BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION

DOCKET NO. 090172 EI
FLORIDA POWER & LIGHT COMPANY

IN RE: FLORIDA POWER & LIGHT COMPANY'S PETITION TO DETERMINE NEED FOR FLORIDA ENERGYSECURE LINE

DIRECT TESTIMONY & EXHIBITS OF:

JUAN E. ENJAMIO

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF JUAN E. ENJAMIO

DOCKET NO. 09_____-EI

Q. Please state your name and business address.

A. My name is Juan E. Enjamio. My business address is Florida Power & Light Company, 9250 West Flagler Street, Miami, Florida 33174.

Q. By whom are you employed and what is your position?

A. I am employed by Florida Power & Light Company ("FPL" or the "Company") as Supervisor of Integrated Analysis in the Resource Assessment & Planning Department.

Q. Please describe your educational background and professional experience.

A. I graduated from the University of Florida in 1979 with a Bachelor of Science degree in Electrical Engineering. I joined FPL in 1980 as a Distribution Engineer. Since my initial assignment in FPL, I have held positions as a Transmission System Planner, Power System Control Center Engineer, Bulk Power Markets Engineer, Supervisor of Transmission Planning and Supervisor of Supply and Demand Analysis. In 2004, I became Supervisor of Integrated Analysis – Resource Planning.

Q. Please describe your duties and responsibilities in your current position.

A. In my current position as Supervisor of Integrated Analysis, I am responsible for supervision and coordination of economic analyses of alternatives to meet FPL's resource needs and maintain system reliability.

Q. Are you sponsoring an exhibit in this case?

A. Yes. I am sponsoring the following exhibits which are attached to my direct testimony:

- JEE-1 Projection of FPL's 2009-2030 Resource Needs
- JEE-2 Resource Plans Utilized in the Analyses
- JEE-3 Renewable Resource Assumptions
- JEE-4 RPS Scenario Renewable Resources Added
- JEE-5 Projected FPL Energy Mix by Fuel Type
- JEE-6 Projection of FPL System Incremental Gas Use
- JEE-7 Economic Evaluation Results for Different Gas Transportation Alternatives
- JEE-8 Projection of Approximate Bill Impacts for Different Gas Transportation Alternatives
- JEE-9 Cost of Capital

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to present the results of economic analyses that support FPL's petition for an affirmative determination of need for FPL to construct the Florida EnergySecure Line. My testimony addresses six main points. First, I will discuss FPL's projection of additional resource needs in

the future and how those resource needs relate to increased firm natural gas transportation. Second, I present and discuss the long-term resource plan that meets FPL's future resource needs and two alternate resource plans that are used to quantify FPL's natural gas transportation requirements. Third, I present FPL's projected gas requirements. Fourth, I present an overview of the economic analysis process. Fifth, I describe the results of the economic analyses that examined FPL's gas transportation alternatives and the resulting projections of approximate bill impacts for each of the alternatives. Sixth, I summarize the results of the economic analyses and present my conclusion that the Florida EnergySecure Line / Company E Upstream Pipeline Project is the most economic of the gas transportation alternatives considered and, when other beneficial non-economic attributes are taken into account, the best alternative for FPL's customers.

Q. Please summarize your testimony.

A. Based on FPL's current load forecast and consistent with its long-term resource plan, which includes future generation resources previously approved by the Commission (i.e. the West County Energy Center Units 1, 2 and 3, the modernizations of the Cape Canaveral and Riviera steam units, the uprates of FPL's existing nuclear units, Turkey Point Units 6 and 7, and the solar photovoltaic and thermal projects at FPL's DeSoto, Space Center, and Martin sites), FPL projects that it will need as much as 19,661 MW of new capacity between 2013 and 2040. Of this total capacity, 17,357 MW is expected to be incremental gas-fired capacity. This need already accounts for the addition of

1,121 MW of new demand side management (DSM) programs projected to be added between 2009 and 2018.

In addition to FPL's long-term resource plan (Base Case), two alternate scenarios were developed to analyze firm gas transportation alternatives. These alternate scenarios are the Renewable Portfolio Standard (RPS) Scenario resource plan (RPS Scenario) and the Nuclear Delay Scenario resource plan (Nuclear Delay Scenario). The RPS Scenario assumes that the state of Florida will adopt an RPS rule with a target of 20% renewable energy by 2020, constrained by a 2% cap on increased retail revenues. The Nuclear Delay Scenario differs in that it postulates a four-year delay in the construction of Turkey Point Units 6 and 7.

In 2008, approximately 53% of all energy produced by FPL came from gas-fired generating units. This percentage is projected to increase to 68% by 2030 and 84% by 2040. Between 2013 and 2040, FPL will need to add about 2,700 million cubic feet of gas transportation capacity per day (MMcf/d). As described in the testimony of FPL witness Forrest, the existing gas infrastructure in Florida is inadequate to meet the need for firm gas transportation needs of FPL through 2040.

As a result, FPL conducted a solicitation process for gas transportation capacity for FPL's initial gas requirements as well as developed its own self-

build project: the Florida EnergySecure Line / Company E Upstream Pipeline Project. From the solicitation process, the best non-FPL alternative was selected (identified as the "Company B Proposal"). The solicitation process is described in the testimony of FPL witness Stubblefield.

The focus of my testimony is the economic analysis performed to compare both alternatives, the Company B Proposal and the Florida EnergySecure Line / Company E Upstream Pipeline Project, under the Base Case and two alternate scenarios. The economic analysis consists of a life-cycle cost analysis that determines the difference in cumulative present value of revenue requirements (CPVRR) between the two firm gas transportation alternatives under each of three resource plans. The analysis results show that selecting the Florida EnergySecure Line / Company E Upstream Pipeline Project results in an economic advantage ranging between $204 million and $513 million CPVRR when compared to the Company B Proposal. This economic advantage does not include any benefit to FPL's customers from short-term off-system sales of gas transportation capacity. FPL witness Sexton explains how the sales made possible by the Florida EnergySecure Line / Company E Upstream Pipeline Project could provide additional benefits to our customers, ranging from approximately $200 million to as high as approximately $700 million.

I conclude that based on the projected gas transportation needs and favorable economics, the Florida EnergySecure Line / Company E Upstream Pipeline Project is the best alternative for our customers.

