VIA HAND DELIVERY

Ms. Ann Cole
Division of the Commission Clerk and
Administrative Services
Florida Public Service Commission
Betty Easley Conference Center
2540 Shumard Oak Boulevard, Room 110
Tallahassee, FL 32399-0850

RE: Florida Power & Light Company's 2011 Ten Year Power Plant Site Plan

Dear Ms. Cole:

In accordance with Rule 25-22.071, F.A.C., please find enclosed for filing the original and twenty-five (25) copies of Florida Power & Light Company's 2011-2020 Ten Year Power Plant Site Plan.

Sincerely,

[Signature]

for Jessica A. Cano

Enclosures
Ten Year Power Plant Site Plan
2011 – 2020

FPL
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Enclosures
Ten Year Power Plant Site Plan

2011-2020

Submitted To:

Florida Public Service Commission

Miami, Florida
April 2011
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Overview of the Document

Chapter 186, Florida Statutes, requires that each electric utility in the State of Florida with a minimum existing generating capacity of 250 megawatts (MW) must annually submit a Ten Year Power Plant Site Plan. This plan should include an estimate of the utility's future electric power generating needs, a projection of how these estimated generating needs might be met, and disclosure of information pertaining to the utility’s preferred and potential power plant sites. The information contained in this Site Plan is compiled and presented in accordance with rules 25-22.070, 25-22.071, and 25-22.072, Florida Administrative Code (F.A.C.).

This Ten Year Power Plant Site Plan (Site Plan) document is based on Florida Power & Light Company’s (FPL) integrated resource planning (IRP) analyses that were carried out in 2010 and that were on-going in the first Quarter of 2011. The forecasted information presented in this plan addresses the years 2011 through 2020.

Site Plans are long-term planning documents and should be viewed in this context. A Site Plan contains tentative information and all of this information is subject to change at the discretion of the utility. Much of the data submitted is preliminary in nature and is presented in a general manner. Specific and detailed data will be submitted as part of the Florida site certification process, or through other proceedings and filings, at the appropriate time.

This document is organized in the following manner:

**Chapter I – Description of Existing Resources**
This chapter provides an overview of FPL's current generating facilities. Also included is information on other FPL resources including purchased power, demand side management, and FPL's transmission system.

**Chapter II – Forecast of Electric Power Demand**
FPL's load forecasting methodology, and its forecast of seasonal peaks and annual energy usage, is presented in Chapter II.

**Chapter III – Projection of Incremental Resource Additions**
This chapter discusses FPL's integrated resource planning (IRP) process and outlines FPL's projected resource additions, especially new power plants, based on FPL's IRP work in 2010 and
early 2011.

Chapter IV – Environmental and Land Use Information
This chapter discusses environmental information as well as Preferred and Potential site locations for additional electric generation facilities.

Chapter V – Other Planning Assumptions and Information
This chapter addresses twelve "discussion items" which pertain to additional information that is included in a Site Plan filing.
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Executive Summary

Florida Power & Light Company's (FPL) 2011 Ten Year Power Plant Site Plan (Site Plan) presents FPL's current plans to augment and enhance its electric generation capability (owned or purchased) as part of its efforts to meet its projected incremental resource needs for the 2011 - 2020 time period. By design, the primary focus of this document is on supply side additions; i.e., electric generation capability and the sites for these additions. The supply side additions discussed in this document are resources projected to be needed after accounting for FPL's demand side management (DSM) efforts and the significant energy efficiency contributions from the current federal appliance and lighting efficiency standards. The projected impacts of the federal appliance and lighting efficiency standards are already reflected in FPL's load forecast which is discussed in Chapter II. The projected impacts of FPL's DSM efforts are addressed as projected reductions to the forecasted load.

The resource plan that is presented in FPL's 2011 Site Plan contains a number of key similarities to the resource plan presented in FPL's 2010 Site Plan. On the other hand, there are specific factors that are driving changes in FPL's resource plans and which will continue to influence FPL's on-going resource planning work. A brief discussion of these similarities, factors, and changes is provided below. Additional information regarding many of these topics is presented in Chapter III.

I. Similarities to the Resource Plan Previously Presented in FPL's 2010 Site Plan:

There are six key similarities in the current resource plan presented in this document compared to the resource plan presented in the 2010 Site Plan.

**Similarity # 1: A third highly efficient combined cycle (CC) generating unit at the West County Energy Center site will be added to FPL's system in 2011.**

One similarity to FPL's 2010 Site Plan is the addition of a third new highly efficient natural gas-fired CC generating unit at FPL's West County Energy Center (WCEC) site in 2011. FPL placed in-service two 1,219 MW (Summer) CC units at the WCEC site in 2009. These units are identified as WCEC Units 1 and 2. The WCEC Units 1 and 2 were approved by the Florida Public Service Commission (FPSC) in June 2006 in Order No. PSC-06-0555-FOF-El. Site Certification for these units under the Florida Electric Power Plant Siting Act was approved by the Governor and the Cabinet serving as the Siting Board in December 2006 in Order No. DEP 06-1755.
FPL is currently constructing the third new CC unit, WCEC Unit 3, at this site. This new CC unit is projected to go into commercial operation by June 2011. The WCEC Unit 3 was approved by the FPSC in September 2008 in Order No. PSC-08-0591-FOF-EI and Site Certification for this unit was obtained in November 2008 in Order No. DEP 08-1204.

**Similarity # 2: FPL’s 2011 Site Plan continues to project that the DSM Goals imposed by FPSC for FPL will be met.**

In late 2009, the FPSC imposed new DSM Goals for FPL for the years 2010 through 2019. As was the case in its 2010 Site Plan, FPL continues to project that these DSM Goals will be met.

However, there are several aspects of the new DSM Goals that are cause for concern. One issue is that, in imposing DSM Goals for FPL, the approach used by the FPSC in 2009 deviated from prior practice in ways that resulted in electric rates for FPL’s customers being higher than would otherwise have been the case. In addition, this high level of DSM Goals means that FPL is becoming increasingly dependent upon DSM resources for reserves needed to maintain system reliability. This concern is mentioned again later in this Executive Summary and is discussed in more detail in Chapter III.

**Similarity # 3: Generating capacity at FPL’s four existing nuclear generation units will increase in the 2011 – 2013 time frame.**

FPL will be adding approximately 450 MW of increased generating capacity from its existing Turkey Point and St. Lucie nuclear power plants. This increased capacity is currently scheduled to come in-service between March 2011 and January 2013. The need for these nuclear capacity “uprates” was approved by the FPSC in January 2008 in Order No. PSC-08-0021-FOF-EI. The Final Order for the Site Certification was issued in September 2008 for the St. Lucie uprates in Order No. DEP 08-0942 and in October 2008 for the Turkey Point uprates in Order No. DEP 08-1141. (There are some relatively small changes in the schedules for the increased nuclear capacity that are discussed in Chapter III.)

**Similarity # 4: FPL continues to pursue licenses, permits, and approvals that would be necessary for future construction and operation of two new nuclear generating units at its Turkey Point site.**

FPL is continuing its work to obtain all of the licenses, permits, and approvals that would be necessary to construct and operate two new nuclear units at its Turkey Point site in the future.
These licenses, permits, and approvals will provide FPL with the option to construct these nuclear units at Turkey Point for a time expected to be up to 20 years from the time the licenses and permits are granted, and then to operate the units. A decision regarding construction of these new units will be made once the licenses and permits are granted. (Based on the current estimated time for construction, the earliest practical deployment dates for the two new units would be beyond the 10-year reporting period for this Site Plan. Therefore, these units are not shown in this document.)

**Similarity # 5: A number of existing generating units have been placed on Inactive Reserve.**

In 2009, FPL began to take a number of its existing generating units out of active service and place them on Inactive Reserve status. That process is continuing in early 2011. The specific generating units that have been placed on Inactive Reserve status are discussed in Chapter III of this document. However, there are changes in regard to FPL's current plans for these units that are discussed later in this Executive Summary and in more detail in Chapter III.

**Similarity # 6: The modernizations of FPL's existing Cape Canaveral and Riviera plant sites is underway and are projected to be completed in 2013 and 2014, respectively.**

FPL's 2010 Site Plan projected that the modernizations of FPL existing generating units at these two sites would occur in 2013 (Cape Canaveral) and 2014 (Riviera). FPL received need determination approval from the FPSC for both of these modernizations in September 2008 in Order No. PSC-08-0591-FOF-El. Site Certification was received for Cape Canaveral in October 2009 in Order No. DEP 09-1015. Site Certification was received for Riviera in November 2009 in Order No. DEP O9-1245. These modernizations are underway and are again reflected in this Site Plan.

**II. Factors That Are Driving Changes in FPL's Resource Plan:**

There are two primary factors that are driving the changes in FPL's 2011 resource plan compared to the resource plan presented in FPL's 2010 Site Plan. These factors, and their impacts on the resource plan, are summarized below and are addressed in more detail in Chapter III of this document.
Factor # 1: The costs of returning units from Inactive Reserve status are projected to be high.

Recent detailed evaluation of the specific costs of returning generating units from their current Inactive Reserve status, and then operating those units after they are returned to service, indicate that such costs are projected to be high. These cost projections require further analysis to determine when, and if, these units will be returned to active service.

Factor # 2: The growing number of combined cycle units on FPL's system will require that planned maintenance outages for FPL's fleet of fossil-fueled generating units be scheduled throughout the year, including Summer and Winter peak load months.

Combined cycle units are based on advanced combustion turbines whose planned maintenance outages must be strictly tied to their operating hours. Therefore, there is relatively little flexibility regarding when planned maintenance for the combined cycle units can be scheduled. This makes it more difficult to schedule planned maintenance for these units, plus all of FPL's other fossil-fueled generating units, solely in non-peak load months.

III. Resulting Changes in FPL's Resource Plan Compared to the Resource Plan Previously Presented in FPL's 2010 Site Plan:

The combined effect of the factors discussed above contribute to three significant changes in FPL's resource plan presented in this document compared to the resource plan previously presented in FPL's 2010 Site Plan. The changes are summarized below and are discussed in more detail in Chapter III.

Resulting Change # 1: FPL’s 2011 Site Plan does not specify a permanent return to active service of the existing generating units placed in Inactive Reserve.

The effect of the projected high costs of returning these units to active status, and subsequently operating these units, are reflected in the resource plan that FPL presents in its 2011 Site Plan. Based on these cost projections, and the comparatively lower projected system costs of new combined cycle capacity, this resource plan does not show the permanent return to service of any of these generating units in the ten-year period addressed in this document.

FPL currently expects that three of these generating units, Cutler 5 & 6 and Sanford 3, will be retired by 2012. FPL will be examining other potential uses for these sites, including their
potential use as sites for new renewable energy facilities. The four steam units at FPL’s Port Everglades site will remain available to return to service at least until 2014. Two of these four steam units, Port Everglades Units 3 & 4, are currently scheduled to be returned to active service in 2012 and then return to Inactive Reserve status at least until the “modernized” units at Cape Canaveral and Riviera are in normal operation (i.e., until mid-2014). The other two steam units, Port Everglades Units 1 & 2, are currently scheduled to remain on Inactive Reserve status during this time period. The remaining unit on Inactive Reserve status, Turkey Point 2, will remain on Inactive Reserve status, but will operate as a synchronous condenser (which provides reactive power support for FPL’s transmission system in Southeastern Florida) rather than as provider of electricity. This unit is capable of returning to active service in the future to provide MW and MWh. (Further discussion of the units on Inactive Reserve status is provided in Chapter III.)

FPL will continue to evaluate the relative economics of returning the Port Everglades and Turkey Point 2 units from Inactive Reserve compared to adding new combined cycle capacity at Greenfield/Brownfield sites and/or modernizing generation facilities at existing sites.

**Resulting Change # 2: For planning purposes consistent with the objectives of this reporting document, the resource plan presented in this Site Plan shows the addition of two new Greenfield CC units.**

With the assumption that none of the units currently in Inactive Reserve status will be permanently returned to active service during the ten-year period addressed in this document, and consistent with all other assumptions (new load forecast, DSM Goals, etc.), FPL currently projects that it will have its next resource need in 2016. Consistent with two of the objectives of this document, which are to provide a preview of what types of generating units FPL projects would be added, and when FPL projects that those additions would be made, FPL is projecting that this resource need would be met by the addition of one new CC unit similar to the new CC units being added as part of the modernizations of the Cape Canaveral and Riviera sites. An additional resource need is then projected by the year 2020. For planning purposes, FPL currently projects that this subsequent resource need would also be met by the addition of another new CC unit of the same type. No specific sites have been designated for these two new CC units and they are referred to as Greenfield CC units throughout this document.

As previously mentioned, and as part of FPL’s ongoing resource planning process, FPL will continue to evaluate how best to meet future resource needs; i.e., through new CC capacity and/or the return of Inactive Reserve units to active service. These analyses will also examine the potential for modernizing additional existing power plants such as is being done at the Cape
Canaveral and Riviera sites. For example, the existing Port Everglades site is a potential site for modernization. Other existing sites may also emerge in the ongoing analyses as potential candidates for modernization. Analyses of any modernization candidates would include evaluation of numerous factors including: fuel delivery costs/issues, transmission impacts (especially in the Southeastern region of Florida as will be discussed later), system reliability issues due to the removal of existing units from active service prior to the construction of new capacity at the site, overall system economics, etc.

**Resulting Change # 3: FPL's resource plan reflects that planned maintenance must be scheduled during Summer and Winter peak months.**

Due to the previously discussed requirement that combustion turbine maintenance take place on a strict schedule based on operating hours, FPL must schedule planned maintenance during peak load months. This is reflected in this Site Plan as MWs of capacity that are projected to be out-of-service in Summer and Winter reserve margin calculations (as presented in Schedules 7.1 through 7.4 in Chapter III.) One effect of this change is that it increases FPL's projected resource needs in future years.

**IV. Additional Factors Influencing FPL's Resource Planning Work:**

In addition to the two factors specifically described above (projected high costs of returning units in Inactive Reserve to active service and the need to schedule planned maintenance in peak load months) that are driving changes in FPL's resource plans, there are additional factors that also influence FPL's resource planning work. Among these other additional factors are two that FPL typically refers to as on-going system concerns that FPL has considered in its resource planning work for a number of years. These two on-going system concerns are: (1) maintaining/enhancing fuel diversity in the FPL system, and (2) maintaining a balance between load and generating capacity in Southeastern Florida, particularly in Miami-Dade and Broward counties.

A third factor that could affect FPL's resource planning is the possibility of the establishment of a Florida standard for renewable energy or clean energy. A Renewable Portfolio Standard (RPS) proposal was prepared by the FPSC, and then sent to the Florida Legislature for consideration, with a possible change to a Clean Portfolio Standard (CPS), during the 2009 legislative session. However, no RPS or CPS legislation was enacted during the 2009 or 2010 legislative sessions. RPS or CPS legislation, or other legislative initiatives regarding renewable or clean energy contributions, may occur in the future. If such legislation is enacted during 2011 or in later years,
FPL will then determine what steps need to be taken to address the legislation. Such steps would then be discussed in FPL’s Site Plan in the year following the enactment of such legislation.

A fourth factor that will affect FPL’s resource planning is the issue of how best to reliably obtain additional natural gas for FPL’s system which is projected to continue to add more natural gas-fired generating capacity after the modernizations of Cape Canaveral and Riviera are completed.

A fifth factor or issue that will affect FPL’s resource planning was previously mentioned in this Executive Summary: the extent to which FPL’s reserves will become increasingly dependent upon DSM resources as opposed to generation resources. This projected imbalance in future reserves is becoming more pronounced, in part, because of higher DSM Goals requirements.

Each of these factors will continue to be examined in FPL’s on-going resource planning work during the rest of 2011 and in future years.

Table ES-1 presents a current projection of major changes to specific generating units and firm capacity purchases for 2011 – 2020 in terms of Summer MW. Table ES-2 then expands upon the information presented in Table ES-1 by adding projections of Winter MW impacts, Summer reserve margins, Winter reserve margins, etc. (Although neither table specifically identifies the impacts of the new DSM Goals on FPL’s resource needs and resource plan, the DSM Goals have been fully accounted for in the resource plan presented in this Site Plan.)
Table ES-1: Projected Capacity & Firm Purchase Power Changes

<table>
<thead>
<tr>
<th>Year *</th>
<th>Projected Capacity &amp; Firm Purchase Power Changes</th>
<th>Summer MW</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Riviera Unit 3 &amp; 4 - removed for modernization</td>
<td>(565)</td>
<td>February-11</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 Uprates - interim increase</td>
<td>17</td>
<td>April-11</td>
</tr>
<tr>
<td></td>
<td>West County Unit # 3</td>
<td>1,219</td>
<td>June-11</td>
</tr>
<tr>
<td></td>
<td>Total of MW changes to Summer reserve margin:</td>
<td>671</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>Inactive Reserve Unit (PE Units 3 &amp; 4) - active service</td>
<td>761</td>
<td>January-12</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 1 Uprates - completed</td>
<td>122</td>
<td>March-12</td>
</tr>
<tr>
<td></td>
<td>Palm Beach SWA - PPA extension</td>
<td>55</td>
<td>April-12</td>
</tr>
<tr>
<td></td>
<td>Oleander PPA - contract ends</td>
<td>(155)</td>
<td>May-12</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 outage</td>
<td>(731)</td>
<td>June-12</td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 3 Uprates - completed</td>
<td>109</td>
<td>June-12</td>
</tr>
<tr>
<td></td>
<td>Total of MW changes to Summer reserve margin:</td>
<td>161</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>St. Lucie Unit 2 Uprates - completed</td>
<td>93</td>
<td>October-12</td>
</tr>
<tr>
<td></td>
<td>Inactive Reserve Unit (PE Units 3 &amp; 4) - inactive status</td>
<td>(761)</td>
<td>November-12</td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 4 Uprates - completed</td>
<td>109</td>
<td>February-13</td>
</tr>
<tr>
<td></td>
<td>Cape Canaveral Next Generation Clean Energy Center</td>
<td>1,210</td>
<td>June-13</td>
</tr>
<tr>
<td></td>
<td>Martin 1 ESP - outage</td>
<td>(826)</td>
<td>June-13</td>
</tr>
<tr>
<td></td>
<td>Total of MW changes to Summer reserve margin:</td>
<td>(175)</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>Martin 2 ESP - outage</td>
<td>(826)</td>
<td>March-14</td>
</tr>
<tr>
<td></td>
<td>Riviera Beach Next Generation Clean Energy Center</td>
<td>1,212</td>
<td>June-14</td>
</tr>
<tr>
<td></td>
<td>Total of MW changes to Summer reserve margin:</td>
<td>386</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Palm Beach SWA PPA - additional</td>
<td>90</td>
<td>April-15</td>
</tr>
<tr>
<td></td>
<td>Total of MW changes to Summer reserve margin:</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>UPS Replacement</td>
<td>(931)</td>
<td>December-15</td>
</tr>
<tr>
<td></td>
<td>SJRPP</td>
<td>(375)</td>
<td>April-16</td>
</tr>
<tr>
<td></td>
<td>Greenfield 3x1 Combined Cycle</td>
<td>1,191</td>
<td>June-16</td>
</tr>
<tr>
<td></td>
<td>Total of MW changes to Summer reserve margin:</td>
<td>(115)</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>Total of MW changes to Summer reserve margin:</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>Total of MW changes to Summer reserve margin:</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>Total of MW changes to Summer reserve margin:</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td>Greenfield 3x1 Combined Cycle</td>
<td>1,191</td>
<td>June-20</td>
</tr>
<tr>
<td></td>
<td>Total of MW changes to Summer reserve margin:</td>
<td>1,191</td>
<td></td>
</tr>
</tbody>
</table>

* Year shown reflects when the MW change begins to be accounted for in reserve margin calculations.
Table ES-2: Projected Capacity Changes and Reserve Margins for FPL

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Capacity Changes</th>
<th>Net Capacity Changes (MW)</th>
<th>Reserve Margin (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Winter</td>
<td>Summer</td>
</tr>
<tr>
<td>2011</td>
<td>Inactive Reserve of Existing Units - offline</td>
<td>(775)</td>
<td>(1,822)</td>
</tr>
<tr>
<td></td>
<td>Riviera Plant - offline for modernization</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scherer Plant Upgrade</td>
<td>(665)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 Partial Uprate</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 Partial Uprates Peak Outage</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>West County Unit 3</td>
<td>(728)</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>Changes to Existing Purchases</td>
<td>(394)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 1 Uprates</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 3 Uprates</td>
<td>109</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inactive Reserve of Existing Units - offline</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inactive Reserve Unit (PE Units 3 &amp; 4) - online</td>
<td>(631)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manatee 2 ESP Peak Outage</td>
<td>822</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Riviera Plant - offline for modernization</td>
<td>(571)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scherer Plant upgrade</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 1 Uprate Peak Outage</td>
<td>(653)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 Partial Uprate</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 Partial Uprates Peak Outage</td>
<td>(731)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 3 Uprate Peak Outage</td>
<td>(717)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>West County Unit 3</td>
<td>1,335</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>Cape Canaveral Next Generation Clean Energy Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 1 Uprates</td>
<td>1,210</td>
<td></td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 Uprates</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 3 Uprates</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 4 Uprates</td>
<td>109</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inactive Reserve Unit (PE Units 3 &amp; 4) - offline</td>
<td>109</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manatee Unit 1 ESP Peak Outage</td>
<td>(631)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Martin Unit 1 ESP Peak Outage</td>
<td>822</td>
<td></td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 Partial Uprate</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>Cape Canaveral Next Generation Clean Energy Center</td>
<td>1,355</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 4 Uprates</td>
<td>109</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Martin Unit 1 ESP Peak Outage</td>
<td>(832)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Martin Unit 2 ESP Peak Outage</td>
<td>(826)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Riviera Beach Next Generation Clean Energy Center</td>
<td>1,212</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Change to Existing Qualifying Facilities</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Riviera Beach Next Generation Clean Energy Center</td>
<td>1,344</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>Changes to Existing Purchases</td>
<td>(383)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change to Existing Qualifying Facilities</td>
<td>(1,306)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Greenfield 3x1 Combined Cycle</td>
<td>1,191</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>Changes to Existing Purchases</td>
<td>(383)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Greenfield 3x1 Combined Cycle</td>
<td>1,351</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td>1,391</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td></td>
<td>383</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
<td>316</td>
<td></td>
</tr>
</tbody>
</table>

(1) Additional information about these resulting reserve margins and capacity changes are found on Schedules 7 & 8 respectively.
(2) The Summer and Winter reserve margins reflect an additional 350 MW in summer and 500 MW in winter of units scheduled to be out during those peak periods. See Section III.C.1 in Chapter 3 for more details.
(3) Winter values are forecasted values for January of the year shown.
(4) Summer values are forecasted values for August of the year shown.
(5) These are firm capacity and energy contracts with QF, utilities, and other entities. See Table I.B.1 and Table I.B.2 for more details.
(6) All new unit additions are scheduled to be in-service in June of the year shown. All additions assumed to start in June are included in the Summer reserve margin calculation starting in that year and in the Winter reserve margin calculation starting with the next year.
(7) Outages for uprate work.
(8) Outages for ESP work.
(9) A number of existing FPL power plants have been removed from service and placed on Inactive Reserve status. See Chapter 3 for a discussion of the units on inactive Reserves.
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CHAPTER I

Description of Existing Resources
I. Description of Existing Resources

FPL's service area contains approximately 27,650 square miles and has a population of approximately 8.7 million people. FPL served an average of 4,520,328 customer accounts in thirty-five counties during 2010. These customers were served from a variety of resources including: FPL-owned fossil-fueled, renewable, and nuclear generating units, non-utility owned generation, demand side management (DSM), and interchange/purchased power.

I.A. FPL-Owned Resources

The existing FPL generating resources are located at sixteen generating sites distributed geographically around its service territory and also include partial ownership of one unit located in Georgia and two units located in Jacksonville, Florida. The current electrical generating facilities consist of four nuclear units, three coal units, fourteen combined cycle (CC) units, fifteen fossil steam units, forty-eight combustion gas turbines, one simple cycle combustion turbine, and two photovoltaic facilities¹. The locations of these eighty-seven generating units are shown on Figure I.A.1 and in Table I.A.1. Table I.A.2 provides a "break down" of the capacity provided by the combustion turbine (CT) and steam turbine (ST) components of FPL's existing CC units.

FPL's bulk transmission system is comprised of 6,721 circuit miles of transmission lines. Integration of the generation, transmission, and distribution system is achieved through FPL's 586 substations in Florida.

The existing FPL system, including generating plants, major transmission stations, and transmission lines, is shown on Figure I.A.2. In addition, Figure I.A.3 shows FPL's interconnection ties with other utilities.

¹ FPL also has one 75 MW solar thermal facility at its Martin plant site. This facility does not generate electricity as the other units mentioned above do. Instead, it produces steam that reduces the use of fossil fuel to produce steam.
FPL Generating Resources by Location

<table>
<thead>
<tr>
<th>Location/Map Key</th>
<th>Plant Name</th>
<th>Number of Units</th>
<th>Summer MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Turkey Point</td>
<td>5</td>
<td>3,322</td>
</tr>
<tr>
<td>B</td>
<td>St. Lucie *</td>
<td>2</td>
<td>1,553</td>
</tr>
<tr>
<td>C</td>
<td>Manatee</td>
<td>3</td>
<td>2,735</td>
</tr>
<tr>
<td>D</td>
<td>Fort Myers</td>
<td>2</td>
<td>1,747</td>
</tr>
<tr>
<td>E</td>
<td>Cutler</td>
<td>2</td>
<td>205</td>
</tr>
<tr>
<td>F</td>
<td>Lauderdale</td>
<td>2</td>
<td>884</td>
</tr>
<tr>
<td>G</td>
<td>Port Everglades</td>
<td>4</td>
<td>1,187</td>
</tr>
<tr>
<td>H</td>
<td>Riviera</td>
<td>2</td>
<td>586</td>
</tr>
<tr>
<td>I</td>
<td>Martin</td>
<td>5</td>
<td>3,695</td>
</tr>
<tr>
<td>J</td>
<td>Sanford</td>
<td>3</td>
<td>2,050</td>
</tr>
<tr>
<td>K</td>
<td>Putnam</td>
<td>2</td>
<td>498</td>
</tr>
<tr>
<td>L</td>
<td>SJRPP **</td>
<td>2</td>
<td>254</td>
</tr>
<tr>
<td>M</td>
<td>West County</td>
<td>2</td>
<td>2,438</td>
</tr>
<tr>
<td>N</td>
<td>DeSoto ***</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>O</td>
<td>Space Coast ***</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Scherer ****</td>
<td>1</td>
<td>646</td>
</tr>
<tr>
<td></td>
<td>Gas Turbines</td>
<td>48</td>
<td>1,906</td>
</tr>
</tbody>
</table>

Total System Generation = 87 MW = 23,722
System Firm Generation = 85 MW = 23,887

* Represents FPL's ownership share: St Lucie nuclear: 100% unit 1, 85% unit 2; St. Johns River: 20% of two units.
** SJRPP = St. John's River Power Park.
*** The 25 MW of PV at DeSoto and the 10 MW of Space Coast are considered as non-firm generating capacity.
**** The Scherer unit is located in Georgia and is not shown on this map.

Figure I.A.1: Capacity Resources by Location (as of December 31, 2010)
<table>
<thead>
<tr>
<th>Unit Type/ Plant Name</th>
<th>Location</th>
<th>Number of Units</th>
<th>Fuel</th>
<th>Summer MW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nuclear</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey Point</td>
<td>Florida City, FL</td>
<td>2</td>
<td>Nuclear</td>
<td>1,386</td>
</tr>
<tr>
<td>St. Lucie *</td>
<td>Hutchinson Island, FL</td>
<td>2</td>
<td>Nuclear</td>
<td>1,553</td>
</tr>
<tr>
<td><strong>Total Nuclear</strong></td>
<td></td>
<td>4</td>
<td></td>
<td>2,939</td>
</tr>
<tr>
<td><strong>Coal Steam</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SJRPP **</td>
<td>Jacksonville, FL</td>
<td>2</td>
<td>Coal</td>
<td>254</td>
</tr>
<tr>
<td>Scherer</td>
<td>Monroe County, Ga</td>
<td>1</td>
<td>Coal</td>
<td>646</td>
</tr>
<tr>
<td><strong>Total Coal Steam</strong></td>
<td></td>
<td>3</td>
<td></td>
<td>900</td>
</tr>
<tr>
<td><strong>Combined-Cycle</strong>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martin</td>
<td>Indiantown, FL</td>
<td>2</td>
<td>Gas</td>
<td>938</td>
</tr>
<tr>
<td>Sanford</td>
<td>Lake Monroe, FL</td>
<td>2</td>
<td>Gas</td>
<td>1,142</td>
</tr>
<tr>
<td>Fort Myers</td>
<td>Fort Myers, FL</td>
<td>1</td>
<td>Gas</td>
<td>1,432</td>
</tr>
<tr>
<td>Manatee</td>
<td>Parrish, FL</td>
<td>1</td>
<td>Gas</td>
<td>1,111</td>
</tr>
<tr>
<td>Turkey Point</td>
<td>Florida City, FL</td>
<td>1</td>
<td>Gas</td>
<td>1,148</td>
</tr>
<tr>
<td>Lauderdale</td>
<td>Dania, FL</td>
<td>2</td>
<td>Gas/Oil</td>
<td>884</td>
</tr>
<tr>
<td>Martin</td>
<td>Indiantown, FL</td>
<td>1</td>
<td>Gas/Oil</td>
<td>1,105</td>
</tr>
<tr>
<td>Pinnaam</td>
<td>Paledka, FL</td>
<td>2</td>
<td>Gas/Oil</td>
<td>496</td>
</tr>
<tr>
<td>West County</td>
<td>Palm Beach County, FL</td>
<td>2</td>
<td>Gas/Oil</td>
<td>2,438</td>
</tr>
<tr>
<td><strong>Total Combined Cycle</strong></td>
<td></td>
<td>14</td>
<td></td>
<td>11,466</td>
</tr>
<tr>
<td><strong>Oil/Gas Steam</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutler</td>
<td>Miami, FL</td>
<td>2</td>
<td>Gas</td>
<td>205</td>
</tr>
<tr>
<td>Manatee</td>
<td>Parrish, FL</td>
<td>2</td>
<td>Oil/Gas</td>
<td>1,624</td>
</tr>
<tr>
<td>Martin</td>
<td>Indiantown, FL</td>
<td>2</td>
<td>Oil/Gas</td>
<td>1,652</td>
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<tr>
<td>Port Everglades</td>
<td>Port Everglades, FL</td>
<td>4</td>
<td>Oil/Gas</td>
<td>1,187</td>
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<tr>
<td>Riviera</td>
<td>Riviera Beach, FL</td>
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<td>Oil/Gas</td>
<td>566</td>
</tr>
<tr>
<td>Sanford</td>
<td>Lake Monroe, FL</td>
<td>1</td>
<td>Oil/Gas</td>
<td>138</td>
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<tr>
<td>Turkey Point</td>
<td>Florida City, FL</td>
<td>2</td>
<td>Oil/Gas</td>
<td>788</td>
</tr>
<tr>
<td><strong>Total Oil/Gas Steam</strong></td>
<td></td>
<td>15</td>
<td></td>
<td>6,158</td>
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<tr>
<td><strong>Gas Turbines(GT)/Diesels(IC)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lauderdale (GT)</td>
<td>Dania, FL</td>
<td>24</td>
<td>Gas/Oil</td>
<td>840</td>
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<tr>
<td>Port Everglades (GT)</td>
<td>Port Everglades, FL</td>
<td>12</td>
<td>Gas/Oil</td>
<td>420</td>
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<tr>
<td>Fort Myers (GT)</td>
<td>Fort Myers, FL</td>
<td>12</td>
<td>Oil</td>
<td>420</td>
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<tr>
<td><strong>Total Gas Turbines/Diesel</strong></td>
<td></td>
<td>48</td>
<td></td>
<td>1,900</td>
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<tr>
<td><strong>Combustion Turbines</strong>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Fort Myers ****</td>
<td>Fort Myers, FL</td>
<td>1</td>
<td>Gas/Oil</td>
<td>315</td>
</tr>
<tr>
<td><strong>Total Combustion Turbines</strong></td>
<td></td>
<td>1</td>
<td></td>
<td>315</td>
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<tr>
<td><strong>PV</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DeSoto *****</td>
<td>DeSoto, FL</td>
<td>1</td>
<td>Solar Energy</td>
<td>25</td>
</tr>
<tr>
<td>Space Coast *****</td>
<td>Brevard County, FL</td>
<td>1</td>
<td>Solar Energy</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total PV</strong></td>
<td></td>
<td>2</td>
<td></td>
<td>35</td>
</tr>
</tbody>
</table>

Total System Generation as of December 31, 2010 = 87,458 MW
System Firm Generation as of December 31, 2010 = 85,202 MW

* Total capability of each unit is 853/839 MW. FPL’s ownership share of St. Lucie 1 and 2 is 100% and 85%, respectively. Capabilities shown represent FPL’s output share from each of the units (approx. 92.5% and exclude the Orlando Utilities Commission (OUC) and Florida Municipal Power Agency (FMPA) combined portion of approximately 7.4476% per unit.

** Represents FPL’s ownership share: SJRPP coal: 20% of two units

*** The Combined Cycles and Combustion Turbines are broken down by components on Table 1.A.2.

**** This unit consists of two combustion turbines.

***** The 25 MW of PV at DeSoto and the 10 MW at Space Coast are considered non-firm generating capacity.
Table I.A.2: Combined Cycle and Combustion Turbine Components

<table>
<thead>
<tr>
<th>Plant Name/Unit No.</th>
<th>Summer MW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CT A</td>
</tr>
<tr>
<td>Ft Myers 2</td>
<td>158</td>
</tr>
<tr>
<td>Lauderdale 4</td>
<td>161</td>
</tr>
<tr>
<td>Lauderdale 5</td>
<td>161</td>
</tr>
<tr>
<td>Manatee 3</td>
<td>162</td>
</tr>
<tr>
<td>Martin 3</td>
<td>164</td>
</tr>
<tr>
<td>Martin 4</td>
<td>164</td>
</tr>
<tr>
<td>Martin 5</td>
<td>161</td>
</tr>
<tr>
<td>Putnam 1</td>
<td>71</td>
</tr>
<tr>
<td>Sanford 4</td>
<td>166</td>
</tr>
<tr>
<td>Sanford 5</td>
<td>169</td>
</tr>
<tr>
<td>Turkey Point 5</td>
<td>174</td>
</tr>
<tr>
<td>West County 1</td>
<td>250</td>
</tr>
<tr>
<td>West County 2</td>
<td>250</td>
</tr>
</tbody>
</table>

This table shows the breakdown of total MW for each unit by CT and steam component.

* The total MW values shown in this table may differ slightly from values shown in other tables due to rounding of per-component values.
### Table 1.A.3: Purchase Power Resources by Contract (as of December 31, 2010)

<table>
<thead>
<tr>
<th>Location (City or County)</th>
<th>Fuel</th>
<th>Summer MW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Purchases from QF's: Cogeneration/Small Power Production Facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cedar Bay Generating Co.</td>
<td>Duval, Coal (Cogen)</td>
<td>250</td>
</tr>
<tr>
<td>Indiantown Cogen., LP</td>
<td>Martin, Coal (Cogen)</td>
<td>330</td>
</tr>
<tr>
<td>Broward South</td>
<td>Broward, Solid Waste</td>
<td>4</td>
</tr>
<tr>
<td>Broward North</td>
<td>Broward, Solid Waste</td>
<td>56</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td></td>
<td>640</td>
</tr>
<tr>
<td><strong>II. Purchases from Utilities:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UPS from Southern Company</td>
<td>Various in Georgia, Coal</td>
<td>931</td>
</tr>
<tr>
<td>SJRPP</td>
<td>Jacksonville, FL, Coal</td>
<td>375</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td></td>
<td>1,306</td>
</tr>
<tr>
<td><strong>III. Other Purchases:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oleander (Extension)</td>
<td>Brevard, Gas</td>
<td>155</td>
</tr>
<tr>
<td><strong>Total Net Firm Generating Capability:</strong></td>
<td></td>
<td>2,101</td>
</tr>
</tbody>
</table>

### Non-Firm Energy Purchases (MWH)

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Location (City or County)</th>
<th>Fuel</th>
<th>Energy (MWH) Delivered to FPL in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Okeelanta</td>
<td>Palm Beach</td>
<td>Bagasse/Wood</td>
<td>256,627</td>
</tr>
<tr>
<td>Broward South</td>
<td>Broward</td>
<td>Garbage</td>
<td>349,171</td>
</tr>
<tr>
<td>Tomoka Farms</td>
<td>Volusia</td>
<td>Landfill Gas</td>
<td>24,527</td>
</tr>
<tr>
<td>Waste Management Integration Renewable Energy</td>
<td>Broward</td>
<td>Landfill Gas</td>
<td>55,438</td>
</tr>
<tr>
<td>Tropicana</td>
<td>Manatee</td>
<td>Natural Gas</td>
<td>43,827</td>
</tr>
<tr>
<td>Calnetix</td>
<td>Palm Beach</td>
<td>Natural Gas</td>
<td>0</td>
</tr>
<tr>
<td>Georgia Pacific</td>
<td>Putnam</td>
<td>Paper by-product</td>
<td>2,548</td>
</tr>
<tr>
<td>Rothenbach Park</td>
<td>Sarasota</td>
<td>PV</td>
<td>259</td>
</tr>
<tr>
<td>Customer - Owned PV &amp; Wind</td>
<td>Various</td>
<td>PV/Wind</td>
<td>482</td>
</tr>
<tr>
<td>Palm Beach SWA</td>
<td>Palm Beach</td>
<td>Solid Waste</td>
<td>114,195</td>
</tr>
</tbody>
</table>
NOTE: This map is not a complete representation of FPL's Transmission System

Figure I.A.2: FPL Substation and Transmission System Configuration
Figure I.A.3: FPL Interconnection Diagram
I.B  Firm Capacity Power Purchases

Purchases from Qualifying Facilities (QF):
Firm capacity power purchases are an important part of FPL's resource mix. FPL currently has contracts with five qualifying facilities; i.e., cogeneration/small power production facilities, to purchase firm capacity and energy as shown in Table I.A.2, Table I.B.1, and I.B.2.

A cogeneration facility is one which simultaneously produces electrical and thermal energy, with the thermal energy (e.g., steam) being used for industrial, commercial, or cooling and heating purposes. A small power production facility is one which does not exceed 80 MW (unless it is exempted from this size limitation by the Solar, Wind, Waste, and Geothermal Power Production Incentives Act of 1990) and uses as its primary energy source (at least 50%) solar, wind, waste, geothermal, or other renewable resources.

Purchases from Utilities:
FPL has a Unit Power Sales (UPS) contract to purchase 931 MW from the Southern Company (Southern) through the end of December 2015. This capacity will be supplied by Southern from a mix of gas-fired and coal-fired units.

In addition, FPL has contracts with the Jacksonville Electric Authority (JEA) for the purchase of 375 MW (Summer) and 383 MW (Winter) of coal-fired generation from the St. John's River Power Park (SJRPP) Units No. 1 and No. 2. However, due to Internal Revenue Service (IRS) regulations, the total amount of energy that FPL may receive from this purchase is limited. FPL currently assumes, for planning purposes, that this limit will be reached in the first half of 2016. Once this limit is reached, FPL will be unable to receive firm capacity and energy from these purchases. (However, FPL will continue to receive firm capacity and energy from its ownership portion of the SJRPP units.)

These purchases are shown in Table I.A.3, Table I.B.1, and Table I.B.2. FPL also has ownership interest in the SJRPP units. The ownership amount is reflected in FPL's installed capacity shown on Figure I.A.1, in Table I.A.1, and on Schedule 1.
Other Purchases:

FPL has another firm capacity purchase contract with a non-QF, non-utility supplier. This purchase contract runs through May 2012. Table I.B.1 and I.B.2 present the Summer and Winter MW, respectively, resulting from this contract.

