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July 16, 2002

-VIA HAND DELIVERY-

Ms. Blanca S. Bayó
Division of the Commission Clerk
and Administrative Services
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: Docket Nos. 020262-EI and 020263-EI

Dear Ms. Bayó:

On March 22, 2002, Florida Power & Light Company ("FPL") filed a Petition for Determination of Need for an Electrical Power Plant - Martin Unit 8 and a Petition for Determination of Need for an Electrical Power Plant - Manatee Unit 3. FPL's two petitions were assigned Docket Nos. 020262-EI and 020263-EI, respectively.

On April 22, 2002, FPL moved to hold both proceedings in abeyance to allow FPL to undertake a Supplemental Request for Proposals (Supplemental RFP). On April 29, 2002, FPL filed an emergency motion for waiver of Rule 25-22.080(2), F.A.C., to allow deferral of the hearing schedule if, as a result of the Supplemental RFP, Martin Unit 8 and Manatee Unit 3 were determined to be the most cost-effective alternatives to meet FPL's 2005 and 2006 need. By Order No. PSC-02-0571-PCO-EI, Commissioner Deason, acting as prehearing officer, substantially granted FPL's emergency motion to hold both proceedings in abeyance, and by Order No. PSC-02-0703-PCO-EI, the Commission granted FPL's emergency waiver of Rule 25-22.080(2).

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FPL has completed its Supplemental RFP. FPL's analysis shows that Martin Unit 8 and Manatee Unit 3 are the most cost-effective options to meet FPL's 2005 and 2006 need for capacity. Consequently, FPL is now prepared, consistent with Order Nos. PSC-02-0571-PCO-EI

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and PSC-02-0703-PCO-EI, for the Commission to proceed with its evaluation of the need for those two units in Docket Nos. 020262-EI and 020263-EI. The documents enclosed herewith, as described below, provide the information required for that evaluation.

Enclosed for filing on behalf of FPL in Docket Nos. 020262-EI and 020263-EI are the original and fifteen copies of:

(1) FPL's Motion for Leave to Amend Petitions for Determination of Need

(2) FPL's Amended Petition for Determination of Need for an Electrical Power Plant-Martin Unit 8

(3) FPL's Amended Petition for Determination of Need for an Electrical Power Plant-Manatee Unit 3

Because the same analysis supported FPL's assessment of its 2005 and 2006 capacity needs and its determination that Martin Unit 8 and Manatee Unit 3 were the most cost-effective alternatives to meet the needs, FPL previously filed a motion to consolidate both dockets. Consistent with its motion to consolidate, FPL filed along with its original Need Determination petitions a single Need Study for Electrical Power Plant and a single set of Need Study Appendices, as well as a common set of testimony for both dockets. FPL continues to seek consolidation of these dockets for hearing.

In support of its amended Petitions for Determination of Need for Martin Unit 8 and Manatee Unit 3, FPL is filing the original and 15 copies of the following documents:

(1) Need Study For Electrical Power Plant, 2005-2006

(2) Need Study Appendices A - D

(3) Need Study Appendices E - J

(4) Need Study Appendices K - O

(5) Direct Testimony of Dr. William E. Avera

(6) Direct Testimony of C. Dennis Brandt

(7) Direct Testimony of Moray P. Dewhurst

(8) Direct Testimony of Leonardo E. Green

(9) Direct Testimony of Rene Silva

(10) Direct Testimony of Dr. Steven R. Sim

(11) Direct Testimony of Donald R. Stillwagon

(12) Direct Testimony of Alan S. Taylor

(13) Direct Testimony of William L. Yeager

(14) Direct Testimony of Gerard Yupp

These documents reflect the results of FPL's Supplemental RFP and supercede the Need Study and Appendices and its Direct Testimony filed on March 22, 2002, in support of its initial Petitions for Determination of Need. Therefore, FPL hereby withdraws the March 22 Need Study and Appendices and the March 22 Direct Testimony.

Copies of the enclosed documents, are being provided to counsel for all parties of record. Under separate cover letter, FPL is filing its confidential appendices to the Need Study and a Request for Confidential Classification for the confidential appendices.