I. FPL'S PROJECTION OF RESOURCE NEEDS

Q. How were the projections of resource needs determined?

A. The timing and magnitude of FPL's future resource needs are based on generation reliability analyses using established planning criteria. While FPL uses both loss of load probability (LOLP) and reserve margin criteria in its system, under current assumptions the latter establishes the need for future resources. The reserve margin planning criterion establishes a minimum reserve margin of 20%. FPL updated its reserve margin calculations using current assumptions. The most significant of these assumptions are listed below:

Load forecast: By 2030, FPL's summer peak load is expected to grow 12,871 MW over the 2008 actual peak load. The load forecast and the load forecasting process are described in FPL witness Morley's testimony.

Demand side management (DSM): The DSM assumption used in this analysis is based on meeting FPL's currently-approved DSM Goals through 2014, plus implementing additional cost-effective DSM

through 2014 that was identified after the current DSM Goals were established, and a projection of continued DSM additions in 2015 through 2018. This projection above the DSM already implemented by FPL through the end of 2008 results in the addition of 1,121 MW of load control and conservation measures by 2018. This projection of 1,121 MW of additional DSM starting in 2009 is not reflected in FPL's load forecast, but is instead included as an additional resource in the resource plan.

FPL is scheduled to present new projections of cost-effective DSM to the Commission in June 2009. These new projections will be used to determine the Company's new DSM Goals for the years 2010 through 2019. The analyses to develop these new projections of cost-effective DSM for the new DSM Goals are a work-in-progress at the time the need determination petition for the Florida EnergySecure Line is being filed.

Renewable resources: The Base Case resource plan includes 110 MW of solar generation from FPL's new solar projects at the DeSoto, Space Center and Martin sites. These projects have already been approved by the Commission.

Generation resources previously approved by the Commission: The following generating units are included in the resource plan:

1. West County Energy Center Units 1, 2, and 3 (all in service by the summer of 2011). Total capacity = 3,657 MW.

2. Nuclear uprates at existing nuclear units (all in service by end of 2012). Total capacity = approximately 400 MW.

3. New nuclear units - Turkey Point Units 6 and 7 will be in service in 2018 and 2020, respectively. Total capacity = 2,200 MW.

4. Modernizations – The modernization projects at the Cape Canaveral and Riviera Plants, which will become the Cape Canaveral Next Generation Clean Energy Center (CCEC) and Riviera Beach Next Generation Clean Energy Center (RBEC), will be in service in 2013 and 2014, respectively. Incremental capacity = 1,069 MW.

Power purchases: Expiration of power purchase contracts totaling 1,610 MW.

The analysis of the generation reliability needs, based on the assumptions described above, indicates the need for 14,931 MW of additional resources between 2021 and 2040, after incremental DSM. This need is based on meeting the 20% summer reserve margin criteria. This is further illustrated in Exhibit JEE-1.

II. THE RESOURCE PLANS

Q. What resource plans did you use in your study?

A. As I previously discussed, FPL used its long-term resource plan (Base Case) and two alternate scenario resource plans (RPS Scenario and Nuclear Delay Scenario) to analyze the economics of the Florida EnergySecure Line / Company E Upstream Pipeline Project.

Q. What is included in the Base Case?

A. The Base Case reflects the major assumptions listed in Section I, including the generation capacity additions through 2020 already approved by the Commission. The need for additional resources required to maintain generation reliability after 2020 in excess of the capacity provided by the resources described in Section I is met with natural gas-fired combined cycle units. For this plan, the combined cycle units were sized at 550 MW with performance equivalent to that of "G" class advanced combustion turbine technology.

In the final analysis, this resource plan results in the need to add 17,357 MW of natural gas-fired resources between 2013 and 2040. This total includes the CCEC and RBEC facilities. The results of the Base Case are described in Exhibit JEE-2.

Q. Why did you assume that FPL will fill the incremental generation resource needs beyond the proposed nuclear Turkey Point Units 6 and 7 with gas-fired combined cycle units?

A. The options available to FPL to meet the needs for additional generation resources are limited to renewable energy resources, gas-fired combined cycle units, gas-fired combustion turbine units and additional nuclear generating units. I should note that, for resource planning purposes, modernizing existing facilities and building new combined cycle units would impose very similar gas requirements on FPL's system.

Under current assumptions, renewable energy resources whether solar, wind, or biomass are not cost effective when compared to FPL's other potential generation resources (gas-fired units and nuclear units). Therefore, it is appropriate that FPL not include new renewable resources in its Base Case. However, FPL did include an RPS plan as an alternate scenario in this study.

FPL considered whether gas-fired combustion turbines would be more cost effective than combined cycle units. It was determined that for FPL's system,

under current assumptions, combined cycle units will be the more cost-effective natural gas-fired option.

The last option considered was the addition of new nuclear units. As demonstrated in the Nuclear Power Plant Cost Recovery Docket, FPL believes that new nuclear units are cost effective generation alternatives that result in significant fuel cost savings and emission reductions. However, FPL is uncertain as to the timing of additional nuclear units following the construction of Turkey Point Units 6 and 7 and determined that including additional nuclear units into the resource plans utilized in the economic analysis of gas transportation alternatives was not appropriate.

Q. Why did FPL develop an RPS Scenario?

A. The Florida Legislature is considering the adoption of RPS legislation. As requested by the Legislature, the Commission developed a draft rule that it recently submitted to the Legislature for its consideration. FPL believes some form of RPS legislation or other similar renewable energy legislation will be implemented at either the state or federal level in the near future. As a result, FPL decided to include an RPS scenario in the economic analysis of the Florida EnergySecure Line / Company E Upstream Pipeline Project and competing gas transportation proposal.

Q. How did FPL develop the RPS Scenario resource plan?

A. The RPS Scenario was developed using the major assumptions listed in Section I of my testimony. However, additional renewable resources were

added in a manner consistent with the Commission's RPS draft rule. Any resource need not met with new renewable resources was met with the 550 MW natural gas-fired combined cycle units as previously described.

In the final analysis, the RPS Scenario results in the need to add 16,804 MW of natural gas-fired resources between 2013 and 2040 in the form of combined cycle units. The results of the RPS Scenario resource plan are shown in Exhibit JEE-2.

Q. Can you describe how you determined the additional renewable resources added under the Commission RPS draft rule?

A. It was assumed that the RPS would require that 20% of energy sales would be met from renewable resources by the year 2020. However, FPL assumed a cap on the cost of these renewable resources. This cap consists of 1.5% of previous year's retail revenues for Class I renewable resources (solar and wind) and an additional 0.5% cap for Class II renewables (all others).

To meet the 20% renewable energy standard, the analysis assumed that FPL would add both solar photovoltaic and biomass renewable energy resources. The costs and performance of the solar photovoltaic resources are based on FPL's DeSoto Next Generation Solar Energy Center Project. At 25 MW, this plant will be the largest solar photovoltaic facility in the nation when completed at the end of 2009. The costs of biomass resources are based on Navigant's "Florida Renewable Energy Potential Assessment" report,

prepared for the Commission and others in late 2008. The assumptions used for solar and biomass renewable resources are listed in Exhibit JEE-3.