### Table I.B.1: FPL's Firm Purchased Power Summer MW

Summary of FPL's Firm Capacity Purchases: Summer MW (for August of Year Shown)

<table>
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<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Broward South</td>
<td>1/1/1993</td>
<td>12/31/2026</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
</tr>
<tr>
<td>Broward South</td>
<td>1/1/1995</td>
<td>12/31/2026</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
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<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Broward South</td>
<td>1/1/1997</td>
<td>12/31/2026</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
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<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Broward North</td>
<td>1/1/1993</td>
<td>12/31/2026</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Broward North</td>
<td>1/1/1996</td>
<td>12/31/2026</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
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<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Broward North</td>
<td>1/1/1997</td>
<td>12/31/2026</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Palm Beach SWA - extension</td>
<td>4/1/2012</td>
<td>4/1/2032</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
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<tr>
<td>Palm Beach SWA - additional</td>
<td>4/1/2015</td>
<td>4/1/2032</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

| Total of QF and Utility Purchases | 1.968 | 1.956 | 1.956 | 1.956 | 2.046 | 748 | 740 | 740 | 740 |

<table>
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<tr>
<th></th>
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<tbody>
<tr>
<td>UPS Replacement</td>
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<td>12/31/2015</td>
<td>931</td>
<td>931</td>
<td>931</td>
<td>931</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SJRPP</td>
<td>4/2/1982</td>
<td>4/2/2016 *</td>
<td>375</td>
<td>375</td>
<td>375</td>
<td>375</td>
<td>375</td>
<td>0</td>
<td>0</td>
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</table>

| Utility Purchases Sub Total | 1,308 | 1,308 | 1,308 | 1,308 | 1,308 | 0    | 0    | 0    | 0    |

| Total "Non-QF" Purchase Sub-Total | 1,466 | 1,308 | 1,308 | 1,308 | 1,308 | 0    | 0    | 0    | 0    |

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Cleander (Extension)</td>
<td>6/1/2007</td>
<td>9/30/2012</td>
<td>155</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

| Other Purchases Sub Total | 155  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |

| Total Non-QF Purchase Sub-Total | 1,466 | 1,308 | 1,308 | 1,308 | 1,308 | 0    | 0    | 0    | 0    |

<table>
<thead>
<tr>
<th></th>
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<td></td>
<td>2,056</td>
<td>1,966</td>
<td>1,956</td>
<td>1,956</td>
<td>2,046</td>
<td>748</td>
<td>740</td>
<td>740</td>
<td>740</td>
<td>740</td>
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</tbody>
</table>

* Contract End Date shown does not represent the actual contract end date. Instead, this data represents a projection of the date at which FPL's ability to receive further capacity and energy from this purchase will be suspended due to IRS regulations.
Table I.B.2: FPL's Firm Purchased Power Winter MW

Summary of FPL's Firm Capacity Purchases: Winter MW (for January of Year Shown)

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Cogeneration Small</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Broward South</td>
<td>01/01/83</td>
<td>12/31/14</td>
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<td>1.4</td>
<td>1.4</td>
<td>1.4</td>
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<tr>
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<tr>
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<tr>
<td>Broward North</td>
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<tr>
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<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
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</tr>
<tr>
<td>Cedar Bay Generating Co.</td>
<td>01/01/84</td>
<td>12/31/14</td>
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<tr>
<td>Invicta Gcgen L.P</td>
<td>12/22/12</td>
<td>12/21/13</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
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<td>003</td>
</tr>
<tr>
<td>Palm Beach SWA - extension</td>
<td>4/1/2012</td>
<td>4/1/2013</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
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</tr>
<tr>
<td>Palm Beach SWA - additional</td>
<td>4/1/2015</td>
<td>4/1/2016</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
<td>000</td>
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</tr>
<tr>
<td><strong>GF Purchases Sub Total:</strong></td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
</tr>
</tbody>
</table>

II. Purchases from Utilities:

<table>
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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>UPS Replacement</td>
<td>06/01/10</td>
<td>12/31/15</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
<td>003</td>
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<tr>
<td>SJRPP</td>
<td>04/02/92</td>
<td>4/1/2016</td>
<td>333</td>
<td>333</td>
<td>333</td>
<td>333</td>
<td>333</td>
<td>333</td>
<td>333</td>
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<td><strong>Utility Purchases Sub Total:</strong></td>
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<td>1,314</td>
<td>1,314</td>
<td>1,314</td>
<td>1,314</td>
<td>1,314</td>
<td>1,314</td>
<td>1,314</td>
<td>1,314</td>
<td>1,314</td>
<td>1,314</td>
</tr>
<tr>
<td>Total of GF and Utility Purchases =</td>
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<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
<td>1,968</td>
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III. Other Purchases:

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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Okeanie (Extension)</td>
<td>06/01/07</td>
<td>06/30/17</td>
<td>180</td>
<td>180</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other Purchases Sub Total:</td>
<td>180</td>
<td>180</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Non-QF Purchase Sub-Total =</strong></td>
<td>1,494</td>
<td>1,494</td>
<td>1,494</td>
<td>1,494</td>
<td>1,494</td>
<td>1,494</td>
<td>1,494</td>
<td>1,494</td>
<td>1,494</td>
<td>1,494</td>
<td>1,494</td>
<td>1,494</td>
</tr>
</tbody>
</table>

Winter Firm Capacity Purchases Total MW: 2,082 | 2,082 | 2,082 | 2,082 | 2,082 | 2,082 | 2,082 | 2,082 | 2,082 | 2,082 | 2,082 | 2,082

* Contract End Date shown does not represent the actual contract end date. Instead, this date represents a projection of the date at which FPL's ability to receive further capacity and energy from this purchase will be suspended due to IRS regulations.
I.C  Non-Firm (As Available) Energy Purchases

FPL purchases non-firm (as-available) energy from several cogeneration and small power production facilities. Table I.C.1 shows the amount of energy purchased in 2010 from these facilities.

Table I.C.1: As-Available Energy Purchases From Non-Utility Generators in 2010

<table>
<thead>
<tr>
<th>Project</th>
<th>County</th>
<th>Fuel</th>
<th>In-Service Date</th>
<th>Energy (MWh) Delivered to FPL in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Okeelanta</td>
<td>Palm Beach</td>
<td>Bagasse/Wood</td>
<td>11/05</td>
<td>256,627</td>
</tr>
<tr>
<td>Broward South</td>
<td>Broward</td>
<td>Garbage</td>
<td>9/09</td>
<td>349,171</td>
</tr>
<tr>
<td>Tomoka Farms</td>
<td>Volusia</td>
<td>Landfill Gas</td>
<td>7/08</td>
<td>24,527</td>
</tr>
<tr>
<td>Waste Management - Renewable Energy</td>
<td>Broward</td>
<td>Landfill Gas</td>
<td>1/10</td>
<td>55,436</td>
</tr>
<tr>
<td>Tropicana</td>
<td>Manatee</td>
<td>Natural Gas</td>
<td>2/00</td>
<td>43,827</td>
</tr>
<tr>
<td>Calheta</td>
<td>Palm Beach</td>
<td>Natural Gas</td>
<td>7/06</td>
<td>0</td>
</tr>
<tr>
<td>Georgia Pacific</td>
<td>Putnam</td>
<td>Paper by-product</td>
<td>2/94</td>
<td>2,548</td>
</tr>
<tr>
<td>Rothenbach Park</td>
<td>Sarasota</td>
<td>PV</td>
<td>10/07</td>
<td>259</td>
</tr>
<tr>
<td>Customer - Owned PV &amp; Wind</td>
<td>Various</td>
<td>PV/Wind</td>
<td>Various</td>
<td>482</td>
</tr>
<tr>
<td>Palm Beach SWA</td>
<td>Palm Beach</td>
<td>Solid Waste</td>
<td>4/10</td>
<td>114,195</td>
</tr>
</tbody>
</table>

I.D.  Demand Side Management (DSM)

FPL has sought out and implemented cost-effective DSM programs since 1978. These programs include a number of conservation/energy efficiency and load management initiatives. FPL’s DSM efforts through 2010 have resulted in a cumulative Summer peak reduction of approximately 4,371 MW at the generator and an estimated cumulative energy saving of approximately 55,462 Gigawatt-hour (GWh) at the generator. After accounting for reserve margin requirements, FPL’s DSM efforts through 2010 have eliminated the need to construct the equivalent of more than 13 new 400 MW generating units. DSM is discussed further in Chapter III.
## Schedule 1

### Existing Generating Facilities

**As of December 31, 2010**

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Unit No.</th>
<th>Location</th>
<th>Unit Type</th>
<th>Fuel Type</th>
<th>Alt. Transport Days</th>
<th>Commercial Days</th>
<th>Expected Retirement Month-Year</th>
<th>Gen. Max. Nameplate kW</th>
<th>Net Capacity MW</th>
<th>Summer MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Canaveral</td>
<td>19245/30E</td>
<td>Brevard County</td>
<td>ST FO2</td>
<td>NG WA PL</td>
<td>Unknown</td>
<td>Apr-65</td>
<td>Jun-10</td>
<td>0</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Cutler</td>
<td>27/36S/40E</td>
<td>Miami Dade County</td>
<td>ST NG</td>
<td>No PL No</td>
<td>Unknown</td>
<td>Nov-54</td>
<td>Jan-12</td>
<td>75,000</td>
<td>69</td>
<td>88</td>
</tr>
<tr>
<td>DeSoto</td>
<td>27/36S/29E</td>
<td>Hernando County</td>
<td>ST NG</td>
<td>No PL No</td>
<td>Unknown</td>
<td>Jul-55</td>
<td>Jan-12</td>
<td>161,500</td>
<td>138</td>
<td>137</td>
</tr>
<tr>
<td>Fort Myers</td>
<td>35/36S/25E</td>
<td>Lee County</td>
<td>PV</td>
<td>N/A NIA</td>
<td>N/A NIA</td>
<td>Unknown</td>
<td>Oct-09</td>
<td>25,000</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Lauderdale</td>
<td>30/36S/40E</td>
<td>Broward County</td>
<td>CC NG</td>
<td>FO2 PL PL</td>
<td>Unknown</td>
<td>Jun-02</td>
<td>Unknown</td>
<td>1,775,300</td>
<td>1,400</td>
<td>1,432</td>
</tr>
<tr>
<td>Manatee</td>
<td>18/36S/20E</td>
<td>Manatee County</td>
<td>CC NG</td>
<td>FO2 PL PL</td>
<td>Unknown</td>
<td>May-93</td>
<td>Unknown</td>
<td>526,250</td>
<td>483</td>
<td>442</td>
</tr>
<tr>
<td>Martin</td>
<td>28/36S/30E</td>
<td>Martin County</td>
<td>ST FO6</td>
<td>NG PL PL</td>
<td>Unknown</td>
<td>Oct-76</td>
<td>Unknown</td>
<td>843,300</td>
<td>822</td>
<td>812</td>
</tr>
</tbody>
</table>

1/ These ratings are peak capability.
2/ The Cape Canaveral modernization project has resulted in the removal of the two steam units previously at the Canaveral site to clear the site for the development of a combined cycle generating unit. This new unit is projected to enter service in June 2013.
3/ Three generating units were on Inactive Reserve status as of 3/31/2010.
4/ The capacity shown for the PV facility at DeSoto is considered non-firm generating capacity due to the intermittent nature of the solar resource.
5/ Martin B is also partially fueled by a 75 MW solar thermal facility that supplies steam when adequate sunlight is available, thus reducing fossil fuel use.

Florida Power & Light Company
## Schedule 1

### Existing Generating Facilities

As of December 31, 2010

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Unit No.</th>
<th>Location</th>
<th>Unit Type</th>
<th>Fuel Type</th>
<th>Fuel</th>
<th>Transport</th>
<th>Alt. F</th>
<th>Alt. A</th>
<th>Commercial In-Service</th>
<th>Expected Retirement</th>
<th>Gen. Max. Nameplate</th>
<th>Net Capability 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port Everglades</td>
<td>City of Hollywood</td>
<td>23/656/42E</td>
<td>ST FO6</td>
<td>NG WA PL</td>
<td>Unknown</td>
<td>Jun-60</td>
<td>Unknown</td>
<td>1,665,534</td>
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<td>1,607</td>
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</tr>
<tr>
<td>Putnam</td>
<td>Putnam County</td>
<td>16/108/27E</td>
<td>CC</td>
<td>NG FO2</td>
<td>PL</td>
<td>WA</td>
<td>Unknown</td>
<td>580,606</td>
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<td>285</td>
<td>249</td>
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<tr>
<td>Riviera</td>
<td>City of Riviera Beach</td>
<td>33/428/43E</td>
<td>ST FO6</td>
<td>NG WA PL</td>
<td>Unknown</td>
<td>Jan-62</td>
<td></td>
<td>620,840</td>
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<td></td>
<td>571</td>
<td>565</td>
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<tr>
<td>Sanford</td>
<td>Volusia County</td>
<td>16/195/30E</td>
<td>ST FO6</td>
<td>NG WA PL</td>
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<td>2,533,970</td>
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<td>Monroe, GA</td>
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<td>NG No</td>
<td>PL No</td>
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<td>Jul-89</td>
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<td>652</td>
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<tr>
<td>Space Coast</td>
<td>Brevard County</td>
<td>13/235/36E</td>
<td>BIT SUB</td>
<td>No</td>
<td>RR No</td>
<td>Unknown</td>
<td>Apr-10</td>
<td>10,000</td>
<td></td>
<td></td>
<td>10</td>
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</tr>
</tbody>
</table>

1) These ratings are peak capability.
2) These generating units were on Inactive Reserve status as of 12/31/2010.
3) These ratings represent FPL's generating capacity share of Scherer Unit No. 4, adjusted for transmission losses.
4) The capacity shown for the PV facility at Space Coast is considered as non-firm generating capacity due to the intermittent nature of the solar resource.

---

Florida Power & Light Company
## Schedule 1

### Existing Generating Facilities

**As of December 31, 2010**

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Location</th>
<th>Unit No.</th>
<th>Fuel Type</th>
<th>Fuel Transport Type</th>
<th>Commercial Days</th>
<th>Commercial Use</th>
<th>Actual/Expected Retirement Month/Year</th>
<th>Gen. Max. Nameplate Capacity</th>
<th>Net Capability&lt;sup&gt;ii&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Johns River Power Park&lt;sup&gt;ii&lt;/sup&gt;</td>
<td>St. Johns River</td>
<td>12/19/26E (RPOE)</td>
<td>BIT</td>
<td>BIT Pet RR WA</td>
<td>Unknown Mar-87</td>
<td>Unknown</td>
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<td>271,838 200 224</td>
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<td>BIT</td>
<td>BIT Pet RR WA</td>
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<td>Unknown</td>
<td>135,918 125 127</td>
<td>135,918 125 127</td>
<td>135,918 125 127</td>
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<tr>
<td>St. Lucie&lt;sup&gt;iii&lt;/sup&gt;</td>
<td>St. Lucie County</td>
<td>16/06/41E</td>
<td>NP</td>
<td>UR No TK No</td>
<td>Unknown May-78</td>
<td>Unknown</td>
<td>1,573,775 1,579 1,663</td>
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<td>UR No TK No</td>
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<td>850,000 853 839</td>
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<td>NP</td>
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<td>Turkey Point</td>
<td>Miami Dade County</td>
<td>27/37/40E</td>
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<td>FO6 NG WA PL</td>
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<td>ST</td>
<td>FO6 NG WA PL</td>
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<td>402,050 398 396</td>
<td>402,050 398 396</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2&lt;sup&gt;iv&lt;/sup&gt;</td>
<td>ST</td>
<td>FO6 NG WA PL</td>
<td>Unknown May-72</td>
<td>Unknown</td>
<td>759,470 717 693</td>
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<td>759,470 717 693</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>NP</td>
<td>UR No TK No</td>
<td>Unknown Jul-73</td>
<td>Unknown</td>
<td>775,670 717 693</td>
<td>775,670 717 693</td>
<td>775,670 717 693</td>
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<td></td>
<td></td>
<td>4</td>
<td>NP</td>
<td>UR No TK No</td>
<td>Unknown Jun-73</td>
<td>Unknown</td>
<td>779,070 717 693</td>
<td>779,070 717 693</td>
<td>779,070 717 693</td>
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<tr>
<td></td>
<td></td>
<td>5</td>
<td>CC</td>
<td>FO2 PL PL</td>
<td>Unknown May-07</td>
<td>Unknown</td>
<td>1,224,210 1,156 1,146</td>
<td>1,224,210 1,156 1,146</td>
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</tr>
<tr>
<td>West County</td>
<td>Palm Beach County</td>
<td>28/32/435/40E</td>
<td>CC</td>
<td>FO2 PL PL</td>
<td>Unknown Aug-09</td>
<td>Unknown</td>
<td>2,733,800 2,670 2,438</td>
<td>2,733,800 2,670 2,438</td>
<td>2,733,800 2,670 2,438</td>
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<tr>
<td></td>
<td></td>
<td>1</td>
<td>CC</td>
<td>FO2 PL PL</td>
<td>Unknown Nov-09</td>
<td>Unknown</td>
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<td>1,386,800 1,336 1,219</td>
<td>1,386,800 1,336 1,219</td>
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<td></td>
<td></td>
<td>2</td>
<td>CC</td>
<td>FO2 PL PL</td>
<td>Unknown Nov-09</td>
<td>Unknown</td>
<td>1,366,800 1,336 1,219</td>
<td>1,366,800 1,336 1,219</td>
<td>1,366,800 1,336 1,219</td>
</tr>
</tbody>
</table>

**Total System Generating Capacity as of December 31, 2010<sup>v</sup>**

- Florida Power & Light Company: 24,797 23,722
- System Generating Capacity: 24,762 23,687

---

1/ These ratings are peak capability.

2/ The net capability ratings represent Florida Power & Light Company's share of St. Johns River Park Unit No. 1 and No. 2, excluding the Jacksonville Electric Authority (JECA) share of 80%.

3/ Total capability of each unit is 853/839 MW. FPL's share of each unit is 853/839 and 85% (714/726) respectively as shown above. FPL's ownership share of St. Lucie 1 and 2 is 100% (853/839) and 85% (714/726) respectively as shown above. FPL's ownership share of each unit is approx. 92.5% and exclude the Orlando Utilities Commission (OUC) and Florida Municipal Power Agency (FMPA) combined portion of approximately 7447.96% per unit.

4/ This generating unit was on inactive Reserve status as of 12/31/2010.

5/ The Total System Generating Capacity value shown includes FPL-owned firm and non-firm generating capacity.

6/ The System Generating Capacity value shown excludes only firm generating capacity.
CHAPTER II

Forecast of Electric Power Demand
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II. Forecast of Electric Power Demand

II. A. Overview of the Load Forecasting Process

Long-term (20-year) forecasts of sales, net energy for load (NEL), and peak loads are typically developed on an annual basis for resource planning work at FPL. New long-term forecasts were developed by FPL in early 2011 that replaced the previous long-term load forecasts that were used by FPL during 2010 in much of its resource planning work and which were presented in FPL’s 2010 Site Plan. These new load forecasts are utilized throughout FPL’s 2011 Site Plan. These forecasts are a key input to the models used to develop FPL’s integrated resource plan.

The following pages describe how forecasts are developed for each component of the long-term forecast: sales, NEL, and peak loads. Consistent with past forecasts, the primary drivers to develop these forecasts include economic conditions and weather.

The projections for the national and Florida economies are obtained from the consulting firm IHS Global Insight. Population projections are obtained from the Florida Legislature’s Office of Economic and Demographic Research (EDR). These projections are developed, in conjunction with the Bureau of Economic and Business Research (BEBR) of the University of Florida. These inputs are quantified and qualified using statistical models in terms of their impact on the future demand for electricity.

Weather is always a key factor that affects FPL’s energy sales and peak demand. Two sets of weather variables are developed and used in FPL’s forecasting models:

1. Cooling and Heating Degree-Hours are used to forecast energy sales.
2. Temperature data, along with Cooling and Heating Degree-Hours, are used to forecast Summer and Winter peaks.

The Cooling and Heating Degree-Hours are used to capture the changes in the electric usage of weather-sensitive appliances such as air conditioners and electric space heaters. A composite hourly temperature profile is derived using hourly temperatures across FPL’s service territory. Miami, Ft. Myers, Daytona Beach, and West Palm Beach are the locations from which temperatures are obtained. In developing the composite hourly profile, these regional temperatures are weighted by regional energy sales. This composite temperature is used to derive projected Cooling and Heating Degree-Hours, which are based on starting point temperatures of 72°F and 66°F degrees, respectively.
Similarly, composite temperature and hourly profiles of temperatures are used for the Summer and Winter peak models.

II. B. Comparison of FPL’s Current and Previous Load Forecasts

FPL’s current load forecast is generally in line with the load forecast presented in its 2010 Site Plan. There are three primary factors that are driving the current load forecast: projected population growth, a projection of gradual recovery following the economic recession in Florida, and a somewhat lower projected long-term price of electricity. The net impact of these three factors is that the current load forecast is similar to the 2010 Site Plan forecast in most years between 2011 and 2020.

The customer forecast is based on recent population projections. Population projections are derived from the EDR’s February 2011 Demographic Estimating Conference. This forecast is slightly higher than the prior projection. During the recent recession, net migration into Florida fell to record lows. Historically low rates of net migration are expected to continue until around 2012-2013 due to the weakened housing market and other lingering effects from the recession which make it difficult for people to relocate.

As population growth recovers, a modest rebound in customer growth is projected in 2012 and 2013. However, population growth is not expected to reach the level historically experienced in Florida until 2014-2015. As a result of the higher than expected customer growth in 2010, the total number of customers projected in the current load forecast is above the levels projected in FPL’s 2010 Site Plan.

Consistent with the economic assumptions incorporated into the 2010 Site Plan, the state’s economy continues to suffer the lingering effects of an economic recession. Beginning in mid-2010, Florida began seeing an annual increase in employment for the first time in three years. Since December 2009, Florida has gained nearly 44,000 jobs. However, Florida is still a long way from recovering. Since the recession began, Florida had lost over 800,000 jobs. Foreclosures are still a problem for the state, with Florida being second only to California in the number of mortgage foreclosures. The severity of the recession and current economic conditions suggests that Florida’s economic recovery will be gradual. By 2013, the state’s economy is projected to resume a more historically typical rate of growth. The real price of electricity in the current forecast is somewhat lower than that utilized in last year’s Site Plan. A delay in carbon pricing, combined with
lower projected fuel costs, are two factors driving the relatively lower forecasted price of electricity.

Consistent with the forecast presented in FPL’s 2010 Site Plan, the total growth projected for the ten-year reporting period of this document is significant. The Summer peak is projected to increase to 26,193 MW by 2020, an increase of 3,937 MW over the 2010 actual Summer peak. Likewise, NEL is projected to reach 133,121 GWH in 2020, an increase of 18,747 GWH from the actual 2010 value.

II.C. Long-Term Sales Forecasts

Long-term forecasts of electricity sales were developed for each revenue class and are adjusted to match the NEL forecast. The results of these sales forecasts for the years 2011 - 2020 are presented in Schedules 2.1 - 2.3 which appear at the end of this chapter. Econometric models are developed for each revenue class using the statistical software package MetrixND. The methodologies used to develop energy sales forecasts for each jurisdictional revenue class and NEL forecast are outlined below.

1. Residential Sales

Residential electric usage per customer is estimated by using an econometric model. Residential sales are a function of: Cooling Degree-Hours, Heating Degree-Hours, lagged Cooling Degree-Hours, lagged Heating Degree-Hours, consecutive minimum temperature days square, real price of electricity (a 12-month moving average), Florida real per capita income, a variable designed to reflect the impact of empty homes, and a dummy variable for the month of January. The impact of weather is captured by the Cooling Degree-Hours, Heating Degree-Hours, the one month lag of these variables, and the consecutive minimum temperature variable. The price of electricity plays a role in explaining electric usage, because electricity, like all other goods and services, will be used in greater or lesser quantities depending upon its price. To capture economic conditions, the model includes Florida’s real per capita income. The housing crisis has also had an impact on use per customer. Consequently, the model includes a variable designed to capture the impact of empty homes. A dummy variable for January is included to reflect a different usage pattern for this month. Residential energy sales are forecasted by multiplying the residential use per customer forecast by the number of residential customers forecasted.
2. **Commercial Sales**  
The commercial sales forecast is also developed using an econometric model. Commercial sales are a function of the following variables: Florida real per capita income, commercial real price of electricity, Cooling Degree-Hours, Heating Degree-Hours, lagged Cooling Degree-Hours, a variable designed to reflect the impact of empty homes, a dummy variable for the month of December and for the specific month of January 2007, and an autoregressive term. Cooling Degree-Hours, Heating Degree-Hours, and the one month lag of Cooling Degree-Hours are used to capture weather-sensitive load in the commercial sector.

3. **Industrial Sales**  
The industrial class is comprised of two distinct groups; very small accounts (those with less than 20 kW of demand) and large, traditionally industrial customers. As such, the forecast is developed using a separate econometric model for each group of industrial customers. The small industrial sales model utilizes the following variables: Florida Housing Starts, Cooling Degree-Hours, Heating Degree-Hours, and an autoregressive term. The Cooling and Heating Degree-Hours are used to capture the weather-sensitive load in this group of industrial customers. Florida Housing Starts are reflective of construction activity which comprises a significant portion of this group. The large industrial sales model utilizes the following variables: Florida population, and the industrial real price of electricity (a 24-month moving average).

4. **Railroad and Railways Sales and Street and Highway Sales**  
The projections for railroad and railways sales are based on historical average use per customer which is multiplied by the forecasted number of customers. This class consists solely of Miami-Dade County's Metrorail system.

The forecast for street and highway sales is developed by using a trended use per customer, which is multiplied by the number of forecasted customers.

5. **Other Public Authority Sales**  
This revenue class is a closed class with no new customers being added. This class consists of sports fields and a government account. The forecast for this class is based on historical knowledge of its usage characteristics.

6. **Total Sales to Ultimate Customer**  
Sales forecasts by revenue class are summed to produce a total sales forecast.
7. Sales for Resale

Sales for resale (wholesale) customers are composed of municipalities and/or electric co-operatives. These customers differ from jurisdictional customers in that they are not the ultimate users of the electricity they buy. Instead, they resell this electricity to their own customers. Currently there are four customers in this class: the Florida Keys Electric Cooperative; City of Key West; Metro-Dade County; and Lee County Electric Cooperative. In addition, FPL will begin making sales to Seminole Electric Cooperative in June 2014 under a long term agreement.

FPL provides service to the Florida Keys Electric Cooperative under a long-term partial requirements contract. The sales to Florida Keys Electric Cooperative are forecasted using a regression model.

FPL’s sales to the City of Key West are expected to terminate in 2013. Forecasted sales to the City of Key West are based on assumptions regarding their contract demand and expected load factor.

Metro-Dade County sells 60 MW to Progress Energy Florida. Line losses are billed to Metro-Dade under a wholesale contract.

Lee County has contracted with FPL for FPL to supply a portion of their load through 2013, then to begin serving their entire load beginning in 2014 through 2033. This contract began in January 2010. Forecasted sales to Lee County are based on assumptions regarding their contract demand and expected load factor.

A new contract with Seminole Electric Cooperative is included in the forecast which includes delivery of 200 MW beginning in June 2014.

II.D. Net Energy for Load (NEL)

An econometric model is developed to produce a NEL per customer forecast. The inputs to the model include the real price of electricity (a 12-month moving average), and Florida real per capita income. The model also includes three weather variables: Cooling Degree Hours using a base temperature of 72 degrees, Heating Degree Days using a base of 66 degrees, and an additional heating degree variable for extreme cold weather.

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2 FPL is currently evaluating the possibility of serving the Vero Beach electrical load at the time the 2011 Site Plan is being prepared. Because this possibility is still being evaluated, the load forecast presented in this Site Plan does not include this potential load.
using a base of 45 degrees. In addition, the model also includes variables for mandated energy efficiency and a variable designed to capture the impact of empty homes. Seasonal dummy variables are included for the months of February, May, July, October, and December.

The mandated energy efficiency variables are included to capture the impacts of the 2005 National Energy Policy Act, the 2007 Energy Independence and Security Act, and compact florescent light bulbs. The estimated impact of these factors for the 2011 to 2020 time period is a reduction, on average, of 10,447 GWh per year. The increase in the number of empty homes resulting from the current housing slump has affected use per customer and is captured in a separate variable. The forecast was also adjusted for additional load estimated from hybrid vehicles, beginning in 2010, which resulted in an increase of approximately 2,052 GWh by the end of the ten-year reporting period.

The NEL forecast is developed by multiplying the NEL per customer forecast by the total number of customers forecasted. Once the NEL forecast is obtained, total billed sales are computed using a historical ratio of sales to NEL. The sales by class forecasts previously discussed are then adjusted to match the total billed sales. The forecasted NEL values for 2011 - 2020 are presented in Schedule 3.3 that appears at the end of this chapter.

II.E. System Peak Forecasts

The rate of absolute growth in FPL system peak load has been a function of the size of the customer base, varying weather conditions, projected economic conditions, changing patterns of customer behavior (including an increased stock of electricity-consuming appliances), and more efficient appliances and lighting. FPL developed the peak forecast models to capture these behavioral relationships. Impacts of the 2005 National Energy Policy Act, the 2007 Energy Independence and Security Act, and the impact of compact fluorescent light bulbs are taken into account in developing the peak forecast. The estimated impact of these federal mandates for the 2011 to 2020 time frame is a reduction of approximately 909 MW (Summer) and 454 MW (Winter) in 2011, and approximately 2,268 MW (Summer) and 1,315 MW (Winter) by 2020. The forecast was also adjusted for additional load estimated from hybrid vehicles which resulted in an increase of approximately 261 MW in the Summer and 114 MW in the Winter by the end of the ten-year reporting period.
The forecasting methodology of Summer, Winter, and monthly system peaks is discussed below. The forecasted values for Summer and Winter peak loads for the years 2011 – 2020 are presented at the end of this chapter in Schedules 3.1 and 3.2, and in Chapter III in Schedules 7.1 through 7.4.

1. **System Summer Peak**
   The Summer peak forecast is developed using an econometric model. The variables included in the model are the real price of electricity, Florida real per capita income, Cooling Degree-Hours in the day prior to the peak, the maximum temperature on the day of the peak, and a variable for mandated energy efficiency. The model is based on the Summer peak contribution per customer and is, therefore, multiplied by total customers, and adjusted to account for incremental loads resulting from hybrid vehicles and new wholesale contracts, to derive FPL’s system Summer peak.

2. **System Winter Peak**
   Like the system Summer peak model, this model is also an econometric model. The model consists of two weather-related variables: the minimum temperature on the peak day and Heating Degree-Hours for the prior day square. The model also includes a dummy variable for winter peaks occurring on weekends and an autoregressive term. The forecasted results are adjusted for the impact of mandated energy efficiency. The model is based on the Winter peak contribution per customer and is, therefore, multiplied by total customers, and adjusted to account for incremental loads resulting from hybrid vehicles and new wholesale contracts, to derive FPL’s system Winter peak.

3. **Monthly Peak Forecasts**
   The forecasting process for monthly peaks consists of the following actions:
   
   a. Develop the historical seasonal factor for each month by using ratios of historical monthly peaks to the appropriate seasonal peak.
   
   b. Apply the monthly ratios to their respective seasonal peak forecast to derive the peak forecast by month. This process assumes that the seasonal factors remain unchanged over the forecasting period.
II.F. The Hourly Load Forecast

Forecasted values for system hourly load for the period 2011 - 2020 are produced using a System Load Forecasting "shaper" program. This model uses years of historical FPL hourly system load data to develop load shapes for weekdays, weekend days, and holidays. The model allows calibration of hourly values where the peak is maintained or where both the peak and minimum load-to-peak ratio is maintained.

II.G. Uncertainty

In order to address uncertainty in the forecasts of aggregate peak demand and NEL, FPL first evaluates the assumptions underlying the forecasts. FPL takes a series of steps in evaluating the input variables, including comparing projections from different sources, identifying outliers in the series, and assessing the series' consistency with past forecasts. In addition, FPL reviews factors which may affect the input variables. This may require reviewing data from local economic development boards or from FPL's own Customer Service Business Unit. Other factors which may be considered include demographic trends and housing characteristics such as starts, size, and vintage of homes.

Uncertainty is also addressed in the modeling process. Generally, econometric models are used to forecast the aggregate peak demand and NEL. During the modeling process, the relevant statistics (goodness of fit, F-statistic, P-values, mean absolute deviation (MAD), mean absolute percentage error (MAPE), etc.) are scrutinized to ensure that the models adequately explain historical variation. Once a forecast is developed, it is compared with past forecasts. Deviations from past forecasts are examined in light of changes in input assumption to ensure that the drivers underlying the forecast are well understood. Finally, forecasts of aggregate peak demand and NEL are compared with their actual values as they become available. An ongoing process of variance analyses is performed. To the extent that the variance analysis identifies large unexplained deviations between the forecast and actual values, revisions to the econometric model may be considered.

The inherent uncertainty in load forecasting is addressed in different ways in regard to FPL's overall resource planning and operational planning work. In regard to FPL's resource planning work, FPL's utilization of a 20% reserve margin criterion (approved by the FPSC) is designed, in part, to maintain reliable electric service to FPL's customers in light of forecasting uncertainty. In regard to operational planning, an extreme weather
load forecast for the projected Summer peak day is produced based on maximum
historical temperatures on the day of the Summer peak. Likewise, an extreme weather
Winter peak forecast is developed by considering minimum historical temperatures at the
time of the Winter peak. Statistical analysis on the distribution of historical weather data
is performed to evaluate and understand the impact of extreme weather on the peaks
and on NEL, and the likelihood of experiencing extreme weather.

II.H. DSM

The effects of FPL's DSM energy efficiency programs implementation through 2010 are
assumed to be imbedded in the actual usage data for forecasting purposes. Any change
in usage pattern, be it the impact of FPL's DSM energy efficiency efforts, price impact, or
weather impact, is reflected in the actual observed load data. Therefore, energy
efficiency impacts, whether market-driven or as a result of FPL's DSM programs, are
assumed to be included in the historical usage data for peaks and NEL.

The impacts of incremental energy efficiency that FPL plans to implement in the future,
plus the impacts of FPL's cumulative and incremental load management programs, are
accounted for as "line item reductions" to the forecasts as part of the IRP process as
shown in Schedules 7.1 and 7.2. After making these adjustments to the load forecasts,
the resulting "firm" load forecast is then used in FPL's IRP work.
### Schedule 2.1

#### History and Forecast of Energy Consumption And Number of Customers by Customer Class

**Historical**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Average No. of Customers</th>
<th>Average kWh Per Customer</th>
<th>Commercial</th>
<th>Average No. of Customers</th>
<th>Average kWh Per Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>7,754,846</td>
<td>47,588</td>
<td>3,490,541</td>
<td>37,960</td>
<td>426,573</td>
<td>88,989</td>
</tr>
<tr>
<td>2002</td>
<td>7,898,628</td>
<td>50,865</td>
<td>3,566,167</td>
<td>40,029</td>
<td>435,313</td>
<td>91,955</td>
</tr>
<tr>
<td>2003</td>
<td>8,079,316</td>
<td>53,485</td>
<td>3,652,663</td>
<td>41,425</td>
<td>444,650</td>
<td>93,163</td>
</tr>
<tr>
<td>2004</td>
<td>8,247,442</td>
<td>52,502</td>
<td>3,744,915</td>
<td>42,064</td>
<td>458,053</td>
<td>91,832</td>
</tr>
<tr>
<td>2005</td>
<td>8,469,602</td>
<td>54,348</td>
<td>3,828,374</td>
<td>43,468</td>
<td>469,973</td>
<td>92,490</td>
</tr>
<tr>
<td>2006</td>
<td>8,620,855</td>
<td>54,570</td>
<td>3,906,267</td>
<td>44,487</td>
<td>478,867</td>
<td>92,901</td>
</tr>
<tr>
<td>2007</td>
<td>8,729,806</td>
<td>55,138</td>
<td>3,971,451</td>
<td>45,921</td>
<td>493,130</td>
<td>93,121</td>
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<td>2008</td>
<td>8,771,694</td>
<td>53,229</td>
<td>3,992,257</td>
<td>45,561</td>
<td>500,748</td>
<td>90,987</td>
</tr>
<tr>
<td>2009</td>
<td>8,732,591</td>
<td>53,950</td>
<td>3,984,490</td>
<td>45,026</td>
<td>501,055</td>
<td>89,860</td>
</tr>
<tr>
<td>2010</td>
<td>8,739,209</td>
<td>56,343</td>
<td>4,004,366</td>
<td>44,544</td>
<td>503,529</td>
<td>88,464</td>
</tr>
</tbody>
</table>

**Projected Values (2011 - 2020):**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Average No. of Customers</th>
<th>Average kWh Per Customer</th>
<th>Commercial</th>
<th>Average No. of Customers</th>
<th>Average kWh Per Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>8,873,003</td>
<td>54,384</td>
<td>4,033,183</td>
<td>44,188</td>
<td>504,216</td>
<td>87,637</td>
</tr>
<tr>
<td>2012</td>
<td>8,965,719</td>
<td>54,932</td>
<td>4,075,327</td>
<td>44,946</td>
<td>505,886</td>
<td>87,956</td>
</tr>
<tr>
<td>2013</td>
<td>9,106,253</td>
<td>56,399</td>
<td>4,139,206</td>
<td>45,134</td>
<td>510,436</td>
<td>88,423</td>
</tr>
<tr>
<td>2014</td>
<td>9,263,516</td>
<td>58,257</td>
<td>4,210,689</td>
<td>46,214</td>
<td>517,941</td>
<td>89,226</td>
</tr>
<tr>
<td>2015</td>
<td>9,418,816</td>
<td>59,326</td>
<td>4,281,260</td>
<td>47,089</td>
<td>526,406</td>
<td>89,455</td>
</tr>
<tr>
<td>2016</td>
<td>9,564,856</td>
<td>60,362</td>
<td>4,347,767</td>
<td>47,869</td>
<td>534,487</td>
<td>89,560</td>
</tr>
<tr>
<td>2017</td>
<td>9,700,967</td>
<td>61,118</td>
<td>4,409,530</td>
<td>48,660</td>
<td>542,273</td>
<td>89,733</td>
</tr>
<tr>
<td>2018</td>
<td>9,830,014</td>
<td>61,928</td>
<td>4,468,188</td>
<td>49,456</td>
<td>549,902</td>
<td>89,937</td>
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<tr>
<td>2019</td>
<td>9,955,509</td>
<td>62,480</td>
<td>4,525,231</td>
<td>50,385</td>
<td>557,399</td>
<td>90,383</td>
</tr>
<tr>
<td>2020</td>
<td>10,080,541</td>
<td>63,575</td>
<td>4,582,064</td>
<td>51,512</td>
<td>564,827</td>
<td>91,199</td>
</tr>
</tbody>
</table>

#### Schedule 2.1 Notes:

- Col. (2) represents population only in the area served by FPL.
- Col. (4) and Col. (7) represent actual energy sales including the impacts of existing conservation. These values are at the meter.
- Col. (5) and Col. (8) represent the annual average of the twelve month values.

Florida Power & Light Company 42
## Schedule 2.2

### History and Forecast of Energy Consumption

#### And Number of Customers by Customer Class

**Historical**

<table>
<thead>
<tr>
<th>Year</th>
<th>Industrial GWh</th>
<th>Average No. of Customers</th>
<th>Average kWh Per Customer</th>
<th>Railroads GWh</th>
<th>Street &amp; Highway Lighting GWh</th>
<th>Sales to Railroads &amp; Street &amp; Highway Lighting GWh</th>
<th>Sales to Sales to Ultimate GWh</th>
<th>Ultimate GWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>4,091</td>
<td>15,445</td>
<td>264,872</td>
<td>86</td>
<td>419</td>
<td>67</td>
<td>90,212</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>4,057</td>
<td>15,533</td>
<td>261,199</td>
<td>89</td>
<td>420</td>
<td>63</td>
<td>95,523</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>4,004</td>
<td>17,029</td>
<td>235,135</td>
<td>93</td>
<td>425</td>
<td>64</td>
<td>99,496</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>3,964</td>
<td>18,512</td>
<td>214,139</td>
<td>93</td>
<td>413</td>
<td>58</td>
<td>99,095</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>3,913</td>
<td>20,352</td>
<td>191,873</td>
<td>95</td>
<td>424</td>
<td>49</td>
<td>102,296</td>
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<tr>
<td>2006</td>
<td>4,036</td>
<td>21,211</td>
<td>190,277</td>
<td>94</td>
<td>422</td>
<td>49</td>
<td>103,659</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>3,774</td>
<td>18,732</td>
<td>201,499</td>
<td>91</td>
<td>437</td>
<td>53</td>
<td>105,415</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>3,587</td>
<td>13,377</td>
<td>268,168</td>
<td>81</td>
<td>423</td>
<td>37</td>
<td>102,919</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>3,245</td>
<td>10,084</td>
<td>321,796</td>
<td>80</td>
<td>422</td>
<td>34</td>
<td>102,755</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>3,130</td>
<td>9,910</td>
<td>351,319</td>
<td>81</td>
<td>431</td>
<td>28</td>
<td>104,557</td>
<td></td>
</tr>
</tbody>
</table>

**Historical Values (2001 - 2010):**

Col. (10) and Col.(14) represent actual energy sales including the impacts of existing conservation. These values are at the meter.

Col. (11) represents the annual average of the twelve month values.


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## Schedule 2.2

### History and Forecast of Energy Consumption

#### And Number of Customers by Customer Class

**Projected**

<table>
<thead>
<tr>
<th>Year</th>
<th>Industrial GWh</th>
<th>Average No. of Customers</th>
<th>Average kWh Per Customer</th>
<th>Railroads GWh</th>
<th>Street &amp; Highway Lighting GWh</th>
<th>Sales to Ultimate GWh</th>
<th>Ultimate GWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>3,152</td>
<td>8,848</td>
<td>366,191</td>
<td>82</td>
<td>442</td>
<td>30</td>
<td>102,287</td>
</tr>
<tr>
<td>2012</td>
<td>3,082</td>
<td>9,306</td>
<td>331,160</td>
<td>91</td>
<td>452</td>
<td>30</td>
<td>103,083</td>
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<tr>
<td>2013</td>
<td>3,037</td>
<td>9,733</td>
<td>312,057</td>
<td>92</td>
<td>463</td>
<td>30</td>
<td>105,165</td>
</tr>
<tr>
<td>2014</td>
<td>3,018</td>
<td>10,054</td>
<td>300,163</td>
<td>92</td>
<td>475</td>
<td>30</td>
<td>108,085</td>
</tr>
<tr>
<td>2015</td>
<td>3,013</td>
<td>10,241</td>
<td>294,231</td>
<td>92</td>
<td>487</td>
<td>30</td>
<td>110,038</td>
</tr>
<tr>
<td>2016</td>
<td>3,015</td>
<td>10,437</td>
<td>288,893</td>
<td>92</td>
<td>500</td>
<td>30</td>
<td>111,888</td>
</tr>
<tr>
<td>2017</td>
<td>3,004</td>
<td>10,527</td>
<td>285,355</td>
<td>92</td>
<td>514</td>
<td>30</td>
<td>113,418</td>
</tr>
<tr>
<td>2018</td>
<td>2,992</td>
<td>10,516</td>
<td>284,534</td>
<td>92</td>
<td>529</td>
<td>30</td>
<td>114,928</td>
</tr>
<tr>
<td>2019</td>
<td>2,987</td>
<td>10,545</td>
<td>283,288</td>
<td>92</td>
<td>544</td>
<td>30</td>
<td>116,518</td>
</tr>
<tr>
<td>2020</td>
<td>2,981</td>
<td>10,598</td>
<td>281,312</td>
<td>92</td>
<td>560</td>
<td>30</td>
<td>118,749</td>
</tr>
</tbody>
</table>

**Projected Values (2011 - 2020):**

Col. (10) and Col.(14) represent forecasted energy sales that do not include the impact of incremental conservation. These values are at the meter.

Col. (11) represents the annual average of the twelve month values.