With the interruption of these proceedings for the Supplemental RFP, it is important that FPL's need determination proceedings be heard expeditiously. Prior to the Commission's granting of FPL's Emergency Motion To Hold The Proceedings In Abeyance, the parties had agreed to a schedule that would result in a hearing on October 2-4, 2002, a Commission decision on November 19, 2002, and a final order no later than December 4, 2002. FPL needs to preserve this schedule in order to meet its scheduled in-service date of June 2005 for both Martin Unit 8 and Manatee Unit 3. To facilitate this schedule, FPL has: (a) included more detailed data in the enclosed Need Study and Appendices than is required by Commission rule; (b) filed its direct testimony along with its amended petitions; (c) worked out with the intervenors free access to the primary analytical tools used in conducting the economic analysis of the Supplemental RFP; (d) agreed to a Confidentiality Agreement and process to allow intervenor access to most confidential data; and (e) agreed to expedited discovery. FPL will continue to work with the Commission and the parties to facilitate the Commission's prompt consideration of these proceedings.

Any delay in these proceedings would place at risk the in-service dates of Martin Unit 8 and Manatee Unit 3. In the event of delay, FPL would not achieve its 20 percent reserve margin criteria (or even a 15 percent reserve margin) in the summer of 2005. Without purchases of capacity to replace these facilities, an option which may not be available for the full capacity of these units, the reliability of FPL's system could be significantly adversely impacted to the detriment of FPL's customers. In the event of a delay, if FPL were to attempt to purchase capacity and energy to replace these units, FPL likely would pay higher costs than the costs it would incur if these units had met their in-service dates. Thus, delay also would adversely impact the costs paid by FPL's customers.

Because a delay would cause adverse impacts upon FPL's customers, FPL respectfully requests that these proceedings be processed according to the previously agreed schedule and that an Order on Procedure be issued. Such an order should place reasonable limits on discovery, encourage intervenors to coordinate discovery as they have previously agreed to do,

expedite discovery as previously agreed and set forth the agreed-to schedule, thereby facilitating the administration of these proceedings.

Respectfully submitted,

Charles A Guyton

R. Wade Litchfield
Charles A. Guyton

Attorneys for Florida Power
& Light Company

CAG/gc
Enclosures

cc: Counsel for Parties of Record

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BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION

DOCKET NOS. 020262-EI, 020263-EI
FLORIDA POWER & LIGHT COMPANY

JULY 16, 2002

IN RE: PETITION FOR DETERMINATION OF NEED FOR PROPOSED ELECTRICAL POWER PLANT IN MARTIN COUNTY OF FLORIDA POWER & LIGHT COMPANY

IN RE: PETITION FOR DETERMINATION OF NEED FOR PROPOSED ELECTRICAL POWER PLANT IN MANATEE COUNTY OF FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY & EXHIBITS OF:

ALAN S. TAYLOR

DOCUMENT NUMBER-DATE
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FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF ALAN S. TAYLOR

DOCKET NOS. 020262-EI, 020263-EI

JULY 16, 2002

Q. Please state your name and business address.

A. My name is Alan S. Taylor, and my business address is 5511 Northfork Court, Boulder, Colorado, 80301.

Q. By whom are you employed and what position do you hold?

A. I am president of Sedway Consulting, Inc.

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

A. I perform consulting engagements in which I assist utilities, regulators, and customers with the challenges that they may face in today's dynamic electricity marketplace. My area of specialization is in the economic and financial analysis of power supply options.

Q. Please describe your education and professional experience.

A. I received a Bachelor of Science Degree in Energy Engineering from the Massachusetts Institute of Technology and a Masters Degree in Business

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Administration from the Haas School of Business at the University of California, Berkeley, where I specialized in finance and graduated valedictorian.

I have worked in the utility planning and operations area for 17 years, predominantly as a consultant specializing in integrated resource planning, competitive bidding analysis, utility industry restructuring, market price forecasting, and asset valuation. I have testified before state commissions in proceedings involving resource solicitations, environmental surcharges, and fuel adjustment clauses.

I began my career at Baltimore Gas & Electric Company, where I performed efficiency and environmental compliance testing on the utility system's power plants. I subsequently worked for five years as a senior consultant at Energy Management Associates (EMA, now New Energy Associates), training and assisting over two dozen utilities in their use of EMA's operational and strategic planning models, PROMOD III and PROSCREEN II. During my graduate studies, I was employed by Pacific Gas & Electric Company (PG&E), where I analyzed the utility's proposed demand-side management (DSM) incentive ratemaking mechanism, and by Lawrence Berkeley Laboratory (LBL) where I evaluated utility regulatory policies surrounding the development of brownfield generation sites.