Under the RPS Scenario, between 2010 and 2020 FPL will add an average of 42 MW of solar photovoltaic resources and 28 MW of biomass resources every year. It was then assumed that after 2020 FPL would continue to build renewable resources following the 2010-2020 trend. This results in the addition, by 2040, of 3,290 MW of renewable resources to FPL's generation resource portfolio.

In determining the amount of renewable resources to be added under the 2% cap, FPL assumed one of several interpretations of how the cap would be applied. In FPL's analysis, the amount of renewable resources to be added was constrained by the cost cap, thus preventing the 20% RPS target from being met. The renewable resources added in the RPS scenario are shown in Exhibit JEE-4.

Q. Why did FPL develop a Nuclear Delay Scenario?

A. FPL presently expects to place the new Turkey Point Units 6 and 7 into service in 2018 and 2020, respectively. Nevertheless, as FPL explained in the need determination proceeding for those units, there is substantial uncertainty regarding the timetable for licensing and construction of new nuclear units because of circumstances not within FPL's control. For example, licensing could be delayed for years by unexpected intervention and litigation. There is

also active competition among new nuclear projects for the fabrication and timely delivery of key components by the few suppliers that are capable of providing them. Moreover, FPL has consistently advised the Commission that it can justify proceeding with new nuclear units only if there is strong political and regulatory support. Recent changes in Congress, a new administration in the White House and the likely appointment of new Commissioners to the Nuclear Regulatory Commission all create uncertainty as to whether the support new nuclear projects have received for the past several years will continue. To illustrate FPL's concern, the "Clean Energy" bill currently being discussed in Congress contains no support for new nuclear projects, in spite of the bill's emphasis on reducing greenhouse gas emissions and the important role that nuclear power can and should play in achieving those reductions.

Because of these uncertainties, FPL elected to develop a planning scenario that assumed a four-year delay of both new nuclear units so that they would be brought into service in 2022 and 2024. The Florida EnergySecure Line would provide valuable insurance against such a delay by ensuring that there would be sufficient gas supply available to the gas-fired units needed to accommodate this delay.

Q. How did you develop the Nuclear Delay Scenario?

A. The Nuclear Delay Scenario resource plan was also developed using the major assumptions listed in Section I of my testimony. However, in this scenario, the in-service dates of Turkey Point Units 6 and 7 were deferred to 2022 and

2024 to reflect a four-year delay as a result of factors outside of FPL's control. Under this scenario, two combined cycle units, with a capacity of 1,219 MW each with the same technology as the CBEC and RBCC units, were added in 2018 and 2020 to meet generation reliability.

Ultimately, the Nuclear Delay Scenario results in the need to add 17,030 MW of natural gas-fired resources between 2013 and 2040 in the form of combined cycle units. The results of the Nuclear Delay Scenario are shown in Exhibit JEE-2.

III. GAS REQUIREMENTS

Q. What is FPL's projected fuel mix?

A. In 2008, based on historical data, 53% of FPL's net energy for load was generated with natural gas. With the Base Case, the percentage of total energy generated from gas is projected to grow to approximately 68% by 2030 and 84% by 2040. Even under the RPS Scenario, the percentage of total energy generated from gas is projected to be 64% by 2030 and 76% by 2040. FPL's projected energy mix by fuel type for each of the three resource plans is shown in Exhibit JEE-5.

Q. What is the magnitude of incremental gas requirements under the Base Case?

A. Under the Base Case, from 2013 FPL's gas need would grow to 1.6 billion cubic feet per day (Bcf/d) by 2030 and 2.8 Bcf/d by 2040. A graph of the incremental gas requirements of the Base Case is shown in Exhibit JEE-6.

Q. What is the magnitude of incremental gas requirements under the RPS Scenario?

A. The gas requirements under the RPS Scenario are lower than the requirements under the Base Case because renewable energy generation displaces gas generation. Under the RPS Scenario, from 2013 FPL's gas need would grow to over 1.6 Bcf/d by 2030 and to 2.7 Bcf/d by 2040. The incremental gas requirements of the RPS Scenario are shown in Exhibit JEE-6.

Q. What is the magnitude of incremental gas requirements under the Nuclear Delay Scenario?

A. The gas requirements under the Nuclear Delay Scenario are approximately the same as those for the Base Case after 2024. There is a significant difference, however, in the gas need in the earlier years because an additional 400 MMcf/d is needed between 2018 and 2020 due to the delays associated with Turkey Point Units 6 and 7. Under this scenario, FPL's gas need will grow to 800 MMcf/d in the 2013-2020 period to 1.7 Bcf/d by 2030 and to 2.7 Bcf/d by 2040.

IV. OVERVIEW OF ECONOMIC ANALYSIS PROCESS

Q. Which gas transportation alternatives did FPL include in its economic analysis?

A. In this economic analysis, FPL considered two gas transportation alternatives: (1) the self-build Florida EnergySecure Line coupled with the Company E Upstream Pipeline Project, and (2) the most competitive of the proposals obtained under FPL's solicitation process, which was designated the "Company B Proposal."

As described in detail in the testimony of FPL witnesses Sharra and Collins, the Florida EnergySecure Line consists of the construction of approximately 300 miles of new gas pipe by FPL to be placed in service by January 2014. This FPL alternative assumes the use of the Company E Upstream Pipeline which will be its primary supply source. This option also includes the economic benefits of future expansions of the Florida EnergySecure Line, as described by FPL witness Sharra.

The Company B Proposal, and the process whereby this alternative was selected as the most competitive gas transportation alternative from all the proposals received under FPL's solicitation process, is described in the testimony of FPL witness Stubblefield.

Q. How were the economic analyses performed?

A. The economic analysis of the Florida EnergySecure Line / Company E Upstream Pipeline Project and the most competitive alternative (the Company B Proposal) consisted of the following steps:

Step 1 - FPL defined the Base Case and the alternative scenarios as well as the determination of gas requirements for each resource plan, as described earlier in my testimony.

Step 2 - FPL developed the gas transportation costs. This step was carried out for each resource plan for both the Florida EnergySecure Line / Company E Upstream Pipeline Project and the Company B Proposal. These costs were developed through the life of the study. The 40-year timeframe of the study is based on the expected useful life of the Florida EnergySecure Line / Company E Upstream Pipeline Project because the analysis is intended to be a life-cycle cost study.