Schedule 2.3
History and Forecast of Energy Consumption
And Number of Customers by Customer Class
(Historical)

<table>
<thead>
<tr>
<th>Year</th>
<th>(17) GWh</th>
<th>(18) GWh</th>
<th>(19) GWh</th>
<th>(20) Average</th>
<th>(21) No. of Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>976</td>
<td>7,222</td>
<td>98,404</td>
<td>2,722</td>
<td>3,935,281</td>
</tr>
<tr>
<td>2002</td>
<td>1,233</td>
<td>7,443</td>
<td>104,199</td>
<td>2,792</td>
<td>4,018,805</td>
</tr>
<tr>
<td>2003</td>
<td>1,511</td>
<td>7,366</td>
<td>106,393</td>
<td>2,679</td>
<td>4,117,221</td>
</tr>
<tr>
<td>2004</td>
<td>1,531</td>
<td>7,467</td>
<td>108,093</td>
<td>3,029</td>
<td>4,224,509</td>
</tr>
<tr>
<td>2005</td>
<td>1,506</td>
<td>7,498</td>
<td>111,301</td>
<td>3,156</td>
<td>4,321,895</td>
</tr>
<tr>
<td>2006</td>
<td>1,569</td>
<td>7,909</td>
<td>113,137</td>
<td>3,218</td>
<td>4,409,563</td>
</tr>
<tr>
<td>2007</td>
<td>1,499</td>
<td>7,401</td>
<td>114,315</td>
<td>3,276</td>
<td>4,496,589</td>
</tr>
<tr>
<td>2008</td>
<td>993</td>
<td>7,092</td>
<td>111,004</td>
<td>3,348</td>
<td>4,509,730</td>
</tr>
<tr>
<td>2009</td>
<td>1,155</td>
<td>7,394</td>
<td>111,303</td>
<td>3,439</td>
<td>4,499,067</td>
</tr>
<tr>
<td>2010</td>
<td>2,049</td>
<td>7,768</td>
<td>114,373</td>
<td>3,523</td>
<td>4,520,328</td>
</tr>
</tbody>
</table>

Historical Values (2001 - 2010):

Col. (19) represents actual energy sales including the impacts of existing conservation.


Col. (20) represents the annual average of the twelve month values.


Schedule 2.3
History and Forecast of Energy Consumption
And Number of Customers by Customer Class
(Projected)

<table>
<thead>
<tr>
<th>Year</th>
<th>(17) GWh</th>
<th>(18) GWh</th>
<th>(19) GWh</th>
<th>(20) Average</th>
<th>(21) No. of Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>2,142</td>
<td>6,776</td>
<td>111,175</td>
<td>3,590</td>
<td>4,549,837</td>
</tr>
<tr>
<td>2012</td>
<td>2,142</td>
<td>7,292</td>
<td>112,517</td>
<td>3,672</td>
<td>4,594,191</td>
</tr>
<tr>
<td>2013</td>
<td>2,047</td>
<td>7,445</td>
<td>114,847</td>
<td>3,756</td>
<td>4,663,131</td>
</tr>
<tr>
<td>2014</td>
<td>4,935</td>
<td>8,014</td>
<td>121,035</td>
<td>3,845</td>
<td>4,742,529</td>
</tr>
<tr>
<td>2015</td>
<td>5,566</td>
<td>8,006</td>
<td>123,610</td>
<td>3,940</td>
<td>4,821,867</td>
</tr>
<tr>
<td>2016</td>
<td>5,599</td>
<td>8,106</td>
<td>125,593</td>
<td>4,041</td>
<td>4,896,672</td>
</tr>
<tr>
<td>2017</td>
<td>5,625</td>
<td>8,208</td>
<td>127,251</td>
<td>4,147</td>
<td>4,966,477</td>
</tr>
<tr>
<td>2018</td>
<td>5,672</td>
<td>8,310</td>
<td>128,910</td>
<td>4,258</td>
<td>5,032,864</td>
</tr>
<tr>
<td>2019</td>
<td>5,717</td>
<td>8,443</td>
<td>130,679</td>
<td>4,373</td>
<td>5,097,548</td>
</tr>
<tr>
<td>2020</td>
<td>5,770</td>
<td>8,601</td>
<td>133,121</td>
<td>4,493</td>
<td>5,161,981</td>
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</tbody>
</table>

Projected Values (2011 - 2020):

Col. (19) represents forecasted energy sales that do not include the impact of incremental conservation and agrees to Col. (2) in Schedule 3.3.


Col. (20) represents the annual average of the twelve month values.

## Schedule 3.1

**History and Forecast of Summer Peak Demand (MW)**

(Historical)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Wholesale</th>
<th>Retail</th>
<th>Interruptible</th>
<th>Residential</th>
<th>C/I Load Management</th>
<th>C/I Load Conservation</th>
<th>C/I Conservation</th>
<th>Net Firm Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>18,754</td>
<td>169</td>
<td>18,585</td>
<td>0</td>
<td>835</td>
<td>516</td>
<td>483</td>
<td>469</td>
<td>17,436</td>
</tr>
<tr>
<td>2002</td>
<td>19,219</td>
<td>261</td>
<td>18,958</td>
<td>0</td>
<td>870</td>
<td>576</td>
<td>483</td>
<td>506</td>
<td>17,866</td>
</tr>
<tr>
<td>2003</td>
<td>19,868</td>
<td>253</td>
<td>19,415</td>
<td>0</td>
<td>885</td>
<td>618</td>
<td>566</td>
<td>541</td>
<td>18,217</td>
</tr>
<tr>
<td>2004</td>
<td>20,540</td>
<td>258</td>
<td>20,287</td>
<td>0</td>
<td>885</td>
<td>695</td>
<td>586</td>
<td>566</td>
<td>19,094</td>
</tr>
<tr>
<td>2005</td>
<td>22,361</td>
<td>264</td>
<td>22,097</td>
<td>0</td>
<td>886</td>
<td>715</td>
<td>592</td>
<td>599</td>
<td>20,871</td>
</tr>
<tr>
<td>2006</td>
<td>21,819</td>
<td>256</td>
<td>21,563</td>
<td>0</td>
<td>910</td>
<td>770</td>
<td>607</td>
<td>634</td>
<td>20,302</td>
</tr>
<tr>
<td>2007</td>
<td>21,962</td>
<td>261</td>
<td>21,701</td>
<td>0</td>
<td>941</td>
<td>818</td>
<td>676</td>
<td>672</td>
<td>20,345</td>
</tr>
<tr>
<td>2008</td>
<td>21,060</td>
<td>181</td>
<td>20,879</td>
<td>0</td>
<td>966</td>
<td>851</td>
<td>734</td>
<td>697</td>
<td>19,360</td>
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<tr>
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<td>22,351</td>
<td>249</td>
<td>22,102</td>
<td>0</td>
<td>976</td>
<td>882</td>
<td>750</td>
<td>719</td>
<td>20,595</td>
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<tr>
<td>2010</td>
<td>22,256</td>
<td>419</td>
<td>21,837</td>
<td>0</td>
<td>991</td>
<td>962</td>
<td>816</td>
<td>747</td>
<td>19,720</td>
</tr>
</tbody>
</table>

### Historical Values (2001 - 2010):

Col. (2) - Col. (4) are actual values for historical Summer peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Demand.

Col. (5) - Col. (9) represent actual DSM capabilities starting from January 1988 and are annual (12-month) values except for 2010 values which are August values. Note that the values for FPL’s Former Interruptible Rate are incorporated into Col. (8), which also includes Business On Call (BOC), CIIC, and Commercial Industrial Demand Reduction (CDR).

Col. (10) represents a HYPOTHETICAL “Net Firm Demand” as if the load control values had definitely been exercised on the peak. Col. (10) is derived from the formula: Col. (10) = Col. (2) - Col. (6) - Col. (9).

## Schedule 3.1

**History and Forecast of Summer Peak Demand (MW)**

(Projected)

<table>
<thead>
<tr>
<th>August of Year</th>
<th>Total</th>
<th>Wholesale</th>
<th>Retail</th>
<th>Interruptible</th>
<th>Residential</th>
<th>C/I Load Management</th>
<th>C/I Load Conservation</th>
<th>C/I Conservation</th>
<th>Net Firm Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>21,879</td>
<td>383</td>
<td>21,496</td>
<td>0</td>
<td>1,005</td>
<td>79</td>
<td>858</td>
<td>39</td>
<td>18,697</td>
</tr>
<tr>
<td>2012</td>
<td>21,853</td>
<td>385</td>
<td>21,468</td>
<td>0</td>
<td>1,017</td>
<td>154</td>
<td>878</td>
<td>93</td>
<td>19,712</td>
</tr>
<tr>
<td>2013</td>
<td>22,155</td>
<td>343</td>
<td>21,812</td>
<td>0</td>
<td>1,023</td>
<td>244</td>
<td>896</td>
<td>154</td>
<td>19,837</td>
</tr>
<tr>
<td>2014</td>
<td>23,452</td>
<td>1,129</td>
<td>22,322</td>
<td>0</td>
<td>1,041</td>
<td>343</td>
<td>934</td>
<td>216</td>
<td>20,917</td>
</tr>
<tr>
<td>2015</td>
<td>24,172</td>
<td>1,196</td>
<td>23,976</td>
<td>0</td>
<td>1,044</td>
<td>442</td>
<td>952</td>
<td>272</td>
<td>21,482</td>
</tr>
<tr>
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<td>24,905</td>
<td>1,143</td>
<td>23,763</td>
<td>0</td>
<td>1,047</td>
<td>536</td>
<td>971</td>
<td>318</td>
<td>21,734</td>
</tr>
<tr>
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<td>25,025</td>
<td>1,150</td>
<td>23,875</td>
<td>0</td>
<td>1,050</td>
<td>525</td>
<td>989</td>
<td>353</td>
<td>22,008</td>
</tr>
<tr>
<td>2018</td>
<td>25,266</td>
<td>1,167</td>
<td>24,169</td>
<td>0</td>
<td>1,053</td>
<td>711</td>
<td>1,007</td>
<td>378</td>
<td>22,117</td>
</tr>
<tr>
<td>2019</td>
<td>25,690</td>
<td>1,165</td>
<td>24,525</td>
<td>0</td>
<td>1,056</td>
<td>792</td>
<td>1,029</td>
<td>397</td>
<td>22,419</td>
</tr>
<tr>
<td>2020</td>
<td>26,193</td>
<td>1,172</td>
<td>25,022</td>
<td>0</td>
<td>1,060</td>
<td>837</td>
<td>1,042</td>
<td>412</td>
<td>22,823</td>
</tr>
</tbody>
</table>

### Projected Values (2011 - 2020):

Col. (2) - Col. (4) represent FPL’s forecasted peak with incremental conservation, cumulative load management, or incremental load management.

Col. (5) - Col. (9) represent cumulative load management, and incremental conservation and load management. All values are projected August values. The 2011 values are based on IRP projections after the 2010 Summer peak and FPL’s new DSM Goals for 2011. The projections for 2012 through 2020 are based on FPL’s DSM Goals.

Col. (8) represents FPL’s Business On Call, CDR, CIIC, and Curtailable programs/rates.

Col. (10) represents a “Net Firm Demand” which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by using the formula: Col. (10) = Col. (2) - Col. (6) - Col. (7) - Col. (8) - Col. (9).
Florida Power & Light Company

### Schedule 3.2

**History and Forecast of Winter Peak Demand: Base Case**

#### (Historical)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Wholesale</th>
<th>Retail</th>
<th>Interruptible</th>
<th>Res. Load Management</th>
<th>Residential Conservation</th>
<th>C/I Load Management</th>
<th>C/I Conservation</th>
<th>Net Firm Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>18,190</td>
<td>150</td>
<td>18,040</td>
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<td>740</td>
<td>506</td>
<td>448</td>
<td>196</td>
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</tr>
<tr>
<td>2002</td>
<td>17,597</td>
<td>145</td>
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<td>758</td>
<td>546</td>
<td>457</td>
<td>206</td>
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</tr>
<tr>
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<td>20,190</td>
<td>246</td>
<td>19,944</td>
<td>0</td>
<td>802</td>
<td>587</td>
<td>453</td>
<td>227</td>
<td>18,935</td>
</tr>
<tr>
<td>2004</td>
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<td>814</td>
<td>533</td>
<td>533</td>
<td>233</td>
<td>13,402</td>
</tr>
<tr>
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<td>225</td>
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<td>0</td>
<td>810</td>
<td>606</td>
<td>542</td>
<td>240</td>
<td>16,750</td>
</tr>
<tr>
<td>2006</td>
<td>19,683</td>
<td>225</td>
<td>19,453</td>
<td>0</td>
<td>822</td>
<td>620</td>
<td>549</td>
<td>249</td>
<td>16,312</td>
</tr>
<tr>
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<td>644</td>
<td>579</td>
<td>279</td>
<td>15,887</td>
</tr>
<tr>
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<td>17,892</td>
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<td>868</td>
<td>666</td>
<td>636</td>
<td>265</td>
<td>16,051</td>
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<td>984</td>
<td>687</td>
<td>660</td>
<td>291</td>
<td>18,517</td>
</tr>
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<td>0</td>
<td>905</td>
<td>718</td>
<td>721</td>
<td>503</td>
<td>21,706</td>
</tr>
</tbody>
</table>

**Historical Values (2001 - 2010):**

Col. (2) - Col. (4) are actual values for historical Winter peaks. As such, they incorporate the effects of conservation (Col. 7 & Col. 9), and may incorporate the effects of load control if load control was operated on these peak days. Therefore, Col. (2) represents the actual Net Firm Demand.

Col. (5) - Col. (9) for 2001 through 2010 represent actual DSM capabilities starting from January 1988 and are annual (12-month) values. Note that the values for FPL’s former interruptible Rate are incorporated into Col. (8), which also includes Business On Call (BOC), CILC, and Commercial/Industrial Demand Reduction (CDR).

Col. (10) represents a HYPOTHETICAL “Net Firm Demand” as if the load control values had definitely been exercised on the peak. Col. (10) is derived by the formula: Col. (10) = Col.(2) - Col.(6) - Col.(8).

### Schedule 3.2

**History and Forecast of Winter Peak Demand: Base Case**

#### (Projected)

<table>
<thead>
<tr>
<th>January of Year</th>
<th>Total</th>
<th>Firm Wholesale</th>
<th>Retail</th>
<th>Interruptible</th>
<th>Res. Load Management</th>
<th>Residential Conservation</th>
<th>C/I Load Management</th>
<th>C/I Conservation</th>
<th>Net Firm Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>21,443</td>
<td>376</td>
<td>21,067</td>
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<td>911</td>
<td>31</td>
<td>754</td>
<td>16</td>
<td>19,732</td>
</tr>
<tr>
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<td>21,113</td>
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<td>922</td>
<td>63</td>
<td>789</td>
<td>47</td>
<td>19,688</td>
</tr>
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<td>2013</td>
<td>21,883</td>
<td>380</td>
<td>21,303</td>
<td>0</td>
<td>932</td>
<td>104</td>
<td>784</td>
<td>89</td>
<td>19,774</td>
</tr>
<tr>
<td>2014</td>
<td>22,564</td>
<td>1,015</td>
<td>21,569</td>
<td>0</td>
<td>958</td>
<td>158</td>
<td>817</td>
<td>134</td>
<td>20,618</td>
</tr>
<tr>
<td>2015</td>
<td>23,048</td>
<td>1,222</td>
<td>21,828</td>
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<td>960</td>
<td>214</td>
<td>832</td>
<td>177</td>
<td>20,866</td>
</tr>
<tr>
<td>2016</td>
<td>23,302</td>
<td>1,228</td>
<td>22,073</td>
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<td>961</td>
<td>257</td>
<td>846</td>
<td>215</td>
<td>21,014</td>
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<tr>
<td>2017</td>
<td>23,543</td>
<td>1,237</td>
<td>22,306</td>
<td>0</td>
<td>963</td>
<td>314</td>
<td>860</td>
<td>244</td>
<td>21,161</td>
</tr>
<tr>
<td>2018</td>
<td>23,794</td>
<td>1,245</td>
<td>22,550</td>
<td>0</td>
<td>968</td>
<td>358</td>
<td>874</td>
<td>268</td>
<td>21,331</td>
</tr>
<tr>
<td>2019</td>
<td>24,044</td>
<td>1,252</td>
<td>22,792</td>
<td>0</td>
<td>969</td>
<td>396</td>
<td>869</td>
<td>282</td>
<td>21,508</td>
</tr>
<tr>
<td>2020</td>
<td>24,366</td>
<td>1,260</td>
<td>23,045</td>
<td>0</td>
<td>970</td>
<td>431</td>
<td>902</td>
<td>293</td>
<td>21,709</td>
</tr>
</tbody>
</table>

**Projected Values (2011 - 2029):**

Col. (2) - Col.(4) represent FPL’s forecasted peak with incremental conservation, cumulative load management, or incremental load management.

Col. (5) - Col. (9) represent cumulative load management, and incremental conservation and load management. All values are projected January values. The 2011 values are based on IRP projections after the 2010 Winter peak and FPL’s new DSM Goals for 2011. The projections for 2012 through 2020 are based on FPL’s DSM Goals.

Col. (9) represents FPL’s Business On Call, CDR, CILC, and Curtailable programs/rates.

Col. (10) represents a Net Firm Demand which accounts for all of the incremental conservation and assumes all of the load control is implemented on the peak. Col. (10) is derived by the formula: Col. (10) = Col.(2) - Col.(6) - Col.(7) - Col.(8) - Col.(9).
### Schedule 3.3

#### History of Annual Net Energy for Load (GWh)

*All values are "at the generator" values except for Col. (9)*

**(Historical)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Energy For Load</th>
<th>Actual Net Energy</th>
<th>Net Energy Sales for Resale</th>
<th>Utility Use &amp; Losses</th>
<th>Total Billed Retail Energy Sales (GWh)</th>
<th>Load Factor(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(GWh)</td>
<td>(GWh)</td>
<td>(GWh)</td>
<td>(GWh)</td>
<td>(GWh)</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>101.364</td>
<td>1,554</td>
<td>1,405</td>
<td>98,404</td>
<td>970</td>
<td>7,222</td>
</tr>
<tr>
<td>2002</td>
<td>107.380</td>
<td>1,662</td>
<td>1,499</td>
<td>104,199</td>
<td>1,233</td>
<td>7,443</td>
</tr>
<tr>
<td>2003</td>
<td>111.784</td>
<td>1,773</td>
<td>1,619</td>
<td>108,393</td>
<td>1,511</td>
<td>7,396</td>
</tr>
<tr>
<td>2004</td>
<td>111.659</td>
<td>1,872</td>
<td>1,893</td>
<td>108,093</td>
<td>1,531</td>
<td>7,487</td>
</tr>
<tr>
<td>2005</td>
<td>115.065</td>
<td>1,970</td>
<td>1,793</td>
<td>111,301</td>
<td>1,505</td>
<td>7,498</td>
</tr>
<tr>
<td>2006</td>
<td>117.116</td>
<td>2,078</td>
<td>1,901</td>
<td>113,137</td>
<td>1,569</td>
<td>7,909</td>
</tr>
<tr>
<td>2007</td>
<td>118.518</td>
<td>2,138</td>
<td>2,066</td>
<td>114,316</td>
<td>1,499</td>
<td>7,401</td>
</tr>
<tr>
<td>2008</td>
<td>115.379</td>
<td>2,249</td>
<td>2,126</td>
<td>111,004</td>
<td>993</td>
<td>7,092</td>
</tr>
<tr>
<td>2009</td>
<td>115.844</td>
<td>2,345</td>
<td>2,196</td>
<td>111,303</td>
<td>1,155</td>
<td>7,394</td>
</tr>
<tr>
<td>2010</td>
<td>119.119</td>
<td>2,487</td>
<td>2,250</td>
<td>114,373</td>
<td>2,049</td>
<td>7,768</td>
</tr>
</tbody>
</table>

#### Historical Values (2001 - 2010):

Col. (2) represents derived "Total Net Energy For Load w/o DSM". The values are calculated using the formula: Col. (2) = Col. (3) + Col. (4) + Col. (5).

Col. (3) & Col. (4) are DSM values starting in January 1998 and are annual (12-month) values. Col. (3) and Col. (4) for 2010 are "estimated actuals" and are also annual (12-month) values. The values represent the total GWh reductions experienced each year.

Col. (5) is the actual Net Energy for Load (NEL) for years 2001 - 2010.

Col. (6) is the Total Retail Billed Sales. The values are calculated using the formula: Col. (6) = Col. (5) - Col. (6) - Col. (7). These values are at the meter.

Col. (8) is calculated using Col. (5) from this page and Col. (2), "Total", from Schedule 3.1 using the formula: Col. (8) = ((Col. (5) * 1000) / (Col. (2) * 8760))

Adjustments are made for leap years.

### Schedule 3.3

#### History of Annual Net Energy for Load (GWh)

*All values are "at the generator" values except for Col. (9)*

**(Projected)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Forecasted Net Energy For Load without DSM (GWh)</th>
<th>Residential Conservation (GWh)</th>
<th>CIG Conservation (GWh)</th>
<th>Adjusted for DSM (GWh)</th>
<th>Sales for Resale (GWh)</th>
<th>Utility Use &amp; Losses (GWh)</th>
<th>Total Billed Retail Energy Sales w/o DSM (GWh)</th>
<th>Load Factor(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>111,175</td>
<td>73</td>
<td>75</td>
<td>111,028</td>
<td>2,142</td>
<td>6,776</td>
<td>102,257</td>
<td>58.5%</td>
</tr>
<tr>
<td>2012</td>
<td>112,917</td>
<td>220</td>
<td>245</td>
<td>112,041</td>
<td>2,142</td>
<td>7,252</td>
<td>103,893</td>
<td>58.8%</td>
</tr>
<tr>
<td>2013</td>
<td>114,647</td>
<td>408</td>
<td>442</td>
<td>113,797</td>
<td>2,047</td>
<td>7,445</td>
<td>105,155</td>
<td>59.1%</td>
</tr>
<tr>
<td>2014</td>
<td>121,035</td>
<td>601</td>
<td>641</td>
<td>118,793</td>
<td>4,935</td>
<td>8,014</td>
<td>108,685</td>
<td>59.9%</td>
</tr>
<tr>
<td>2015</td>
<td>123,810</td>
<td>789</td>
<td>822</td>
<td>121,991</td>
<td>5,686</td>
<td>8,006</td>
<td>110,838</td>
<td>58.4%</td>
</tr>
<tr>
<td>2016</td>
<td>126,593</td>
<td>885</td>
<td>972</td>
<td>123,634</td>
<td>5,599</td>
<td>8,106</td>
<td>111,888</td>
<td>58.1%</td>
</tr>
<tr>
<td>2017</td>
<td>127,251</td>
<td>1,165</td>
<td>1,092</td>
<td>124,994</td>
<td>5,625</td>
<td>8,208</td>
<td>113,418</td>
<td>58.0%</td>
</tr>
<tr>
<td>2018</td>
<td>128,910</td>
<td>1,336</td>
<td>1,188</td>
<td>126,347</td>
<td>5,672</td>
<td>8,310</td>
<td>114,928</td>
<td>58.2%</td>
</tr>
<tr>
<td>2019</td>
<td>130,679</td>
<td>1,497</td>
<td>1,207</td>
<td>127,915</td>
<td>5,717</td>
<td>8,443</td>
<td>116,518</td>
<td>58.1%</td>
</tr>
<tr>
<td>2020</td>
<td>133,121</td>
<td>1,657</td>
<td>1,329</td>
<td>130,135</td>
<td>5,770</td>
<td>8,601</td>
<td>118,749</td>
<td>58.0%</td>
</tr>
</tbody>
</table>

#### Projected Values (2011 - 2020):

Col. (2) represents Forecasted Net Energy for Load w/o DSM values. The values are extracted from Schedule 2.3, Col. (19).

Col. (3) & Col. (4) are forecasted values of the reduction on sales from incremental conservation and are mid-year (6-month) values reflecting DSM signups occurring evenly throughout each year. The effects of conservation implemented prior to 2011 are incorporated into the load forecast values in Col. (2).

Col. (5) is the forecasted Net Energy for Load (NEL) after adjusting for impacts DSM for years 2011 - 2020 using the formula: Col. (5) = Col. (2) - Col. (3) - Col. (4)

Col. (6) is the Total Retail Billed Sales. The values are calculated using the formula: Col. (6) = Col. (5) - Col. (6) - Col. (7). These values are at the meter.

Col. (8) is calculated using Col. (2) from this page and Col. (2), "Total", from Schedule 3.1 using the formula: Col. (8) = ((Col. (2) *1000) / (Col. (2) * 8760))

Adjustments are made for leap years.
## Schedule 4

**Previous Year Actual and Two-Year Forecast of Retail Peak Demand and Net Energy for Load (NEL) by Month**

<table>
<thead>
<tr>
<th>Month</th>
<th>Total Peak Demand</th>
<th>NEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MW</td>
<td>GWh</td>
</tr>
<tr>
<td>JAN</td>
<td>24,346</td>
<td>9,410</td>
</tr>
<tr>
<td>FEB</td>
<td>16,488</td>
<td>7,470</td>
</tr>
<tr>
<td>MAR</td>
<td>17,748</td>
<td>8,001</td>
</tr>
<tr>
<td>APR</td>
<td>15,480</td>
<td>8,179</td>
</tr>
<tr>
<td>MAY</td>
<td>19,217</td>
<td>9,950</td>
</tr>
<tr>
<td>JUN</td>
<td>21,901</td>
<td>11,619</td>
</tr>
<tr>
<td>JUL</td>
<td>21,633</td>
<td>11,215</td>
</tr>
<tr>
<td>AUG</td>
<td>22,256</td>
<td>11,651</td>
</tr>
<tr>
<td>SEP</td>
<td>20,738</td>
<td>11,064</td>
</tr>
<tr>
<td>OCT</td>
<td>19,116</td>
<td>9,020</td>
</tr>
<tr>
<td>NOV</td>
<td>17,052</td>
<td>8,145</td>
</tr>
<tr>
<td>DEC</td>
<td>21,153</td>
<td>8,619</td>
</tr>
<tr>
<td>TOTALS</td>
<td>114,373</td>
<td>111,175</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Month</th>
<th>Total Peak Demand</th>
<th>NEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MW</td>
<td>GWh</td>
</tr>
<tr>
<td>JAN</td>
<td>21,443</td>
<td>8,191</td>
</tr>
<tr>
<td>FEB</td>
<td>17,558</td>
<td>7,365</td>
</tr>
<tr>
<td>MAR</td>
<td>17,460</td>
<td>8,239</td>
</tr>
<tr>
<td>APR</td>
<td>17,160</td>
<td>8,368</td>
</tr>
<tr>
<td>MAY</td>
<td>19,255</td>
<td>9,905</td>
</tr>
<tr>
<td>JUN</td>
<td>20,557</td>
<td>10,336</td>
</tr>
<tr>
<td>JUL</td>
<td>21,155</td>
<td>11,101</td>
</tr>
<tr>
<td>AUG</td>
<td>21,679</td>
<td>11,218</td>
</tr>
<tr>
<td>SEP</td>
<td>20,917</td>
<td>10,424</td>
</tr>
<tr>
<td>OCT</td>
<td>19,582</td>
<td>9,728</td>
</tr>
<tr>
<td>NOV</td>
<td>17,922</td>
<td>8,099</td>
</tr>
<tr>
<td>DEC</td>
<td>17,787</td>
<td>8,202</td>
</tr>
<tr>
<td>TOTALS</td>
<td>112,517</td>
<td>112,517</td>
</tr>
</tbody>
</table>

Cols. (4) - (7) do not include the impacts of cumulative load management, incremental conservation, and incremental load management and are consistent with values shown in Col. (19) of Schedule 2.3 and Col. (2) of Schedule 3.3.
CHAPTER III

Projection of Incremental Resource Additions
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III. Projection of Incremental Resource Additions

III.A FPL’s Resource Planning:

FPL developed an integrated resource planning (IRP) process in the early 1990s and has since utilized this approach, in whole or in part as analysis needs warranted, to determine when new resources are needed, what the magnitude of the needed resources are, and what type of resources should be added. The timing and type of new power plants, the primary subjects of this document, are determined as part of the IRP process work.

This section describes FPL’s basic IRP process. Some of the key assumptions, in addition to a new load forecast, that were used in developing the resource plan presented in this Site Plan are also discussed.

Four Fundamental Steps of FPL’s Resource Planning:

There are 4 fundamental steps to FPL’s resource planning. These steps can be described as follows:

Step 1: Determine the magnitude and timing of FPL’s new resource needs;

Step 2: Identify which resource options and resource plans can meet the determined magnitude and timing of FPL’s resource needs (i.e., identify competing options and resource plans);

Step 3: Evaluate the competing options and resource plans in regard to system economics and non-economic factors; and,

Step 4: Select a resource plan and commit, as needed, to near-term options.

Figure III.A.1 graphically outlines the 4 steps.
Fundamental IRP Steps

(1) Determine the magnitude and timing of FPL's new resource needs

- Load forecast update
  - Updating of databases
  - System reliability analyses

(2) Identify competing resource options and resource plans which can meet the determined magnitude and timing of FPL's resource needs

- Feasibility analyses of individual DSM options
  - Packaging of DSM options
  - Feasibility analyses of new capacity options
  - Identify resource plans for system analyses
    - System economic and non-economic analyses of new capacity options
    - System economic and non-economic analyses of competing resource plans

(3) Evaluate the competing options and resource plans in regard to system economics and non-economics factors

(4) Finalize FPL's Integrated Resource Plan & commit to near-term options

Finalize FPL's Integrated Resource Plan

FPL Commitment to near-term options

Start ——— Completion

Timetable for Process

(Normal time period: approx. 6-7 months)

Figure III.A.1: Overview of FPL's IRP Process
Step 1: Determine the Magnitude and Timing of FPL’s New Resource Needs:

The first of the four resource planning steps, determining the magnitude and timing of FPL’s resource needs, is essentially a determination of the amount of capacity or megawatts (MW) of load reduction, new capacity additions, or a combination of both load reduction and new capacity additions that are needed to maintain system reliability. Also determined in this step is when the MWs are needed to meet FPL’s reliability criteria. This step is often referred to as a reliability assessment, or resource adequacy, analysis for the utility system.

Step 1 typically starts with an updated load forecast. Several databases are also updated in this first fundamental step, not only with the new information regarding forecasted loads, but also with other information that is used in many of the fundamental steps in resource planning. Examples of this new information include, but are not limited to: delivered fuel price projections, current financial and economic assumptions, and power plant capability and reliability assumptions. FPL also includes key assumptions regarding three specific resource areas: (1) near-term construction capacity additions, (2) firm capacity power purchases, and (3) DSM implementation.

The first of these assumptions is based on new generating capacity additions that have been approved by the Florida Public Service Commission (FPSC) through Determination of Need proceedings that evaluated both the need for, and the cost-effectiveness of, each of the new capacity additions. These generating capacity additions have also received the necessary Site Certification approvals from either the Secretary of the Florida Department of Environmental Protection (FDEP) or the Governor and Cabinet (acting as the Siting Board). (There is also work in progress to obtain the necessary federal and state licenses, permits, and approvals for construction and operation of two new nuclear units whose earliest practical deployment dates are outside of the 2011 – 2020 reporting period of this Site Plan.)

Several new generating unit additions will occur in the 2011 – 2020 reporting time frame of this document. These generating unit additions include:

- The completion of a third gas-fired CC unit at FPL’s West County Energy Center (WCEC) site which is scheduled to come in-service in June 2011. This new unit, WCEC Unit 3, will add approximately 1,219 MW (Summer) of generation capacity.
FPSC approval for this unit was obtained in September 2008 and site certification was granted in November 2008.

- Two existing generating plant sites, each featuring two older fossil fuel-fired steam generating units, are in the process of being modernized by removing the existing generating units and replacing them with one new, highly efficient CC unit. The new CC plant at FPL's Cape Canaveral site is projected to be placed in-service in 2013. This new CC unit is projected to have a peak output of 1,210 MW and will be called the Cape Canaveral Next Generation Clean Energy Center. The new plant at FPL's Riviera site is projected to be placed in-service in 2014 and it is expected to have a peak output of 1,212 MW. This new plant will be called the Riviera Beach Next Generation Clean Energy Center. These modernizations were approved by the FPSC in September 2008. The site certification application for Cape Canaveral was granted in October 2009. The site certification application for Riviera Beach was granted in November 2009.

- In addition, FPL will be adding approximately 450 MW of generating capacity at its existing nuclear power plants at the Turkey Point and St. Lucie sites. This added capacity is scheduled to come in-service in the 2011 – 2013 time period. These capacity "uprates" were approved by the FPSC in January 2008. The Final Order for the Site Certification was issued in September 2008 for the St. Lucie uprates and in October 2008 for the Turkey Point uprates.

These new generating units and generating capacity additions were selected for a variety of reasons including cost-effectiveness, significant system fuel savings, fuel diversity, and significant system emission reductions, including greenhouse gas emission reductions.

The second of these assumptions involves firm capacity power purchases. FPL's current projection of firm capacity purchases is generally similar to the projection shown in FPL's 2010 Site Plan. However, FPL's current projection does include an additional 90 MW from the Palm Beach Solid Waste Authority (SWA). FPL and SWA are currently seeking FPSC approval for this capacity addition. In total, the projected firm capacity purchases are from a combination of utility and independent power producers. Details, including the annual total capacity values for these purchases, are presented in Chapter I in Tables I.B.1 and I.B.2. These purchased capacity amounts were incorporated in FPL's resource planning work.

The third of these assumptions involves a projection of the amount of additional demand side management (DSM) that is anticipated to be implemented annually over the ten-year
period. Since 1994, FPL’s resource planning work has assumed that, at a minimum, the DSM MW called for in FPL’s approved DSM Goals will be achieved as planned. The resource plan presented in FPL’s 2011 Site Plan fully accounts for the new DSM goals.

These key assumptions, plus the other updated information described above, are then applied in the first fundamental step: the determination of the magnitude and the timing of FPL’s future resource needs. This determination is accomplished by system reliability analyses which for FPL are currently based on dual planning criteria of a minimum peak period reserve margin of 20% (FPL applies this to both Summer and Winter peaks) and a maximum loss-of-load probability (LOLP) of 0.1 day per year. Both of these criteria are commonly used throughout the utility industry.

Historically, two types of methodologies, deterministic and probabilistic, have been employed in system reliability analysis. The calculation of excess firm capacity at the annual system peaks (reserve margin) is the most common method, and this relatively simple deterministic calculation can be performed on a spreadsheet. It provides an indication of the adequacy of a generating system’s capacity resources compared to its load during peak periods. However, deterministic methods do not take into account probabilistic-related elements such as the impact of individual unit failures. For example: two 50 MW units which can be counted on to run 90% of the time are more valuable in regard to utility system reliability than is one 100 MW unit which can also be counted on to run 90% of the time. Probabilistic methods also recognize the value of being part of an interconnected system with access to multiple capacity sources.

For this reason, probabilistic methodologies have been used to provide an additional perspective on the reliability of a generating system. There are a number of probabilistic methods that are being used to perform system reliability analyses. Of these, the most widely used is loss-of-load probability or LOLP. Simply stated, LOLP is an index of how well a generating system may be able to meet its demand (i.e., a measure of how often load may exceed available resources). In contrast to reserve margin, the calculation of LOLP looks at the daily peak demands for each year, while taking into consideration such probabilistic events as the unavailability of individual generators due to scheduled maintenance or forced outages.

LOLP is expressed in units of the “number of times per year” that the system demand could not be served. The standard for LOLP accepted throughout the industry is a maximum of 0.1 day per year. This analysis requires a more complicated calculation
methodology than does the reserve margin analysis. LOLP analyses are typically carried out using computer software models such as the Tie Line Assistance and Generation Reliability (TIGER) program used by FPL.

The result of the first fundamental step of resource planning is a projection of how many new MW of resources are needed to meet both reserve margin and LOLP criteria, and thus maintain system reliability, and of when the MW are needed. Information regarding the timing and magnitude of these resource needs is then used in the second fundamental step: identifying resource options and resource plans that can meet the determined magnitude and timing of FPL's resource needs.

Step 2: Identify Resource Options and Plans That Can Meet the Determined Magnitude and Timing of FPL's Resource Needs:

The initial activities associated with this second fundamental step of resource planning generally proceed concurrently with the activities associated with Step 1. During Step 2, preliminary economic screening analyses of new capacity options are often conducted to determine which new capacity options appear to be the most competitive on FPL's system. This preliminary analysis work can also help identify capacity size (MW) values, projected construction/permitting schedules, and operating parameters and costs. Similarly, preliminary economic screening analyses of new DSM options and/or continued growth in existing DSM options are typically conducted.

FPL typically utilizes the P-MArea production cost model and a Fixed Cost Spreadsheet, and/or the Strategist model, as well as spreadsheet analyses, to perform the preliminary economic screening of generation resource options. For the preliminary economic screening analyses of DSM resource options, FPL typically uses its DSM cost-effectiveness model which is an FPL spreadsheet model utilizing the FPSC's approved methodology for performing preliminary cost-effectiveness screening of individual DSM measures and programs. FPL also utilizes its non-linear programming model for analyzing the potential for lowering system peak loads through additional load management capacity. Then FPL typically utilizes its linear programming model to develop DSM portfolios that are subsequently used in developing resource plans for final system analyses of DSM-based resource plans.

The individual new resource options emerging from these preliminary economic screening analyses are then typically "packaged" into different resource plans which are
designed to meet the system reliability criteria. In other words, resource plans are created by combining individual resource options so that the timing and magnitude of FPL's projected new resource needs are met. The creation of these competing resource plans is typically carried out using spreadsheet and/or dynamic programming techniques.

At the conclusion of the second fundamental resource planning step, a number of different combinations of new resource options (i.e., resource plans) of a magnitude and timing necessary to meet FPL's resource needs are identified.

**Step 3: Evaluate the Competing Options and Resource Plans in Regard to System Economics and Non-Economic Factors:**

At the completion of fundamental steps 1 & 2, the most viable new resource options have been identified, and these resource options have been combined into a number of resource plans which meet the magnitude and timing of FPL's resource needs. The stage is set for evaluating these resource options and resource plans in final, or system, economic analyses that attempt to account for all of the impacts to the FPL system from the competing resource options/resource plans. (These system impacts are typically not accounted for in preliminary economic screening analyses.) In FPL's 2010 and early 2011 resource planning work, once the resource plans were developed, FPL utilized the P-MArea production cost model and a Fixed Cost Spreadsheet, and/or the Strategist model, to perform the system economic analyses.

The basic economic analyses of the competing resource plans focus on total system economics. The standard basis for comparing the economics of competing resource plans is their relative impact on FPL's electricity rate levels, with the objective generally being to minimize FPL's projected leveled system average rate (i.e., a Rate Impact Measure or RIM methodology). In cases in which the DSM contribution was assumed as a given and the only competing options were new generating units and/or purchase options, comparisons of competing resource plans' impacts on electricity rates and on system revenue requirements are equivalent. Consequently, the competing options and plans in such cases were evaluated on a cumulative present value revenue requirement (CPVRR) basis.

Other factors are also included in FPL's evaluation of resource options and resource plans. While these factors may have an economic component or impact, they are often discussed in quantitative, but non-economic terms, such as percentages, tons, etc. rather
than in terms of dollars. These factors are often referred to by FPL as "system concerns" that include (but are not necessarily limited to) maintaining/enhancing fuel diversity in the FPL system, system emission levels, and maintaining a regional balance between load and generating capacity, particularly in the Southeastern Florida counties of Miami-Dade and Broward. In conducting the evaluations needed to determine which resource options and resource plans are best for FPL's system, both the economic and non-economic evaluations are conducted with an eye to whether the system concern is positively or negatively impacted by a given resource option or resource plan.

Step 4: Finalizing FPL's Current Resource Plan

The results of the previous three fundamental steps are typically used to develop the current resource plan. This plan is presented in the following section.