Subsequently, I worked at PHB Hagler Bailly (and its predecessor firms) for ten years, serving as a vice president in the firm's Global Economic Business Services practice and as a senior member of the Wholesale Energy Markets practice of PA Consulting Group when that firm acquired PHB Hagler Bailly in 2000. In 2001, I founded Sedway Consulting, Inc. and have continued to specialize in economic analyses associated with electricity wholesale markets.

Q. What is the purpose of your testimony?

A. I was retained to assist Florida Power & Light (FPL) in conducting its solicitation for competitive power supplies. The purpose of my testimony is to describe my role as an independent evaluator and present my findings. I reviewed FPL's solicitation process and performed a parallel and independent economic evaluation of the proposals and self-build options that were available to FPL. I will discuss the process and tools that I used to conduct that parallel economic evaluation. Based on the results of my independent evaluation, I concluded that the Martin/Manatee FPL portfolio described in the Need Study is the least-cost portfolio that meets FPL's resource needs.

Q. Are you sponsoring an exhibit in this case?

A. Yes. It consists of the following documents:

Document AST-1, Resume of Alan S. Taylor

Document AST-2, Sedway Consulting's Independent Evaluation Report.

Q. Please describe the role you performed as an independent evaluator in FPL's solicitation.

A. I reviewed FPL's Supplemental Request for Proposals (Supplemental RFP) and the utility's 2002 Ten-Year Site Plan. Prior to the receipt of proposals, I requested that FPL run its detailed economic evaluation tool – the Electric Generation Expansion and Analysis System (EGEAS) model, originally developed by Electric Power Research Institute – and provide results that I could use to calibrate Sedway Consulting's bid evaluation model. Once FPL received the proposals and clarified ambiguous or confusing issues with the bidders, I was sent the economic/pricing information from each proposal. The information was provided to me by bid number, thereby masking the identities of the bidders and the locations of their projects. FPL conferred with me on a number of issues relating to proposal disqualification decisions, interpretation of bid information, clarification requests, and economic evaluation assumptions. As the evaluation progressed, FPL and I discussed appropriate modeling assumptions in both evaluation tools (which I discuss later in my testimony). Using Sedway Consulting's Response Surface Model (RSM), I developed rankings of all of the proposals. Also, with the RSM results, I developed portfolios of low-cost resources and assessed the overall costs of such portfolios. I reviewed FPL's EGEAS runs to confirm consistency of assumptions and reasonableness of results, and I documented the entire process in an independent evaluation report (Document AST-2).

Q. Turning first to the process of the solicitation, do you believe that the Supplemental RFP was an adequate document for soliciting proposals?

A. Yes. As one who has developed dozens of such utility resource RFPs, I believe that FPL's Supplemental RFP struck a good balance between being sufficiently detailed without being overly burdensome on the respondent. I think that the number and quality of the proposals that FPL received is a testament to the Supplemental RFP's adequacy.

Q. Do you believe that FPL's evaluation process was conducted fairly?

A. Yes. I believe that the outside proposals and FPL self-build options were evaluated on an equal footing, with consistent assumptions and analytic approaches applied to all relevant resource options at each stage of the evaluation.

Q. Please describe Sedway Consulting's RSM model and its use in FPL's solicitation.

A. The RSM is a spreadsheet model that I have used in solicitations around the country. It is a relatively straightforward tool that allows one to independently assess the cost impacts of different generating or purchase resources for a utility's supply portfolio. Most of the evaluation analytics in the RSM involve calculations that are based entirely on my input of proposal costs and characteristics. A small part of the model examines system production cost impacts and needs to be calibrated to simulate a specific

utility's system. In the case of the FPL solicitation, prior to the opening of the bids, I requested that FPL execute a specific set of runs with its detailed evaluation model, EGEAS. With the results of these runs, I was able to calibrate the RSM to approximate the production cost results that EGEAS would produce in a subsequent evaluation of any proposals or self-build options that FPL might receive. Thus, I would not have to rely on FPL's modeling of a proposal; instead, I would be able to insert my own inputs into my own model and independently evaluate the economic impact of any particular bid. In short, the RSM provides an independent assessment to help ensure against the inadvertent introduction of significant mistakes that could cause the evaluation team to reach the wrong conclusions.