For the Florida EnergySecure Line / Company E Upstream Pipeline Project, the gas transportation costs reflect the initial capital costs, the operating and maintenance (O&M) costs of the line and the capital costs of increasing compression to boost its capacity. Also included are the Company E transportation charges and additional transportation charges incurred to obtain additional firm gas transportation in the future to meet FPL's projected

growing gas needs after 2026 through the end of the study period. For the Company B Proposal, the gas transportation costs include all Company B gas transportation charges as well as additional transportation charges that will be incurred to obtain additional firm gas transportation in the future to meet FPL's projected growing gas needs through the end of the study period. The development of the gas transportation costs is discussed in more detail in the testimony of FPL witness Stubblefield.

Step 3 - FPL quantified the fuel and other variable cost savings. The two gas transportation alternatives have slightly different natural gas costs. The P-MAREA production-costing model from P-Plus Corporation was used to determine the resulting difference in FPL's total system fuel cost. This model has been used by FPL in fuel cost recovery proceedings as well as need proceedings brought before the Commission. The P-MAREA model simulates the operation of FPL's system on an hourly basis. The model captures variable costs (such as fuel, variable O&M and environmental compliance costs) in its production costing calculations, projects the annual emission levels associated with the resource plans, incorporates the effects of system transmission transfer limits on the dispatch of the generating units and recognizes the pipelines that serve FPL's system, incorporating lateral constraints to the various plants in FPL's system.

Step 4 - FPL aggregated all components of system cost and determined the cumulative present value of revenue requirements (CPVRR) of each alternative under each of the three resource plans.

Q. Did you perform sensitivity analyses regarding fuel price forecasts and emission price forecasts?

A. No. The fuel consumption and fuel prices under the Florida EnergySecure Line / Company E Upstream Pipeline Project and the Company B Proposal are very similar. As a result, we determined that fuel price sensitivities would not make a significant difference. Similarly, emissions were close to the same under the Florida EnergySecure Line / Company E Upstream Pipeline Project and the Company B Proposal in each resource plan. Therefore, sensitivities to emission price forecasts would not have affected the economic comparison between the gas transportation alternatives and were deemed unnecessary.

Q. In your economic analysis, did you assume gas transportation sales from the Florida EnergySecure Line / Company E Upstream Pipeline Project to non-FPL customers?

A. The economic analysis results discussed in my testimony do not reflect any short-term gas transportation sales to non-FPL customers. However, FPL witness Sexton explains in his testimony that such sales are likely to happen and discusses his projections of the resulting benefits. These anticipated benefits from sales to non-FPL customers, although significant in magnitude, are not included in my economic analysis.

Q. What financial assumptions did you use for this economic analysis?

A. Exhibit JEE-9 shows the long-term financial assumptions used in this economic analysis. These financial assumptions are consistent with the assumptions used during the need determination proceedings of the modernization of the Riviera and Cape Canaveral Plants as well as FPL's solicitation for gas transportation proposals. This solicitation process is described in the testimony of FPL witness Stubblefield. Although FPL's projected cost of capital has been adjusted recently, in this economic analysis FPL used the cost of capital assumptions in effect at the time of the solicitation because the factors that affect FPL's cost of capital assumptions also affect the parties that responded to FPL's solicitation and would affect their bids. Using the cost of capital assumptions in effect at the time of the solicitations ensures that the alternatives are comparable.

V. RESULTS OF THE ECONOMIC ANALYSES

Q. What are the results of the economic analysis?

A. Exhibit JEE-7 shows the economic results of the Florida EnergySecure Line / Company E Upstream Pipeline Project under the three resource plans.

Under the Base Case resource plan, the economic analysis shows that the Florida EnergySecure Line / Company E Upstream Pipeline Project is the most economically beneficial with an advantage of $208 million CPVRR.

About $89 million of the total economic advantage is based on the comparison of gas transportation costs, with fuel and other variable cost savings contributing another $119 million.

Under the RPS Scenario, the economic analysis shows that the Florida EnergySecure Line / Company E Upstream Pipeline Project is the most economically beneficial with an economic advantage of $204 million CPVRR. About $89 million of the total advantage is based on the comparison of gas transportation costs, with fuel and other variable cost savings contributing another $115 million.

Under the Nuclear Delay Scenario resource plan, the economic analysis shows that the Florida EnergySecure Line / Company E Upstream Pipeline Project is the most economically beneficial with an economic advantage of $513 million CPVRR. About $403 million of the total economic advantage is based on the comparison of gas transportation costs, with fuel and other variable cost savings contributing another $110 million.

Q. Did you develop projections of the estimated bill impact to FPL customers?

A. Yes. FPL developed projections of the approximate bill impact of the two gas transportation options under the three resource planning scenarios. Exhibit JEE-8 shows the projections of this bill impact for an average customer using 1,000 kWh per month.

VI. CONCLUSIONS

Q. Is the Florida EnergySecure Line / Company E Upstream Pipeline Project the best gas transportation option available to FPL and FPL's customers?

A. Yes. Natural gas is and will continue to be FPL's major fuel source for the foreseeable future, and gas-fired generation capacity will continue to be a major part of FPL's future resource plan. The existing gas infrastructure in Florida will be inadequate to meet the long-term needs for gas transportation capacity to support the anticipated increase in gas generation, to as much as 17,357 MW of new gas-fired generation by 2040, as described by FPL witnesses Forrest and Sexton. FPL's proposed Florida EnergySecure Line / Company E Upstream Pipeline Project results in CPVRR savings between $204 million and $513 million compared to the best non-FPL proposal obtained in FPL's solicitation process.

Based on the economic advantages of the Florida EnergySecure Line / Company E Upstream Pipeline Project as described in my testimony, the additional economic benefits presented in the testimony of FPL witness Sexton and the significant non-economic benefits described in the testimony of FPL witness Forrest, I conclude that the Florida EnergySecure Line / Company E Upstream Pipeline Project is the best alternative to meet FPL's future gas requirements.