III.B Projected Incremental Resource Additions/Changes

FPL's projected incremental generation capacity additions/changes for 2011 through 2020 are depicted in Table III.B.1. These capacity additions/changes result from a variety of actions that primarily consist of: (i) changes to existing units (which are frequently achieved as a result of plant component replacements during major overhauls), (ii) the construction of an approved third new generating unit at the West County Energy Center (WCEC), (iii) increases in generating capacity at FPL's four existing nuclear units, (iv) the temporary return of certain generating units from Inactive Reserve status to active service, then returning these units to Inactive Reserve status, (v) changes in the amounts of purchased power being delivered under existing contracts as per the contract schedules or by entering into new purchase contracts, (vi) the projected modernizations of FPL's existing Cape Canaveral and Riviera sites by the removal of the steam generating units that were previously on the sites and the addition of one new, very fuel-efficient CC generating unit at each site, and (vii) the projected addition of new, very fuel-efficient new CC generating capacity at sites yet to be determined.3

3 These new CC capacity additions may take the form of new CC units at Greenfield sites, Brownfield sites, and/or through modernizations at existing sites. These decisions have not yet been made at the time the 2011 Site Plan was being developed. For reference purposes, these additions are referred to in the 2011 Site Plan as "Greenfield CC units."
Although the DSM additions that are consistent with the DSM goals imposed by the FPSC through 2020 are not explicitly presented in this table, these DSM additions have been fully accounted for in all of FPL's resource planning work reflected in this document. In addition, the projected MW reductions from these DSM additions are reflected in the projected reserve margin values shown in the table below and in Schedules 7.1 and 7.2 presented later in this chapter.
<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Capacity Changes</th>
<th>Net Capacity Changes (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Winter</td>
</tr>
<tr>
<td>2011</td>
<td>Inactive Reserve of Existing Units - offline</td>
<td>(775)</td>
</tr>
<tr>
<td></td>
<td>Riviera Plant - removed for modernization</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Scherer Plant - Upgrade</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 Upate - Outage</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 - Interim Increase</td>
<td>(726)</td>
</tr>
<tr>
<td></td>
<td>West County Unit 3</td>
<td>---</td>
</tr>
<tr>
<td>2012</td>
<td>Changes to Existing Purchases</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 1 Uprates - Completed</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 3 Uprates - Completed</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Inactive Reserve of Existing Units - offline</td>
<td>(394)</td>
</tr>
<tr>
<td></td>
<td>Inactive Reserve Units (PE Units 3 &amp; 4) - active status</td>
<td>755</td>
</tr>
<tr>
<td></td>
<td>Manatee 2 ESP - Outage</td>
<td>(822)</td>
</tr>
<tr>
<td></td>
<td>Riviera Plant - removed for modernization</td>
<td>(571)</td>
</tr>
<tr>
<td></td>
<td>Scherer Plant - upgrade</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 1 Upate - Outage</td>
<td>(853)</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 - Interim Increase</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 Upate - Outage</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 3 Upate - Outage</td>
<td>(717)</td>
</tr>
<tr>
<td></td>
<td>West County Unit 3</td>
<td>(1,335)</td>
</tr>
<tr>
<td>2013</td>
<td>Cape Canaveral Next Generation Clean Energy Center</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 1 Uprates - Completed</td>
<td>122</td>
</tr>
<tr>
<td></td>
<td>St. Lucie Unit 2 Uprates - Completed</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 3 Uprates - Completed</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 4 Uprates - Completed</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Inactive Reserve Unit (PE Units 3 &amp; 4) - inactive status</td>
<td>(765)</td>
</tr>
<tr>
<td></td>
<td>Manatee Unit 1 ESP - Outage</td>
<td>(822)</td>
</tr>
<tr>
<td></td>
<td>Martin Unit 1 ESP - Outage</td>
<td>---</td>
</tr>
<tr>
<td>2014</td>
<td>Cape Canaveral Next Generation Clean Energy Center</td>
<td>1,356</td>
</tr>
<tr>
<td></td>
<td>Turkey Point Unit 4 Uprates - Completed</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Martin Unit 1 ESP - Outage</td>
<td>(832)</td>
</tr>
<tr>
<td></td>
<td>Martin Unit 2 ESP - Outage</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Riviera Beach Next Generation Clean Energy Center</td>
<td>---</td>
</tr>
<tr>
<td>2015</td>
<td>Change to Existing Qualifying Facilities</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Riviera Beach Next Generation Clean Energy Center</td>
<td>1,344</td>
</tr>
<tr>
<td>2016</td>
<td>Changes to Existing Purchases</td>
<td>(841)</td>
</tr>
<tr>
<td></td>
<td>Change to Existing Qualifying Facilities</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Greenfield 3x1 Combined Cycle</td>
<td>---</td>
</tr>
<tr>
<td>2017</td>
<td>Changes to Existing Purchases</td>
<td>(383)</td>
</tr>
<tr>
<td></td>
<td>Greenfield 3x1 Combined Cycle</td>
<td>1,381</td>
</tr>
<tr>
<td>2018</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>2019</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>2020</td>
<td>Greenfield 3x1 Combined Cycle</td>
<td>---</td>
</tr>
</tbody>
</table>

(1) Additional information about these resulting reserve margins and capacity changes are found on Schedules 7 & 8 respectively.
(2) The Summer and Winter reserve margins reflect an additional 350 MW in Summer and 550 MW in Winter of unspecified average capacity scheduled to be out during those peak periods. See Chapter III for more details.
(3) Winter values are forecasted values for January of the year shown.
(4) Summer values are forecasted values for August of the year shown.
(5) These are firm capacity and energy contracts with O€, utilities, and other entities. See Table I.B.1 and Table I.B.2 for more details.
(6) All new unit additions are scheduled to be in-service in June of the year shown. All additions assumed to start in June are included in the Summer reserve margin calculation starting in that year and in the Winter reserve margin calculation starting with the next year.
(7) Outages for unit work.
(8) Outages for ESP work. (Assumes EPA final Toxics Rule requires ESPs, thus necessitating outages.)
(9) A number of existing FPL power plants have been removed from service and placed on Inactive Reserve status. See Chapter III for a discussion of the units on Inactive Reserves.
III.C Discussion of the Projected Resource Plan and Issues Impacting FPL’s Resource Planning Work

As indicated in the Executive Summary, FPL’s resource planning efforts in 2010 and early 2011 were influenced by a number of factors. Furthermore, these factors are expected to continue to influence FPL’s resource planning work for the foreseeable future. There are 7 such factors that are of primary importance:

1) Growing difficulty in scheduling fossil-fueled power plant maintenance;
2) High projected costs of returning generating units on Inactive Reserve status to active service;
3) Securing additional natural gas (and doing so in a manner that enhances the reliability of the natural gas supply system);
4) Maintaining/enhancing fuel diversity in the FPL system;
5) Maintaining a balance between load and generating capacity in Southeastern Florida, particularly in Miami-Dade and Broward counties;
6) Growing dependence upon DSM resources to maintain FPL system reliability; and,
7) Possible establishment of “Clean Energy Standards” or another mechanism to promote large scale utilization of renewable energy.

These 7 factors, and their various impacts on FPL’s resource planning efforts including the current resource plan that is presented in this Site Plan, are briefly discussed below.

1. Growing Difficulty in Scheduling Fossil-Fueled Power Plant Maintenance:

FPL’s fleet of fossil generation units is increasingly made up of CC units. These units have the desirable attributes of being very fuel-efficient and operating with very low air emissions. However, the key components of each CC unit are combustion turbines (CT). The maintenance schedule for the CT components is directly tied to the CT’s operating hours. When operating hour thresholds are reached, scheduled maintenance of the CTs must take place. This fact reduces flexibility in scheduling planned maintenance of CC units, and, in turn, reduces flexibility in scheduling planned maintenance of other fossil-fueled generating units on FPL’s system.

FPL has historically attempted to avoid scheduling planned maintenance of its generating units during its peak load months of January and August. However, as the
number of CC units on its system has increased (and will continue to increase with the addition of WCEC 3, the modernizations, etc.), this scheduling of planned maintenance outside of the peak months has become more difficult to do. Compounding this issue is the fact that the Winter peak can occur in months other than January such as December or February, and the Summer peak can occur in months other than August such as June or July. FPL already schedules planned maintenance during these other months.

Consequently, FPL will now begin scheduling planned maintenance during the months of January and August. For reserve margin projection purposes, FPL is now projecting that, on average, 550 MW will be out of service for planned maintenance during its Winter peak months and 350 MW will be out of service for planned maintenance during its Summer peak months. These projections are based on averages of currently planned maintenance in Winter peak months other than January, and on averages of currently planned maintenance in Summer peak months other than August.

This projection of scheduled planned maintenance during peak months is now reflected in Schedules 7.1 through 7.4 which present, respectively, the projected Summer and Winter reserve margins. (In practice, the actual number of MW that will be out of service on any day in January and/or August will likely vary from these average amounts.) One effect of this change is that it increases FPL’s projected resource needs in future years.

2. Projected High Costs of Returning Generating Units on Inactive Reserve Status to Active Service:

In FPL’s 2010 Site Plan, FPL’s then-current resource plan (reflecting FPL’s 2009 and early 2010 resource planning work) assumed that the generating units that were being placed on Inactive Reserve status would begin to be returned to active service as needed to maintain system reliability. No economic analyses had been done at that time to compare this option to other alternatives. FPL’s recent analyses of these generating units, particularly regarding the projected high costs of returning them to active service in comparison with the net system costs of new generation options, indicate that the addition of new generation will be less costly.
In comparison with new CC capacity, FPL’s ongoing analyses currently show that it is projected to be more cost-effective for FPL’s customers to add new CC capacity rather than to return the Inactive Reserve units to active service. As a result, FPL currently projects the following in regard to the units currently on Inactive Reserve status:

- Sanford 3 and Cutler 5 & 6 are projected to be retired by 2012. FPL will be examining other potential uses for these sites, including their potential use as sites for new renewable energy facilities.
- Turkey Point 2 operation has been changed from a unit that provides electricity to the grid to a synchronous condenser that provides voltage support for the transmission system in Southeastern Florida. Turkey Point 2 is currently projected to continue serving in this role for the foreseeable future.
- Two of the four steam units at FPL’s Port Everglades site, Port Everglades units 3 & 4, are currently scheduled to be returned to active service in 2012, then to return to Inactive Reserve status until the modernized units at Cape Canaveral and Riviera are in normal operation (i.e., until mid-2014). A decision on the future role of these two units will be made at that time or at a later date.
- The remaining units on Inactive Reserve, Port Everglades 1 & 2, will remain on Inactive Reserve status for the immediate future. A decision on their future roles will be made at a later date.

FPL’s current projections indicate that the Inactive Reserve units are not the economic choice with which to meet FPL’s future resource needs. FPL currently projects that it will have resource needs beginning in 2016 and increasing each year through 2020, the last year of the reporting period of this document.

For planning purposes, FPL’s 2011 Site Plan shows the addition of one new “Greenfield” CC unit in 2016 and another new Greenfield CC unit in 2020. These new CC units are currently projected to be the same type of unit that is being added in the modernizations of Cape Canaveral and Riviera. These projected in-service dates are subject to change as a result of FPL’s on-going resource planning work.

As mentioned previously in a footnote, FPL has not yet made a decision regarding the site for new CC capacity additions. Therefore, new CC capacity could be added
at a Greenfield site, a Brownfield site, and/or at an existing site as part of a modernization similar to those currently taking place at FPL's Cape Canaveral and Riviera sites.

In regard to potential modernization of existing sites, there are a number of factors that must be analyzed including: fuel delivery costs/issues, transmission impacts (especially in the Southeastern region of Florida as will be discussed later), system reliability issues due to the removal of existing units from active service prior to construction of new capacity at the site, overall system economics, etc. FPL's analyses to-date have identified Port Everglades as a potential candidate for modernization. This site, plus other Greenfield and Brownfield sites, is being evaluated in FPL's on-going analyses. These potential sites are discussed in detail in Chapter IV.

3. Securing Additional Natural Gas:

The recent trend of increasing reliance upon natural gas to produce electricity for FPL's customers is projected to continue with the addition of WCEC 3, the Cape Canaveral modernization, and the Riviera modernization, plus the projection of new CC capacity starting in 2016. Therefore, FPL will need to secure more natural gas supply and more gas transportation capacity. The issue is how to secure these additional natural gas resources in a manner that is economical for FPL's customers and which maintains and/or enhances the reliability of natural gas supply and deliverability to FPL's generating units.

FPL has historically purchased the gas transportation capacity required for new natural gas supply from two existing natural gas pipeline companies. As more natural gas is delivered through two pipelines entering Florida, the impact of a supply disruption on either pipeline becomes more problematic. Therefore, FPL sought approval in 2009 from the FPSC for the construction of a new, third natural gas pipeline into Florida capable of serving future gas-fired generation needs for FPL and others in the state. Such a third pipeline was projected to have benefits for FPL and its customers by increasing the diversity of FPL's fuel supply sources, increasing the physical reliability of the pipeline delivery system, and enhancing competition among pipelines. However, the application for an FPL-owned pipeline was denied by the FPSC in 2009. FPL is continuing to evaluate how additional significant amounts of
natural gas can best be delivered to its system in the future and FPL will be addressing this issue with the FPSC in 2011.

4. Maintaining/Enhancing System Fuel Diversity;

FPL is currently dependent upon using natural gas to generate more than half of the electricity it delivers to its customers. In the future, the percentage of FPL’s electricity that is generated by natural gas is projected to steadily increase. Therefore, FPL is continually seeking opportunities to maintain and enhance the fuel diversity of its system.

In 2007, FPL sought approval from the FPSC to add two new advanced technology coal units to its system. These two new units would have been placed in-service in 2013 and 2014. However, in part due to concerns over potential greenhouse gas emission legislation/regulation, FPL was unable to obtain approval for these units. Consequently, FPL does not believe that new advanced technology coal units are viable fuel diversity enhancement options in Florida for the foreseeable future.

Therefore, FPL has turned its attention to nuclear energy and renewable energy to enhance its fuel diversity, and to using natural gas more efficiently. In regard to nuclear energy, FPL obtained approval to increase capacity at each of its four existing nuclear units. In total, these capacity “uprates” will add approximately 450 MW of nuclear capacity and energy for FPL’s customers beginning in the 2011-2013 time period. In 2008, the FPSC approved the need for these uprates and authorized FPL to recover uprates-related expenditures. The schedule for this additional nuclear capacity has changed slightly from that projected in FPL’s 2010 Site Plan. An “interim” capacity increase of approximately 17 MW (FPL’s share) from St. Lucie 2 is now projected to become available by April 2011. No such “interim” capacity increase was projected in the 2010 Site Plan. Another projected change involves the schedule for St. Lucie 1. The completion of the uprates work is now projected to occur several months later than originally projected, primarily due to delays in federal licensing for this project. Smaller delays in the completion of the uprate projects at St. Lucie 2 and Turkey Point 3 are also now projected.

FPL is continuing its work to obtain all of the licenses, permits, and approvals that would be necessary to construct and operate two new nuclear units at its Turkey Point site in the future. These licenses, permits, and approvals will provide FPL with
the option to construct these nuclear units at Turkey Point for a time expected to be up to 20 years from the time the licenses and permits are granted, and then to operate the units. A decision regarding construction of these new units will be made once the licenses and permits are granted. (Based on the current estimated time for construction, the earliest practical deployment dates for the two new units would be beyond the 10-year reporting period for this Site Plan. Therefore, these units are not shown in this document.)

FPL also has been involved in activities to investigate adding or maintaining renewable resources as a part of its generation supply. One of these activities is a variety of discussions with the owners of existing facilities aimed at maintaining or extending current agreements that are scheduled to end during the ten-year reporting period of this document. Also FPL sought and received approval from the FPSC in 2008 to add 110 MW through three new FPL-owned solar facilities, one solar thermal facility and two photovoltaic (PV) facilities. One 25 MW PV facility began commercial operation in 2009. The remaining two solar facilities, a 10 MW PV facility and a 75 MW solar thermal steam generating facility, began commercial operation in 2010. The addition of these renewable energy facilities was made possible due to enabling legislation from the Florida Legislature in 2008. FPL remains strongly supportive of Federal and/or State legislation that enables electric utilities to add renewable energy resources and authorize the utilities to recover costs for these resources.

In regard to using natural gas more efficiently, FPL received approvals in 2008 from the FPSC to build a third highly efficient CC unit at its West County Energy Center site (WCEC Unit 3) and to modernize the existing Cape Canaveral and Riviera plant sites with new, highly efficient CC units that replace the former steam units. WCEC Unit 3 is currently projected to go in-service in 2011. The modernizations of Cape Canaveral and Riviera are currently projected to go in-service in 2013 and 2014, respectively.

In the future, FPL will continue to identify and evaluate alternatives that may maintain or enhance system fuel diversity. FPL also plans to maintain the ability to utilize fuel oil at those existing units that have that capability, although cost factors currently limit the expected use of this fuel. Furthermore, as previously discussed, FPL continues to evaluate the potential for greater diversity in the delivery of natural gas through a new, third natural gas pipeline. A third pipeline would result in a more reliable, and more economic, natural gas supply for FPL's customers.
5. Maintaining a Balance Between Load and Generation in Southeastern Florida:

In recent years, an imbalance was projected to develop between regionally installed generation and regional peak load in Southeastern Florida. With such an imbalance, a significant amount of energy required in the Southeastern Florida region during peak periods would need to be provided either by operating less efficient generating units located in Southeastern Florida out of economic dispatch, or by importing the energy through the transmission system from plants located outside the region. FPL's prior planning work concluded that either additional installed generating capacity in this region, or additional installed transmission capacity capable of delivering electricity from outside the region, would be required to address this imbalance.

Partly because of the lower transmission-related costs resulting from their location, four recent capacity addition decisions (Turkey Point Unit 5 and WCEC Units 1, 2, & 3) were evaluated as the most cost-effective options to meet FPL's capacity needs in the near-term. Adding these units contributes to reducing the imbalance between generation and load in Southeastern Florida.

In addition, FPL will be adding increased capacity at FPL's existing two nuclear units at Turkey Point in 2012 and 2013 and will increase the generating capacity at its Riviera site through a modernization of that site in 2014. These generating unit additions in Southeastern Florida are expected to address the imbalance for most, if not all, of the 2011 - 2020 reporting period addressed in this document.

However, because of the combination of a number of factors including: (i) the projected retirement of the Cutler 5 & 6 units, (ii) placing the Port Everglades steam units (Units 1 – 4) on Inactive Reserve status for most of this reporting period, (iii) dedicating Turkey Point 2 to a transmission support role, plus (iv) projected growth in electrical demand in the region, FPL still projects that an imbalance between generation and load in the region will eventually occur. The recent WCEC unit additions, and the modernization of the Riviera site, have had the effect of effectively “shrinking” the region of concern regarding imbalance. The former area of concern included Miami-Dade County, Broward County, and parts of Palm Beach County. After these capacity additions in Palm Beach County, the region of concern regarding a load-generation imbalance for the foreseeable future now consists of Miami-Dade and Broward counties, which is south of the former area of concern.
The Southeastern Florida imbalance issue will remain a consideration in FPL's on-going resource planning work, particularly as FPL's planning analyses in future years begin to increasingly focus on the 2020-on time frame.

6. Growing Dependence Upon DSM Resources to Maintain System Reliability:

In late 2009, the FPSC imposed significantly higher DSM Goals than had been deemed appropriate in previous DSM Goals dockets. One result of the higher amounts of DSM is that it will result in higher electric rates for all of FPL's customers.

Another result is that FPL is projected to become increasingly dependent upon DSM, instead of generation resources, to maintain system reliability. In order to demonstrate this point, FPL has added two new schedules, Schedule 7.3 and 7.4, to its 2011 Site Plan. These new schedules are presented in the back portion of this chapter. Both of the new schedules use Schedule 7.1, which presents FPL's projected Summer reserve margins, as a starting point.

In Schedule 7.3, Column (14), FPL projects what a "generation-only" reserve margin would be for each year in the 10-year reporting period by making two changes in Schedule 7.1. First, the projected DSM values in Column (8) have been zeroed out to remove the projected contribution from DSM. Second, the projected additions of one Greenfield CC unit in both 2016 and 2020 have been removed. These two changes result in a projection of reserve margins that are based solely on generation resources that currently exist or which have been approved by the FPSC.

The result is a projected generation-only reserve margin in the range of approximately 11% to 12% through 2015, but which would decrease significantly thereafter. It decreases to 4.5% in 2016 and becomes negative by 2020.

In Schedule 7.4, the projected additions of the 2016 and 2020 Greenfield CC units have been added back in as indicated by the values in Column (1). The projected generation-only reserve margin for the year 2016 increases to 9.3%. Although substantially higher than the 4.5% value for 2016 projected in Schedule 7.3, the 9.3% value is also considerably lower than the 11% to 12% range for the years 2011 through 2015. In the years after 2016, the projected generation-only reserve margin steadily decreases to less than 5% by 2019. Even with the projected addition of
another new CC unit in 2020, this generation-only reserve margin does increase again, but only slightly above 7%.

Therefore, FPL’s projected system reserves, already dependent to a significant degree upon DSM resources, are becoming increasingly more dependent upon DSM. Stated another way, the FPL system’s ability to continue to provide reliable electricity service to FPL’s customers is becoming increasingly dependent upon DSM. FPL currently believes that generation-only reserves at these projected low levels may not be adequate, and FPL will continue to evaluate the appropriateness of a minimum generation-only requirement as part of its on-going resource planning work.

7. Possible Establishment of “Clean Energy Standards”:

At the time this document is being prepared, neither the United States nor the State of Florida has established a “Clean Energy Standard” which would require that a certain amount of energy be supplied by “clean” energy sources. A similar “Renewable Portfolio Standard” proposal was prepared by the FPSC and sent to the Florida Legislature for their consideration, including an option to change the standard to a Clean Energy Standard, during the 2009 legislative session. However, no such legislation was enacted during either the 2009 or 2010 session. Such legislation, or other legislative initiatives regarding clean energy contributions, may occur in the future. If such legislation is enacted in 2011 or in a later year, FPL will then determine what steps need to be taken to comply with the legislation. Such steps would then be discussed in FPL’s Site Plan in the year following the enactment of such legislation.

III.D Demand Side Management (DSM)

FPL has sought out and implemented cost-effective DSM programs since 1978. These programs include both conservation initiatives and load management. FPL’s DSM efforts through 2010 have resulted in a cumulative Summer peak reduction of approximately 4,371 MW (Summer) at the generator and an estimated cumulative energy saving of approximately 55,462 Gigawatt Hour (GWh) at the generator. After accounting for reserve margin requirements, FPL’s DSM efforts through 2010 have eliminated the need to construct more than 13 new 400 MW generating units.

As previously discussed in Chapter I and earlier in this chapter, the FPSC in late 2009 imposed significantly higher DSM Goals for FPL for 2010 – 2019 than were deemed
appropriate in prior DSM Goals dockets. The DSM Goals recently imposed by the FPSC have three components: Summer MW reductions, Winter MW reductions, and GWh reductions. Table III.D.1 presents the cumulative Summer MW reduction component of these goals. (The Summer MW component, and to a much lesser degree the Winter MW reduction component, impacts FPL's need for future resources such as those discussed in this document. The GWh reduction component has no impact on FPL's need for future resources.)

**Table III.D.1: FPL's Summer MW Reduction Goals for DSM**

(At the Generator)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cumulative Summer MW DSM Goals for FPL (at Generator)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>110</td>
</tr>
<tr>
<td>2011</td>
<td>253</td>
</tr>
<tr>
<td>2012</td>
<td>419</td>
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<td>2013</td>
<td>599</td>
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<td>2014</td>
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<td>2016</td>
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<td>2017</td>
<td>1,251</td>
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<tr>
<td>2018</td>
<td>1,379</td>
</tr>
<tr>
<td>2019</td>
<td>1,498</td>
</tr>
</tbody>
</table>

The next step in regard to FPL's DSM efforts is to obtain FPSC approval for a DSM Plan with which it proposes to meet the DSM Goals. At the time this Site Plan is being prepared, FPL has not received FPSC approval for a DSM Plan. Consequently, FPL does not yet know with certainty what its portfolio of approved DSM programs will be. FPL expects to have an approved DSM Plan later in 2011. (Assuming this is the case, FPL expects to provide a description of its approved DSM programs in its 2012 Site Plan.) Nonetheless, FPL's resource planning work in 2010 and early 2011, reflected in this document, assumed that the FPSC-approved DSM Goals would be met.

FPL has consistently been among the leading utilities nationally in DSM achievement. For example, according to the U.S. Department of Energy's 2009 data (the last year for which the DOE data was available at the time this Site Plan is being developed), FPL ranked # 2 nationally in cumulative DSM demand reduction. And, importantly, FPL has achieved these significant DSM accomplishments while seeking to lessen the DSM-based impact on electric rates for all of its customers.
In regard to DSM, FPL’s intent is to meet the FPSC’s DSM Goals and to continue its national leadership role in DSM consistent with efforts both to continue to lessen the DSM-based impact on electric rates for all of FPL’s customers, and to ensure that FPL’s system reliability does not become too dependent upon DSM resources.

### III.E Transmission Plan

The transmission plan will allow for the reliable delivery of the required capacity and energy to FPL’s retail and wholesale customers. The following table presents FPL’s proposed future additions of 230 kV bulk transmission lines that must be certified under the Transmission Line Siting Act.

#### Table III.E.1: List of Proposed Power Lines

<table>
<thead>
<tr>
<th>(1) Line Ownership</th>
<th>(2) Terminals (To)</th>
<th>(3) Terminals (From)</th>
<th>(4) Line Length</th>
<th>(5) Commercial In-Service Date (Mo/Yr)</th>
<th>(6) Nominal Voltage (KV)</th>
<th>(7) Capacity (MVA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPL</td>
<td>St. Johns</td>
<td>Pringle</td>
<td>25 Miles</td>
<td>Dec -16</td>
<td>230</td>
<td>759</td>
</tr>
<tr>
<td>FPL</td>
<td>Manatee</td>
<td>BobWhite</td>
<td>30 Miles</td>
<td>Dec -15</td>
<td>230</td>
<td>1190</td>
</tr>
</tbody>
</table>

1/ Final order certifying the corridor was issued on April 21, 2006. This project is to be completed in two phases. Phase I consisted of 4 miles of new 230kV line (Pringle to Pellicer) and was completed in May-2009. Phase II consists of 21 miles of new 230kV line (St. Johns to Pellicer) and is scheduled to be completed by Dec-2016.

2/ Final order certifying the corridor was issued on November 6, 2008. This project consists of 30 miles of new 230kV line (Manatee to Bobwhite) and is scheduled to be completed by Dec-2015

In addition, there will be transmission facilities needed to connect several of FPL’s projected generating capacity additions to the system transmission grid. These transmission facilities for the projected generating capacity additions at the West County Energy Center site Unit 3, the capacity increases (uprates) at the existing St. Lucie and Turkey Point nuclear sites, and the Cape Canaveral and Riviera Beach modernizations are described on the following pages.

In regard to the existing generating units that have been placed on Inactive Reserve status, there are no projected impacts to FPL’s transmission system from these units.
III.E.1 Transmission Facilities for West County Energy Center (WCEC) Unit 3

The work required to connect West County Energy Center (WCEC) Unit 3 in 2011 to the FPL grid is projected to be as follows:

I. Substation:

1. Build new collector yard containing two collector busses with four breakers to connect the three combustion turbines (CT), and one steam turbine (ST).
2. Build new Sugar 230 kV Substation on WCEC site.
3. Construct two string busses to connect the collector busses to Sugar 230kV Substation.
4. Add four main step-up transformers (3-370 MVA, 1-580 MVA), one for each CT, and one for the ST.
5. At Corbett Substation, relocate Germantown 230 kV line terminal from Corbett to Sugar Sub.
6. At Corbett Substation, relocate Broward/Yamato 230 kV line terminal from Corbett to Sugar Sub.
7. At Corbett Substation, install new Sugar 230 kV line terminal in Bay 2W.
8. At Corbett Substation, install one 5-ohm inductor on the 230 kV side of the 500/230 kV autotransformer.
9. Add relays and other protective equipment.

II. Transmission:

1. Relocate Germantown 230 kV line from Corbett to Sugar.
2. Relocate Broward/Yamato 230 kV line from Corbett to Sugar.
3. Construct one mile 230 kV 1190 MVA line from Sugar to Corbett.
III.E.2 Transmission Facilities for St. Lucie Units 1 & 2 Capacity Uprates

The work required to address the St. Lucie Units 1 & 2 uprates in 2011 for Unit 1 and in 2012 for Unit 2, in regard to the FPL grid is projected to be as follows:

I. Substation:

1. At Midway Substation, replace eleven 230 kV disconnect switches, and remove six wave traps. Also upgrade associated jumpers, bus work and equipment connections.
2. At St. Lucie Switchyard, replace eighteen 230 kV disconnect switches and remove six wave traps.
3. Uprate the Unit 1A and 1B main step-up transformers to 635 MVA. Unit 1B main step-up transformer is to be replaced by the uprated spare main step-up transformer. Existing Unit 1B main step-up transformer is to become the new station spare
4. Uprate the spare main step-up transformer to 635 MVA to replace Unit 2A main step-up transformer.
5. Replace the Unit 2A and Unit 2B main step-up transformer with new one rated at 635 MVA.
6. Add fiber optic relays and other protective equipment.

II. Transmission:

1. Upgrade the three existing St. Lucie-Midway 230 kV lines with spacers between the conductors to achieve a normal (continuous) rating of 2790 Amperes.
2. Replace one existing overhead ground wire on each of the three existing St. Lucie Midway 230kV line with fiber optic overhead ground wire for protective relay communication.
III.E.3 Transmission Facilities for Turkey Point Units 3 & 4 Capacity Uprates

The work required to address the Turkey Point Units 3 & 4 uprates in 2012 in regard to the FPL grid is projected to be as follows:

I. Substation:

1. At Turkey Point Switchyard, install two 5-Ohm series phase inductors combined with external shunt capacitors on the southeast and southwest 230 kV operating busses.
2. At Turkey Point Switchyard, replace twelve 230 kV disconnect switches. Also upgrade associated jumpers, bus work and equipment connections.
3. Uprate the Unit 3 and Unit 4 main step-up transformers to 970 MVA.
4. Replace spare main step-up transformer with 1028 MVA transformer.
5. Add relays and other protective equipment.
6. Replace breaker failure panels at Davis Substation.
7. Replace breaker failure panels at Flagami Substation.

II. Transmission:

1. Upgrade the existing string busses for both Units 3 & 4 between the main step-up transformers and the switchyard with spacers between the conductors.
III.E.4 Transmission Facilities for Cape Canaveral Next Generation Clean Energy Center (Projected Modernization)

The work required to connect the projected Cape Canaveral Next Generation Clean Energy Center in 2013 to the FPL grid is forecasted to be as follows:

I. **Substation:**

1. Build new collector yard containing two collector busses with four breakers to connect the three combustion turbines (CT), and one steam turbine (ST).
2. Construct two string busses to connect the collector busses to Cape Canaveral 230kV Substation.
3. Add four main step-up transformers (3-370 MVA, 1- 580 MVA), one for each CT, and one for the ST.
4. At Cape Canaveral Switchyard replace eight 230 kV disconnect switches. Also upgrade associated jumpers, bus work and equipment connections.
5. Expand switchyard relay vault and add relays and other protective equipment.

II. **Transmission:**

1. Relocate the Cape Canaveral-Grissom 115 kV line.
III.E.5 Transmission Facilities for Riviera Beach Next Generation Clean Energy Center (Projected Modernization)

The work required to connect the projected Riviera Beach Next Generation Clean Energy Center in 2014 to the FPL grid is forecasted to be as follows:

I. Substation:

1. Expand the Riviera 230 kV Switchyard five breakers to accommodate terminals for one combustion turbine (CT), and one steam turbine (ST).
2. Construct a new 138 kV Riviera Switchyard - five bays, 14 breakers with terminals to connect two CT units and seven 138 kV lines.
3. Add four main step-up transformers (3-370 MVA, 1-580 MVA), one for each CT, and one for the ST.
4. Add relays and other protective equipment.
5. At Ranch Substation, add a new 230 kV bay 5 and upgrade bay 4 to 3000 Amperes.
6. Breaker replacements:
   - Ranch Substation – Replace one 230 kV breaker
   - Broward Substation – Replace one 230 kV breaker

II. Transmission:

1. Break the Indiantown-Riviera 230kV and extend each of the line segments south (approx. 4 miles) to connect to the Ranch 230 kV Substation forming Indiantown-Ranch and a Ranch-Riviera 230 kV circuits.
2. Remove Corbett-Ranch #2 230 kV line at Ranch and:
   a. extend to meet the Cedar-Lauderdale 230 kV line N/S corridor (approx. 10 miles).
3. Break Cedar-Corbett 230 kV (near Ranch Sub in Corbett-Jog section) and:
   a. Extend Cedar side to Riviera, (approx. 15 miles) creating new Cedar-Riviera 230 kV.
   b. Extend Corbett side to meet the Cedar-Lauderdale 230 kV N/S corridor (approx. 10 miles).
4. Break Cedar-Lauderdale 230 kV (near 230 corridor running N/S)
   a. Connect Cedar side to meet 3.b. to create a Cedar to Corbett 230 kV.
   b. Connect Lauderdale side to meet 2.a. to create a Corbett to Lauderdale 230 kV.
5. Upgrade the existing IBM-Yamato 138 kV line to 1200 Amperes.
7. Relocate six existing 138 kV lines from existing Riviera 138 kV Switchyard to new Riviera 138 kV Switchyard.
III.F. Renewable Resources

FPL has been the leading Florida utility in examining ways to effectively utilize renewable energy technologies to serve its customers. FPL has been involved since 1976 in renewable energy research and development and in facilitating the implementation of various renewable energy technologies. For purposes of discussing FPL's renewable energy efforts in this document, those efforts will be placed into five categories.

1) Early Research & Development Efforts:
   FPL assisted the Florida Solar Energy Center (FSEC) in the late 1970s in demonstrating the first residential solar photovoltaic (PV) system east of the Mississippi. This PV installation at FSEC's Brevard County location was in operation for over 15 years and provided valuable information about PV performance capabilities in Florida on both a daily and annual basis. FPL later installed a second PV system at the FPL Flagami substation in Miami. This 10-kilowatt (kW) system was placed into operation in 1984. (The system was removed in 1990 to make room for substation expansion once testing of this PV installation had been completed.)

   For a number of years, FPL maintained a thin-film PV test facility located at the FPL Martin Plant Site. This FPL PV test facility was used to test new thin-film PV technologies and to identify design, equipment, or procedure changes necessary to accommodate direct current electricity from PV facilities into the FPL system. Although this testing has ended, the site is now the home for PV capacity which was installed as a result of FPL's early "green pricing" efforts.

2) Demand Side & Customer Efforts:
   In terms of utilizing renewable energy sources to meet its customers' needs, FPL initiated the first utility-sponsored conservation program in Florida designed to facilitate the implementation of solar technologies by its customers. FPL's Conservation Water Heating Program, first implemented in 1982, offered incentive payments to customers choosing solar water heaters. Before the program ended (due to the fact that it was no longer cost-effective), FPL paid incentives to approximately 48,000 customers who installed solar water heaters.

   In the mid-1980s, FPL introduced another renewable energy program, FPL's Passive Home Program. This program was created in order to broadly disseminate information about passive solar building design techniques which are most applicable in Florida's climate. As part of this program, three Florida architectural firms created
complete construction blueprints for six passive home designs with the assistance of the FSEC and FPL. These designs and blueprints were available to customers at a low cost. During its existence, this program was popular and received a U.S. Department of Energy award for innovation. The program was eventually phased out due to a revision of the Florida Model Energy Building Code (Code). This revision was brought about in part by FPL’s Passive Home Program. The revision incorporated into the Code one of the most significant passive design techniques highlighted in the program: radiant barrier insulation.

In early 1991, FPL received approval from the FPSC to conduct a research project to evaluate the feasibility of using small PV systems to directly power residential swimming pool pumps. This research project was completed with mixed results. Some of the performance problems identified in the test were deemed to be solvable, particularly when new pools are constructed. However, the high cost of PV, the significant percentage of sites with unacceptable shading, and various customer satisfaction issues remain as significant barriers to wide acceptance and use of this particular solar application.

FPL has since continued to analyze and promote the utilization of PV. These efforts have included a PV research, development, and education project, and participation in the State of Florida’s PV for Schools program. With resources from the FPL Group Foundation, FPL contributed 30 kw of PV to schools and educational non-profits in its service area during 2010. This initiative also delivers teacher training and curriculum that is tied to the Sunshine Teacher Standards in Florida. Additionally, it provides teacher grants to promote and fund projects in the classrooms. As part of its green pricing research efforts, 2 kw PV arrays were placed in each of 4 schools, and in the Miami Science Museum, for a total of 10 kw of PV in educational facilities. FPL’s green pricing efforts also resulted in a 250 kw PV array at Rothenbach Park in Sarasota.

FPL has also been investigating fuel cell technologies through monitoring of industry trends, discussions with manufacturers, and direct field trials. From 2002 through the end of 2005, FPL conducted field trials and demonstration projects of Proton Exchange Membrane (PEM) fuel cells with the objectives of serving customer end-uses while evaluating the technical performance, reliability, economics, and relative readiness of the PEM technology. The demonstration projects were conducted in partnership with customers and included 5 locations. The research projects were
useful to FPL in identifying specific issues that can occur in field applications and the current commercial viability of this technology. FPL will continue to monitor the progress of these technologies and conduct additional field evaluations as significant developments in fuel cell technologies occur.

In addition, FPL assists customers who are interested in installing PV equipment at their facilities. Consistent with Florida Administrative Code Rule 256.065, Interconnection and Net Metering of Customer-Owned Renewable Generation, FPL works with customers to interconnect these customer-owned PV systems. Through December 2010, approximately 1,074 customer systems (predominantly residential) have been interconnected.

Finally, as part of its DSM Goals decision, the FPSC imposed a requirement for Florida’s investor-owned utilities to spend up to a set, not-to-exceed amount of money annually to facilitate demand side solar water heater and photovoltaic applications. FPL’s not-to-exceed annual amount of money for these applications is approximately $15.5 million. These expenditures will be made in accordance with the solar water heater and PV aspects of FPL’s DSM Plan once FPL receives approval for its Plan.

3) Supply Side Efforts – Power Purchases:
FPL has also facilitated renewable energy projects (facilities which burn bagasse, waste wood, municipal waste, etc.). Firm capacity and energy, and as-available energy, have been purchased by FPL from these types of facilities. (Please refer to Tables I.B.1, I.B.2, and Table I.C.1 in Chapter I).

Periodically, FPL invites renewables suppliers to provide proposals for renewable power and energy at or below avoided costs in response to FPL’s Requests for Proposals (RFPs). FPL issued Renewable RFPs in 2007 and 2008 soliciting proposals to provide firm capacity and energy, and energy only, at or below avoided costs from renewable generators. FPL also promptly responds to inquiries for information from prospective renewable energy suppliers either by e-mail or phone.

With regard to existing contracts that have recently ended, FPL and the Solid Waste Authority of Palm Beach (SWA) recently agreed to extend their contract that expired March 31, 2010 for a 20-year term from April 1, 2012 through April 1, 2032. In addition, a new contract for an additional 90 MW between FPL and SWA has been
signed and has been submitted to the FPSC for approval. Also, the firm capacity and energy contract with Broward South that expired August 2009 was not renewed, but Broward South continues as an as-available supplier of renewable energy to FPL.

4) Supply Side Efforts – FPL Facilities:
With regard to solar projects, FPL has completed construction of three solar facilities: (i) a 75 MW steam generation solar thermal facility in Martin County (the Martin Next Generation Solar Energy Center); (ii) a 25 MW PV electric generation facility in DeSoto County (the DeSoto Next Generation Solar Energy Center); and (iii) a 10 MW PV electric generation facility in Brevard County at NASA’s Kennedy Space Center (the Space Coast Next Generation Solar Energy Center). The DeSoto County project was completed in 2009 and the other two projects were completed in 2010. These three projects were completed in response to the Florida Legislature’s House Bill 7135 which was signed into law by then-Governor Crist in June 2008. House Bill 7135 (hereafter referred to as the 2008 Energy Bill), was enacted to enable the development of clean, zero greenhouse gas emitting renewable generation in the State of Florida. Specifically, the 2008 Energy Bill authorized cost recovery for the first 110 MW of eligible renewable projects that had the proper land, zoning, and transmission rights in place. FPL’s three solar projects met the specified criteria, and were granted approval for cost recovery in 2008. Each of the three solar projects is discussed below.

a. The Martin Next Generation Solar Energy Center:
This facility began commercial operation in 2010 and provides 75 MW of solar thermal capacity in an innovative way that directly displaces fossil fuel usage on the FPL system. This facility consists of solar thermal technology which generates steam that is integrated into the existing steam cycle for the Martin Unit 8 natural gas-fired CC plant. This project is the first “hybrid” solar plant in the world, the second largest solar facility in the world, and the largest solar plant of any kind in the U.S. outside of California.

b. The DeSoto Next Generation Solar Energy Center:
This PV facility began commercial operation in 2009 and provides up to 25 MW of non-firm capacity and energy, making it the second largest PV facility in the U.S. The facility utilizes a tracking array that is designed to follow the sun as it traverses across the sky.
c. **The Space Coast Next Generation Solar Energy Center:**

Located at the Kennedy Space Center, this facility is part of an innovative public/private partnership with NASA. This non-tracking PV facility began commercial operation in 2010 and provides up to 10 MW of non-firm capacity and energy.

Each of these facilities is a significant and innovative renewable generating plant in its own right. Collectively, these Next Generation Solar Energy Centers are expected to produce a total of approximately 225,000 megawatt-hours (MWh) of electricity each year, and at peak production provide enough energy to serve the requirements of more than 15,000 homes.

For resource planning purposes, FPL projects that the output from these renewable facilities will be “as available”, non-firm energy only. This is due to several factors. First, the Martin solar thermal facility is a “fuel-substitute” facility, not a facility that provides additional capacity and energy. The solar thermal facility displaces the use of fossil fuel to produce steam on the FPL system when the solar thermal facility is operating. Second, in regard to the two PV facilities, the intermittent nature of the solar resource makes it difficult to accurately determine what contribution the PV facilities at these specific locations can consistently make at FPL’s late Summer afternoon and early Winter morning peak load hours. Once site-specific operating data has been gathered for an appropriate amount of time, FPL will then re-evaluate the actual output from each PV facility to determine what portion, if any, of its output can be projected as firm capacity at the projected peak hours in FPL’s resource planning work.

In addition to these three approved projects, FPL is currently in the process of identifying other potential solar sites in the state in the event that a future Renewable Portfolio Standard (RPS), Clean Energy Portfolio Standard (CPS), or other legislation is enacted by the Florida legislature that enables FPL to construct and recover costs for additional solar generation. FPL is evaluating existing FPL generation sites along with potential Greenfield sites within FPL’s service territory. These potential FPL and Greenfield sites are discussed further in Chapter IV.

FPL remains hopeful of developing a wind generation project on South Hutchinson Island in St. Lucie County. This project is known as the St. Lucie Wind Project and it would consist of up to six wind turbine generators capable of generating up to
approximately 13.8 MW. In 2007, FPL began the St. Lucie County land use approval process, and soon after applied for the necessary federal and state permitting. However, a decision by the state and federal agencies on the St. Lucie Wind Project's permitting will not be finalized until the local land use approval process is completed. At the time this Site Plan is being developed, the local land use approval process has not been completed. An in-service date for the project is dependent upon a successful outcome to the local approval and permitting process.

5) **Ongoing Research & Development Efforts:**

FPL has developed alliances with several Florida universities to promote development of emerging technologies. For example, an alliance has been established with the newly formed Southeast National Marine Renewable Energy Center (SNMREC) at Florida Atlantic University (FAU), which will focus on the commercialization of ocean current, ocean thermal (i.e., energy conversion as well as cold water air conditioning), and hydrogen technologies. FPL has been taking the lead in assisting FAU with the discussions being held with the U.S. Department of the Interior's Minerals Bureau of Ocean Energy Management Regulation and Enforcement (BOEMRE). BOEMRE is working to establish the permitting process for ocean energy development on the outer continental shelf.

FPL has also developed an alliance with the University of Florida to support its biomass-related studies to determine improved vegetative management techniques for use in minimizing maintenance costs at FPL's current and future solar sites and to perform wind studies within the state. In addition, FPL has partnered with the Florida Institute of Technology on fuel cell technology and with the Florida State Universities Center for Applied Power System in regard to grid integration of ocean energy and other renewables.

FPL has also developed a "Living Lab" to demonstrate FPL's solar energy commitment to employees and visitors at its Juno Beach facility. FPL is evaluating multiple solar technologies and applications for the purpose of developing a renewable business model resulting in the most cost-effective and reliable uses of solar energy for FPL customers. FPL will expand the Living Lab as new solar products come to market.
FPL has also been in discussions with several private companies on multiple emerging technology initiatives including ocean current, ocean thermal, hydrogen, fuel cell technology, biomass, biofuels, and energy storage.

III.G FPL’s Fuel Mix and Fuel Price Forecasts

1. FPL’s Fuel Mix

Until the mid-1980s, FPL relied primarily on a combination of fuel oil, natural gas, and nuclear energy to generate electricity with significant reliance on oil-fired generation. In the early 1980s, FPL began to purchase “coal-by-wire.” In 1987, coal was first added to the fuel mix through FPL’s partial ownership and additional purchases from the St. Johns River Power Park (SJRPP). This allowed FPL to meet its customers’ energy needs with a more diversified mix of energy sources. Additional coal resources were added with the partial acquisition (76%) of Scherer Unit 4 which began serving FPL’s customers in 1991. Starting in 1997, petroleum coke was added to the fuel mix as a blend stock with coal at SJRPP.

The trend since the early 1990s has been a steady increase in the amount of natural gas that is used by FPL to provide electricity due, in part, to the introduction of highly efficient and cost-effective CC generating units and the ready availability of natural gas. This planning document reflects an evolution in that trend in recognition that, although efficient gas-fired generation continues to provide significant benefits to FPL’s customers, adding natural gas-fired additions exclusively would, in the long term, create an unbalanced generation portfolio. In 2009, FPL placed into commercial operation two new gas-fired CC units at the West County Energy Center (WCEC) site. A third new CC unit will be added to the WCEC site in 2011. In addition, FPL is currently modernizing its existing Cape Canaveral and Riviera plant sites by removing the steam generating units previously on the sites and replacing them with two highly efficient new CC units, one at each site. These new CC units will provide highly efficient generation that will dramatically improve FPL’s overall system generation efficiency.

In addition, FPL is increasing its utilization of nuclear energy through capacity uprates of its four existing nuclear units. These uprates will add a total of approximately 450 MW of nuclear generation capacity in the 2011 – 2013 time period. (FPL is also pursuing plans to obtain licenses, permits, and approvals to construct and operate two new nuclear units at its existing Turkey Point site that, in total, would add
approximately 2,200 MW of new nuclear generating capacity. The earliest dates by which those new nuclear units could practically be deployed are outside of the ten-year reporting time frame of this document.

In regard to utilizing renewable energy, FPL has added 110 MW of solar generating capacity through a 75 MW solar thermal facility at FPL's existing Martin site, a 25 MW PV facility in DeSoto County, and a 10 MW PV facility in Brevard County. The 25 MW PV facility was placed into commercial operation in 2009. The other two solar facilities were placed into commercial operation in 2010.

FPL's future resource planning work will continue to focus on identifying and evaluating alternatives that would most cost-effectively maintain and/or enhance FPL's long-term fuel diversity. These fuel diverse alternatives may include: the purchase of power from renewable energy facilities, additional FPL-owned renewable energy facilities, obtaining access to diversified sources of natural gas such as liquefied natural gas (LNG) and natural gas from the Mid-Continent unconventional reserves, preserving FPL's ability to utilize fuel oil at its existing units, and increased utilization of nuclear energy. (As previously discussed, new advanced technology coal generating units are not currently considered as viable options in Florida in the ten-year reporting period of this document due, in part, to concerns over greenhouse gas emissions legislation/regulation.) The evaluation of the feasibility and cost-effectiveness of these, and other possible alternatives, will be part of on-going resource planning efforts.

FPL's current use of various fuels to supply energy to customers, plus a projection of this "fuel mix" through 2020 based on the resource plan presented in this document, is presented in Schedules 5, 6.1, and 6.2 later in this chapter.

2. FPL's Fossil Fuel Cost Forecasts

Fossil fuel price forecasts, and the resulting projected price differentials between fuels, are major drivers used in evaluating alternatives for meeting future resource needs. FPL's forecasts are generally consistent with other published contemporary forecasts.

Future oil and natural gas prices, and to a lesser extent, coal and petroleum coke prices, are inherently uncertain due to a significant number of unpredictable and uncontrollable drivers that influence the short-and long-term price of oil, natural gas, coal, and petroleum coke. These drivers include:
a. Current and projected worldwide demand for crude oil and petroleum products;

b. Current and projected worldwide refinery capacity/production;

c. Expected worldwide economic growth, in particular in China, and other Pacific Rim countries;

d. Organization of Petroleum Exporting Countries (OPEC) production, the availability of spare OPEC production capacity and the assumed growth in spare OPEC production capacity;

e. Non-OPEC production and expected growth in non-OPEC production;

f. The geopolitics of the Middle East, West Africa, the Former Soviet Union, Nigeria, Venezuela, etc., as well as, the uncertainty and impact upon worldwide energy consumption related to U. S. and worldwide environmental legislation, politics, etc.;

g. Current and projected North American natural gas demand;

h. Current and projected U.S., Canadian, and Mexican natural gas production;

i. The worldwide supply and demand for LNG; and

j. The growth in solid fuel generation on a U. S. and worldwide basis.

The inherent uncertainty and unpredictability in these factors today and tomorrow clearly underscores the need to develop a set of plausible oil, natural gas, and solid fuel (coal and petroleum coke) price scenarios that will bound a reasonable set of long-term price outcomes. In this light, FPL developed and utilized Low, Medium, and High price forecasts for fossil fuels in some of its 2010 and early 2011 resource planning work, particularly in regard to nuclear cost recovery filing work.

FPL’s Medium price forecast methodology is consistent for oil and natural gas. For oil and natural gas commodity prices, FPL’s Medium price forecast applies the following methodology:

a. For 2011 through 2013, the methodology used the January 14, 2011 forward curve for New York Harbor 1% sulfur heavy oil, U. S. Gulf Coast 1% sulfur heavy oil, ultra low sulfur diesel fuel oil, and Henry Hub natural gas commodity prices;
b. For the next two years (2014 and 2015), FPL used a 50/50 blend of the January 14, 2011 forward curve and the most current projections at the time from The PIRA Energy Group;

c. For the 2016 through 2025 period, FPL used the annual projections from The PIRA Energy Group, and;

d. For the period beyond 2025, FPL used the real rate of escalation provided in the Energy Information Administration (EIA) Annual Energy Outlook 2011 Early Release publication. FPL assumed a 2.5% annual rate of escalation to convert real prices to nominal prices prior to 2025, with no escalation from 2025 forward. In addition to the development of oil and natural gas commodity prices, nominal price forecasts also were prepared for oil and natural gas transportation costs. The addition of commodity and transportation forecasts resulted in delivered price forecasts.

FPL’s Medium price forecast methodology is also consistent for coal and petroleum coke prices. Coal and petroleum coke prices were based upon the following approach:

a. The price forecasts for Central Appalachian coal (CAPP), Powder River Basin (PRB), South American coal, and petroleum coke were provided by JD Energy;

b. The marine transportation rates from the loading port for coal and petroleum coke to an import terminal were also provided by JD Energy;

c. The coal price forecast for SJRPP and Plant Scherer assume the continuation of the existing mine-mouth and transportation contracts until expiration, along with the purchase of spot coal, to meet generation requirements.

The development of FPL’s Low and High price forecasts for oil, natural gas, coal, and petroleum coke prices were based on the historical volatility of the 12-month forward price, one year ahead. FPL developed these forecasts to account for the uncertainty which exists within each commodity as well as across commodities. These forecasts reflect a range of reasonable forecast outcomes.
3. **Nuclear Fuel Cost Forecast**

This section reviews the various steps needed to fabricate nuclear fuel for delivery to the nuclear power plants, the method used to forecast the price for each step, and other comments regarding FPL’s nuclear fuel cost forecast.

**a) Steps Required for Nuclear Fuel to be delivered to FPL’s Plants**

Four separate steps are required before nuclear fuel can be used in a commercial nuclear power reactor. These steps are summarized below.

**(1) Mining:** Uranium is produced in many countries such as Canada, Australia, Kazakhstan, and the United States. During the first step, uranium is mined from the ground using techniques such as open pit mining, underground mining, in-situ leaching operations, or production as a by-product from other mining operations, such as gold, copper, or phosphate rocks. The product from this first step is the raw uranium delivered as an oxide, U3O8 (sometimes referred to as yellowcake).

**(2) Conversion:** During the second step, the U3O8 is chemically converted into UF6 which, when heated, changes into a gaseous state. This second step further removes any chemical impurities and serves as preparation for the third step, which requires uranium to be in a gaseous state.

**(3) Enrichment:** The third step is called enrichment. Natural uranium contains 0.711% of uranium at an atomic mass of 235 (U-235) and 99.289% of uranium at an atomic mass of 238 (U-238). FPL’s nuclear reactors use uranium with a higher percentage of up to five percent (5%) of U-235 atoms. Because natural uranium does not contain a sufficient amount of U-235, the third step increases the percentage amount of U-235 from 0.711% to a level specified when designing the reactor core (typically in a range from approximately 3% to as high as 5%). The output of this enrichment process is enriched uranium in the form of UF6.

**(4) Fabrication:** During the last step, fuel fabrication, the enriched UF6 is changed to a UO2 powder, pressed into pellets, and fed into tubes, which are sealed and bundled together into fuel assemblies. These fuel assemblies are then delivered to the plant site for insertion in a reactor.
Like other utilities, FPL has purchased raw uranium and the other components of the nuclear fuel cycle separately from numerous suppliers from different countries.

b) Price Forecasts for Each Step

(1) Mining: There is some volatility in the current uranium market. Current demand continues to be rather stable and outputs from production facilities have been increasing steadily. The following are the current major contributors that led to some volatility in the prices for uranium:

- Hedge funds are now back in the market, now that the recent financial crisis is resolving itself. This causes more speculative demand, not tied to market fundamentals, and causes the market price to move according to news potentially affecting potential future supply/demand balance, or news regarding current suppliers.

- The large inventory from the U.S. Department of Energy (DOE) is being withheld from the market due to political pressure from suppliers. Some of this uranium finds its way into the market periodically to fund cleanup of certain Department of Energy facilities.

- The U.S. Department of Commerce (DOC) has imposed restrictions on the import of nuclear fuel from France and Russia.

- Although a limited number of new nuclear units is scheduled to start production in the US during the next 5 to 10 years, other countries, more specifically China, has announced a significant increase in construction of new units which has caused short term increase in uranium market price.

Over a 10 year horizon, FPL expects the market to be more consistent with market fundamentals. The supply picture is more stable, with laws enacted to resolve the import of Russian-enriched uranium, by allowing some imports of Russian-enriched uranium to about 20-25% of needs for currently operating units, but with no restriction on the first core for new units and no restrictions after 2020. New and current facilities continue to add capacity to meet demands. Actual demand tends to grow over time because of the long lead time to build nuclear units. However, FPL cannot discount the possibility of future periodic sharp increase in prices, but believes such occurrences will likely be temporary in nature.
FPL's nuclear fuel price forecasts are the result of FPL's analysis based on inputs from various nuclear fuel market expert reports and studies.

(2) **Conversion:** FPL’s price forecast considers the construction of new nuclear units. Just like for raw uranium, an increase in demand for conversion services would result from this need. Insufficient planned production is currently forecasted after 2013 to meet the higher demand scenario. As with additional raw uranium production, supply will expand beyond current level once more firm commitments are made including commitments to building new nuclear units.

(3) **Enrichment:** With no new production capacity, the current tight market supply for economically produced enrichment services will continue until 2013. The current diffusion plants, which use significant amount of electricity, can make up any gaps in supply of enrichment services now that prices for electricity have decreased. In addition, there are a number of new facilities coming on-line through 2013, using more efficient and proven processes such as the use of centrifuges for enrichment of uranium. As with supply for the other steps of the nuclear fuel cycle, expansion of future capacity is feasible within the lead time for constructing new nuclear units and any other projected increase in demand. Meanwhile, world supply and demand will continue to be balanced such that FPL expects adequate supply of enrichment services. The tight supply/demand will most likely causes the price of enrichment services to continue to rise in the future.

(4) **Fabrication:** Because the nuclear fuel fabrication process is highly regulated by the Nuclear Regulatory Commission (NRC), not all production facilities can qualify as suppliers to nuclear reactors in the U.S. Although world supply and demand is expected to show significant excess capacity for the foreseeable future, the gap is not as wide for U.S. supply and demand. The supply for the U.S. market is expected to be sufficient to meet U.S. demand for the foreseeable future.

c) **Other Comments Regarding FPL’s Nuclear Fuel Cost Forecast**

The calculations for the nuclear fuel cost forecasts used in FPL’s 2010 and early 2011 resource planning work were performed consistent with the method then used for FPL’s Fuel Clause filings, including the assumption of refueling outages every 18 months. The costs for each step to fabricate the nuclear fuels were...
added to come up with the total costs of the fresh fuel to be loaded at each refueling (acquisition costs). The acquisition cost for each group of fresh fuel assemblies were then amortized over the energy produced by each group of fuel assemblies. FPL also added 1 mill per kilowatt hour net to reflect payment to DOE for spent fuel disposal.
## Schedule 6
### Fuel Requirements (for PPL only)

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<td>Trillion BTU</td>
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<td>250</td>
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<td></td>
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<tr>
<td>(2) Coal</td>
<td>1,000 TON</td>
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<tr>
<td>(3) Residual (FD6) Total</td>
<td>1,000 BBL</td>
<td>7,489</td>
<td>6,754</td>
<td>2,489</td>
<td>1,455</td>
<td>845</td>
<td>712</td>
<td>907</td>
<td>1,066</td>
<td>1,256</td>
<td>1,213</td>
<td>1,378</td>
</tr>
<tr>
<td>(4) Steam</td>
<td>1,000 BBL</td>
<td>7,489</td>
<td>6,754</td>
<td>2,489</td>
<td>1,455</td>
<td>845</td>
<td>712</td>
<td>907</td>
<td>1,066</td>
<td>1,256</td>
<td>1,213</td>
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<tr>
<td>(5) Distillate (FO2) Total</td>
<td>1,000 BBL</td>
<td>47</td>
<td>522</td>
<td>121</td>
<td>2</td>
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<td>0</td>
<td>15</td>
<td>19</td>
<td>71</td>
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<td>(6) Steam</td>
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<td>0</td>
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<td>(7) CC</td>
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<td>194</td>
<td>100</td>
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<td>4</td>
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<td>324</td>
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<td>15</td>
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<td>71</td>
<td>47</td>
<td>63</td>
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<tr>
<td>(9) Natural Gas - Total</td>
<td>1,000 MCF</td>
<td>461,429</td>
<td>504,395</td>
<td>529,819</td>
<td>542,420</td>
<td>505,993</td>
<td>539,782</td>
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<td>11,609</td>
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<td>728</td>
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<td>1,048</td>
<td>2,180</td>
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1/ Source: A Schedules.

Note: Solar contributions are provided on Schedules 6.1 and 6.2.
### Schedule 6.1
Energy Sources

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<td>(1) Annual Energy Exchange 2)</td>
<td>GWH</td>
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<td>8,333</td>
<td>5,797</td>
<td>5,947</td>
<td>5,274</td>
<td>5,163</td>
<td>5,062</td>
<td>1,728</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>(2) Nuclear</td>
<td>GWH</td>
<td>22,893</td>
<td>22,856</td>
<td>20,758</td>
<td>19,718</td>
<td>25,388</td>
<td>26,720</td>
<td>26,406</td>
<td>26,587</td>
<td>26,981</td>
<td>26,591</td>
<td>26,491</td>
<td>27,058</td>
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<tr>
<td>(3) Coal</td>
<td>GWH</td>
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<td>5,721</td>
<td>6,736</td>
<td>6,230</td>
<td>7,446</td>
<td>6,903</td>
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<td>(4) Residual(FO6) -Total</td>
<td>GWH</td>
<td>4,560</td>
<td>4,081</td>
<td>1,627</td>
<td>964</td>
<td>559</td>
<td>467</td>
<td>602</td>
<td>704</td>
<td>829</td>
<td>801</td>
<td>999</td>
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<tr>
<td>(5) Steam</td>
<td>GWH</td>
<td>4,560</td>
<td>4,081</td>
<td>1,627</td>
<td>964</td>
<td>559</td>
<td>467</td>
<td>602</td>
<td>704</td>
<td>829</td>
<td>801</td>
<td>999</td>
<td>520</td>
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<tr>
<td>(6) Distillate(FO2) -Total</td>
<td>GWH</td>
<td>21</td>
<td>279</td>
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<td>(7) Steam</td>
<td>GWH</td>
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<td>2</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>(8) CC</td>
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<td>143</td>
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<td>4</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>(9) CT</td>
<td>GWH</td>
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<td>134</td>
<td>9</td>
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<td>0</td>
<td>5</td>
<td>6</td>
<td>25</td>
<td>15</td>
<td>20</td>
<td>1</td>
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<tr>
<td>(10) Natural Gas -Total</td>
<td>GWH</td>
<td>62,728</td>
<td>68,771</td>
<td>73,272</td>
<td>75,939</td>
<td>71,971</td>
<td>77,352</td>
<td>78,200</td>
<td>83,199</td>
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<td>88,496</td>
<td>90,768</td>
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<tr>
<td>(11) Steam</td>
<td>GWH</td>
<td>8,795</td>
<td>5,041</td>
<td>3,984</td>
<td>2,711</td>
<td>1,365</td>
<td>1,134</td>
<td>1,347</td>
<td>1,655</td>
<td>1,894</td>
<td>1,838</td>
<td>2,087</td>
<td>1,935</td>
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<tr>
<td>(12) CC</td>
<td>GWH</td>
<td>53,636</td>
<td>61,304</td>
<td>65,166</td>
<td>73,151</td>
<td>70,549</td>
<td>76,174</td>
<td>76,179</td>
<td>81,464</td>
<td>83,071</td>
<td>85,651</td>
<td>86,244</td>
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<td>44</td>
<td>56</td>
<td>81</td>
<td>153</td>
<td>126</td>
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<td>(14) Solar 3)</td>
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<td>226</td>
<td>225</td>
<td>225</td>
<td>224</td>
<td>224</td>
<td>222</td>
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<tr>
<td>(15) PV</td>
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<td>73</td>
<td>73</td>
<td>72</td>
<td>71</td>
<td>71</td>
<td>71</td>
<td>70</td>
<td>68</td>
<td>69</td>
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<td>(16) Solar Thermal 4)</td>
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<td>155</td>
<td>154</td>
<td>154</td>
<td>154</td>
<td>154</td>
<td>153</td>
<td>153</td>
<td>152</td>
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<tr>
<td>(17) Other 5)</td>
<td>GWH</td>
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<td>6,539</td>
<td>2,663</td>
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<td>3,780</td>
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<td>5,850</td>
<td>6,239</td>
<td>6,636</td>
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<td>Net Energy For Load 6)</td>
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<td>114,373</td>
<td>111,176</td>
<td>112,517</td>
<td>114,847</td>
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<td>127,200</td>
<td>128,910</td>
<td>130,679</td>
<td>133,121</td>
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</table>

1) Source: A Schedules
2) The projected figures are based on estimated energy purchases from JRRPP and the Southern Companies (LPS contract).
3) Represents output from FPL's PV and solar thermal facilities.
4) Estimated projected values. Solar thermal does not produce GWH, but produces steam that displaces fossil fuel-derived steam. Actual solar thermal contribution for 2010 was relatively small due to the fact that the facility did not begin commercial operation until late 2010. Its 2010 contribution to the Meridian II CC GWH output is rolled into row (12) for reporting purposes. Its projected contributions for 2011 - 2020 are provided separately on row (16).
5) Represents a forecast of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, net of Economy and other Power Sales.
6) Net Energy For Load values for the years 2011 - 2020 are also shown in Schedule 2.3.
### Schedule 6.2
Energy Sources % by Fuel Type

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<tr>
<td>(1) Annual Energy Interchange</td>
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<td>6.2</td>
<td>5.2</td>
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<td>4.3</td>
<td>4.4</td>
<td>1.4</td>
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<tr>
<td>(2) Nuclear</td>
<td>%</td>
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<td>17.5</td>
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<td>22.1</td>
<td>21.4</td>
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<td>21.2</td>
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<td>20.3</td>
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<tr>
<td>(3) Coal</td>
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<td>6.1</td>
<td>5.5</td>
<td>6.5</td>
<td>6.7</td>
<td>6.0</td>
<td>5.5</td>
<td>5.8</td>
<td>5.3</td>
<td>5.7</td>
<td>5.2</td>
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<tr>
<td>(4) Residual (FOB) -Total</td>
<td>%</td>
<td>4.1</td>
<td>3.6</td>
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<td>0.9</td>
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<td>0.4</td>
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<td>0.7</td>
<td>0.8</td>
<td>0.7</td>
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<tr>
<td>(5) Steam</td>
<td>%</td>
<td>4.1</td>
<td>3.6</td>
<td>1.5</td>
<td>0.9</td>
<td>0.5</td>
<td>0.4</td>
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<td>0.7</td>
<td>0.8</td>
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<tr>
<td>(7) Steam</td>
<td>%</td>
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<tr>
<td>(8) CC</td>
<td>%</td>
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<td>0.1</td>
<td>0.1</td>
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<tr>
<td>(9) CT</td>
<td>%</td>
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<td>0.1</td>
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<td>0.0</td>
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<tr>
<td>(10) Natural Gas -Total</td>
<td>%</td>
<td>56.4</td>
<td>58.4</td>
<td>65.9</td>
<td>67.5</td>
<td>62.8</td>
<td>63.9</td>
<td>63.3</td>
<td>66.2</td>
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<td>67.7</td>
<td>68.2</td>
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<tr>
<td>(11) Steam</td>
<td>%</td>
<td>7.8</td>
<td>4.4</td>
<td>3.6</td>
<td>2.4</td>
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<td>1.3</td>
<td>1.5</td>
<td>1.4</td>
<td>1.6</td>
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<tr>
<td>(12) CC</td>
<td>%</td>
<td>48.2</td>
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<td>62.2</td>
<td>65.0</td>
<td>61.5</td>
<td>62.9</td>
<td>62.1</td>
<td>64.9</td>
<td>65.3</td>
<td>66.4</td>
<td>66.6</td>
<td>66.7</td>
<td></td>
</tr>
<tr>
<td>(13) CT</td>
<td>%</td>
<td>0.3</td>
<td>0.4</td>
<td>0.1</td>
<td>0.1</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>(14) Solar</td>
<td>%</td>
<td>0.0</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>(15) PV</td>
<td>%</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>(16) Solar Thermal</td>
<td>%</td>
<td>0.0</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>(17) Other</td>
<td>%</td>
<td>4.7</td>
<td>5.5</td>
<td>2.4</td>
<td>3.1</td>
<td>3.3</td>
<td>3.5</td>
<td>4.6</td>
<td>5.0</td>
<td>6.2</td>
<td>5.3</td>
<td>5.5</td>
<td>5.5</td>
<td></td>
</tr>
</tbody>
</table>

1/ Source: A Schedules
2/ The projected figures are based on estimated energy purchases from SRPP and the Southern Companies (UPS contract).
3/ Represents output from FPL’s PV and solar thermal facilities.
4/ Estimated projected values. Solar thermal does not produce GWh, but produces steam that displaces fossil fuel-derived steam.
   Actual solar thermal contribution for 2010 was relatively small due to the fact that the facility did not begin commercial operation until late 2010. Its 2010 contribution to the Martin 8 CC GWh output is rolled into row (12) for reporting purposes. Its projected contributions for 2011 - 2020 are provided separately on row (16).
5/ Represents a forecast of energy expected to be purchased from Qualifying Facilities, Independent Power Producers, net of
   Ecomerch and other Power Sales.
6/ Net Energy For Load values for the years 2011 - 2020 are also shown in Schedule 2.3.
### Schedule 7.1
**Forecast of Capacity, Demand, and Scheduled Maintenance At Time Of Summer Peak**

<table>
<thead>
<tr>
<th>August of Year</th>
<th>Capacity Installed</th>
<th>Capacity Import</th>
<th>Available QF</th>
<th>Summer Peak</th>
<th>DSM Demand</th>
<th>Maintenance Before</th>
<th>Maintenance After</th>
<th>Total Firm Firm</th>
<th>Total Firm Capacity</th>
<th>Firm Capacity Peak</th>
<th>Firm Capacity Margin Before Maintenance</th>
<th>Firm Capacity Margin After Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>22,462</td>
<td>1,461</td>
<td>0</td>
<td>595</td>
<td>24,518</td>
<td>21,679</td>
<td>1,981</td>
<td>19,698</td>
<td>4,819</td>
<td>24.5</td>
<td>350</td>
<td>4,469</td>
</tr>
<tr>
<td>2012</td>
<td>23,437</td>
<td>1,306</td>
<td>0</td>
<td>650</td>
<td>25,393</td>
<td>21,853</td>
<td>2,141</td>
<td>19,712</td>
<td>5,681</td>
<td>28.8</td>
<td>1,064</td>
<td>4,817</td>
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<tr>
<td>2013</td>
<td>24,105</td>
<td>1,306</td>
<td>0</td>
<td>650</td>
<td>26,061</td>
<td>22,155</td>
<td>2,317</td>
<td>19,838</td>
<td>6,223</td>
<td>31.4</td>
<td>1,176</td>
<td>5,047</td>
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<tr>
<td>2014</td>
<td>25,317</td>
<td>1,306</td>
<td>0</td>
<td>650</td>
<td>27,273</td>
<td>23,452</td>
<td>2,534</td>
<td>20,918</td>
<td>6,354</td>
<td>30.4</td>
<td>1,176</td>
<td>5,178</td>
</tr>
<tr>
<td>2015</td>
<td>25,317</td>
<td>1,306</td>
<td>0</td>
<td>740</td>
<td>27,363</td>
<td>24,172</td>
<td>2,710</td>
<td>21,462</td>
<td>5,900</td>
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<td>350</td>
<td>5,550</td>
</tr>
<tr>
<td>2016</td>
<td>26,508</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>27,248</td>
<td>24,605</td>
<td>2,671</td>
<td>21,734</td>
<td>5,514</td>
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<td>350</td>
<td>5,164</td>
</tr>
<tr>
<td>2017</td>
<td>26,508</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>27,248</td>
<td>25,026</td>
<td>3,016</td>
<td>22,009</td>
<td>5,239</td>
<td>23.8</td>
<td>350</td>
<td>4,889</td>
</tr>
<tr>
<td>2018</td>
<td>26,508</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>27,248</td>
<td>25,266</td>
<td>3,149</td>
<td>22,117</td>
<td>5,130</td>
<td>23.2</td>
<td>350</td>
<td>4,760</td>
</tr>
<tr>
<td>2019</td>
<td>26,508</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>27,248</td>
<td>25,650</td>
<td>3,271</td>
<td>22,419</td>
<td>4,828</td>
<td>21.5</td>
<td>350</td>
<td>4,478</td>
</tr>
<tr>
<td>2020</td>
<td>27,690</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>28,439</td>
<td>26,193</td>
<td>3,771</td>
<td>22,622</td>
<td>5,616</td>
<td>24.6</td>
<td>350</td>
<td>5,266</td>
</tr>
</tbody>
</table>

Col. (2) represents capacity additions and changes projected to be in-service by June 1st. These MWs are generally considered to be available to meet Summer peak loads which are forecasted to occur during August of the year indicated.

Col. (6) = Col.(2) + Col.(3) - Col.(4) + Col.(5).

Col. (7) reflects the 2011 load forecast without incremental DSM or cumulative load management.

Col. (8) represents cumulative load management capability, plus incremental conservation, from 1/2011-on intended for use with the 2011 load forecast.

Col. (10) = Col. (6) - Col. (9)

Col. (11) = Col.(10) / Col.(9)

Col. (12) indicates the capacity of units projected to be out-of-service for planned maintenance during the Summer peak period. This value is comprised of: (i) an assumed value of 350 MW on average of capacity that will be out-of-service for planned maintenance during the Summer months for all years; (ii) an additional 714 MW (at St. Lucie 2) of nuclear capacity that will be out-of-service during part of Summer in 2012 due to an extended planned outage as part of the capacity uprates project; and (iii) an additional 826 MW of fossil-fueled capacity that will be out-of-service in the Summer of 2013 (at Martin 1) and in the Summer of 2014 (at Martin 2) due to the installation of electrostatic precipitators.

Col. (13) = Col. (10) - Col. (12)

Col. (14) = Col.(13) / Col.(9)
Schedule 7.2
Forecast of Capacity, Demand, and Scheduled Maintenance At Time of Winter Peak

<table>
<thead>
<tr>
<th>Year</th>
<th>Installed Capacity MW</th>
<th>Firm Capacity MW</th>
<th>Peak Demand MW</th>
<th>Winter Margin Before Maintenance MW</th>
<th>Scheduled Maintenance MW</th>
<th>Winter Margin After Maintenance MW</th>
<th>% of Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>23,987</td>
<td>1,494</td>
<td>26,076</td>
<td>1,711</td>
<td>19,732</td>
<td>6,343</td>
<td>32.1</td>
</tr>
<tr>
<td>2012</td>
<td>24,400</td>
<td>1,494</td>
<td>26,489</td>
<td>1,802</td>
<td>19,889</td>
<td>6,799</td>
<td>34.5</td>
</tr>
<tr>
<td>2013</td>
<td>23,959</td>
<td>1,314</td>
<td>25,923</td>
<td>1,909</td>
<td>19,774</td>
<td>6,148</td>
<td>31.1</td>
</tr>
<tr>
<td>2014</td>
<td>25,423</td>
<td>1,314</td>
<td>27,387</td>
<td>2,065</td>
<td>20,519</td>
<td>6,868</td>
<td>33.5</td>
</tr>
<tr>
<td>2015</td>
<td>26,767</td>
<td>1,314</td>
<td>28,731</td>
<td>2,182</td>
<td>20,866</td>
<td>7,864</td>
<td>37.7</td>
</tr>
<tr>
<td>2016</td>
<td>26,767</td>
<td>383</td>
<td>28,858</td>
<td>2,288</td>
<td>21,014</td>
<td>7,846</td>
<td>32.7</td>
</tr>
<tr>
<td>2017</td>
<td>28,118</td>
<td>0</td>
<td>28,858</td>
<td>2,382</td>
<td>21,161</td>
<td>7,696</td>
<td>36.4</td>
</tr>
<tr>
<td>2018</td>
<td>28,118</td>
<td>0</td>
<td>28,858</td>
<td>2,464</td>
<td>21,330</td>
<td>7,527</td>
<td>35.3</td>
</tr>
<tr>
<td>2019</td>
<td>28,118</td>
<td>0</td>
<td>28,858</td>
<td>2,536</td>
<td>21,506</td>
<td>7,350</td>
<td>34.2</td>
</tr>
<tr>
<td>2020</td>
<td>28,118</td>
<td>0</td>
<td>28,858</td>
<td>2,606</td>
<td>21,709</td>
<td>7,148</td>
<td>32.9</td>
</tr>
</tbody>
</table>

Col. (2) represents capacity additions and changes projected to be in-service by January 1st. These MWs are generally considered to be available to meet winter peak loads which are forecasted to occur during January of the year indicated.


Col. (7) reflects the 2011 load forecast without incremental DSM or cumulative load management.

Col. (8) represents cumulative load management capability, plus incremental conservation, from 1/2011-on intended for use with the 2011 load forecast.

Col. (10) = Col. (6) - Col. (9)

Col. (11) = Col.(10) / Col.(9)

Col. (12) indicates the capacity of units projected to be out-of-service for planned maintenance during the Winter peak period. This value is comprised of: (i) an assumed value of 550 MW on average of capacity that will be out-of-service for planned maintenance during the Winter months for all years; (ii) an additional 726 MW at St. Lucie 2 of nuclear capacity that will be out-of-service in Winter of 2011 due to an extended planned outage as part of the capacity uprates project; (iii) an additional 1,570 MW (853 MW at St. Lucie 1 and 717 MW at Turkey Point 3) of nuclear capacity that will be out-of-service during part of the Winter of 2012 due to extended planned outages as part of the capacity uprates project; (iv) an additional 822 MW that will be out-of-service in the Winter of 2012 (at Manatee 2) and in the Winter of 2013 (at Manatee 1) due to the installation of electrostatic precipitators; and (v) an additional 832 MW (at Martin 1) that will be out-of-service during the Winter of 2014 due to the installation of electrostatic precipitators.

Col. (13) = Col. (10) - Col. (12)

Col. (14) = Col.(13) / Col.(9)
### Schedule 7.3

**Projection of Generation - Only Reserves**

At Time Of Summer Peak (Assuming No 2016 or 2020 Generation Additions)

<table>
<thead>
<tr>
<th>August Year</th>
<th>Installed Capacity Firm MW</th>
<th>Import Capacity Firm MW</th>
<th>Export Capacity Firm MW</th>
<th>Total Firm Capacity MW</th>
<th>Available Demand QF MW</th>
<th>DSM Demand MW</th>
<th>Maintenance MW</th>
<th>% of Peak</th>
<th>Reserve Summer MW</th>
<th>Peak Margin Before Scheduled MW</th>
<th>Maintenance MW</th>
<th>Margin After Maintenance MW</th>
<th>% of Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>22,462</td>
<td>1,481</td>
<td>0</td>
<td>595</td>
<td>24,518</td>
<td>21,679</td>
<td>0</td>
<td>21,679</td>
<td>2,839</td>
<td>13.1</td>
<td>350</td>
<td>2,489</td>
<td>11.5</td>
</tr>
<tr>
<td>2012</td>
<td>23,437</td>
<td>1,306</td>
<td>0</td>
<td>650</td>
<td>25,393</td>
<td>21,853</td>
<td>0</td>
<td>21,853</td>
<td>3,540</td>
<td>16.2</td>
<td>1,064</td>
<td>2,476</td>
<td>11.3</td>
</tr>
<tr>
<td>2013</td>
<td>24,105</td>
<td>1,306</td>
<td>0</td>
<td>650</td>
<td>26,061</td>
<td>22,155</td>
<td>0</td>
<td>22,155</td>
<td>3,906</td>
<td>17.6</td>
<td>1,176</td>
<td>2,730</td>
<td>12.3</td>
</tr>
<tr>
<td>2014</td>
<td>26,317</td>
<td>1,306</td>
<td>0</td>
<td>650</td>
<td>27,273</td>
<td>23,452</td>
<td>0</td>
<td>23,452</td>
<td>3,821</td>
<td>16.3</td>
<td>1,176</td>
<td>2,645</td>
<td>11.3</td>
</tr>
<tr>
<td>2015</td>
<td>26,317</td>
<td>1,306</td>
<td>0</td>
<td>740</td>
<td>27,363</td>
<td>24,172</td>
<td>0</td>
<td>24,172</td>
<td>3,191</td>
<td>13.2</td>
<td>350</td>
<td>2,841</td>
<td>11.8</td>
</tr>
<tr>
<td>2016</td>
<td>26,317</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>26,057</td>
<td>24,605</td>
<td>0</td>
<td>24,605</td>
<td>1,452</td>
<td>5.9</td>
<td>350</td>
<td>1,102</td>
<td>4.5</td>
</tr>
<tr>
<td>2017</td>
<td>26,317</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>26,057</td>
<td>25,025</td>
<td>0</td>
<td>25,025</td>
<td>1,032</td>
<td>4.1</td>
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<td>2.7</td>
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<tr>
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<td>0</td>
<td>740</td>
<td>26,057</td>
<td>25,256</td>
<td>0</td>
<td>25,256</td>
<td>791</td>
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<td>441</td>
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<td>740</td>
<td>26,057</td>
<td>25,690</td>
<td>0</td>
<td>25,690</td>
<td>367</td>
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<td>0.1</td>
</tr>
<tr>
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<td>0</td>
<td>740</td>
<td>26,057</td>
<td>26,193</td>
<td>0</td>
<td>26,193</td>
<td>(137)</td>
<td>(0.5)</td>
<td>350</td>
<td>(487)</td>
<td>(1.9)</td>
</tr>
</tbody>
</table>

Col. (2) represents capacity additions and changes, assuming no generation additions in 2016 or 2020.

Col. (6) = Col.(2) + Col.(3) - Col.(4) + Col.(5).

Col. (7) reflects the 2011 load forecast without incremental DSM or cumulative load management.

Col. (8) shows zero contribution from DSM in order to calculate FPL's reserves that are supplied only by generation resources.

Col. (10) = Col. (8) / Col. (9)

Col. (11) = Col.(10) / Col.(9)

Col. (12) indicates the capacity of units projected to be out-of-service for planned maintenance during the Summer peak period. This value is comprised of: (i) an assumed value of 350 MW on average of capacity that will be out-of-service for planned maintenance during the Summer months for all years; (ii) an additional 714 MW (at St. Lucie 2) of nuclear capacity that will be out-of-service during part of Summer in 2012 due to an extended planned outage as part of the capacity uprates project; and (iii) an additional 826 MW of fossil-fueled capacity that will be out-of-service in the Summer of 2013 (at Martin 1) and in the Summer of 2014 (at Martin 2) due to the installation of electrostatic precipitators.

Col. (13) = Col. (10) - Col. (12)

Col. (14) = Col.(13) / Col.(9)
### Schedule 7.4

**Projection of Generation - Only Reserves**

At Time Of Summer Peak (Assuming 2016 and 2020 CC Generation Additions)

<table>
<thead>
<tr>
<th>August of</th>
<th>Installed Capacity</th>
<th>Capacity</th>
<th>Firm Capacity</th>
<th>QF Available</th>
<th>Demand</th>
<th>DSM Demand</th>
<th>Maintenance</th>
<th>Maintenance</th>
<th>Margin Before</th>
<th>Scheduled</th>
<th>Reserve Margin After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>MW</td>
<td>% of Peak</td>
<td>MW</td>
<td>% of Peak</td>
</tr>
<tr>
<td>2011</td>
<td>22,462</td>
<td>1,461</td>
<td>0</td>
<td>595</td>
<td>24,518</td>
<td>21,879</td>
<td>21,879</td>
<td>2,839</td>
<td>13.1</td>
<td>350</td>
<td>2,489</td>
</tr>
<tr>
<td>2012</td>
<td>23,437</td>
<td>1,306</td>
<td>0</td>
<td>650</td>
<td>25,383</td>
<td>21,853</td>
<td>21,853</td>
<td>3,540</td>
<td>16.2</td>
<td>1,064</td>
<td>2,476</td>
</tr>
<tr>
<td>2013</td>
<td>24,105</td>
<td>1,306</td>
<td>0</td>
<td>650</td>
<td>26,061</td>
<td>22,155</td>
<td>22,155</td>
<td>3,906</td>
<td>17.6</td>
<td>1,176</td>
<td>2,730</td>
</tr>
<tr>
<td>2014</td>
<td>25,317</td>
<td>1,306</td>
<td>0</td>
<td>650</td>
<td>27,273</td>
<td>23,452</td>
<td>23,452</td>
<td>3,821</td>
<td>16.3</td>
<td>1,176</td>
<td>2,645</td>
</tr>
<tr>
<td>2015</td>
<td>25,317</td>
<td>1,306</td>
<td>0</td>
<td>740</td>
<td>27,363</td>
<td>24,172</td>
<td>24,172</td>
<td>3,191</td>
<td>13.2</td>
<td>350</td>
<td>2,841</td>
</tr>
<tr>
<td>2016</td>
<td>26,508</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>27,248</td>
<td>24,605</td>
<td>24,605</td>
<td>2,643</td>
<td>10.7</td>
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<td>2,293</td>
</tr>
<tr>
<td>2017</td>
<td>26,508</td>
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<td>0</td>
<td>740</td>
<td>27,248</td>
<td>25,025</td>
<td>25,025</td>
<td>2,223</td>
<td>8.9</td>
<td>350</td>
<td>1,873</td>
</tr>
<tr>
<td>2018</td>
<td>26,508</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>27,248</td>
<td>25,266</td>
<td>25,266</td>
<td>1,982</td>
<td>7.8</td>
<td>350</td>
<td>1,632</td>
</tr>
<tr>
<td>2019</td>
<td>26,508</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>27,248</td>
<td>25,660</td>
<td>25,660</td>
<td>1,558</td>
<td>6.1</td>
<td>350</td>
<td>1,206</td>
</tr>
<tr>
<td>2020</td>
<td>27,899</td>
<td>0</td>
<td>0</td>
<td>740</td>
<td>26,439</td>
<td>26,193</td>
<td>26,193</td>
<td>2,246</td>
<td>8.6</td>
<td>350</td>
<td>1,896</td>
</tr>
</tbody>
</table>

Col. (1) represents capacity additions and changes, assuming one CC unit is added in 2016 and one CC unit is added in 2020.

Col. (2) = Col. (2) + Col. (3) - Col. (4) + Col. (5).

Col. (7) reflects the 2011 load forecast without incremental DSM or cumulative load management.

Col. (8) shows zero contribution from DSM in order to calculate FPL’s reserves that are supplied only by generation resources.

Col. (10) = Col. (6) - Col. (9)

Col. (11) = Col. (10) / Col. (9)

Col. (12) indicates the capacity of units projected to be out-of-service for planned maintenance during the Summer peak period. This value is comprised of: (i) an assumed value of 350 MW on average of capacity that will be out-of-service for planned maintenance during the Summer months for all years; (ii) an additional 714 MW (at St. Lucie 2) of nuclear capacity that will be out-of-service during part of Summer in 2012 due to an extended planned outage as part of the capacity uprates project; and (iii) an additional 826 MW of fossil-fueled capacity that will be out-of-service in the Summer of 2013 (at Martin 1) and in the Summer of 2014 (at Martin 2) due to the installation of electrostatic precipitators.