Q. Does this conclude your direct testimony?

A. Yes.

Projection of FPL's 2009 - 2030 Resource Needs

(Without new capacity additions beyond resources already approved)

Summer

August of the Year	(1) Projections of FPL Unit Capability * (MW)	(2) Projections of Firm Purchases (MW)	(3) = (1)+(2) Projection of Total Capacity (MW)	(4) Peak Load Forecast (MW)	(5) Summer DSM Forecast ** (MW)	(6)=(4)-(5) Forecast of Firm Peak (MW)	(7)=(3)-(6) Forecast of Summer Reserves (MW)	(8)=(7)/(6) Forecast of Summer Reserve Margins w/o Additions (%)	(9)=((6)*1.20)-(3) MW Needed to Meet 20% Reserve Margin (MW)
2009	21,985	2,514	24,499	21,124	1,997	19,126	5,372	28.1%	**(1,547)**
2010	20,809	2,107	22,916	21,147	2,119	19,027	3,888	20.4%	**(83)**
2011	21,946	2,062	24,008	21,368	2,236	19,132	4,876	25.5%	**(1,049)**
2012	22,230	1,961	24,191	21,933	2,357	19,576	4,614	23.6%	**(699)**
2013	23,553	1,961	25,514	22,249	2,483	19,766	5,748	29.1%	**(1,794)**
2014	24,760	2,011	26,771	23,533	2,615	20,918	5,853	28.0%	**(1,669)**
2015	24,760	2,011	26,771	24,142	2,749	21,393	5,377	25.1%	**(1,099)**
2016	25,574	700	26,274	24,772	2,884	21,888	4,386	20.0%	**(8)**
2017	26,396	700	27,096	25,401	3,019	22,383	4,713	21.1%	**(236)**
2018	27,496	700	28,196	26,143	3,064	23,079	5,116	22.2%	**(500)**
2019	27,926	700	28,626	26,848	3,064	23,784	4,842	20.4%	**(85)**
2020	29,026	700	29,726	27,715	3,064	24,651	5,075	20.6%	**(144)**
2021	29,369	700	30,069	28,449	3,064	25,385	4,684	18.5%	**393**
2022	29,369	700	30,069	29,109	3,064	26,045	4,024	15.4%	**1,185**
2023	29,369	700	30,069	29,758	3,064	26,694	3,374	12.6%	**1,965**
2024	29,369	700	30,069	30,339	3,064	27,275	2,794	10.2%	**2,661**
2025	29,369	450	29,819	30,973	3,064	27,909	1,909	6.8%	**3,672**
2026	29,369	120	29,489	31,596	3,064	28,532	956	3.4%	**4,750**
2027	29,369	105	29,474	32,145	3,064	29,081	393	1.4%	**5,423**
2028	29,369	105	29,474	32,754	3,064	29,690	(216)	-0.7%	**6,154**
2029	29,369	105	29,474	33,349	3,064	30,285	(811)	-2.7%	**6,868**
2030	29,369	105	29,474	33,931	3,064	30,867	(1,393)	-4.5%	**7,567**

Winter

January of the Year	(1) Projections of FPL Unit Capability * (MW)	(2) Projections of Firm Purchases (MW)	(3) = (1)+(2) Projection of Total Capacity (MW)	(4) Peak Load Forecast (MW)	(5) Winter DSM Forecast ** (MW)	(6)=(4)-(5) Forecast of Firm Peak (MW)	(7)=(3)-(6) Forecast of Winter Reserves (MW)	(8)=(7)/(6) Forecast of Winter Reserve Margins w/o Additions (%)	(9)=((6)*1.20)-(3) MW Needed to Meet 20% Reserve Margin (MW)
2009	23,280	2,702	25,982	18,697	1,730	16,968	9,014	53.1%	**(5,621)**
2010	24,661	2,191	26,852	18,790	1,819	16,971	9,880	58.2%	**(6,486)**
2011	22,334	2,095	24,429	19,120	1,888	17,231	7,197	41.8%	**(3,751)**
2012	23,761	2,095	25,856	19,710	1,960	17,749	8,106	45.7%	**(4,556)**
2013	24,057	1,970	26,027	20,098	2,035	18,063	7,963	44.1%	**(4,351)**
2014	25,400	2,020	27,420	21,154	2,113	19,041	8,378	44.0%	**(4,570)**
2015	26,710	2,020	28,730	21,882	2,196	19,687	9,043	45.9%	**(5,105)**
2016	26,710	1,090	27,800	22,396	2,278	20,118	7,681	38.2%	**(3,658)**
2017	27,535	700	28,235	22,912	2,361	20,551	7,683	37.4%	**(3,573)**
2018	28,369	700	29,069	23,466	2,436	21,030	8,039	38.2%	**(3,833)**
2019	29,469	700	30,169	24,019	2,436	21,583	8,586	39.8%	**(4,269)**
2020	29,903	700	30,603	24,572	2,436	22,135	8,467	38.3%	**(4,040)**
2021	31,003	700	31,703	25,089	2,436	22,652	9,050	40.0%	**(4,520)**
2022	31,350	700	32,050	25,571	2,436	23,135	8,915	38.5%	**(4,288)**
2023	31,350	700	32,050	26,044	2,436	23,607	8,442	35.8%	**(3,721)**
2024	31,350	700	32,050	26,512	2,436	24,076	7,974	33.1%	**(3,158)**
2025	31,350	450	31,800	26,985	2,436	24,548	7,251	29.5%	**(2,342)**
2026	31,350	120	31,470	27,460	2,436	25,023	6,446	25.8%	**(1,441)**
2027	31,350	105	31,455	27,929	2,436	25,493	5,962	23.4%	**(863)**
2028	31,350	105	31,455	28,399	2,436	25,962	5,493	21.2%	**(300)**
2029	31,350	105	31,455	28,873	2,436	26,436	5,019	19.0%	**268**
2030	31,350	105	31,455	29,352	2,436	26,916	4,539	16.9%	**844**

* 1. Assumes new FPL generating unit additions: WCEC 1 in 2009, WCEC 2 in 2010, WCEC 3 in 2011, CCEC in 2013, and RBEC in 2014.
2. Proposed nuclear uprates are assumed (399 MW). Approximately 104 MW are added in December 2011, 103 MW in May 2012, 88 MW in June 2012, and 104 MW by December 2012. Also includes Turkey Point Nuclear Units 6 and 7: 1100 MW in 2018 and 1100 MW in 2020.
3. Reflects Inactive Reserve which is the temporary removal of a number of existing, older, less efficient units from active service starting in 2009. Units on Inactive Reserve Status include: Cutler Units 5 & 6, Port Everglades Units 1 & 2, Sanford Unit 3, Martin Unit 2, and Manatee Unit 2. While in inactive reserve, these units will be maintained so that they can be returned to active service as needed. This table reflects the units in inactive reserve coming back into service by 2021.

** DSM values shown represent cumulative load management and incremental conservation capability.

Resource Plans Utilized in the Analyses

Base Case	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 - 2030	2031 - 2040
- unit(s) added	WCEC 3 CC added; Cape Canaveral & Riviera Removed	Nuclear Uprates	Cape Canaveral Conversion and Nuclear Uprates	Riviera Conversion	---	---	---	Turkey Point 6	---	Turkey Point 7	14 - 2x1 CC	13 - 2x1 CC
- incremental MW added	(138)	295	1,323	1,207	0	0	0	1,100	0	1,100	7,742	7,189
- cumulative MW added	(138)	157	1,480	2,687	2,687	2,687	2,687	3,787	3,787	4,887	12,629	19,818
- gas dependent MW added	1,219	1,219	2,438	3,645	3,645	3,645	3,645	3,645	3,645	3,645	11,387	18,576
- Reserve Margin	25.5%	23.6%	29.1%	28.0%	25.1%	20.0%	21.1%	22.2%	20.4%	20.6%	(all meet criteria)	(all meet criteria)

RPS Scenario	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 - 2030	2031 - 2040
- unit(s) added	WCEC 3 CC added; Cape Canaveral & Riviera Removed	Nuclear Uprates and Renewables	Cape Canaveral Conversion and Renewables	Riviera Conversion and Renewables	Renewables	Renewables	Renewables	Turkey Point 6 and Renewables	Renewables	Turkey Point 7 and Renewables	Renewables (886 MW), 14 - 2x1 CC	Renewables (1635 MW), 12 - 2x1 CC
- incremental MW added	(128)	330	1,368	1,237	75	35	35	1,185	85	1,200	8,628	8,271
- cumulative MW added	(128)	202	1,570	2,807	2,882	2,917	2,952	4,137	4,222	5,422	14,050	22,321
- gas dependent MW added	1,219	1,219	2,438	3,645	3,645	3,645	3,645	3,645	3,645	3,645	11,387	18,023
- Reserve Margin	25.5%	23.6%	29.2%	28.0%	25.3%	20.0%	21.1%	22.4%	20.6%	20.8%	(all meet criteria)	(all meet criteria)

Nuclear Delay Scenario	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 - 2030	2031 - 2040
- unit(s) added	WCEC 3 CC added; Cape Canaveral & Riviera Removed	Nuclear Uprates	Cape Canaveral Conversion and Nuclear Uprates	Riviera Conversion	---	---	---	3 x 1 G CC		3 x 1 G CC	TP 6 in 2022 TP 7 in 2024 10 - 2x1 CC	12 - 2x1 CC
- incremental MW added	(138)	295	1,323	1,207	0	0	0	1,219		1,219	7,730	6,636
- cumulative MW added	(138)	157	1,480	2,687	2,687	2,687	2,687	3,906	3,906	5,125	12,855	19,491
- gas dependent MW added	1,219	1,219	2,438	3,645	3,645	3,645	3,645	4,864	4,864	6,083	11,613	18,249
- Reserve Margin	25.5%	23.6%	29.1%	28.0%	25.1%	20.0%	21.1%	22.7%	20.9%	21.6%	(all meet criteria)	(all meet criteria)

Notes:

1. Proposed nuclear uprates are assumed (399 MW) in the analysis. Approximately 104 MW are added in December 2011, 103 MW in May 2012, 88 MW in June 2012, and 104 MW by December 2012.
2. This analysis reflects Inactive Reserve, which is the temporary removal of a number of existing, older, less efficient units from active service starting in 2009. Units on Inactive Reserve Status include: Cutler Units 5 & 6, Port Everglades Units 1 & 2, Sanford Unit 3, Martin Unit 2, and Manatee Unit 2. These units will continue to be maintained and will be returned to active service as needed.
3. For the RPS scenario, the table shows total renewable capacity added, both biomass and solar. For purposes of determining resources needed to meet reserve margin needs, FPL assumed that the solar photovoltaic resources did not contribute firm capacity at time of system peak.

Renewable Resource Assumptions

Cost Data (2009 $)		
	Solar Photovoltaic	**Biomass**
Total Installed Capital Cost ($/kW)	6,937.0	4,500.0
Fixed O&M and Capital Replacement ($/kW-yr)	54.0	125.0
Non-Fuel Variable O&M ($/MWh)	-	2.5
Fuel cost $/MWH	-	38.5

Operating Data		
	Solar Photovoltaic	**Biomass**
Availability (%)	100.0%	90.0%
Average Net Annual Capacity Factor (%)	22.8%	85.0%

RPS Scenario - Renewable Resources Added (Cumulative)

By year	Solar MW	Biomass MW	Total MW
2015	275	155	430
2020	460	310	770
2025	716	441	1,157
2030	1,041	615	1,656
2035	1,435	959	2,394
2040	1,897	1,393	3,290

Projected FPL Energy Mix by Fuel Type
(%)