Col. (13) = Col. (10) - Col. (12)

Col. (14) = Col. (13) / Col. (9)
### Schedule 8
Planned And Prospective Generating Facility Additions And Changes

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Unit No.</th>
<th>Unit Location</th>
<th>Fuel Type</th>
<th>Fuel Transport</th>
<th>Const. Start</th>
<th>In-Service Start</th>
<th>Retirement Date</th>
<th>Unit Name</th>
<th>Unit Capacity (MW)</th>
<th>Winter MW</th>
<th>Summer MW</th>
<th>Status</th>
</tr>
</thead>
</table>

#### 2011

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Unit No.</th>
<th>Unit Location</th>
<th>Fuel Type</th>
<th>Fuel Transport</th>
<th>Const. Start</th>
<th>In-Service Start</th>
<th>Retirement Date</th>
<th>Unit Name</th>
<th>Unit Capacity (MW)</th>
<th>Winter MW</th>
<th>Summer MW</th>
<th>Status</th>
</tr>
</thead>
</table>

- **St. Lucie (Florida)**
  - 2: St. Lucie County, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 723,776
  - 17
  - OT

- **Broward**
  - 3: City of Fort Lauderdale, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 510,420
  - 277
  - OT

- **Schenectady**
  - 4: City of Schenectady, NY, USA
  - No TK, No
  - As of 11: Unknown
  - 315,450
  - 239
  - OT

- **Westchester Energy Center**
  - 2: City of Westchester, NY, USA
  - No TK, No
  - As of 11: Unknown
  - 880,502
  - 28
  - OT

- **West Palm Beach Energy Center**
  - 5: Palm Beach County, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 1,364,930
  - 12
  - OT

#### 2012

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Unit No.</th>
<th>Unit Location</th>
<th>Fuel Type</th>
<th>Fuel Transport</th>
<th>Const. Start</th>
<th>In-Service Start</th>
<th>Retirement Date</th>
<th>Unit Name</th>
<th>Unit Capacity (MW)</th>
<th>Winter MW</th>
<th>Summer MW</th>
<th>Status</th>
</tr>
</thead>
</table>

- **Broward**
  - 3: City of Fort Lauderdale, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 315,420
  - 28
  - OT

- **Schenectady**
  - 4: City of Schenectady, NY, USA
  - No TK, No
  - As of 11: Unknown
  - 510,420
  - 277
  - OT

- **St. Lucie (Florida)**
  - 2: St. Lucie County, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 723,776
  - 17
  - OT

- **Schenectady**
  - 4: City of Schenectady, NY, USA
  - No TK, No
  - As of 11: Unknown
  - 315,450
  - 239
  - OT

- **Westchester Energy Center**
  - 2: City of Westchester, NY, USA
  - No TK, No
  - As of 11: Unknown
  - 880,502
  - 28
  - OT

- **West Palm Beach Energy Center**
  - 5: Palm Beach County, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 1,364,930
  - 12
  - OT

#### 2013

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Unit No.</th>
<th>Unit Location</th>
<th>Fuel Type</th>
<th>Fuel Transport</th>
<th>Const. Start</th>
<th>In-Service Start</th>
<th>Retirement Date</th>
<th>Unit Name</th>
<th>Unit Capacity (MW)</th>
<th>Winter MW</th>
<th>Summer MW</th>
<th>Status</th>
</tr>
</thead>
</table>

- **St. Lucie (Florida)**
  - 2: St. Lucie County, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 723,776
  - 17
  - OT

- **Schenectady**
  - 4: City of Schenectady, NY, USA
  - No TK, No
  - As of 11: Unknown
  - 315,450
  - 239
  - OT

- **Cape Canaveral Reed Generation Clean Energy Center**
  - 1: Brevard County, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 1,280,783
  - 1280/703
  - T

- **South Florida Utilities**
  - 2: St. Lucie County, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 723,776
  - 83
  - T

- **Turkey Point (Upgraded)**
  - 3: Miami Dade County, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 769,900
  - 109
  - T

- **West Palm Beach Energy Center**
  - 5: Palm Beach County, FL, USA
  - No TK, No
  - As of 11: Unknown
  - 1,364,930
  - 12
  - OT

#### References

1. The Winter Total MW value consists of all generation additions and changes achieved by January. The Summer Total MW value consists of all generation additions and changes achieved by June. All MW additions/changes occurring later in the year will be plotted up for recording/leaving purposes in the following year.

2. The nuclear codes will be performed during the extended outage for each unit.

Florida Power & Light Company 98
### Schedule B
Planned And Prospective Generating Facility Additions And Changes

<table>
<thead>
<tr>
<th>Unit No.</th>
<th>Location</th>
<th>Type</th>
<th>Fuel</th>
<th>Transport</th>
<th>Start</th>
<th>In-Service</th>
<th>Retirement</th>
<th>Gen. Mw</th>
<th>RPM</th>
<th>Net Mw</th>
<th>Net Capacity (%)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>Turkey Hill Limestone, FL</td>
<td>N1</td>
<td>UC</td>
<td>No</td>
<td>No</td>
<td>—</td>
<td>—</td>
<td>Unknown</td>
<td>1,180</td>
<td>1,180</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1</td>
<td>Indian Harbour</td>
<td>N1</td>
<td>UC</td>
<td>No</td>
<td>No</td>
<td>—</td>
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<td>1,180</td>
<td>1,180</td>
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<td>—</td>
</tr>
<tr>
<td>1</td>
<td>Riviera Beach Reservoir</td>
<td>C1</td>
<td>NG</td>
<td>FC2</td>
<td>FL</td>
<td>Jun-11</td>
<td>Jun-13</td>
<td>Unknown</td>
<td>1,180</td>
<td>1,180</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1</td>
<td>Riviera Beach Reservoir</td>
<td>C1</td>
<td>NG</td>
<td>FC2</td>
<td>FL</td>
<td>Jun-12</td>
<td>Jun-14</td>
<td>Unknown</td>
<td>1,180</td>
<td>1,180</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2015</td>
<td>Unavailable Set H Combined Cycle 1</td>
<td>CC</td>
<td>NG</td>
<td>FC2</td>
<td>FL</td>
<td>Jul-13</td>
<td>Aug-15</td>
<td>Unknown</td>
<td>1,180</td>
<td>1,180</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2016</td>
<td>Unavailable Set H Combined Cycle 2</td>
<td>CC</td>
<td>NG</td>
<td>FC2</td>
<td>FL</td>
<td>Jul-14</td>
<td>Aug-16</td>
<td>Unknown</td>
<td>1,180</td>
<td>1,180</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2017</td>
<td>Unavailable Set H Combined Cycle 3</td>
<td>CC</td>
<td>NG</td>
<td>FC2</td>
<td>FL</td>
<td>Jul-15</td>
<td>Aug-17</td>
<td>Unknown</td>
<td>1,180</td>
<td>1,180</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2018</td>
<td>Unavailable Set H Combined Cycle 4</td>
<td>CC</td>
<td>NG</td>
<td>FC2</td>
<td>FL</td>
<td>Jul-16</td>
<td>Aug-18</td>
<td>Unknown</td>
<td>1,180</td>
<td>1,180</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**ADDITIONS CHANGES**

- **2014 Changes/Additions with Inactive Reserve Total:** 1,180
- **2015 Changes/Additions with Inactive Reserve Total:** 1,180
- **2016 Changes/Additions with Inactive Reserve Total:** 1,180
- **2017 Changes/Additions with Inactive Reserve Total:** 1,180

**NOTES:**

1. The Winter Total Mw value consists of all generation additions and changes achieved by January. The Summer Total Mw value consists of all generation additions and changes achieved by June. All MW additions/change occurring in the year will be picked up for reporting/PLn usage purposes in the following year.
2. The numbers update will be performed during the extended outages for each unit.

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**Florida Power & Light Company** 99
### Schedule 9

**Status Report and Specifications of Proposed Generating Facilities**

1. **Plant Name and Unit Number:** West County Energy Center Combined Cycle Unit 3

2. **Capacity**
   - a. Summer: 1,219 MW
   - b. Winter: 1,335 MW

3. **Technology Type:** Combined Cycle

4. **Anticipated Construction Timing**
   - a. Field construction start-date: 2009
   - b. Commercial in-service date: 2011

5. **Fuel**
   - a. Primary Fuel: Natural Gas
   - b. Alternate Fuel: Distillate

6. **Air Pollution and Control Strategy:**
   - Natural Gas: Dry Low NOx Combustors, SCR
   - Distillate: 0.0015% S, Water Injection on Distillate

7. **Cooling Method:** Cooling Tower

8. **Total Site Area:** 220 Acres

9. **Construction Status:** V (Under construction, more than 50% Complete)

10. **Certification Status:** Permitted

11. **Status with Federal Agencies:** Permitted

12. **Projected Unit Performance Data:**
    - **Planned Outage Factor (POF):** 2.1%
    - **Forced Outage Factor (FOF):** 1.1%
    - **Equivalent Availability Factor (EAF):** 96.8% (Base & Duct Firing Operation)
    - **Resulting Capacity Factor (%):** Approx. 93% (First Full Year Base Operation)
    - **Average Net Operating Heat Rate (ANOHR):** 6,582 Btu/kWh (Base Operation)

13. **Projected Unit Financial Data *,**:*
    - **Book Life (Years):** 30 years
    - **Total Installed Cost (2011 $/kW):** 709
    - **Direct Construction Cost ($/kW):** 71
    - **AFUDC Amount ($/kW):** 71
    - **Escalation ($/kW):** 11.63
    - **Fixed O&M ($/kW-Yr):** (2011 $/kW-Yr) 0.480
    - **Variable O&M ($/MWH):** (2011 $/MWH) 1.4697

* **$/kW values are based on Summer capacity.**
** Fixed O&M cost includes capital replacement, but not firm gas transportation costs.

**NOTE:** Total installed cost includes gas expansion, transmission interconnection and integration, escalation, and AFUDC.
<table>
<thead>
<tr>
<th>Schedule 9</th>
<th>Status Report and Specifications of Proposed Generating Facilities</th>
</tr>
</thead>
</table>

(1) **Plant Name and Unit Number:** St. Lucie 1 Nuclear (Uprate)

(2) **Capacity**
   - a. Summer: 122 MW (Incremental)
   - b. Winter: 122 MW (Incremental)

(3) **Technology Type:** Nuclear

(4) **Anticipated Construction Timing**
   - a. Field construction start-date: During scheduled refueling outage
   - b. Commercial In-service date: 2012

(5) **Fuel**
   - a. Primary Fuel: Uranium
   - b. Alternate Fuel: —

(6) **Air Pollution and Control Strategy:** No change from existing unit

(7) **Cooling Method:** No change from existing unit

(8) **Total Site Area:** No change from existing unit

(9) **Construction Status:** T (Regulatory approval received, but not under construction)

(10) **Certification Status:** T (Regulatory approval received, but not under construction)

(11) **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

(12) **Projected Unit Performance Data:**
   - Planned Outage Factor (POF): No change from existing unit
   - Forced Outage Factor (POF): No change from existing unit
   - Equivalent Availability Factor (EAF): No change from existing unit
   - Resulting Capacity Factor (%): No change from existing unit
   - Average Net Operating Heat Rate (ANOHR): No change from existing unit
   - Base Operation 75°F, 100%: No change from existing unit

(13) **Projected Unit Financial Data**
   - Book Life (Years): 25 years (Matches the current operating license period.)
   - Total Installed Cost ($/kW): TBD (See Note (1) for explanation.)
   - Direct Construction Cost: TBD (See Note (1) for explanation.)
   - AFUDC Amount ($/kW): TBD (See Note (2) for explanation.)
   - Escalation ($/kW): TBD (See Note (3) for explanation.)
   - Fixed O&M ($/kW-Yr.): There is no additional O&M impact from this project.
   - Variable O&M ($/MWH): There is no additional O&M impact from this project.
   - K Factor: (See Note (2) for explanation.)

**NOTE:**

(1) The projected capital cost values for the capacity uprates at each of FPL's existing nuclear units is currently being reviewed in on-going analyses as this document is being prepared. The capital cost projections that will result from these analyses are expected to be presented in FPL's May 2011 Nuclear Cost Recovery filing.

(2) Not applicable due to early recovery of capital carrying costs.

(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.

** $/ Incremental kW
Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) Plant Name and Unit Number: Turkey Point 3 Nuclear (Uprate)

(2) Capacity
   a. Summer 109 MW (Incremental)
   b. Winter 109 MW (Incremental)

(3) Technology Type: Nuclear

(4) Anticipated Construction Timing
   a. Field construction start-date: During scheduled refueling outage
   b. Commercial In-service date: 2012

(5) Fuel
   a. Primary Fuel Uranium
   b. Alternate Fuel

(6) Air Pollution and Control Strategy: No change from existing unit

(7) Cooling Method: No change from existing unit

(8) Total Site Area: No change from existing unit

(9) Construction Status: T (Regulatory approval received, but not under construction)

(10) Certification Status: T (Regulatory approval received, but not under construction)

(11) Status with Federal Agencies: T (Regulatory approval received, but not under construction)

(12) Projected Unit Performance Data:
   - Planned Outage Factor (POF): No change from existing unit
   - Forced Outage Factor (FOF): No change from existing unit
   - Equivalent Availability Factor (EAF): No change from existing unit
   - Resulting Capacity Factor (%): No change from existing unit
   - Average Net Operating Heat Rate (ANOHr): No change from existing unit
   - Base Operation 76F, 100%: No change from existing unit

(13) Projected Unit Financial Data *
   - Book Life (Years): 21 years (Matches the current operating license period.)
   - Total Installed Cost ($/kW): TBD (See Note (1) for explanation.)
   - Direct Construction Cost ($/kW): TBD (See Note (1) for explanation.)
   - AFUDC Amount ($/kW): TBD (See Note (2) for explanation.)
   - Escalation ($/kW): TBD (See Note (3) for explanation.)
   - Fixed O&M ($/kW-Yr.): There is no additional O&M impact from this project.
   - Variable O&M ($/MWh): There is no additional O&M impact from this project.
   - K Factor: TBD (See Note (2) for explanation.)

NOTE:
(1) The projected capital cost values for the capacity uprates at each of FPL's existing nuclear units is currently being reviewed in ongoing analyses as this document is being prepared. The capital cost projections that will result from these analyses are expected to be presented in FPL's May 2011 Nuclear Cost Recovery filing.
(2) Not applicable due to early recovery of capital carrying costs.
(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.
** $/incremental kW
Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) Plant Name and Unit Number: St. Lucie 2 Nuclear (Uprate)

(2) Capacity
   a. Summer: 17 MW (Interim Incremental FPL's ownership share),
      110 MW (final incremental FPL's ownership share)
   b. Winter: 17 MW (Interim Incremental FPL's ownership share),
      110 MW (final incremental FPL's ownership share)

(3) Technology Type: Nuclear

(4) Anticipated Construction Timing
   a. Field construction start-date: During scheduled refueling outage
   b. Commercial In-service date: 2011 (Interim increase), 2012 (final increase)

(5) Fuel
   a. Primary Fuel: Uranium
   b. Alternate Fuel: —

(6) Air Pollution and Control Strategy: No change from existing unit

(7) Cooling Method: No change from existing unit

(8) Total Site Area: No change from existing unit

(9) Construction Status: T (Regulatory approval received, but not under construction)

(10) Certification Status: T (Regulatory approval received, but not under construction)

(11) Status with Federal Agencies: T (Regulatory approval received, but not under construction)

(12) Projected Unit Performance Data:
   Planned Outage Factor (POF): No change from existing unit
   Forced Outage Factor (FOF): No change from existing unit
   Equivalent Availability Factor (EAF): No change from existing unit
   Resulting Capacity Factor (%): No change from existing unit
   Average Net Operating Heat Rate (ANOHR): No change from existing unit
   Base Operation 75F,100%: No change from existing unit

(13) Projected Unit Financial Data *,**,
   Book Life (Years): 32 years (Matches the current operating license period.)
   Total Installed Cost ($/kW): TBD (See Note (1) for explanation.)
   Direct Construction Cost ($/kW): TBD (See Note (1) for explanation.)
   AFUDC Amount ($/kW): (See Note (2) for explanation.)
   Escalation ($/kW): (See Note (3) for explanation.)
   Fixed O&M ($/kW-Yr.): There is no additional O&M impact from this project.
   Variable O&M ($/MWH): There is no additional O&M impact from this project.
   K Factor: (See Note (2) for explanation.)

NOTE:
(1) The projected capital cost values for the capacity uprates at each of FPL's existing nuclear units is currently being reviewed in on-going analyses as this document is being prepared. The capital cost projections that will result from these analyses are expected to be presented in FPL's May 2011 Nuclear Cost Recovery filing.
(2) Not applicable due to early recovery of capital carrying costs.
(3) These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.
** $/Incremental kW
## Schedule 9

### Status Report and Specifications of Proposed Generating Facilities

1. **Plant Name and Unit Number:** Turkey Point 4 Nuclear (Uprate)

2. **Capacity**
   - a. **Summer:** 109 MW (Incremental)
   - b. **Winter:** 109 MW (Incremental)

3. **Technology Type:** Nuclear

4. **Anticipated Construction Timing**
   - a. Field construction start-date: During scheduled refueling outage
   - b. Commercial in-service date: 2013

5. **Fuel**
   - a. Primary Fuel: Uranium
   - b. Alternate Fuel: --

6. **Air Pollution and Control Strategy:** No change from existing unit

7. **Cooling Method:** No change from existing unit

8. **Total Site Area:** No change from existing unit

9. **Construction Status:** T (Regulatory approval received, but not under construction)

10. **Certification Status:** T (Regulatory approval received, but not under construction)

11. **Status with Federal Agencies:** T (Regulatory approval received, but not under construction)

12. **Projected Unit Performance Data:**
    - Planned Outage Factor (POF): No change from existing unit
    - Forced Outage Factor (FOF): No change from existing unit
    - Equivalent Availability Factor (EAF): No change from existing unit
    - Resulting Capacity Factor (%): No change from existing unit
    - Average Net Operating Heat Rate (ANOH): No change from existing unit
    - Base Operation 75F, 100%: No change from existing unit

13. **Projected Unit Financial Data *,**, Book Life (Years): 21 years (Matches the current operating license period.)
    - Total Installed Cost ($/kW): TBD (See Note (1) for explanation.)
    - Direct Construction Cost ($/kW): TBD (See Note (1) for explanation.)
    - AFUDC Amount ($/kW): TBD (See Note (1) for explanation.)
    - Escalation ($/kW): TBD (See Note (3) for explanation.)
    - Fixed O&M ($/kW-Yr.): There is no additional O&M impact from this project.
    - Variable O&M ($/MWH): There is no additional O&M impact from this project.
    - K Factor: (See Note (2) for explanation.)

**NOTE:**

1. The projected capital cost values for the capacity uprates at each of FPL's existing nuclear units is currently being reviewed in on-going analyses as this document is being prepared. The capital cost projections that will result from these analyses are expected to be presented in FPL's May 2011 Nuclear Cost Recovery filing.
2. Not applicable due to early recovery of capital carrying costs.
3. These costs are included in the Total Installed Cost value.

* $/kW values are based on incremental Summer capacity.

** $/kW Incremental kW
Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) Plant Name and Unit Number: Cape Canaveral Next Generation Clean Energy Center

(2) Capacity
   a. Summer  1,210 MW
   b. Winter  1,355 MW

(3) Technology Type:  Combined Cycle

(4) Anticipated Construction Timing
   a. Field construction start-date: 2011
   b. Commercial In-service date: 2013

(5) Fuel
   a. Primary Fuel  Natural Gas
   b. Alternate Fuel  Ultra-low sulfur distillate

(6) Air Pollution and Control Strategy:
   Dry Low NOx Burners, SCR, Natural Gas,
   0.0015% S. Distillate and Water Injection on Distillate

(7) Cooling Method:
   Once-through cooling water

(8) Total Site Area:  43 Acres

(9) Construction Status:
   U  (Under construction, less than or equal to 50% complete)

(10) Certification Status:\n    Permitted

(11) Status with Federal Agencies:
    Permitted

(12) Projected Unit Performance Data:
   Planned Outage Factor (POF):  2.4%
   Forced Outage Factor (POF):  1.1%
   Equivalent Availability Factor (EAF):  96.5%
   Resulting Capacity Factor (%): Approx. 90% (First Full Year Base Operation)
   Average Net Operating Heat Rate (ANOHR):  6,484 Btu/kWh
   Base Operation: 75F,100%

(13) Projected Unit Financial Data *,**
   Book Life (Years): 30 years
   Total Installed Cost (2013 $/kW):  921
   Direct Construction Cost ($/kW):  98
   AFUDC Amount ($/kW):  13.29
   Fixed O&M ($/kW-Yr): (2013 $):  0.16
   Variable O&M ($/MWH): (2013 $):  1.484

   * $/kW values are based on Summer capacity.
   ** Fixed O&M cost includes capital replacement.

   NOTE:  Total installed cost includes gas expansion, transmission interconnection and integration, escalation, and AFUDC.
Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) Plant Name and Unit Number: Riviera Beach Next Generation Clean Energy Center

(2) Capacity
   a. Summer 1,212 MW
   b. Winter 1,344 MW

(3) Technology Type: Combined Cycle

(4) Anticipated Construction Timing
   a. Field construction start-date: 2012
   b. Commercial in-service date: 2014

(5) Fuel
   a. Primary Fuel: Natural Gas
   b. Alternate Fuel: Ultra-low sulfur distillate

(6) Air Pollution and Control Strategy: Dry Low NOx Burners, SCR, Natural Gas, 0.0015% S. Distillate and Water Injection on Distillate

(7) Cooling Method: Once-through cooling water

(8) Total Site Area: 33 Acres

(9) Construction Status: U (Under construction, less than or equal to 50% complete)

(10) Certification Status: Permitted

(11) Status with Federal Agencies: Permitted

(12) Projected Unit Performance Data:
   Planned Outage Factor (POF): 2.4%
   Forced Outage Factor (FOF): 1.1%
   Equivalent Availability Factor (EAF): 96.5%
   Resulting Capacity Factor (%): Approx. 90% (First Full Year Base Operation)
   Average Net Operating Heat Rate (ANOHR): 6,480 Btu/kWh
   Base Operation 75F, 100%

(13) Projected Unit Financial Data *, **
   Book Life (Years): 30 years
   Total Installed Cost (2014 $/kW): 1,053
   Direct Construction Cost ($/kW):
   AFUDC Amount ($/kW): 121
   Escalation ($/kW):
   Variable O&M ($/MWH): (2014 $) 0.13
   K Factor: 1.509

* $/kW values are based on Summer capacity.
** Fixed O&M cost includes capital replacement.

NOTE: Total installed cost includes gas expansion, transmission interconnection and integration, escalation, and AFUDC.
### Schedule 9

**Status Report and Specifications of Proposed Generating Facilities**

1. **Plant Name and Unit Number**: Greenfield 3x1 Combined Cycle

2. **Capacity**
   - *Summer*: 1,191 MW
   - *Winter*: 1,351 MW

3. **Technology Type**: Combined Cycle

4. **Anticipated Construction Timing**
   - *Field Work Start Date*: 2014
   - *Commercial In-service Date*: 2016

5. **Fuel**
   - *Primary Fuel*: Natural Gas
   - *Alternate Fuel*: Ultra-low sulfur distillate

6. **Air Pollution and Control Strategy**: Dry Low NO, Burners, SCR, Natural Gas, 0.0015% S. Distillate and Water Injection on Distillate

7. **Cooling Method**: Once-through cooling water

8. **Total Site Area**: — Acres

9. **Construction Status**: P (Planned Unit)

10. **Certification Status**: —

11. **Status with Federal Agencies**: —

12. **Projected Unit Performance Data**
   - **Planned Outage Factor (POF)**: 2.4%
   - **Forced Outage Factor (FOF)**: 1.1%
   - **Equivalent Availability Factor (EAF)**: 98.5%
   - **Resulting Capacity Factor (%)**: Approx. 90% (First Full Year Base Operation)
   - **Average Net Operating Heat Rate (ANOHR)**: 6,607 Btu/kWh

13. **Projected Unit Financial Data**
   - **Book Life (Years)**: 30 years
   - **Total Installed Cost (2016 $/kW)**: 956
   - **Direct Construction Cost ($/kW)**: 98
   - **AFUDC Amount ($/kW)**: 98
   - **Escalation ($/kW)**: 17.65
   - **Variable O&M ($/MWH)**: 0.50
   - **K Factor**: 1.5136

   * $/kW values are based on Summer capacity.
   ** Fixed O&M cost includes capital replacement.

**NOTE**: Total installed cost includes gas expansion, transmission interconnection and integration, escalation, and AFUDC.
Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) Plant Name and Unit Number: Greenfield 3x1 Combined Cycle

(2) Capacity
   a. Summer 1,191 MW
   b. Winter 1,351 MW

(3) Technology Type: Combined Cycle

(4) Anticipated Construction Timing
   a. Field construction start-date: 2018
   b. Commercial in-service date: 2020

(5) Fuel
   a. Primary Fuel Natural Gas
   b. Alternate Fuel Ultra-low sulfur distillate

(6) Air Pollution and Control Strategy: Dry Low Nox Burners, SCR, Natural Gas,
   0.0015% S. Distillate and Water Injection on Distillate

(7) Cooling Method: Once-through cooling water

(8) Total Site Area: 33 Acres

(9) Construction Status: P (Planned Unit)

(10) Certification Status: ---

(11) Status with Federal Agencies: ---

(12) Projected Unit Performance Data:
    Planned Outage Factor (POF): 2.4%
    Forced Outage Factor (FOF): 1.1%
    Equivalent Availability Factor (EAF): 96.5%
    Resulting Capacity Factor (%): Approx. 90% (First Full Year Base Operation)
    Average Net Operating Heat Rate (ANOH): 6,607 Btuh/Wh
    Base Operation 75°F, 100%

(13) Projected Unit Financial Data *,**
    Book Life (Years): 30 years
    Total Installed Cost (2020 $/kW): 1,076
    Direct Construction Cost ($/kW): 111
    Escalation ($/kW-Yr): (2020 $) 0.55
    * $/kW values are based on Summer capacity.
    ** Fixed O&M cost includes capital replacement.

NOTE: Total installed cost includes gas expansion, transmission interconnection and integration,
escalation, and AFUDC.

Florida Power & Light Company
## Schedule 10
Status Report and Specifications of Proposed Transmission Lines

### West County Energy Center Unit 3

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Point of Origin and Termination:</td>
<td>New Sugar Substation – Corbett Substation</td>
</tr>
<tr>
<td>(2)</td>
<td>Number of Lines:</td>
<td>1</td>
</tr>
<tr>
<td>(3)</td>
<td>Right-of-way</td>
<td>FPL - Owned</td>
</tr>
<tr>
<td>(4)</td>
<td>Line Length:</td>
<td>1 mile</td>
</tr>
<tr>
<td>(5)</td>
<td>Voltage:</td>
<td>230 kV</td>
</tr>
<tr>
<td>(6)</td>
<td>Anticipated Construction Timing:</td>
<td>Start date: May 2009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>End date: November 2010 (Completed)</td>
</tr>
<tr>
<td>(7)</td>
<td>Anticipated Capital Investment: (Trans. and Sub.)</td>
<td>$11,300,000</td>
</tr>
<tr>
<td>(8)</td>
<td>Substations:</td>
<td>New Sugar Substation and Corbett Substation</td>
</tr>
<tr>
<td>(9)</td>
<td>Participation with Other Utilities:</td>
<td>None</td>
</tr>
</tbody>
</table>
Schedule 10
Status Report and Specifications of Proposed Transmission Lines

St. Lucie 1 Nuclear (Uprate)

The St. Lucie 1 Nuclear (Uprate) does not require any "new" transmission lines.
Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point 3 Nuclear (Uprate)

The Turkey Point 3 Nuclear (Uprate) does not require any "new" transmission lines.
Schedule 10
Status Report and Specifications of Proposed Transmission Lines

St. Lucie 2 Nuclear (Uprate)

The St. Lucie 2 Nuclear (Uprate) does not require any "new" transmission lines.
Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Turkey Point 4 Nuclear (Uprate)

The Turkey Point 4 Nuclear (Uprate) does not require any "new" transmission lines.
Schedule 10
Status Report and Specifications of Proposed Transmission Lines

Cape Canaveral Next Generation Clean Energy Center (Modernization)

The Cape Canaveral Next Generation Clean Energy Center which will result from the modernization of the Cape Canaveral power plant site does not require any “new” transmission lines.
### Schedule 10
**Status Report and Specifications of Proposed Transmission Lines**

**Riviera Beach Next Generation Clean Energy Center (Modernization)**

The Riviera Beach Energy Center which will result from the modernization of the Riviera Beach power plant site will require one new line and existing lines to be extended and reconfigured to accommodate the increased capacity.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Point of Origin and Termination:</td>
<td>Riviera – Cedar Substation</td>
</tr>
<tr>
<td>(2)</td>
<td>Number of Lines:</td>
<td>1</td>
</tr>
<tr>
<td>(3)</td>
<td>Right-of-way</td>
<td>Existing, FPL - Owned</td>
</tr>
<tr>
<td>(4)</td>
<td>Line Length:</td>
<td>15 miles</td>
</tr>
<tr>
<td>(5)</td>
<td>Voltage:</td>
<td>230 kV</td>
</tr>
</tbody>
</table>
| (6) | Anticipated Construction Timing: | Start date: 2012  
End date: 2014 |
| (7) | Anticipated Capital Investment:  
(Trans. and Sub.) | $12,100,000 |
| (8) | Substations: | Riviera Substation and Cedar Substation |
| (9) | Participation with Other Utilities: | None |
### Schedule 11.1

**Existing FIRM and NON-FIRM Capacity and Energy by Primary Fuel Type**

*Actuals for the Year 2010*

<table>
<thead>
<tr>
<th>Generation by Primary Fuel</th>
<th>(1) Net (MW) Capability</th>
<th>(2) Summer (MW)</th>
<th>(3) Summer (%)</th>
<th>(4) Winter (MW)</th>
<th>(5) Winter (%)</th>
<th>(6) NEL GWh</th>
<th>(7) Fuel Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Coal</td>
<td>900</td>
<td>3.5%</td>
<td>902</td>
<td>3.3%</td>
<td>5,721</td>
<td>5.0%</td>
<td></td>
</tr>
<tr>
<td>(2) Nuclear</td>
<td>2,939</td>
<td>11.4%</td>
<td>3,013</td>
<td>11.2%</td>
<td>22,850</td>
<td>20.0%</td>
<td></td>
</tr>
<tr>
<td>(3) Residual</td>
<td>5,554</td>
<td>23.1%</td>
<td>6,004</td>
<td>22.3%</td>
<td>4,081</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>(4) Distillates</td>
<td>1,668</td>
<td>7.4%</td>
<td>2,087</td>
<td>7.7%</td>
<td>219</td>
<td>0.2%</td>
<td></td>
</tr>
<tr>
<td>(5) Natural Gas</td>
<td>11,903</td>
<td>46.4%</td>
<td>12,766</td>
<td>47.3%</td>
<td>68,771</td>
<td>56.4%</td>
<td></td>
</tr>
<tr>
<td>(6) Solar</td>
<td>35</td>
<td>0.1%</td>
<td>35</td>
<td>0.1%</td>
<td>180</td>
<td>0.1%</td>
<td></td>
</tr>
<tr>
<td><strong>FPL Existing Units Total</strong></td>
<td><strong>23,722</strong></td>
<td><strong>91.9%</strong></td>
<td><strong>24,797</strong></td>
<td><strong>91.9%</strong></td>
<td><strong>99,771</strong></td>
<td><strong>87.2%</strong></td>
<td></td>
</tr>
<tr>
<td>(8) Renewables (Purchases)- Firm</td>
<td>81.0</td>
<td>0.2%</td>
<td>112.0</td>
<td>0.4%</td>
<td>1,004</td>
<td>0.9%</td>
<td></td>
</tr>
<tr>
<td>(9) Renewables (Purchases)- Non-Firm</td>
<td>Not Applicable</td>
<td>—</td>
<td>Not Applicable</td>
<td>—</td>
<td>800</td>
<td>0.7%</td>
<td></td>
</tr>
<tr>
<td><strong>Renewable Total:</strong></td>
<td><strong>81.0</strong></td>
<td><strong>0.2%</strong></td>
<td><strong>112.0</strong></td>
<td><strong>0.4%</strong></td>
<td><strong>1,804</strong></td>
<td><strong>1.58%</strong></td>
<td></td>
</tr>
<tr>
<td>(11) Purchases Other</td>
<td>2,041.0</td>
<td>7.9%</td>
<td>2,074.0</td>
<td>7.7%</td>
<td>12,798</td>
<td>11.2%</td>
<td></td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>25,864.0</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>26,883.0</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>114,573</strong></td>
<td><strong>100.0%</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

1. FPL Existing Units Total values on row (7), columns (2) and (4), match the System Firm Generating Capacity values found on Schedule 1 for Summer and Winter.
2. Net Energy for Load GWh values on row (12), column (6), matches Schedule 6.1 value for 2010.

### Schedule 11.2

**Existing NON-FIRM Self-Service Renewable Generation Facilities**

*Actuals for the Year 2010*

<table>
<thead>
<tr>
<th>Type of Facility</th>
<th>Installed Capacity DC (MW)</th>
<th>Renewable Projected Annual Output (MWh)</th>
<th>Annual Energy Purchased from FPL (MWh)</th>
<th>Annual Energy Sold to FPL (MWh)</th>
<th>Projected Annual Energy Used by Customers (GWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer-Owned PV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0 kW to 10 kW)</td>
<td>4.6</td>
<td>5,214.7</td>
<td>53,476.4</td>
<td>146.5</td>
<td>58.5</td>
</tr>
<tr>
<td>Customer-Owned PV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(&gt; 10 kW to 100 kW)</td>
<td>1.6</td>
<td>1,775.4</td>
<td>17,858.8</td>
<td>158.2</td>
<td>19.5</td>
</tr>
<tr>
<td>Customer-Owned PV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(&gt; 100 kW to 2 MW)</td>
<td>2.9</td>
<td>3,708.4</td>
<td>118,662.7</td>
<td>177.6</td>
<td>118,666.2</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>9.2</strong></td>
<td><strong>10,698.5</strong></td>
<td><strong>189,998.0</strong></td>
<td><strong>482.2</strong></td>
<td><strong>118,744.2</strong></td>
</tr>
</tbody>
</table>

**Notes:**

1. There were approximately 1,074 customer-owned renewable generation facilities interconnected with FPL on December 31, 2010.
2. The Installed Capacity value is the sum of the nameplate ratings (DC MW) for all of the customer-owned renewable generation facilities connected as of Dec. 31, 2010.
3. The Projected Annual Output value is based on NREL’s PV Watts 1 program and the Installed Capacity value in column (2), adjusted for the date when each facility was installed and assuming each facility operated as planned.
4. The Annual Energy Purchased from FPL is an actual value from FPL’s metered data for 2010.
5. The Annual Energy Sold to FPL is an actual value from FPL’s metered data for 2010.
6. The Projected Annual Energy Used by Customers is a projected value that equals:
   (Renewable Projected Annual output + Annual Energy Purchased from FPL) minus the Annual Energy Sold to FPL.
CHAPTER IV

Environmental and Land Use Information
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IV. Environmental and Land Use Information

IV.A Protection of the Environment

FPL operates in a sensitive, temperate/sub-tropical environment containing a number of distinct ecosystems with many endangered or threatened plant and animal species. FPL competes for air, land, and water resources that are necessary to meet the demand for generation, transmission, and distribution of electricity. At the same time, residents and tourists want unspoiled natural amenities, and the general public has an expectation that large corporations such as FPL will conduct their business in an environmentally responsible manner.

FPL has been recognized for many years as one of the leaders among electric utilities for its commitment to the environment. For example, FPL has one of the lowest carbon dioxide (CO₂) emission rates in the nation. The environmental leadership of FPL and its parent company, NextEra Energy, Inc., has been heralded by many outside organizations as demonstrated by a few recent examples. In 2010, NextEra Energy, Inc. (formerly FPL Group) ranked in the top 10 among companies worldwide for innovation and, for a record fourth consecutive year, No. 1 in its industry, according to the 2010 “World's Most Admired Companies” report released by Fortune magazine. In addition to being named the most admired company in its industry, NextEra Energy, Inc. received the No. 1 ranking among its peers in the following specific areas evaluated: innovation, people management, use of corporate assets, social responsibility, quality of management, long-term investment, and quality of products and services. According to Fortune, America's Most Admired Companies is "the definitive report card on corporate reputations".

NextEra Energy, Inc.'s commitment to acknowledging the risks of climate change and effectively reducing its greenhouse gas emissions was again recognized when the company was named to the Carbon Disclosure Leadership Index for 2010. The Carbon Disclosure Leadership Index is produced annually by the Carbon Disclosure Project (CDP), a not-for-profit organization that reports on the business risks and opportunities of climate change for investors. CDP represents 534 institutional investors with $64 trillion in assets under management. Compiled by PricewaterhouseCoopers on behalf of CDP, the Carbon Disclosure Leadership Index highlights companies within the S&P 500 Index that excel in the area of climate change awareness and action.
NextEra Energy, Inc. was named to the 2010 Dow Jones Sustainability Index (DJSI) of the leading companies in North America for corporate sustainability. The DJSI North America selects the top 20 percent of companies in sustainability performance from the 600 largest companies in North America. According to Dow Jones, corporate sustainability leaders achieve long-term shareholder value by "gearing their strategies and management to harness the market's potential for sustainability products and services while successfully reducing and avoiding sustainability costs and risks."

FPL was recognized in 2010 by the Southeastern Electric Exchange (SEE) for outstanding performance in constructing the largest solar photovoltaic (PV) power plant at the time in the United States: the 25 MW DeSoto Next Generation Solar Energy Center. SEE gives its Chairman's Award annually to the project it deems "best of the best" among all entrants in its 11 award categories. Capable of powering approximately 3,000 homes with renewable energy, the DeSoto PV facility was completed months ahead of schedule and more than $22 million under budget.

FPL's responsible tree care practices across its 35-county service area have been recognized for almost a decade. FPL has been the recipient of the Tree Line USA award annually from 2003 - 2010. This award is sponsored by the Arbor Day Foundation in cooperation with the National Association of State Foresters. The recognition is given to utilities that demonstrate quality tree care practices, annual worker training, and public education programs.

In October 2010, FPL won the 2010 Loggerhead Marinelife Center's "Blue Business of the Year" award. The awards were given to those who are leading the way in raising awareness and have made significant contributions to improve and protect South Florida's oceans, beaches, and wildlife. The award recognized FPL's protection and conservation of the endangered Florida manatee and fostering public and employee education and support.

The 12th Annual Sustainable Florida Best Practice Awards were announced on June 4, 2010 in Orlando, Florida. FPL was named a finalist in the large business category for the previously mentioned 25 MW DeSoto PV facility. The awards were presented by the Council for Sustainable Florida, the premier statewide organization committed to balancing the economic interests of the state with the need to be socially and environmentally responsible. The Sustainable Florida Award recognizes organizations for
protecting and preserving Florida's environment for the future while building markets for Florida's business.

In December 2009, NextEra Energy was named Power Company of the Year at the Platts 2009 Global Energy Awards. Platts, the leading global provider of information on the energy industry, received more than 200 nominations for its annual awards program. Nominations came from more than 30 countries. FPL Group was selected as Power Company of the Year from among six finalists. The specific judging criteria were financial results, operational excellence, innovation, and strategic vision.

As mentioned above, NextEra Energy, Inc. has taken a leadership role to address climate change and the call for action for a national climate change policy. The decision to step into the forefront of this issue goes hand-in-hand with NextEra Energy, Inc.'s longtime commitment to managing operations with sensitivity to the environment.

IV.B FPL's Environmental Statement

To reaffirm its commitment to conduct business in an environmentally responsible manner, FPL developed an Environmental Statement in 1992 to clearly define its position, which it continues to stand by today. This statement reflects how FPL incorporates environmental values into all aspects of its activities and serves as a framework for new environmental initiatives throughout the company. FPL's Environmental Statement is:

It is the Company’s intent to continue to conduct its business in an environmentally responsible manner. Accordingly, Florida Power & Light Company will:

- Comply with the spirit and intent, as well as the letter of, environmental laws, regulations, and standards.
- Incorporate environmental protection and stewardship as an integral part of the design, construction, operation, and maintenance of our facilities.
- Encourage the wise use of energy to minimize the impact on the environment.
- Communicate effectively on environmental issues.
- Conduct periodic self-evaluations, report performance, and take appropriate actions.
IV.C Environmental Management

In order to implement the Environmental Statement, FPL established an environmental management system to direct and control the fulfillment of the organization’s environmental responsibilities. A key component of the system is an Environmental Assurance Program that is discussed below. Other components include: executive management support and commitment, a dedicated environmental corporate governance program, written environmental policies and procedures, delineation of organizational responsibilities and individual accountabilities, allocation of appropriate resources for environmental compliance management (which includes reporting and corrective action when non-compliance occurs), environmental incident and/or emergency response, environmental risk assessment/management, environmental regulatory development and tracking, and environmental management information systems.

IV.D Environmental Assurance Program

FPL’s Environmental Assurance Program consists of activities which are designed to evaluate environmental performance, verify compliance with corporate policy as well as legal and regulatory requirements, and communicate results to corporate management. The principal mechanism for pursuing environmental assurance is the environmental audit. An environmental audit may be defined as a management tool comprising a systematic, documented, periodic, and objective evaluation of the performance of the organization and of the specific management systems and equipment designed to protect the environment. The environmental audit’s primary objectives are to facilitate management control of environmental practices and assess compliance with existing environmental regulatory requirements and FPL policies.

IV.E Environmental Communication and Facilitation

FPL is involved in many efforts to enhance environmental protection through the facilitation of environmental awareness and in public education. Some of FPL’s 2010 environmental outreach activities are noted below in Table IV.E.1. In 2009 and 2010, FPL launched web cams at four facilities in order to increase public awareness of ongoing solar projects, FPL’s commitment to sea turtle rehabilitation, and the warm water refuge for manatees provided by power plants. The “solar cams” provide the public with a glimpse of the PV installation at the Space Coast Next Generation Solar Energy Center and the solar thermal installation at the Martin Next Generation Solar Energy Center. The
"turtle cam" installed at the Loggerhead Marinelife Center in Juno Beach provides interested onlookers the opportunity to view rescued sea turtles as they are nursed back to health in the sea turtle hospital. Additionally, the "manatee cam" provides the public a glimpse of hundreds of manatees that gather in the warm waters near the FPL Riviera Plant each Winter during the cold weather. These web cam addresses, respectively, are:

http://www.fpl.com/environment/solar/spacecoast_cam.shtml,
http://www.fpl.com/environment/solar/martin_cam.shtml,
http://www.fpl.com/environment/plant/turtle_cam.shtml, and,

In 2010, FPL, in partnership with the Treasured Lands Foundation, officially re-opened the Barley Barber Swamp at the Martin Power Plant for public tours. The tours began in November of 2010.