	Actual	Base Scenario			Nuclear 4 Year Delay Scenario			RPS Scenario		
	2008	2020	2030	2040	2020	2030	2040	2020	2030	2040
Energy Source										
Gas	53.0%	58.9%	67.6%	83.5%	69.8%	67.6%	83.4%	56.8%	63.7%	75.6%
Oil	5.0%	0.7%	0.3%	0.2%	0.6%	0.3%	0.2%	0.5%	0.1%	0.1%
Coal	6.0%	5.1%	4.2%	2.1%	5.1%	4.2%	2.2%	5.1%	4.2%	1.9%
Nuclear	22.0%	31.0%	27.2%	14.1%	20.2%	27.2%	14.1%	31.0%	27.2%	14.1%
Purchase	12.5%	3.6%	0.4%	0.1%	3.6%	0.4%	0.1%	3.6%	0.4%	0.1%
Renewables	1.5%	0.7%	0.4%	0.1%	0.7%	0.4%	0.1%	3.0%	4.4%	8.2%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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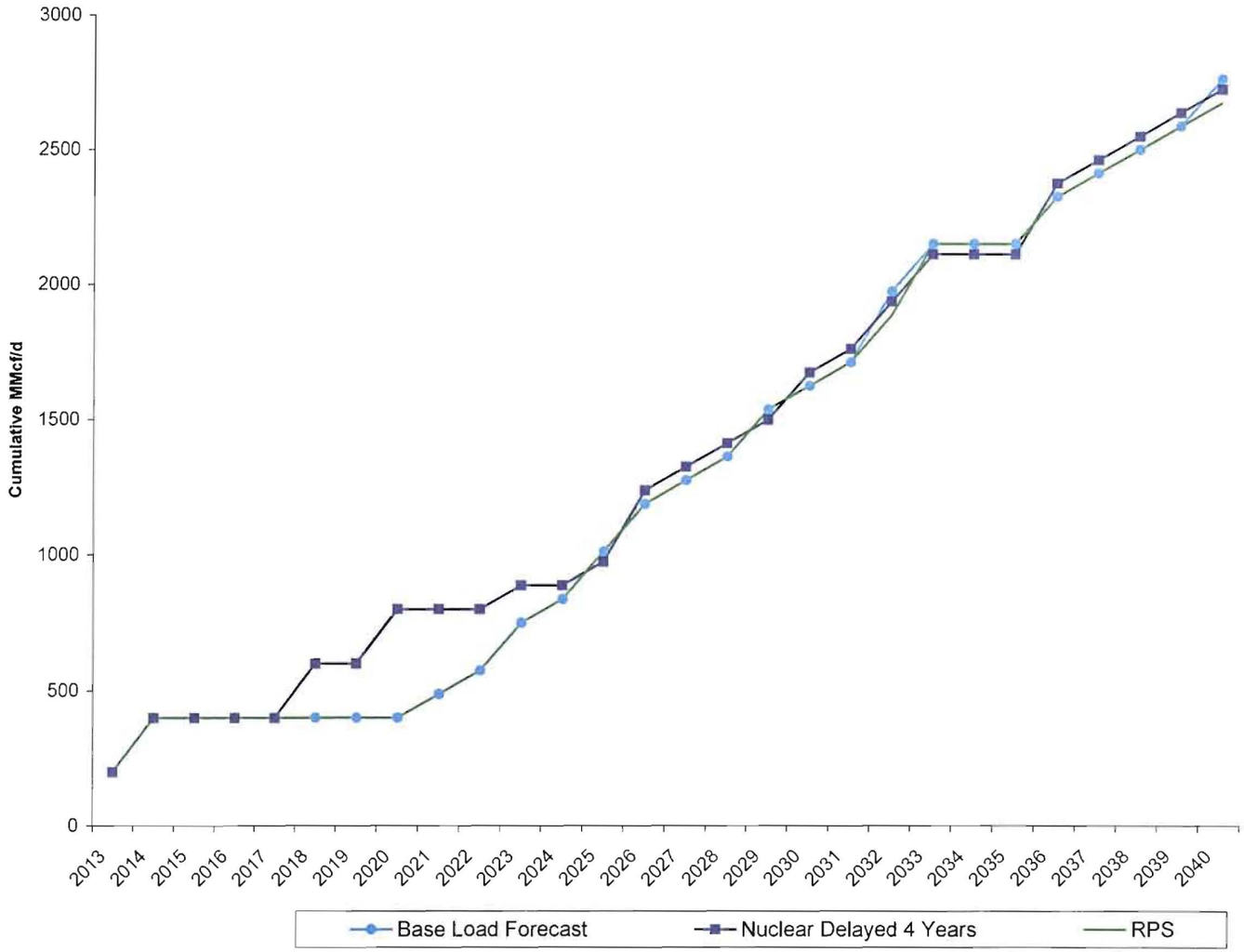
Projected FPL Energy Mix
by Fuel Type
Exhibit JEE-5, Page 1 of 1

Projection of FPL System Incremental Gas Use



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Projection of FPL System
Incremental Gas Use
Exhibit JEE-6, Page 1 of 1

Economic Evaluation Results of Different Gas Transportation Alternatives
Differential Cost: Company B Option vs. Florida EnergySecure Line

(Positive numbers mean savings to the Florida EnergySecure Line)

CPVRR* thru 2053 (2009$)

		Differential Cost: Gas Transportation $ Million	Differential Cost: Variable Costs (fuel and other) $ Million	Total Differential Cost: $ Million
1	Base Case	89	119	208
2	RPS Scenario	89	115	204
3	Nuclear Delay Scenario	403	110	513

* CPVRR= Cumulative Present Value of Revenue Requirements

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Economic Evaluation Results for
Different Gas Transportation Alternatives
Exhibit JEE-7, Page 1 of 1

Economic Analysis Results: Projection of Approximate Bill Impacts for Different Gas Transportation Alternatives Long-term Resource Plan (Base Case)

(a negative value indicates a reduction in rates due to the Florida EnergySecure Line)

Year	(1) Plan with FPL Option Annual Total Revenue Requirements ($millions, Nominal $)	(2) Plan with Company B Annual Total Revenue Requirements ($millions, Nominal $)	(3) = (1)-(2) Differential in Annual Total Revenue Requirements ($millions, Nominal $)	(4) Projected Total Sales After DSM (GWh at the meter)	(5) = ((3)x1,000,000x100) / ((4)x1,000,000) Differential in System Average Electric Rates (cents/kwh)	(6) = ((5)x1,000) / 100 Differential in Customer Bill of 1,000 kwh ($)
2014	6,570	6,342	227	113,497	$0.20	$2.00
2015	7,199	6,984	216	116,032	$0.19	$1.86
2016	7,933	7,735	198	118,353	$0.17	$1.67
2017	8,628	8,444	184	120,821	$0.15	$1.52
2018	9,074	8,899	175	123,846	$0.14	$1.41
2019	9,858	9,695	162	126,896	$0.13	$1.28
2020	10,085	9,933	152	130,473	$0.12	$1.17
2021	10,551	10,482	70	134,244	$0.05	$0.52
2022	11,164	11,179	-15	137,300	-$0.01	-$0.11
2023	11,740	11,805	-65	140,139	-$0.05	-$0.46
2024	12,531	12,622	-91	142,671	-$0.06	-$0.64
2025	13,375	13,474	-100	145,164	-$0.07	-$0.69
2026	14,127	14,312	-186	147,740	-$0.13	-$1.26
2027	15,024	15,222	-199	149,913	-$0.13	-$1.32
2028	15,835	16,051	-216	152,104	-$0.14	-$1.42
2029	16,849	17,076	-227	154,465	-$0.15	-$1.47
2030	17,899	18,136	-237	156,650	-$0.15	-$1.51
2031	18,911	19,150	-238	158,638	-$0.15	-$1.50
2032	20,356	20,606	-250	160,243	-$0.16	-$1.56
2033	22,438	22,695	-257	160,544	-$0.16	-$1.60
2034	22,633	22,895	-262	155,987	-$0.17	-$1.68
2035	24,064	24,334	-270	158,571	-$0.17	-$1.70
2036	26,236	26,514	-278	159,635	-$0.17	-$1.74
2037	27,586	27,870	-284	160,417	-$0.18	-$1.77
2038	28,957	29,248	-291	162,019	-$0.18	-$1.79
2039	30,458	30,754	-296	163,752	-$0.18	-$1.81
2040	32,139	32,445	-306	165,366	-$0.19	-$1.85

Notes: (1) This projection assumes instantaneous adjustment to electric rates and is for illustrative purposes only.
(2) The values presented in Columns (1), (2), and (3) are total system revenue requirements and include all costs: capital, system fuel, etc.