**Table IV.E.1: 2010 FPL Environmental Outreach Activities**

<table>
<thead>
<tr>
<th>Activity</th>
<th># of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visitors to FPL’s Energy Encounter at St. Lucie</td>
<td>17,000</td>
</tr>
<tr>
<td>Visitors to Manatee Park</td>
<td>272,243</td>
</tr>
<tr>
<td>Number of visits to FPL’s Environmental Website</td>
<td>400,000</td>
</tr>
<tr>
<td>Number of pieces of Environmental literature distributed</td>
<td>&gt;60,000</td>
</tr>
<tr>
<td>Solar Schools Program (# of schools participating)</td>
<td>8 (6 new in 2010)</td>
</tr>
<tr>
<td>Visitors to Barley Barber Swamp</td>
<td>943</td>
</tr>
<tr>
<td>Number of visits to Manatee Cam Website</td>
<td>45,000</td>
</tr>
<tr>
<td>Number of visits to Turtle Cam Website</td>
<td>36,000</td>
</tr>
<tr>
<td>Number of visits to Space Coast Webcam Website</td>
<td>500</td>
</tr>
<tr>
<td>Number of visits to Martin Webcam Website</td>
<td>1,500</td>
</tr>
</tbody>
</table>

**IV.F Preferred and Potential Sites**

Based upon its projection of future resource needs, FPL has identified five (5) Preferred Sites and thirteen (13) Potential Sites for future generation additions. Preferred Sites are those locations where FPL has conducted significant reviews and has either taken action, or is currently committed to take action, to site new generation capacity. Potential Sites
are those sites that have attributes that support the siting of generation and are under
consideration as a location for future generation. Some of these sites are currently in use
as existing generation sites and some are not. The identification of a Potential Site does
not indicate that FPL has made a definitive decision to pursue generation (or generation
expansion in the case of an existing generation site) at that location, nor does this
designation indicate that the size or technology of a generator has been determined. The
Preferred Sites and Potential Sites are discussed in separate sections below.

As has been described in previous FPL Site Plans, FPL also considers a number of other
sites as possible sites for future generation additions. These include all of the remainder
of FPL’s existing generation sites and other Greenfield sites. FPL is also analyzing the
potential for modernizing existing power plant sites such as is now being done at the
Cape Canaveral and Riviera sites. For example, the existing Port Everglades site is a
potential site for modernization. Other existing sites may also emerge in the ongoing
analyses as potential candidates for modernization. Analyses of any modernization
candidates would include evaluation of numerous factors including: fuel delivery,
transmission, permitting, etc.

IV.F.1 Preferred Sites

FPL identifies five Preferred Sites in this Site Plan: the existing West County Energy
Center (WCEC) site, the existing St. Lucie plant site, the existing Turkey Point plant site,
the existing Cape Canaveral plant site, and the existing Riviera plant site.

The West County Energy Center site is the location for one combined cycle (CC) capacity
addition FPL will make in 2011. The St. Lucie site is the location for nuclear capacity
uprates that FPL will make in 2011 and 2012. The Turkey Point site is the location for
nuclear capacity uprates that FPL will make in 2012 and 2013. (Turkey Point is also the
site for two new nuclear units, Turkey Point Units 6 & 7, for which FPL is pursuing
licensing and permit approvals. Current projections for in-service dates these new
nuclear units are beyond the 2011-2020 reporting time frame of this document). The
Cape Canaveral and Riviera sites are the locations for modernizations of existing power
plant sites for capacity additions in 2013 and 2014, respectively.

The five Preferred Sites are discussed below in general chronological order in regard to
when the capacity additions are projected to occur.
Preferred Site # 1: West County Energy Center, Palm Beach County

FPL has identified the property adjacent to the existing Corbett Substation property in unincorporated western Palm Beach County as a Preferred Site for the further addition of new generating capacity. The site was selected for the addition of another CC natural gas unit (Unit 3) with ultra-low sulfur light fuel oil (distillate) as a backup fuel. WCEC Units 1 & 2 were constructed on this site and went into commercial operations on August 27, 2009, and November 3, 2009, respectively. WCEC Unit 3, which began construction in March 2009, was approved by both the FPSC and the Secretary of the Florida Department of Environmental Protection (FDEP) and is anticipated to go into commercial operation in June of 2011. Unit 3 will be identical to Units 1 & 2 in regard to technology and capacity.

The existing site is accessible to both natural gas and electrical transmission through existing structures or through additional lateral connections. The facility will use natural gas as the primary fuel and state-of-the-art combustion controls.

a. U.S. Geological Survey (USGS) Map
   A USGS map of the West County Energy Center (WCEC) plant site is found at the end of this chapter.

b. Proposed Facilities Layout
   A map of the general layout of the WCEC generating facilities at the site is found at the end of this chapter.

c. Map of Site and Adjacent Areas
   An overview map of the site and adjacent areas is also found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas
   The site was undeveloped until February 2007 when construction of WCEC Units 1 & 2 was initiated. The site was previously dedicated to industrial (mining) and agricultural use. The site had been excavated, back-filled, and totally re-graded to an elevation of approximately 10 feet above the surrounding land surface. Prior to the initiation of power plant construction, no structures were present on the site and vegetation was virtually non-existent. Units 1 & 2 are completed and are now in commercial operation.
e. **General Environment Features On and In the Site Vicinity**

1. **Natural Environment**  
The plant site had been significantly altered by the construction and operation of a limestone mine where vegetation had been cleared and removed. The surrounding land use is predominantly sugar cane, agriculture, and limestone mining. FPL's existing Corbett substation is located north of the site. The Arthur R. Marshall Loxahatchee National Wildlife Refuge is located to the south of the site.

2. **Listed Species**  
Construction and operation of Unit 3 at the site will not affect any rare, endangered, or threatened species. Wildlife utilization of the property is minimal as a result of the prior mining activities. Common wading birds can be observed on areas adjacent to, and occasionally within, the property. The property is adjacent to areas that have been identified as potential habitats for wood stork.

3. **Natural Resources of Regional Significance Status**  
The construction and operation of another gas-fired CC generating facility at this location is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. Construction will not result in any onsite wetland impacts under federal, state, or local agency permitting criteria.

4. **Other Significant Features**  
FPL is not aware of any other significant features of the site.

g. **Design Features and Mitigation Options**  
The design of Unit 3 comprises the following: one 1,219 MW (Summer capacity) unit consisting of: three combustion turbines (CT), three heat recovery steam generators (HRSG), and a new steam turbine. Natural gas delivered via pipeline is the primary fuel type for this facility with ultra-low sulfur light fuel oil (distillate) serving as a backup fuel.

h. **Local Government Future Land Use Designations**  
Local government future land use designation for the project site is "Rural Residential" according to the Palm Beach County Future Land Use Map.
Designations for the area under the Palm Beach County Unified Land Development Code classified the project site and surrounding area as Special Agricultural District. The site has been granted conditional use for electrical power facilities under a General Industrial zoning district.

h. **Site Selection Criteria Process**
The site has been selected as a Preferred Site due to consideration of various factors including system load and economics. Environmental issues were not a deciding factor since this site does not exhibit significant environmental sensitivity or other environmental issues.

i. **Water Resources**
The primary water source for the entire site is reclaimed (reuse) water from Palm Beach County Water Utilities Department. Reclaimed water is being used for cooling, service, and process water for Units 1 and 2 and as start-up water for Unit 3. Backup water sources include utilizing the Floridan Aquifer allocation permitted for WCEC Units 1, 2, & 3. Potable water is purchased from the Palm Beach County water municipality.

j. **Geological Features of Site and Adjacent Areas**
The site is underlain by approximately 13,000 feet of sedimentary rock strata. The basement complex in this area consists of Paleozoic igneous and metamorphic rocks. Little information is known about these rocks due to their great depth.

Overlying the basement complex to the ground surface are sedimentary rocks and deposits that are primarily marine in origin. Below a depth of about 400 feet these rocks are predominantly limestone and dolomite. Above 400 feet the deposits are largely composed of sand, silt, clay, and phosphate grains. The deepest formation in Palm Beach County on which significant published data are available is the Eocene Age Avon Park.

Testing during construction of Exploratory Well 2 (EW-2) demonstrated the presence of a highly permeable zone (Boulder Zone) in the Oldsmar Formation below a depth of 2,790 feet below pad level (bpl) overlain by a thick confining interval (Avon Park Formation) from approximately 2,000 to 2,790 feet bpl. The base of the Underground Source of Drinking Water (USDW) was identified between the depths of 1,932 and 1,959 feet bpl through interpretation of packer tests, water quality data, and
geophysical logs. Injection testing confirmed that the hydrogeology of the EW-2 site is favorable for disposal of fluids via a deep injection well system. FPL converted EW-2 to an injection well and installed a second injection well (IW-1 and IW-2, respectively). FPL conducted operational testing on the wells and applied for an operational permit. FDEP has issued a Notice of Intent to issue a Class I operational permit for the two injections wells and the associated dual-zone monitoring well.

k. **Projected Water Quantities for Various Uses**

The estimated annual average quantity of water required for industrial processing and cooling for all 3 units is up to 29 million gallons per day (mgd). Cooling water for the three generating units would be cycled through cooling towers.

l. **Water Supply Sources by Type**

WCEC Units 1 & 2, and eventually Unit 3, will use reclaimed water as the primary source of cooling water for the cooling tower with the Floridan Aquifer as backup. The cooling tower will also act as a heat sink for the facility auxiliary cooling system. Such needs for cooling and process water will comply with the existing South Florida Water Management District (SFWMD) regulations for consumptive water use. In addition, reclaimed water used at WCEC must meet all relevant requirements of Chapter 62-610, F.A.C., Part III, for use in cooling towers.

m. **Water Conservation Strategies Under Consideration**

The use of reclaimed water is a water conservation strategy because it is a beneficial use of wastewater. Impacts on the surficial aquifer would be minimized and used only for potable water, if necessary. Water from the Floridan Aquifer will be used for cooling purposes as a backup water source and cooling towers will be utilized. In addition, captured storm water may be reused in the cooling tower whenever feasible. Storm water captured in the storm water ponds will also recharge the surficial aquifer.

n. **Water Discharges and Pollution Control**

Heat will be dissipated in the cooling towers. Blowdown water from the cooling towers, along with other waste streams, will be injected into the boulder zone of the Floridan Aquifer. Non-point source discharges are not an issue since there will be none at this facility. Storm water runoff will be collected and used to recharge the surficial aquifer via a storm water management system. Design elements will be included to capture suspended sediments. In addition, captured storm water may be
reused in the cooling towers, whenever feasible. The facility will employ a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

o. **Fuel Delivery, Storage, Waste Disposal, and Pollution Control**

The site is serviced by a new natural gas transmission pipeline that is capable of providing a sufficient quantity of gas to the entire site. Ultra-low sulfur light fuel oil (distillate) will be received by truck and stored in above-ground storage tanks to serve as backup fuel for the WCEC generating units.

p. **Air Emissions and Control Systems**

The use of natural gas and ultra-low sulfur light fuel oil (distillate) and combustion controls will minimize air emissions from these units and ensure compliance with applicable emission limiting standards. Using these fuels minimizes emissions of sulfur dioxide (SO₂), particulate matter, and other fuel-bound contaminants. Combustion controls similarly minimize the formation of nitrogen oxides (NOₓ) and the combustor design will limit the formation of carbon monoxide and volatile organic compounds. When firing natural gas, NOₓ emissions will be controlled using dry-low NOₓ combustion technology and selective catalytic reduction (SCR). Water injection and SCR will be used to reduce NOₓ emissions during operations when using ultra-low sulfur light fuel oil (distillate) as backup fuel. These design alternatives constitute the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. In total, the designs of the WCEC generating units incorporate features that will make the units among the most efficient and cleanest power plants in the State of Florida.

q. **Noise Emissions and Control Systems**

Noise expected to be caused by construction at the site is expected to be below current noise levels for the residents nearest the site. Noise from the operation of the new unit will be within allowable levels.

r. **Status of Applications**

In regard to WCEC Unit 3, a Site Certification Application (SCA) was filed in December 2007 and the unit received Site Certification by the Secretary of the FDEP, in lieu of the Governor and Cabinet, in November 2008. A Prevention of Significant Deterioration (PSD) air permit was filed in December 2007. The permit was issued
by FDEP in July 2008. FPL initiated construction in March 2009 and anticipates an in-service date of June 2011. WCEC Unit 3 will utilize the underground injection control (UIC) system permitted for the entire site.

**Preferred Site # 2: St. Lucie Plant, St. Lucie County**

FPL's St. Lucie Plant is located in St. Lucie County on Hutchinson Island on an FPL-owned 1,130-acre site. The plant site is bordered by the Atlantic Ocean to the east and the Indian River Lagoon to the west. Located on the site are two nuclear-powered generating units, St. Lucie Units 1 & 2, which have been in operation since 1976 and 1983, respectively.

The generating capacity addition is an increase in the capacity of the two existing nuclear generating units that is used to serve FPL's customers of approximately 122 MW for St. Lucie Unit 1 and 110 MW for St. Lucie Unit 2. The difference between the two values is due to FPL's 100% ownership share of St. Lucie 1 and its 85% ownership share of St. Lucie Unit 2. This work will involve changes to several existing main components within the existing facilities to increase their capability to produce steam for the generation of electricity. No new facilities are required as part of this capacity "uprate." This capacity uprate, along with a similar capacity uprate of FPL's existing Turkey Point nuclear units, was approved by the FPSC in January 2008. The capacity uprates at St. Lucie for the two nuclear units sited there are projected to be in-service partially beginning in 2011 and in their entirety in 2012.⁴

a. **U.S. Geological Survey (USGS) Map**

A USGS map of the FPL St. Lucie Nuclear site is found at the end of this chapter.

b. **Proposed Facilities Layout**

A map of the general layout of the proposed generating facilities at the site is found at the end of this chapter.

c. **Map of Site and Adjacent Areas**

An overview map of the site and adjacent areas is also found at the end of this chapter.

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⁴ FPL has also been pursuing the addition of six wind turbines at the St. Lucie plant site for a number of years. However, to-date FPL has been unable to obtain the necessary local land use approvals that would first be needed before state and federal approvals could be sought.
d. **Existing Land Uses of Site and Adjacent Areas**

St. Lucie Units 1 & 2 are pressurized water reactors, each having two steam generators. The prominent structures, enclosed facilities, and equipment associated with St. Lucie Units 1 & 2 include the containment building, the turbine generator building, the auxiliary building, and the fuel handling building.

Prominent features beyond the power block area include the intake and discharge canals, switchyard, spent-fuel storage facilities, technical and administrative support facilities, and public education facilities (the Energy Encounter and the College of Turtle Knowledge). Significant features surrounding the St. Lucie Units 1 & 2 are predominately undeveloped land and water bodies including; Big Mud Creek, the Atlantic Ocean, Herman's Bay, and Indian River Lagoon.

In regard to the nuclear capacity uprates, the only changes will be modifications to the existing power generation facilities within the power block area, modifications to the switchyard facilities, and modifications to the transmission lines from St. Lucie to Midway substation. None of the other existing facilities at the plant will change as a result of the uprates.

e. **General Environment Features On and In the Site Vicinity**

1. **Natural Environment**

FPL's St. Lucie Plant is located in St. Lucie County on Hutchinson Island on an FPL-owned 1,130-acre site. The St. Lucie Plant includes the reactor buildings, turbine buildings, access/security building, auxiliary building, maintenance facilities, and miscellaneous warehouses and other buildings associated with the operation of Units 1 & 2. The site includes adjacent undeveloped mangrove areas. As a result of the approved capacity uprates, the site characteristics will not change.

2. **Listed Species**

Some listed species known to occur in the area of the plant location are Atlantic sturgeon, smalltooth sawfish, loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), leatherback sea turtle (*Dermochelys coriacea*), hawksbill sea turtle (*Eretmochelys imbricata*), gopher tortoise (*Gopherus polyphemus*), *kemp's* ridley sea turtle (*Lepidochelys kempi*), wood stork (*Mycteria americana*), black skimmer (*Rynchops niger*), and least tern (*Sterna antillarum*).
In regard to the nuclear capacity uprates, neither the development work, nor the continued operation of the two nuclear units after the uprate work has been completed, are expected to adversely affect any rare, endangered, or threatened species. No changes in wildlife populations at the adjacent undeveloped areas are anticipated, including listed species. Noise and lighting impacts will not change and it is expected that wildlife will continue to use the undeveloped areas within the St. Lucie Plant boundary.

3. **Natural Resources of Regional Significance Status**

Significant features surrounding the St. Lucie Units 1 & 2 are predominately undeveloped land and water bodies including; Big Mud Creek, the Atlantic Ocean, Herman's Bay, and Indian River Lagoon.

4. **Other Significant Features**

FPL is not aware of any other significant features of the site.

f. **Design Features and Mitigation Options**

The source of cooling water for the St. Lucie Plant is the Atlantic Ocean. The cooling system for the two generating units is a once-through system. The effects of the discharge of cooling water via these discharge structures were evaluated and mixing zones were established to allow compliance with thermal water quality standards as a part of the Plant’s NPDES (Permit No. FL0002208). These mixing zones include the volume of water beyond the discharge structures, at the edge of which the water temperature is no greater than 17°F above the ambient temperature of the intake water.

In regard to the nuclear capacity uprates, the once-through cooling system will continue to be used for the nuclear units.

g. **Local Government Future Land Use Designations**

St. Lucie Units 1 & 2 are located in unincorporated St. Lucie County, Florida. The County has adopted a comprehensive plan, which is updated on a periodic basis. The County Comprehensive Plan incorporates a map that depicts the future land use categories of all property falling within the unincorporated portions of the County. The St. Lucie Plant has a Future Land Use category of Transportation/Utilities (T/U) according to the St. Lucie County Future Land Use Map. The T/U category is
h. **Site Selection Criteria Process**

The site has been selected as a Preferred Site for the nuclear capacity uprates because it is an existing nuclear plant site and, therefore, offers the opportunity for increased nuclear capacity.

i. **Water Resources**

The source of cooling water for the St. Lucie Plant is the Atlantic Ocean. The once-through cooling system flow will not change as a result of the nuclear uprates. Due to the existing nature of the St. Lucie Plant, surrounding surface waters will not be adversely affected by the generation capacity addition. Stormwater will be handled by the existing facilities and no new areas will be impacted. Wetlands, groundwater, and nearby surface waters will not be impacted.

j. **Geological Features of Site and Adjacent Areas**

Beneath the land surface, there is a peat layer 4 to 6 feet thick. Below this layer is the Anastasia Formation, a sedimentary rock formation composed of clay lenses, sandy limestone, and silty fine to medium sand with fragmented shells. This highly permeable stratum extends 35 to 90 feet below mean sea level (msl). Underlying this stratum there is a semi-permeable zone, The Hawthorn Formation, consisting of slightly clayey and very fine silt which extends 600 feet below msl.

The original surficial deposits at the St. Lucie Plant were excavated to a depth of 60 feet and backfilled with Category I or II fill. The fill is underlain by the Anastasia formation, a sequence of partially cemented sand and sandy limestone, which extends to an average depth of about 145 feet. The Anastasia is underlain to a depth of about 600 to 700 feet by the partially cemented and indurated sands, clays, and sandy limestones of The Hawthorn Formation. Underlying these surface strata are about 13,000 feet of Jurassic through Tertiary Formations, primarily carbonate rocks. These formations have a relatively gentle slope to the southeast.

k. **Projected Water Quantities for Various Uses**

No change is expected in the quantity or characteristics of industrial wastewaters generated by the facility. Therefore, no change in that compliance achievement status is expected. The capacity uprates will not cause any changes in hydrologic or...
water quality conditions due to diversion, interception, or additions to surface water flow. The St. Lucie Plant does not directly withdraw groundwater under its current operations and it will not withdraw groundwater after the capacity uprates work is completed. The use of water supplied by the City of Fort Pierce, which does withdraw groundwater, will remain unchanged and there will be no changes to the groundwater discharges. There will be no quality, quantity, or hydrological changes, either by withdrawal or discharge to a drinking water source. Therefore, there will be no impacts on drinking water.

l. **Water Supply Sources by Type**
The source of cooling water for the St. Lucie Plant is the Atlantic Ocean. General plant service water, fire protection water, process water, and potable water are obtained from City of Fort Pierce. Process water uses include demineralizer regeneration, steam cycle makeup, and general service water use for washdowns. The existing St. Lucie Plant water use is projected to be unchanged as a result of the nuclear capacity uprates.

m. **Water Conservation Strategies Under Consideration**
The existing water resources will not change as a result of the nuclear capacity uprates.

n. **Water Discharges and Pollution Control**
St. Lucie Units 1 & 2 use once-through cooling water from the Atlantic Ocean to remove heat from the main (turbine) condensers via the Circulating Water System (CWS), and to remove heat from other auxiliary equipment via the Auxiliary Equipment Cooling Water System (AECWS). The great majority of this cooling water is used for the CWS.

Under emergency conditions, water can be withdrawn from Big Mud Creek via the Emergency Intake Canal through two 54-inch pipe assemblies in the barrier wall that separates the Creek from the Canal. FPL does not use this intake during normal operations, but does test this system quarterly.

The facility employs a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to control the inadvertent release of pollutants.
o. **Fuel Delivery, Storage, Waste Disposal, and Pollution Control**

St. Lucie Units 1 & 2 are licensed for uranium-dioxide fuel that is slightly enriched uranium-235. The uranium-dioxide fuel is in the form of pellets contained in Zircaloy tubes with welded end plugs to confine radionuclides. The tubes are fabricated into assemblies designed for loading into the reactor core. Each reactor core includes 217 fuel assemblies.

FPL currently replaces approximately one-third of the fuel assemblies in each reactor at intervals of approximately 18 months. FPL operates the reactors such that the average fuel usage by the reactors is approximately 47,000 megawatt-days per metric ton uranium. In regard to the nuclear capacity uprates, more nuclear fuel will be used due to the increased capacity of each generating unit. No changes in the fuel-handling facilities are required. Used fuel assemblies are stored in the onsite Nuclear Regulatory Commission (NRC) approved spent fuel storage facilities. Following completion of the uprates, approximately 11 percent more nuclear fuel will be used to increase the capacity of each generating unit. No changes in the fuel-handling facilities are required.

Diesel fuel is used in a number of emergency generators that include four main plant generators, two building generators, and various general purpose diesel engines. The main plant emergency generators will not be changed as a result of the generation capacity additions. These emergency generators are for standby use only and are tested to assure reliability and for maintenance. Diesel fuel is delivered to the St. Lucie Plant by truck as needed, and stored in tanks with secondary containment.

p. **Air Emissions and Control Systems**

The St. Lucie Plant is classified as a minor source of air pollution, since FDEP has issued a Federally Enforceable State Operating Permit (FESOP) to keep emissions less than 100 tons per year for any air pollutant regulated under the Clean Air Act. The applicable units at the St. Lucie Plant consist of eight large main plant diesel engines, two smaller diesel engines, and various general-purpose diesel engines. The air emissions from these engines are limited by the use of 0.05-percent sulfur diesel fuel and good combustion practices. Best Available Control Technology (BACT) is not applicable to these existing emission units.

Nitrogen oxide (NOₓ) emissions from the operation of the diesel engines comprise the limiting pollutant for these diesel units at the St Lucie Plant. The FDEP FESOP limits
NO\textsubscript{x} emissions to 99.4 tons, which includes fuel use limits on the large main plant emergency diesel engines of 97,000 gallons in any 12-month consecutive period and the smaller building and general purpose diesel engines of 190,000 gallons in any 12-month consecutive period. Also, the Plant may choose to combine the diesel units’ fuel-tracking, which then limits the NO\textsubscript{x} totals for a 12-month consecutive period to a maximum of 80 tons. There will be no change in the operation or emissions of the diesel engines resulting from the nuclear capacity uprates.

In addition, the generation capacity additions will not result in an increase of CO\textsubscript{2} or other greenhouse gas emissions. In fact, the increases in generation capacity are projected to result in decreased FPL system-wide emissions of CO\textsubscript{2}.

q. **Noise Emissions and Control Systems**
A field survey and impact assessment of noise expected to be caused by construction activities at the site was conducted. Predicted noise levels are not expected to result in adverse noise impacts in the vicinity of the site during construction or operation.

r. **Status of Applications**
A Site Certification Application (SCA) under the Florida Electrical Power Plant Siting Act was filed in December 2007 and a final order issued in September 2008. The FPSC voted to approve the need for the St. Lucie (and Turkey Point) nuclear capacity uprates and the final order approving the need for these capacity additions was issued in January 2008.

**Preferred Site #3: Turkey Point Plant, Miami-Dade County**

The Turkey Point Plant site is located on the west side of Biscayne Bay, 25 miles south of Miami. The site is directly on the shoreline of Biscayne Bay and is geographically located approximately 9 miles east of Florida City on Palm Drive. Public access to the plant site is limited due to the nuclear units located there. The land surrounding the site is owned by FPL and acts as a buffer zone. The site is comprised of two nuclear units (Units 3 & 4), two natural gas/oil conventional steam units (Units 1 & 2), one CC natural gas unit (Unit 5), nine small diesel generators, the cooling canals, an FPL-maintained natural wildlife area, and wetlands that have been set aside as the Everglades Mitigation Bank (EMB).
Turkey Point Units 3 & 4 have been in operation since 1972 and 1973, respectively. The Turkey Point site has been selected as a Preferred Site for the increase in the capacity of its two existing nuclear generating units by approximately 109 MW each. This work will involve changes to several existing main components within the existing facilities to increase their capability to produce steam for the generation of electricity. No new or expanded facilities are required as part of this capacity “uprate.” This capacity uprate, along with a similar capacity uprate of FPL’s existing St. Lucie nuclear units, was approved by the FPSC in January 2008. The capacity uprates at Turkey Point are projected to be in-service in 2012 and early 2013.

As previously mentioned, FPL is pursuing licensing for two new nuclear units at the Turkey Point site. Each of these two units would provide 1,100 MW of capacity. Current projections for the in-service dates of these two units, Turkey Point Units 6 & 7, are beyond the 2011 - 2020 reporting time frame of this document.

a. **U.S. Geological Survey (USGS) Map**
   A USGS map of the Turkey Point plant site is found at the end of this chapter.

b. **Proposed Facilities Layout**
   A map of the general layout of the Turkey Point Units 3 and 4 generating facility at the site is found at the end of this chapter.

c. **Map of Site and Adjacent Areas**
   An overview map of the site and adjacent areas is also found at the end of this chapter.

d. **Existing Land Uses of Site and Adjacent Areas**
   The five existing power generation units and support facilities occupy approximately 150 acres of the 11,000-acre Turkey Point Plant site. Support facilities include service buildings, an administration building, fuel oil tanks, water treatment facilities, circulating water intake and outfall structures, wastewater treatment basins, and a system substation. The cooling canal system occupies approximately 5,900 acres. The two 400-megawatt (MW) (nominal) fossil fuel-fired steam electric generation units at the Turkey Point Plant have been in service since 1967 (Unit 1) and 1968 (Unit 2). These units currently burn residual fuel oil and/or natural gas with a maximum equivalent sulfur content of 1 percent. The two 700-MW (nominal) nuclear units have been in service since 1972 (Unit 3) and 1973 (Unit 4).
and 4 are pressurized water reactor (PWR) units. Turkey Point Unit 5 is a nominal 1,150-MW natural gas-fired combined cycle (CC) unit that began operation in 2007. Significant features in the vicinity of the site include Biscayne National Park, the Miami-Dade County Homestead Bayfront Park, and the Everglades National Park.

### e. General Environment Features On and In the Site Vicinity

#### 1. Natural Environment

The prominent structures and enclosed facilities and equipment associated with Units 3 & 4 include: the containment building, which contains the nuclear steam supply system including the reactor, steam generators, reactor coolant pumps, and related equipment; the turbine generator building, where the turbine generator and associated main condensers are located; the auxiliary building, which contains waste management facilities, engineered safety components, and other facilities; and the fuel handling building, where the spent fuel storage pool and storage facilities for new fuel are located. Prominent features beyond the power block area include the intake system, cooling canal system, switchyard, spent fuel storage facilities, and technical and administrative support facilities.

#### 2. Listed Species

The construction during the uprating of the units, and operation of the units after the capacity uprating is completed, are not expected to adversely affect any rare, endangered, or threatened species. Listed species known to occur at the site and in the nearby Biscayne National Park that could potentially utilize the site include the peregrine falcon (*Falco peregrinus*), wood stork (*Mycteria americana*), American crocodile (*Crocodylus acutus*), mangrove rivulus (*Rivulus marmoratus*), roseate spoonbill (*Ajaja ajaja*), limpkin (*Aramus guarauna*), little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), American oystercatcher (*Haematopus palliatus*), least tern (*Sternula antillarum*), the white ibis (*Eudocimus albus*), and bald eagle (*Haliaeetus leucocephalus*). No bald eagle nests are known to exist in the vicinity of the site. The federally listed, threatened American Crocodile thrives at the Turkey Point site, primarily in and around the southern end of the cooling canals which lie south of the project area. The entire site is considered crocodile habitat due to the mobility of the species and use of the site for foraging, traversing, and basking. FPL manages a program for the conservation and enhancement of the American crocodile and is attributed with...
survival improvement and the downlisting of the American Crocodile from endangered to threatened.

3. Natural Resources of Regional Significance Status
Significant features in the vicinity on the site include Biscayne National Park, the Miami-Dade County Homestead Bayfront Park, and the Everglades National Park. The portion of Biscayne Bay adjacent to the site is included within the Biscayne National Park. Biscayne National Park contains 180,000 acres, approximately 95 percent of which is open water interspersed with more than 40 keys. The Biscayne National Park headquarters is located approximately 2 miles north of the Turkey Point plant and is adjacent to the Miami-Dade County Homestead Bayfront Park which contains a marina and day-use recreational facilities.

4. Other Significant Features
FPL is not aware of any other significant features of the site.

f. Design Features and Mitigation Options
Turkey Point Units 3 & 4 uses cooling water from a closed-cycle cooling canal system to remove heat from the main (turbine) condensers, and to remove heat from other auxiliary equipment. The existing cooling canals will accommodate the increase in heat load that is associated with the increased capacity from the uprates. The maximum projected increase in water temperature entering the cooling canal system from the units resulting from the uprates is predicted to be about 2.5F, from 106.1F to 108.6F. The associated projected maximum increase in water temperature returning to the units is about 0.9F, from 91.9F to 92.8F.

g. Local Government future Land Use Designations
Local government future land use plan designates most of the site as IU-3 “Industrial, Unlimited Manufacturing District.” There are also areas designated GU – “Interim District.” Designations for the surrounding area are primarily GU – “Interim District.”

h. Site Selection Criteria Process
The site has been selected as a Preferred Site for the nuclear capacity uprates because it is an existing nuclear plant site and, therefore, offers the opportunity for increased nuclear capacity.
i. **Water Resources**

Unique to the Turkey Point plant site is the self-contained cooling canal system that supplies water to condense steam used by the plant's turbine generators. The canal system consists of 36 interconnected canals. The cooling canals occupy an area approximately two miles wide by five miles long (5,900 acres), approximately four feet deep. The system performs the same function as a giant radiator. The water is circulated through the canals in a two-day journey, ending at the plant's intake pumps.

j. **Geological Features of Site and Adjacent Areas**

The Turkey Point Plant lies upon the Floridian Plateau, a partly-submerged peninsula of the continental shelf. The peninsula is underlain by approximately 4,000 to 15,000 feet of sedimentary rocks consisting of limestone and associated formations that range in age from Paleozoic to Recent. Little is known about the basement complex of Paleozoic igneous and metamorphic rocks due to their great depth.

Generally in Miami-Dade County, the surficial aquifer (Biscayne Aquifer) consists of a wedge-shaped system of porous clastic and carbonate sedimentary materials, primarily limestone and sand deposits of the Miocene to late Quaternary age. The Biscayne Aquifer is thickest along the eastern coast and varies in thickness from 80 to 200 feet thick. The surficial aquifer is typically composed of Pamlico Sand, Miami Limestone (Oolite), the Fort Thompson and Anastasia Formations (lateral equivalents), Caloosahatchee Marl, and the Tamiami formation. The lower confining layers below the surficial aquifer range in thickness from 350 to 600 feet and are composed of the Hawthorn Group. Beneath the Hawthorn Group, the Floridan Aquifer System ranges from 2,800 to 3,400 feet thick and consists of Suwannee Limestone, Avon Park Limestone, and the Oldsmar Formations.

k. **Projected Water Quantities for Various Uses**

The addition of nuclear generating capacity as a result of the uprates will not cause any changes in the quantity or characteristics of industrial wastewaters generated by the facility; therefore, no change in that compliance achievement status is expected. The uprates will not cause any changes in hydrologic or water quality conditions due to diversion, interception, or additions to surface water flow. The Turkey Point Plant does not directly withdraw groundwater under its current operations and it will not do so after the capacity uprates. Locally, groundwater is present beneath the site in the surficial or Biscayne Aquifer and in deeper aquifer zones that are part of the Floridan...
Aquifer System. There will be no effects on those deeper aquifer zones from the capacity uprates.

1. **Water Supply Sources and Type**
   The source of cooling water for Turkey Point Units 3 & 4 is the cooling canal system. There will be no increase in the amount of water withdrawn as a result of the capacity uprates. General plant service water, fire protection water, process water, and potable water are obtained from Miami-Dade County. Process water uses include demineralizer regeneration, steam cycle makeup, and general service water use for washdowns. The water use for the facility will not change as a result of the capacity uprates.

m. **Water Conservation Strategies**
   The existing water resources will not change as a result of the uprates.

n. **Water Discharges and Pollution Control**
   Heated water discharges are dissipated using the existing closed cooling canal system.

   The facility employs a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

o. **Fuel Delivery, Storage, Waste Disposal, and Pollution Control**
   Turkey Point Units 3 & 4 utilize uranium-dioxide fuel that is slightly enriched uranium-235. The uranium-dioxide fuel is in the form of pellets contained in Zircaloy tubes with welded end plugs to confine radionuclides. The tubes are fabricated into assemblies designed for loading into the reactor core. Used fuel assemblies are stored in the onsite NRC-approved spent fuel storage facilities.

   FPL currently replaces approximately one-third of the fuel assemblies in each reactor at refueling intervals of approximately 18 months. FPL operates the reactors such that the average fuel usage by the reactors is approximately 45,000 megawatt-days per metric ton of uranium. Following completion of the uprates, more nuclear fuel will be used to increase the capacity of each unit. No changes in the fuel handling facilities are required. Following completion of the uprates, approximately 11 percent
more nuclear fuel will be used to increase the capacity of each unit. No changes in the fuel-handling facilities are required.

Diesel fuel is used in a number of emergency generators that include four main emergency generators, five smaller emergency generators, and various general purpose diesel engines. The emergency generators will not be changed as a result of the capacity uprates. These emergency generators are for stand-by use only and only operated for testing purposes to assure reliability and for maintenance. Diesel fuel for the emergency generators is delivered to the Turkey Point Plant by truck as needed, and stored in tanks with secondary containment.

p. **Air Emissions and Control Systems**

The normal operation of Turkey Point Units 3 & 4 does not create fossil fuel-related air emissions. However, there are nine emergency generators associated with Units 3 & 4. Four of these nine emergency generators are main plant emergency generators which are rated at 2.5 MW each. The remaining five generators are smaller emergency generators which are associated with the security system. In addition, various general purpose diesels are used as needed for Units 3 & 4.

Turkey Point Plant Units 3 & 4’s associated emergency generators and diesel engines, together with Units 1, 2, & 5, are classified as a major source of air pollution. FDEP has issued a separate Title V Air Operating Permit for the Turkey Point Nuclear Plant (Permit Number 0250003-004-AV). There are no operating limits for the emergency generators or diesel engines. Emergency diesel generators are limited to ultra-low sulfur distillate (0.0015% sulfur). NOx emissions are regulated under Reasonably Available Control Technology (RACT) requirements in Rule 62-296.570(4)(b)7 F.A.C., which limit NOx emissions to 4.75 lb/MMBtu. The use of 0.05 percent sulfur diesel fuel and good combustion practices serve to keep NOx emissions under this limit.

q. **Noise Emissions and Control Systems**

A field survey and impact assessment of noise expected to be caused by activities associated with the uprates was conducted. Predicted noise levels are not expected to result in adverse noise impacts in the vicinity of the site.
r. **Status of Applications**

A Site Certification Application (SCA) under the Florida Electrical Power Plant Siting Act was filed in January 2008 and a final order was issued in October 2008. The FPSC voted to approve the need for the Turkey Point (and St. Lucie) uprates and the final order approving the need for this additional nuclear capacity was issued in January 2008.

**Preferred Site # 4: Cape Canaveral Plant, Brevard County**

This site is located on the existing FPL Cape Canaveral Plant property in unincorporated Brevard County. The site is bound to the east by the Indian River Lagoon and on the west by a four lane highway (US 1). The city of Port St. Johns is located less than a mile away. A rail line is located near the plant.

The site previously housed two steam units (Units 1 & 2) with 788 MW (summer) of generating capacity. The units formerly occupied a portion of the 43 acres that are wholly owned by FPL. The units have been taken out of service and dismantlement of the Cape Canaveral Plant began in mid-2010 and is expected to be complete by the end of first quarter 2011.

The Cape Canaveral Plant site has been listed as a Potential Site in previous FPL Site Plans for both CC and simple cycle combustion turbine (CT) generation options. FPL is in the process of modernizing the existing Cape Canaveral Plant, to be renamed the Cape Canaveral Next Generation Clean Energy Center (CCEC), by replacing the previous two steam generating units with a single modern, highly efficient, lower-emission next-generation clean energy center using the latest CC technology.

a. **Geological Survey (USGS) Map**

A USGS map of the CCEC site is found at the end of this chapter.

b. **Proposed Facilities Layout**

A map of the general layout of the CCEC generating facilities at the site is found at the end of this chapter.

c. **Map of Site and Adjacent Areas**

An overview map of the site and adjacent areas is also found at the end of this chapter.
d. **Existing Land Uses of Site and Adjacent Areas**

The existing and future land uses on the site are primarily dedicated to electrical generation; i.e., FPL’s former Cape Canaveral Units 1 & 2 and the future CCEC unit. The existing land uses that are adjacent to the site consist of single- and multi-family residences to the south and southwest, commercial property to the northwest, utility systems to the west, and a private medical/office facility to the north.

e. **General Environment Features On and In the Site Vicinity**

1. **Natural Environment**

   The natural environment surrounding the site includes the Indian River Lagoon to the east and upland scrub, pine and hardwoods to the north and south. Vegetation with the approximately 45-acre offsite construction laydown and parking area (located west of U.S. Highway 1) consists of open land, upland scrub, pine, hardwoods along with exotic plant species.

2. **Listed Species**

   No adverse impacts to federally or state-listed terrestrial plants and animals are expected in association with construction at the site, due to the existing developed nature of the site and lack of suitable onsite habitat for listed species. Federal- or state-listed terrestrial plants and animals inhabiting the offsite construction laydown and parking area are limited to the state-listed gopher tortoise and the state- and federally-listed scrub jay. The warm water discharges from the plant attract manatees, an endangered species. FPL continues to work closely with state and federal wildlife agencies to ensure protection of the manatees during the modernization process and upon operation of the new plant. In 2010, FPL installed a temporary heating system to warm the water for the manatees as required during manatee season. FPL will also be complying with several other manatee-related conditions of certification to ensure the protection of the manatees during the modernization work.

3. **Natural Resources of Regional Significance Status**

   The construction and operation of a natural gas-fired CC generating facility at this location is consistent with the existing use at the site and is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands.
4. **Other Significant Features**

FPL is not aware of any other significant features of the site.

f. **Design Features and Mitigation Options**

The design option is to replace the existing steam generating units (Units 1 & 2) with one new 1,210 MW (approximate) CC unit consisting of three new combustion turbines (CT), three new heat recovery steam generators (HRSG), and a new steam turbine. The new CC unit is projected to be in-service in mid-2013. Natural gas delivered via pipeline is the primary fuel type for this unit with ultra-low sulfur light oil serving as a backup fuel.

g. **Local Government Future Land Use Designations**

Local government future land use designation for the site is “Public Utilities” and the area has been rezoned to GML-U. Designations for the surrounding area are primarily “Community Commercial” and “Residential”.

h. **Site Selection Criteria Process**

The Cape Canaveral Plant has been selected for a site modernization due to consideration of various factors including system load and economics. Environmental issues were not a deciding factor since this site does not exhibit significant environmental sensitivity or other environmental issues. However, there are environmental benefits of replacing the previous steam units with a new CC unit including a significant reduction in system fuel use, a significant reduction in system air emissions, improved aesthetics at the site, and continued warm water discharge for the manatees as required during manatee season. Further, modernizing this existing facility reduces the impact on natural resources by not requiring new land, new water sources, or additional off-site transmission siting.

i. **Water Resources**

Condenser cooling for the steam cycle portion of the new plant and auxiliary cooling will come from the existing cooling water intake system. Process, potable, and irrigation water for the new plant will come from the existing City of Cocoa’s potable water supply.

j. **Geological Features of Site and Adjacent Areas**

FPL’s Cape Canaveral Plant is located on the Atlantic Coastal Ridge and is at an approximate elevation of 12 feet above mean sea level (msl). The land consists
primarily of fine to medium sand that parallels the coast. There is a lack of shell as it was deposited during a time of transgression. The base of the sedimentary rocks is made up of a thick, primarily carbonate sequence deposited during the Jurassic age through the Pleistocene age. Starting in the Miocene age and continuing through the Holocene age, siliciclastic sedimentation became more predominant. The basement rocks in this area consist of low-grade metamorphic and igneous intrusives, which occur several thousand feet below land surface and are Precambrian, Paleozoic, and Mesozoic in age.

k. **Projected Water Quantities for Various Uses**
   The estimated quantity of water required for processing is approximately 0.232 million gallons per day (mgd) for uses such as process water and service water. Approximately 619 mgd of cooling water would be cycled through the once-through cooling water system. Potable water demand is expected to average .001 mgd.

l. **Water Supply Sources by Type**
   The modernized plant will continue to use the Indian River Lagoon water as the source of once-through cooling water. Such needs for cooling water will comply with the St. John's River Water Management District (SJRWMD) conditions of certification. Process and potable water for the new plant will come from the existing City of Cocoa's potable water supply. Reclaimed water will be used for irrigation.

m. **Water Conservation Strategies Under Consideration**
   No additional water sources will be required as a result of the modernization project.

n. **Water Discharges and Pollution Control**
   The modernized site will utilize portions of the existing once-through cooling water systems for heat dissipation. The heat recovery steam generator blowdown will be mixed with the cooling water flow before discharge. Reverse osmosis (R/O) reject will be mixed with the plant's once-through cooling water system. Stormwater runoff will be collected and routed to stormwater ponds. The facility will employ a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.
o. **Fuel Delivery, Storage, Waste Disposal, and Pollution Control**

Natural gas for the new unit will be transported to the site via a pipeline. New off-site or on-site gas compressors will be installed to raise the gas pressure of the existing pipeline for the new unit. Ultra-low sulfur light fuel oil will be received by truck or barge from Port Canaveral and stored in an existing above-ground storage tank.

p. **Air Emissions and Control Systems**

The emission rates of CCEC would decrease by over 90% from the existing Cape Canaveral Plant, resulting in substantial annual emissions reductions and increased air quality benefits. The use of natural gas and ultra-low sulfur light fuel oil and combustion controls would minimize air emissions from the unit and ensure compliance with applicable emission limiting standards. Using these fuels minimizes emissions of sulfur dioxide (SO₂), particulate matter, and other fuel-bound contaminants. Combustion controls similarly minimize the formation of nitrogen oxides (NOₓ) and the combustor design will limit the formation of carbon monoxide and volatile organic compounds. When firing natural gas, NOₓ emissions will be controlled using dry-low NOₓ combustion technology and selective catalytic reduction (SCR). Water injection and SCR will be used to reduce NOₓ emissions during operations when using ultra-low sulfur light fuel oil as backup fuel. These design alternatives are equivalent to the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. In total, the design of the new CCEC plant will incorporate features that would make it among the most efficient and cleanest power plants in the State of Florida.

q. **Noise Emissions and Control Systems**

Noise from the operation of the new unit will be within allowable levels.

r. **Status of Applications**

The FPSC voted to approve the need for the modernization project and the need order was issued in September 2008. The project received final state certification on October 9, 2009, through the issuance of a final order signed by the Secretary of the DEP.
Preferred Site # 5: Riviera Plant, Palm Beach County

This site is located on the existing FPL Riviera Plant property primarily within Riviera Beach, Palm Beach County (with a small portion of the Site in West Palm Beach). The site is bound to the east by the Lake Worth Lagoon (Intracoastal Waterway) and on the west by a four lane highway (US. 1). The site has barge access via the Port of Palm Beach. A rail line is located near the plant.

The previous site generating capacity was made up of two 300 MW (approximate) steam generating units (Units 3 & 4) that have been taken out of service and will be dismantled in 2011. Units 1 & 2 were previously retired and dismantled and are no longer on the plant site.

The Riviera Plant site has been listed as a Potential Site in previous FPL Site Plans for both CC and simple cycle combustion turbine (CT) generation options. FPL is in the process of modernizing the existing Riviera Plant, to be renamed the Riviera Beach Next Generation Clean Energy Center (RBEC), by replacing the existing generating units with a modern, highly efficient, lower-emission next-generation clean energy center using the latest CC technology. The existing two steam units will first be removed from the site and will be replaced by a single new CC unit.

a. U.S. Geological Survey (USGS) Map
   A USGS map of the RBEC site is found at the end of this chapter.

b. Proposed Facilities Layout
   A general layout of the RBEC generating facilities is found at the end of this chapter.

c. Map of Site and Adjacent Areas
   An overview map of the site and adjacent areas is also found at the end of this chapter.

d. Existing Land Uses of Site and Adjacent Areas
   The previous Riviera Plant consisted of two 300 MW (approximate) units with conventional dual-fuel fired steam boilers and steam turbine units. The plant site includes minimal vegetation and a landscape buffer area south of the power plant. Adjacent land uses include port facilities and associated industrial activities, as well as light commercial and residential development.
e. General Environment Features On and In the Site Vicinity

1. Natural Environment
   The majority of the site is comprised of facilities related to electric power generation for the existing Riviera Plant generating units. The site is located adjacent to the Intracoastal waterway. The site provides warm water as required for manatees during manatee season.

2. Listed Species
   No adverse impacts to federally or state-listed terrestrial plants and animals are expected in association with construction at the site, due to the existing developed nature of the site and lack of suitable onsite habitat for listed species. The warm water discharges from the plant attract manatees, an endangered species. FPL continues to work closely with state and federal wildlife agencies to ensure protection of the manatees during the modernization process and upon operation of the new plant. In 2009, FPL installed a temporary heating system to warm the water for the manatees as required during manatee season. FPL will also be complying with several other manatee-related conditions of certification to ensure the protection of the manatees during the modernization work.

3. Natural Resources of Regional Significance Status
   The construction and operation of a natural gas-fired CC generating facility at this location is consistent with the existing use at the site and is not expected to have any adverse impacts on parks, recreation areas, or environmentally sensitive lands.

4. Other Significant Features
   FPL is not aware of any other significant features of the site.

f. Design Features and Mitigation Options
   The design option is to replace the existing units (Units 3 & 4) with one new 1,212 MW (approximate) unit consisting of three new combustion turbines (CT), three new heat recovery steam generators (HRSG), and a new steam turbine. The new CC unit is projected to be in service in mid-2014. Natural gas delivered via pipeline is the primary fuel type for the unit with ultra-low sulfur light oil serving as a backup fuel.
g. **Local Government Future Land Use Designations**

Local government future land use designation for the site is “Utility”. The Port of Palm Beach is to the north of the site. Designation to the west of the site is “Commercial”. To the south of the site is “Residential” and is in the City of West Palm Beach.

h. **Site Selection Criteria Process**

The Riviera plant has been selected for site modernization due to consideration of various factors including system load and economics. Environmental issues were not a deciding factor since this site does not exhibit significant environmental sensitivity or other environmental issues. However, there are environmental benefits of replacing the existing steam units with a new CC unit including a significant reduction in system air emissions, improved aesthetics at the site and continued warm water discharge for the manatees as required during manatee season. Further, modernizing this existing facility reduces the impact on natural resources by not requiring new land or new water sources.

i. **Water Resources**

Water from the Lake Worth Lagoon (Intracoastal waterway) is currently used for once-through cooling water. The new plant will utilize portions of the existing once-through cooling water intake and discharge structures. Water for cooling pump seals and irrigation will come from three onsite surficial aquifer wells. Process and potable water for the converted plant will come from the existing City of Riviera Beach potable water supply.

j. **Geological Features of Site and Adjacent Areas**

FPL's Riviera Plant site is underlain by the surficial aquifer system. The Surficial aquifer system in eastern Palm Beach County is primarily composed of sand, sandstone, shell, silt, calcareous clay (marl), and limestone deposited during the Pleistocene and Pliocene Epochs. The sediments forming the aquifer system are the Pamlico Sand, Fort Thompson Formation (Pleistocene) and the Caloosahatchee Marl (Pleistocene and Pliocene). Permeable sediments in the upper part of the Tamiami Formation (Pliocene) are also part of the aquifer system. The sediments in the eastern portion of the county are appreciably more permeable than in the west due to better sorting and less silt and clay content.
The surficial aquifer is underlain by at least 600 feet the Hawthorn formation (confining unit). The Floridan Aquifer System underlies the Hawthorn formation.

k. **Projected Water Quantities for Various Uses**
The estimated quantity of water required for processing is approximately 0.232 million gallons per day (mgd) for uses such as process water and service water. Approximately 600 mgd of cooling water would be cycled through the once-through cooling water system. Potable water demand is expected to average .001 mgd.

l. **Water Supply Sources by Type**
The modernized plant will continue to use the Lake Worth Lagoon water as the source of once-through cooling water. Water for cooling pump seals and irrigation will come from on-site surficial aquifer wells currently authorized under SFWMD conditions of certification. Process and potable water for the new plant will come from the existing City of Riviera Beach's potable water supply.

m. **Water Conservation Strategies Under Consideration**
No additional water sources will be required as a result of the modernization project.

n. **Water Discharges and Pollution Control**
The modernized plant will utilize portions of the existing once-through cooling water system for heat dissipation. The heat recovery steam generator blowdown will be mixed with the cooling water flow before discharge. Reverse osmosis (R/O) reject will be mixed with the plant's once-through cooling water system prior to discharge. Stormwater runoff will be collected and routed to stormwater ponds. The facility will employ a Best Management Practices (BMP) plan and Spill Prevention, Control, and Countermeasure (SPCC) plan to prevent and control the inadvertent release of pollutants.

o. **Fuel Delivery, Storage, Waste Disposal, and Pollution Control**
Natural gas for the new unit would be transported to the site via an approximately 6 mile FPL-owned pipeline, the RBEC Lateral. New gas compressors will be installed at the existing FPL 45th Street Terminal facility in Riviera Beach to raise the gas pressure of the pipeline to the appropriate level for the new unit. Ultra-low sulfur light fuel oil would be received by truck, pipeline, or barge and stored in a new above-ground storage tank.
p. **Air Emissions and Control Systems**
   The regulated air emissions at the new plant would be more than 90 percent lower than the previous Riviera Plant's emissions are, resulting in significant annual emissions reductions and air quality benefits. The use of natural gas and ultra-low sulfur light fuel oil and combustion controls would minimize air emissions from the unit and ensure compliance with applicable emission limiting standards. Using these fuels minimizes emissions of sulfur dioxide (SO₂), particulate matter, and other fuel-bound contaminants. Combustion controls similarly minimize the formation of nitrogen oxides (NOₓ) and the combustor design will limit the formation of carbon monoxide and volatile organic compounds. When firing natural gas, NOₓ emissions will be controlled using dry-low NOₓ combustion technology and selective catalytic reduction (SCR). Water injection and SCR will be used to reduce NOₓ emissions during operations when using ultra-low sulfur light fuel oil as backup fuel. These design alternatives are equivalent to the Best Available Control Technology for air emissions, and minimize such emissions while balancing economic, environmental, and energy impacts. Taken together, the design of RBEC would incorporate features that will make it among the most efficient and cleanest power plants in the State of Florida.

q. **Noise Emissions and Control Systems**
   Noise expected to be caused by unit construction at the site is expected to be below current noise levels for the residents nearest the site.

r. **Status of Applications**
   The FPSC voted to approve the need for the modernization project and the need order was issued in September 2008. The project received final state certification on November 24, 2009, through the issuance of a final order signed by the Secretary of the DEP. Final approval for the RBEC 6 mile pipeline lateral and compressor station is expected by end of March 2011.

IV.F.2 **Potential Sites for Generating Options**
   Thirteen (13) sites are currently identified as Potential Sites for near-term future generation additions to meet FPL's projected capacity and energy needs.⁵ These sites have been identified as Potential Sites due to considerations of location to FPL load

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⁵ As has been described in previous FPL Site Plans, FPL also considers a number of other sites as possible sites for future generation additions. These include the remainder of FPL's existing generation sites and other Greenfield sites. Greenfield sites that FPL currently does not own, or for which FPL has not currently secured the necessary rights to, are not specifically identified as Potential Sites in order to protect the economic interests of FPL and its customers.
centers, space, infrastructure, and/or accessibility to fuel and transmission facilities. These sites are suitable for different capacity levels and technologies, including both renewable energy and non-renewable energy technologies for various sites.

Each of these Potential Sites offer a range of considerations relative to engineering and/or costs associated with the construction and operation of feasible technologies. In addition, each Potential Site has different characteristics that will require further definition and attention. Solely for the purpose of estimating water requirements for sites more suited for non-renewable energy technologies, it was assumed that either one dual-fuel (natural gas and light oil) simple cycle CT or a natural gas-fired CC unit would be constructed at these Potential Sites unless otherwise noted.

A simple cycle CT would require approximately 50 gallons per minute (gpm) for both process and cooling water (assuming a cooling tower was utilized). A CC unit would require approximately up to 150 gpm for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower is utilized). If an existing power plant site is ultimately selected for modernization (as is the case with FPL's Cape Canaveral and Riviera sites), the water requirements discussed above for a CC unit would be approximately correct for the modernized site. If a renewable energy generating technology is ultimately selected for one of these sites, the water requirements would be significantly less than those for CT or CC facilities.

Permits are presently considered to be obtainable for each of these sites. No significant environmental constraints are currently known for any of these sites. The Potential Sites briefly discussed below are presented in alphabetical order. At this time, FPL considers each site to be equally viable. As noted previously, FPL also considers a number of other sites as possible sites for future generation additions. These include all of the remainder of FPL's existing generation sites and other Greenfield sites.

**Potential Site # 1: Babcock Ranch, Charlotte County**

This site is located within the proposed Babcock Ranch Community on the north side of Tuckers Grade, approximately 10.5 miles north of the intersection of SR-80 and SR-31 and 1.1 miles east of SR-31. The project is bordered on the north by the Babcock Ranch Preserve owned by the State of Florida. The site is within the SFWMD and, therefore, the drainage would be in accordance with the SFWMD Basis of Review. Permitting of the surface water management system would be through the Florida Department of
Environmental Protection (FDEP) - South District. This site is a possibility for an FPL photovoltaic (PV) facility.

a. **U.S. Geological Survey (USGS) Map**
   A map of this site is found at the end of this chapter.

b. **Land Uses**
   Existing land use on the site is the Babcock Ranch Overlay District, and it is zoned as the Babcock Ranch Overlay Zoning District. This land use and zoning allows for solar facilities.

c. **Environmental Features**
   FPL would anticipate mitigating for any panther and/or wetland impacts as a result of a PV project at this site.

d. **Water Quantities**
   Minimal amounts of water would be required for a PV facility.

e. **Supply Sources**
   Minimal water would be required for a PV facility. A small amount may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. Any such water would be brought to the site by truck.

**Potential Site # 2: DeSoto Solar Expansion, DeSoto County**

The DeSoto site is located at 4051 Northeast Karson Street approximately 0.3 miles east of US 17 and immediately north of Bobay Road in Arcadia, Florida. The site is located in Sections 26, 27, & 35, Township 36 South, and Range 25 East. FPL owns an approximate 13,000 acre parcel in DeSoto County. FPL has designated approximately 5,177 acres for development of a photovoltaic (PV) facility.

The DeSoto site was previously selected as the site for the addition of a 25 MW PV facility, which is operational. There is also a potential to create an additional 275 MW PV generating facility which could be implemented in phases on the additional land.

a. **U.S. Geological Survey (USGS) Map**
   A map of this site is found at the end of this chapter.
b. **Land Uses**
   Existing land use on the site is agricultural. The future land use is Electric Generating Facility.

c. **Environmental Features**
   There are no significant environmental features on the site.

d. **Water Quantities**
   Minimal amounts of water would be required for a future expansion of the existing PV facility.

e. **Supply Sources**
   Minimal water would be required at for an expanded PV facility. A small amount may be needed to occasionally clean the solar panels in the absence of sufficient rainfall and potable water will be required in the administration building and maintenance building. FPL would propose to utilize existing wells onsite to accommodate water needs.

**Potential Site # 3: Florida Heartland, Glades County**

This site is located within Glades County off of SR 78. This site is a possibility for an FPL PV facility.

a. **U.S. Geological Survey (USGS) Map**
   A map of this site is found at the end of this chapter.

b. **Land Uses**
   The existing land use on the site is agriculture.

c. **Environmental Features**
   FPL would anticipate mitigating for any wildlife and/or wetland impacts as a result of a PV project at this site.

d. **Water Quantities**
   Minimal amounts of water would be required for a PV facility.
e. **Supply Sources**

Minimal water would be required for a PV facility. A small amount may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. Any such water would be brought to the site by truck.

**Potential Site # 4: Hendry County**

FPL is currently evaluating potential sites in Hendry County for a future PV facility or fossil generation. Sites currently under investigation are approximately 1,500 acres. No specific locations have been selected at this time.

a. **U.S. Geological Survey (USGS) Map**

A USGS map of the county has been included at the end of this chapter.

b. **Land Uses**

Hendry County has predominantly agricultural land use.

c. **Environmental Features**

This information is not available because a specific site has not been selected at this time.

d. **Water Quantities**

Minimal amounts of water would be required for a PV facility. Fossil generation would require approximately up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower is utilized).

e. **Supply Sources**

Minimal water would be required for a PV facility. A small amount may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. The supply of water for fossil generation would be dependent upon the selection of a specific site.

**Potential Site # 5: Manatee Plant Site, Manatee County**

The existing FPL Manatee Plant 9,500-acre site is located in unincorporated north-central Manatee County. The existing power generating facilities are located in all or portions of Sections 18 and 19 of Township 33S, Range 20-E. The plant site lies approximately 5
miles east of Parrish, Florida. It is approximately 5 miles east of U.S. 301 and 9.5 miles east of Interstate Highway 75 (I-75). The existing plant is approximately 2.5 miles south of the Hillsborough-Manatee County line; a portion of the north property boundary of the plant site abuts the county line. State Road 62 (SR 62) is about 0.7 mile south of the plant, with the plant entrance road going north from that highway. This site is a possible location for an FPL PV facility.

a. **U.S. Geological Survey (USGS) Map**
   A map of the site is found at the end of this chapter.

b. **Land Uses**
   Existing land use on the site is agricultural. The property is zoned Planned Development / Public Interest (PD-PI), which will allow for electrical generation.

c. **Environmental Features**
   FPL would anticipate mitigating for any wildlife and/or wetland impacts as a result of a PV project at this site.

d. **Water Quantities**
   Minimal amounts of water would be required for a PV facility.

e. **Supply Sources**
   Minimal water would be required for a PV facility. A small amount may be needed to occasionally clean the solar panels in the absence of sufficient rainfall.

**Potential Site # 6: Martin County**

FPL is currently evaluating potential sites in Martin County for a future PV facility. No specific locations have been selected at this time.

a. **U.S. Geological Survey (USGS) Map**
   A USGS map of the county has been included at the end of this chapter.

b. **Land Uses**
   This information is not available because a specific site has not been selected at this time.
c. **Environmental Features**
   This information is not available because a specific site has not been selected at this time.

d. **Water Quantities**
   Minimal amounts of water would be required for a PV facility.

e. **Supply Sources**
   Minimal water would be required for a PV facility. A small amount may be needed to occasionally clean the solar panels in the absence of sufficient rainfall.

**Potential Site # 7: Northeast Okeechobee County**

FPL is currently evaluating potential sites in Northeast Okeechobee County for a future PV facility or fossil generation. Sites currently under investigation are approximately 1,500 acres. No specific locations have been selected at this time.

a. **U.S. Geological Survey (USGS) Map**
   A USGS map of the county has been included at the end of this chapter.

b. **Land Uses**
   Northeast Okeechobee County has predominantly agricultural land use.

c. **Environmental Features**
   This information is not available because a specific site has not been selected at this time.

d. **Water Quantities**
   As previously discussed, needed water quantities for fossil generation would be up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower would be utilized). Needed water quantities would be significantly less for a PV facility.

e. **Supply Sources**
   Existing groundwater and/or regional water supply initiatives are potential water sources.
Potential Site # 8: Palatka Site, Putnam County

FPL is currently evaluating a site adjacent to the FPL Putnam Plant in Putnam County for future fossil generation. The approximately 170 acre site was the location of the former FPL Palatka Plant which was dismantled in the 1990s.

a. U.S. Geological Survey (USGS) Map
   A map of the site is found at the end of this chapter.

b. Land Uses
   The site has a land use designation of Industrial.

c. Environmental Features
   The majority of site has been previously impacted by past power plant operations. No significant environmental features have been identified at this time.

d. Water Quantities
   As previously discussed, needed water quantities would be up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming cooling tower).

e. Supply Sources
   The St John's River, existing groundwater, and/or regional water supply initiatives are potential water sources.

Potential Site # 9: Port Everglades Plant, Broward County

The 94-acre FPL Port Everglades plant site is located at Port Everglades in Broward County. The site has convenient access to State Road (S.R.) 84 and I-595. Rail line is located near the plant. The existing plant consists of four steam boiler generating units: two 200 MW (approximate) and two 400 MW (approximate) sized units. The four steam boilers are capable of firing residual fuel oil, natural gas, or a combination of both. The site is also home to 12 simple cycle gas turbine (GT) peaking units of 35 MW (approximate) each. The GTs are capable of firing either natural gas or liquid fuel. This site is being considered for a potential modernization.

a. U.S. Geological Survey (USGS) Map
   A map of the site is found at the end of this chapter.
b. **Land Uses**
The land on this site is primarily industrial. The adjacent land uses are port facilities and associated industrial activities, oil storage, cruise ships, and light commercial.

c. **Environmental Features**
The shoreline of the intake and discharge canal banks are vegetated with fringing mangrove, with some open, maintained grass areas on the side.

d. **Water Quantities**
Water quantities would be up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming cooling tower).

e. **Supply Sources**
Existing groundwater or the municipal water supply could be used for industrial process and makeup water. Industrial cooling water needs could be met using the existing once-through cooling water system.

**Potential Site # 10: Putnam County**

FPL is currently evaluating potential sites in Putnam County for a future PV facility or fossil generation. Sites currently under investigation are approximately 2,800 acres. No specific locations have been selected at this time.

a. **U.S. Geological Survey (USGS) Map**
A USGS map of the county has been included at the end of this chapter.

b. **Land Uses**
Not available because a specific site has not been selected at this time.

c. **Environmental Features**
This information is not available because a specific site has not been selected at this time.

d. **Water Quantities**
Minimal amounts of water would be required for a PV facility. Fossil generation would require approximately up to 150 gallons per minute (gpm) for process water and up to
7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower is utilized).

e. Supply Sources
Existing groundwater is a potential water source.

Potential Site # 11: Southwest Indian River County

FPL is currently evaluating potential sites in Southwest Indian River County for a future PV facility or fossil generation. Sites currently under investigation are approximately 1,500 acres. No specific locations have been selected at this time.

a. U.S. Geological Survey (USGS) Map
A USGS map of the county has been included at the end of this chapter.

b. Land Uses
Southwestern Indian River County has predominantly agricultural land use.

c. Environmental Features
Not available because a specific site has not been selected at this time.

d. Water Quantities
As previously discussed, needed water quantities for fossil generation would be up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower is utilized). Needed water quantities would be significantly less for a PV facility.

e. Supply Sources
Existing groundwater is a potential water source.

Potential Site # 12: Space Coast Solar Expansion, Brevard County

The Space Coast site is located at NASA's Kennedy Space Center property in Brevard County. This site currently consists of a 10 MW PV facility with the potential to expand by another 10 MW. Also, FPL is evaluating the potential for further expansion beyond the existing site, within the Space Center property.
a. **U.S. Geological Survey (USGS) Map**
A USGS map of the site has been included at the end of this chapter.

b. **Land Uses**
NASA, a federal agency, has approved use of the land at the site for PV generation.

c. **Environmental Features**
There are no significant environmental features on this site.

d. **Water Quantities**
Minimal amounts of water would be required for an expansion of the PV facility.

e. **Supply Sources**
No water would be required for an expansion of the PV facility except the small amount that may be needed to occasionally clean the solar panels in the absence of sufficient rainfall. Any such water would be brought to the site by truck or would come from existing onsite wells.

**Potential Site # 13: West Broward, Broward County**

FPL has identified its Andytown Substation property in western unincorporated Broward County as a potential site for the addition of new fossil generating capacity and FPL refers to this potential site as the West Broward site. Current facilities on-site include an electric substation. The existing site is an area accessible to both natural gas and electrical transmission through existing structures or through additional lateral connections.

a. **U.S. Geological Survey (USGS) Map**
A USGS map of the county has been included at the end of this chapter.

b. **Land Uses**
The land uses for the site are designated as agricultural use.

c. **Environmental Features**
Extensive low-quality wetlands are present on the site. Known presence of listed species nearby, e.g. wood storks, will require further investigation.
d. **Water Quantities**
As previously discussed, needed water quantities for fossil generation would be up to 150 gallons per minute (gpm) for process water and up to 7.5 million gallons per day (mgd) per unit for cooling water (assuming a cooling tower is utilized).

e. **Supply Sources**
Groundwater from the shallow aquifer or a local source of reclaimed (reuse) water has been identified as potential water sources. The Floridan Aquifer has also been identified as a potential cooling water source. FPL will also consider the potential for alternative water development options at this site.
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Environmental and Land Use Information:
Supplemental Information

Preferred Site#1: West County Energy Center
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Environmental and Land Use Information:
Supplemental Information

Preferred Site #2: St. Lucie Plant
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(This page is left intentionally blank.)
Environmental and Land Use Information:
Supplemental Information

Preferred Site #3: Turkey Point Plant
(This page is left intentionally blank.)
Environmental and Land Use Information:
Supplemental Information

Preferred Site #4: Cape Canaveral Plant
(This page is left intentionally blank.)
Environmental and Land Use Information:
Supplemental Information
Preferred Site #5: Riviera Plant
(This page is left intentionally blank.)
Florida Power & Light Company

191
FLORIDA POWR LIGHT COMPANY

LEGEND

SCALE

PROJECT

FPL

RIVIERA BEACH ENERGY CENTER

LAND USE / LAND COVER

REFERENCES

Florida Power & Light Company
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Environmental and Land Use Information:
Supplemental Information

Potential Site #1: Babcock Ranch
Environmental and Land Use Information:
Supplemental Information

Potential Site #2: Desoto Solar Expansion
(This page is left intentionally blank.)
Environmental and Land Use Information:
Supplemental Information

Potential Site #3: Florida Heartland Solar
FIGURE 2

LAND USE / LAND COVER

REFERENCES
1. Florida Heartland Solar, FPL, 2011
2. Land Use, EPB AND FPLC, 2014-15
Environmental and Land Use Information:  
Supplemental Information

Potential Site # 4: Hendry County
Environmental and Land Use Information:
Supplemental Information

Potential Site #5: Manatee Plant Site
Environmental and Land Use Information:
Supplemental Information

Potential Site #6: Martin County
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Environmental and Land Use Information:
Supplemental Information

Potential Site #7: Northeast Okeechobee County
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Environmental and Land Use Information:
Supplemental Information

Potential Site #8: Palatka Site
(This page is left intentionally blank.)
Environmental and Land Use Information: Supplemental Information

Potential Site #9: Port Everglades Plant
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Environmental and Land Use Information:
Supplemental Information

Potential Site #10: Putnam County
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Environmental and Land Use Information:
Supplemental Information

Potential Site #11: Southwest Indian River County
(This page is left intentionally blank.)
Environmental and Land Use Information: Supplemental Information

Potential Site #12: Space Coast Solar Expansion
Environmental and Land Use Information:
Supplemental Information

Potential Site #13: West Broward
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CHAPTER V

Other Planning Assumptions & Information
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Introduction

The Florida Public Service Commission (FPSC), in Docket No. 960111-EU, specified certain information that was to be included in an electric utility's Ten Year Power Plant Site Plan filing. Among this specified information was a group of 12 items listed under a heading entitled "Other Planning Assumptions and Information". These 12 items basically concern specific aspects of a utility's resource planning work. The FPSC requested a discussion or a description of each of these items.

These 12 items are addressed individually below as separate "Discussion Items".

Discussion Item # 1: Describe how any transmission constraints were modeled and explain the impacts on the plan. Discuss any plans for alleviating any transmission constraints.

FPL's resource planning work considers two types of transmission limitations/constraints: external limitations and internal limitations. External limitations deal with FPL's ties to its neighboring systems. Internal limitations deal with the flow of electricity within the FPL system.

The external limitations are important since they affect the development of assumptions for the amount of external assistance that is available to the FPL system as well as the amount and price of economy energy purchases. Therefore, these external limitations are incorporated both in the reliability analysis and economic analysis aspects of resource planning. The amount of external assistance which is assumed to be available is based on the projected transfer capability to FPL from outside its system as well as historical levels of available assistance. In the loss of load probability (LOLP) portion of its reliability analyses, FPL models this amount of external assistance as an additional generator within FPL's system which provides capacity in all but the peak load months. The assumed amount and price of economy energy are based on historical values and projections from production costing models.

Internal transmission limitations are addressed by identifying potential geographic locations for potential new units that minimize adverse impacts to the flow of electricity within FPL's system. The internal transmission limitations are also addressed by developing the direct costs for siting new units at different locations and by evaluating the cost impacts created by the new unit/unit location combination on the operation of existing units in the FPL system. Both of these site- and system-related transmission costs are developed for each different unit/unit location option or groups of options. In addition, transfer limits for capacity and energy that can be imported into the...
Southeastern (Miami-Dade and Broward counties) region of FPL's system are also developed for use in FPL's production costing analyses. (A further discussion of the Southeastern Florida region, and the need to maintain a regional balance between generation and transmission contributions, is found in Chapter III.)

FPL's annual transmission planning work determines transmission additions needed to address limitations and to maintain/enhance system reliability. FPL's planned transmission facilities to interconnect and integrate FPL's resource plans and those that must be certified under the Transmission Line Siting Act are presented in Chapter III.

**Discussion Item # 2:** Discuss the extent to which the overall economics of the plan were analyzed. Discuss how the plan is determined to be cost-effective. Discuss any changes in the generation expansion plan as a result of sensitivity tests to the base case load forecast.

FPL typically performs economic analyses of competing resource plans using as an economic criterion FPL's levelized system average electric rates (i.e., a Rate Impact Measure or RIM approach). In addition, for analyses in which DSM levels are not changed, FPL uses the equivalent criterion of the cumulative present value of revenue requirements for the FPL system.6

The load forecast that is presented in FPL's 2011 Site Plan was developed in February 2011. FPL has not performed sensitivity analyses on forecasts that differ from this recently developed load forecast.

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6 FPL's basic approach in its resource planning work is to base decisions on a lowest electric rate basis. However, when DSM levels are considered a "given" in the analysis (i.e., when only new generating options are considered), the lowest electric rate basis approach and the lowest system revenue requirements basis approach, yield identical results in terms of which resource options are more economic. In such cases FPL evaluates options on the simpler - to - calculate (but equivalent) lowest system revenue requirements basis.
Discussion Item # 3: Explain and discuss the assumptions used to derive the base case fuel forecast. Explain the extent to which the utility tested the sensitivity of the base case plan to high and low fuel price scenarios. If high and low fuel price sensitivities were performed, explain the changes made to the base case fuel price forecast to generate the sensitivities. If high and low fuel price scenarios were performed as part of the planning process, discuss the resulting changes, if any, in the generation expansion plan under the high and low fuel price scenario. If high and low fuel price sensitivities were not evaluated, describe how the base case plan is tested for sensitivity to varying fuel prices.

The basic assumptions FPL used in deriving its fuel price forecasts are discussed in Chapter III of this document. FPL used three fuel cost, and three environmental compliance cost, forecasts in its 2010 nuclear cost recovery filings. FPL utilized one fuel cost forecast, and one environmental compliance cost forecast in its DSM Plan analysis work in 2010 and early 2011.

The high and low fuel cost forecasts are derived from a calculation of the historical volatility of the 12-month forward price for one year ahead. From this range of volatility, a reasonable value from the high end of the range is applied to the medium cost fuel cost forecast to develop a high cost fuel cost forecast. Similarly, a reasonable value from the low end of the range is applied to the medium cost fuel cost forecast to develop a low cost fuel cost forecast.

The use of varying high and low fuel cost forecasts did not affect the generation expansion plan used in any of FPL's 2010 planning efforts.

The resource plan presented in this Site Plan is based, in part, on those prior analyses. For that reason, this resource plan, with the recently developed February 2011 load forecast, has not been further tested for different fuel cost forecasts.

Discussion Item # 4: Describe how the sensitivity of the plan was tested with respect to holding the differential between oil/gas and coal constant over the planning horizon.

As described above in the answer to Discussion Item # 3, FPL used up to three fuel cost forecasts in its 2010 resource planning analyses. While these forecasts did not represent a constant cost differential between oil/gas and coal, a variety of fuel cost differentials were represented in these forecasts.
Discussion Item # 5: Describe how generating unit performance was modeled in the planning process.

The performance of existing generating units on FPL’s system was modeled using current projections for scheduled outages, unplanned outages, capacity output ratings, and heat rate information. Schedule 1 in Chapter I and Schedule 8 in Chapter III present the current and projected capacity output ratings of FPL’s existing units. The values used for outages and heat rates are generally consistent with the values FPL has used in planning studies in recent years. However, as discussed briefly in the Executive Summary, and again in more detail in Chapter III, FPL is now projecting that it will begin to perform planned maintenance of its fossil-fueled generating units during the peak months of January and August. Please refer to Chapter III for this discussion.

In regard to new unit performance, FPL utilized current projections for the capital costs, fixed and variable operating & maintenance costs, capital replacement costs, construction schedules, heat rates, and capacity ratings for all construction options in its resource planning work. A summary of this information for the new capacity options FPL currently projects to add over the planning horizon is presented on the Schedule 9 forms in Chapter III.

Discussion Item # 6: Describe and discuss the financial assumptions used in the planning process. Discuss how the sensitivity of the plan was tested with respect to varying financial assumptions.

In its 2010 resource planning work, FPL used several sets of financial assumptions. Two sets of these assumptions were initially used in FPL’s 2010 resource planning work. The first set consisted of: (i) a capital structure of 44.8% debt and 55.2% equity; (ii) a 6.48% cost of debt; (iii) a 10.0% return on equity; and (iv) an after-tax discount rate of 7.30%. A second set of data with the same debt-to-equity ratio and cost of debt, but with an 11.75% return on equity and an after-tax discount rate of 8.27%, was also used.

Later in 2010, FPL adjusted its financial assumptions and used new two sets of financial assumptions. The first set consisted of: i) a capital structure of 40.88% debt and 59.12% equity; (ii) a 6.51% cost of debt; (iii) a 10.0% return on equity; and (iv) an after-tax discount rate of 7.55%. Again, a second set of data with the same debt-to-equity ratio and cost of debt, but with an 11.75% return on equity and an after-tax discount rate of 8.58%, was used.
Going forward in 2011, FPL has again adjusted its financial assumptions. The base case financial assumptions are currently projected to be: (i) a capital structure of 40.88% debt and 59.12% equity; (ii) a 5.50% cost of debt; (iii) a 10.0% return on equity; and (iv) an after-tax discount rate of 7.29%. For certain analyses, such as sensitivity analyses for FPL's two nuclear projects, a second set of financial assumptions may be used. This second set of data is currently projected to consist of the same debt-to-equity ratio and cost of debt as just described, but with an 11.75% return on equity and an after-tax discount rate of 8.33%.

**Discussion Item # 7: Describe in detail the electric utility's Integrated Resource Planning process. Discuss whether the optimization was based on revenue requirements, rates, or total resource cost.**

FPL's integrated resource planning (IRP) process is described in detail in Chapter III of this document.

The standard basis for comparing the economics of competing resource plans in FPL's basic IRP process is the impact of the plans on FPL's electricity rate levels with the objective generally being to minimize FPL's projected levelized system average electric rate (i.e., a Rate Impact Measure or RIM approach). As discussed in response to Discussion Item # 2, both the electricity rate perspective and the cumulative present value of system revenue requirement perspective are identical when DSM levels are unchanged between competing resource plans. Therefore, in planning work in which DSM levels were unchanged, the equivalent cumulative present value of revenue requirements perspective was utilized.

**Discussion Item # 8: Define and discuss the electric utility's generation and transmission reliability criteria.**

FPL currently uses two system reliability criteria in its resource planning work that addresses generation, purchase, and DSM options. One of these is a minimum 20% Summer and Winter reserve margin. The other reliability criterion is a maximum of 0.1 days per year loss-of-load-probability (LOLP). These reliability criteria are discussed in Chapter III of this document. As discussed briefly in the Executive Summary, and in more detail in Chapter III, FPL will be examining the extent to which its system reserves are projected to be dependent upon DSM resources and generation resources in its 2011 resource planning work. The results of this examination could require in a change to FPL's reliability criteria.
In regard to transmission reliability analysis work, FPL has adopted transmission planning criteria that are consistent with the planning criteria established by the Florida Reliability Coordinating Council (FRCC). The FRCC has adopted transmission planning criteria that are consistent with the Reliability Standards established by the North American Electric Reliability Council (NERC). The NERC Reliability Standards are available on the internet site (http://www.nerc.com/).

In addition, FPL has developed a Facility Connection Requirements (FCR) document as well as a Facility Rating Methodology document that are also available on the internet under the FPL OATT Documents directory at https://www.oattoasis.com/FPL/index.html.

Generally, FPL limits its transmission facilities to 100% of the applicable thermal rating. The normal and contingency voltage criteria for FPL stations are provided below:

<table>
<thead>
<tr>
<th>Voltage Level (kV)</th>
<th>Normal Voltage (p.u.)</th>
<th>Contingency Voltage (p.u.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>69, 115, 138</td>
<td>0.95/0.95</td>
<td>1.05/1.07</td>
</tr>
<tr>
<td>230</td>
<td>0.95/0.95</td>
<td>1.06/1.07</td>
</tr>
<tr>
<td>500</td>
<td>0.95/0.95</td>
<td>1.07/1.09</td>
</tr>
<tr>
<td>Turkey Point (*)</td>
<td>1.01/1.01</td>
<td>1.06/1.06</td>
</tr>
<tr>
<td>St. Lucie (*)</td>
<td>1.00/1.00</td>
<td>1.06/1.06</td>
</tr>
</tbody>
</table>

(*) Voltage range criteria for FPL’s Nuclear Power Plants

There may be isolated cases for which FPL may have determined that it is acceptable to deviate from the general criteria stated above. There are several factors that could influence these criteria, such as the overall number of potential customers that may be impacted, the probability of an outage actually occurring, or transmission system performance, as well as others.

**Discussion Item # 9: Discuss how the electric utility verifies the durability of energy savings for its DSM programs.**

The impact of FPL’s DSM programs on demand and energy consumption is revised periodically. Engineering models, calibrated with current field-metered data, are updated at regular intervals. Participation trends are tracked for all of the FPL DSM programs in order to adjust impacts each year for changes in the mix of efficiency measures being installed by program participants.
Survey data is collected from non-participants in order to establish the baseline efficiency. Participant data is compared against non-participant data to establish the demand and energy saving benefits of the utility program versus what would be installed in the absence of the program. For these DSM measures which involve the utilization of load management, FPL conducts periodic tests of the load control equipment to ensure that it is functioning correctly.

**Discussion Item # 10: Discuss how strategic concerns are incorporated in the planning process.**

The Executive Summary and Chapter I11 provide a discussion of a variety of system concerns/issues that influence FPL’s resource planning process. Please see those chapters for a discussion of those concerns/issues.

In addition to these system concerns/issues, there are other strategic factors FPL typically considers when choosing between resource options. These include the following: (1) technology risk; (2) environmental risk, and (3) site feasibility. The consideration of these factors may include both economic and non-economic aspects.

Technology risk is an assessment of the relative maturity of competing technologies. For example, a prototype technology, which has not achieved general commercial acceptance, has a higher risk than a technology in wide use and, therefore, assuming all else equal, is less desirable.

Environmental risk is an assessment of the relative environmental acceptability of different generating technologies and their associated environmental impacts on the FPL system, including environmental compliance costs. Technologies regarded as more acceptable from an environmental perspective for a plan are those which minimize environmental impacts for the FPL system as a whole through highly efficient fuel use and/or state of the art controls.

Site feasibility assesses a wide range of economic, regulatory, and environmental factors related to successfully developing and operating the specified technology at the site in question. Projects that are more acceptable have sites with few barriers to successful development.

All of these factors play a part in FPL’s planning and decisions, including its decisions to construct capacity or to purchase power.
Discussion Item # 11: Describe the procurement process the electric utility intends to utilize to acquire the additional supply-side resources identified in the electric utility’s ten-year site plan.

As has been previously discussed in prior FPL Site Plans, elements of FPL’s recent and future capacity additions include the construction of new generating capacity at the West County Energy Center (WCEC) site, WCEC Unit 3. This generation construction project was selected after evaluating competing bids received in response to Requests for Proposals (RFP) issued by FPL. The FPSC subsequently approved FPL’s decision to construct this new combined cycle (CC) unit in a Determination of Need docket.

In regard to the Modernization projects at FPL’s existing Cape Canaveral and Riviera plants, these projects were also evaluated using the competing bids received in response to the RFP issued for WCEC Unit 3. In addition, bids from competing vendors were also evaluated for FPL’s recent solar thermal and PV projects.

The nuclear capacity additions, both the nuclear uprates and the new nuclear units, do not lend themselves to an RFP approach involving bids from third parties who would build new nuclear generation capacity. In addition, nuclear capacity additions are exempted from the Commission’s Bid Rule by section 403.519 (4) (c). For these nuclear projects, FPL’s procurement activities were conducted to ensure the best combination of quality and cost for the delivered products.

Construction capacity addition decisions for non-nuclear generation for the years 2016 through 2020 presented in this document are expected to be conducted in a manner consistent with the Commission’s Bid Rule.

Identification of self-build options, beyond those units already approved by the FPSC and Governor and Siting Board or units for which FPL may be then seeking approval, in future FPL Site Plans will not be an indication that FPL has pre-judged any capacity solicitation it may conduct. The identification of future generating units is required of FPL in its Site Plan filings and represents those alternatives that appear to be FPL’s best, most cost-effective self-build options at the time. FPL reserves the right to refine its planning analyses and to identify other self-build options. Such refined analyses have the potential to yield a variety of self-build options, some of
which might not require an RFP. If an RFP is issued for Supply options, FPL reserves the right to choose the best alternative for its customers, even if that option is not an FPL self-build option.

Discussion Item # 12: Provide the transmission construction and upgrade plans for electric utility system lines that must be certified under the Transmission Line Siting Act (403.52 – 403.536, F. S.) during the planning horizon. Also, provide the rationale for any new or upgraded line.

(1) FPL has identified the need for a new 230kV transmission line that required certification under the Transmission Line Siting Act which was issued in April 2006. The new line is to be completed in two phases connecting FPL’s St. Johns Substation to FPL’s Pringle Substation (also shown on Table III.E.1 in Chapter III). Phase 1 was completed in May 2009 and consisted of a new line connecting Pringle to a new Pellicer Substation. Phase 2 is planned to connect St. Johns to Pellicer and is scheduled to be completed by December 2016. The construction of this line is necessary to serve existing and future customers in the Flagler and St. Johns areas in a reliable and effective manner.

(2) FPL has identified the need for a new 230kV transmission line (by December 2015) that required certification under the Transmission Line Siting Act which was issued on November 2008. The new line will connect FPL’s Manatee Substation to FPL’s proposed Bob White Substation (also shown on Table III.E.1 in Chapter III). The construction of this line, scheduled to be completed in 2015, is necessary to serve existing and future customers in the Manatee and Sarasota areas in a reliable and effective manner.
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