Economic Analysis Results: Projection of Approximate Bill Impacts for Different Gas Transportation Alternatives

RPS Scenario

(a negative value indicates a reduction in rates due to the Florida EnergySecure Line)

	(1)	(2)	(3) = (1)-(2)	(4)	(5) = ((3)x1,000,000x100) / ((4)x1,000,000)	(6) = ((5)x1,000) / 100
Year	Plan with FPL Option Annual Total Revenue Requirements ($millions, Nominal $)	Plan with Company B Annual Total Revenue Requirements ($millions, Nominal $)	Differential in Annual Total Revenue Requirements ($millions, Nominal $)	Projected Total Sales After DSM (GWh at the meter)	Differential in System Average Electric Rates (cents/kwh)	Differential in Customer Bill of 1,000 kwh ($)
2014	6,506	6,278	229	113,497	$0.20	$2.01
2015	7,105	6,890	215	116,032	$0.19	$1.85
2016	7,821	7,621	200	118,353	$0.17	$1.69
2017	8,499	8,313	185	120,821	$0.15	$1.53
2018	8,891	8,716	175	123,846	$0.14	$1.41
2019	9,623	9,459	163	126,896	$0.13	$1.29
2020	9,798	9,644	154	130,473	$0.12	$1.18
2021	10,244	10,173	71	134,244	$0.05	$0.53
2022	10,828	10,842	-14	137,300	-$0.01	-$0.10
2023	11,360	11,425	-65	140,139	-$0.05	-$0.47
2024	12,072	12,166	-94	142,671	-$0.07	-$0.66
2025	12,890	12,990	-100	145,164	-$0.07	-$0.69
2026	13,614	13,799	-184	147,740	-$0.12	-$1.25
2027	14,422	14,623	-201	149,913	-$0.13	-$1.34
2028	15,145	15,359	-214	152,104	-$0.14	-$1.41
2029	16,112	16,339	-227	154,465	-$0.15	-$1.47
2030	17,126	17,361	-235	156,650	-$0.15	-$1.50
2031	17,994	18,232	-238	158,638	-$0.15	-$1.50
2032	19,210	19,461	-251	160,243	-$0.16	-$1.56
2033	21,332	21,589	-257	160,544	-$0.16	-$1.60
2034	21,471	21,734	-263	155,987	-$0.17	-$1.69
2035	22,691	22,959	-269	158,571	-$0.17	-$1.70
2036	24,642	24,920	-277	159,635	-$0.17	-$1.74
2037	25,904	26,185	-281	160,417	-$0.18	-$1.75
2038	27,175	27,464	-290	162,019	-$0.18	-$1.79
2039	28,384	28,671	-287	163,752	-$0.18	-$1.75
2040	29,662	29,966	-304	165,366	-$0.18	-$1.84

Notes: (1) This projection assumes instantaneous adjustment to electric rates and is for illustrative purposes only.
(2) The values presented in Columns (1), (2), and (3) are total system revenue requirements and include all costs: capital, system fuel, etc.

Economic Analysis Results: Projection of Approximate Bill Impacts for Different Gas Transportation Alternatives

Nuclear Delay

(a negative value indicates a reduction in rates due to the Florida EnergySecure Line)

	(1)	(2)	(3) = (1)-(2)	(4)	(5) = ((3)x1,000,000x100) / ((4)x1,000,000)	(6) = ((5)x1,000) / 100
Year	Plan with FPL Option Annual Total Revenue Requirements ($millions, Nominal $)	Plan with Company B Annual Total Revenue Requirements ($millions, Nominal $)	Differential in Annual Total Revenue Requirements ($millions, Nominal $)	Projected Total Sales After DSM (GWh at the meter)	Differential in System Average Electric Rates (cents/kwh)	Differential in Customer Bill of 1,000 kwh ($)
2014	6,570	6,342	227	113,497	$0.20	$2.00
2015	7,199	6,984	216	116,032	$0.19	$1.86
2016	7,933	7,735	198	118,353	$0.17	$1.67
2017	8,628	8,444	184	120,821	$0.15	$1.52
2018	9,491	9,470	21	123,846	$0.02	$0.17
2019	10,592	10,586	6	126,896	$0.00	$0.05
2020	11,521	11,570	-49	130,473	-$0.04	-$0.37
2021	12,311	12,363	-52	134,244	-$0.04	-$0.39
2022	12,529	12,592	-63	137,300	-$0.05	-$0.46
2023	12,678	12,768	-90	140,139	-$0.06	-$0.64
2024	12,918	13,017	-99	142,671	-$0.07	-$0.70
2025	13,294	13,437	-143	145,164	-$0.10	-$0.98
2026	14,119	14,303	-183	147,740	-$0.12	-$1.24
2027	14,994	15,193	-200	149,913	-$0.13	-$1.33
2028	15,811	16,027	-216	152,104	-$0.14	-$1.42
2029	16,794	17,017	-223	154,465	-$0.14	-$1.44
2030	17,906	18,138	-232	156,650	-$0.15	-$1.48
2031	18,915	19,150	-235	158,638	-$0.15	-$1.48
2032	20,306	20,556	-250	160,243	-$0.16	-$1.56
2033	22,405	22,662	-257	160,544	-$0.16	-$1.60
2034	22,593	22,855	-262	155,987	-$0.17	-$1.68
2035	24,011	24,278	-268	158,571	-$0.17	-$1.69
2036	26,239	26,517	-278	159,635	-$0.17	-$1.74
2037	27,590	27,871	-282	160,417	-$0.18	-$1.76
2038	28,960	29,249	-289	162,019	-$0.18	-$1.78
2039	30,454	30,750	-295	163,752	-$0.18	-$1.80
2040	32,062	32,362	-300	165,366	-$0.18	-$1.81

Notes: (1) This projection assumes instantaneous adjustment to electric rates and is for illustrative purposes only.
(2) The values presented in Columns (1), (2), and (3) are total system revenue requirements and include all costs: capital, system fuel, etc.

COST OF CAPITAL

SOURCE	WEIGHT	LONG LIVE ASSETS COST	WTD COST	AFTER TAX
DEBT	44.2%	6.60%	2.92%	1.79%
PREFERRED	0.0%	0.00%	0.0%	0.0%
COMMON	55.8%	11.75%	6.56%	6.56%
TOTAL	100.0%		9.47%	8.35%

DISCOUNT RATE: 8.35%