Q. How is the RSM an independent analytical tool if it is based on initial EGEAS results?

A. As I noted above, most of the calculations performed by the RSM are not based on EGEAS results in any way. There are two main categories of costs that are evaluated in a resource solicitation: fixed costs and variable costs. The costs in the first category – the fixed costs of a proposal – are calculated entirely separately in the RSM, with no reliance on the EGEAS model for these calculations. The second category – variable costs – has two parts: (1) the calculation of a resource's variable dispatch rates and, (2) the impact that a resource with such variable rates is likely to have on FPL's total system production costs. As with the fixed costs, a proposal's variable dispatch rates

are calculated entirely separately in the RSM, with no basis or reliance on the EGEAS model. It is only in the final subcategory – the impact that a resource is likely to have on system production costs – that the RSM has any reliance on calibrated results from EGEAS.

Q. Please elaborate on that area of calculations where the RSM is affected by the EGEAS calibration runs.

A. This is the area of system production costs. These costs represent the total fuel, variable operation and maintenance (O&M), and purchased power costs that FPL incurs in serving its customers' loads. Given FPL's load forecast, the existing FPL supply portfolio (i.e., all current generating facilities and purchase power contracts), and many specific assumptions about future resources and fuel costs, EGEAS simulates the dispatch of FPL's system and forecasts total production costs for each year of the study period. At the outset of the solicitation project, the RSM was populated with annual system production cost results that were created by the EGEAS calibration runs.

Q. What did the RSM do with this production cost information?

A. Once incorporated into the RSM, the production cost information allowed the RSM to answer the question: How much money (in annual total production costs) is FPL likely to save if it acquires a proposed resource, relative to a reference resource? The use of a reference resource simply allowed a consistent point of comparison for evaluating all bids and self-build options. I

used a reference resource with a high variable dispatch rate of $100/MWh. In fact, I could have picked any variable dispatch rate for the reference resource and obtained the same relative ranking of bids out of the RSM. The cost of the reference resource has no impact on the relative results – it is merely a consistent reference point.

Q. Can you provide a numerical example that shows how the RSM works?

A. Certainly. Assume that a utility has a one-year resource need of 1,750 MW and must select one of the two following proposals:

	Bid A	Bid B
Capacity:	1,750 MW	1,750 MW
Capacity Price:	$9.00/kW-month	$5.50/kW-month
Energy Price:	$20/MWh	$50/MWh

For both proposals, the RSM has already calculated the fixed costs (and represented them in the capacity price) and the variable costs (and represented them in the energy price). Bid A is more expensive in terms of fixed costs, but Bid B is more expensive on an energy cost basis. The RSM calculates the final piece of the economic analysis – the different impacts on system production costs – to determine which bid is less expensive in a total sense for the utility system as a whole.

Assume that the RSM has been calibrated and populated with the following production cost information:

For a 1,750 MW proxy resource, the utility's one-year total system production costs are:

- $2.500 billion for a $100/MWh energy price reference resource
- $2.479 billion for a $50/MWh energy price resource (Bid B)
- $2.416 billion for a $20/MWh energy price resource (Bid A)

Thus, the energy savings (relative to the selection of a $100/MWh reference resource) are $84 million for Bid A with its $20/MWh energy price and $21 million for Bid B with its $50/MWh energy price. In its bid ranking process, the RSM converts all production cost savings into a $/kW-month equivalent value so that the savings can be deducted from the capacity price to yield a final net cost (in $/kW-month) for each bid. Converting the energy savings in this numerical example into $/kW-month equivalent values yields the following:

$84 million / (1,750 MW * 12 months) = $4.00/kW-month

$21 million / (1,750 MW * 12 months) = $1.00/kW-month

The RSM calculates the net cost of both bids by subtracting the energy cost savings from the fixed costs:

	Bid A	Bid B
Capacity Price:	$9.00/kW-month	$5.50/kW-month
Energy Cost Savings:	$4.00/kW-month	$1.00/kW-month
Net Cost:	**$5.00/kW-month**	**$4.50/kW-month**

Bid B is less expensive. This can be confirmed through a total cost analysis as well:

Bid A will require total capacity payments of $189 million (= 1,750 MW x $9.00/kW-month x 12 months), and Bid B will require $115.5 million (= 1,750 MW x $5.50/kW-month x 12 months). Thus, Bid A has fixed costs that are $73.5 million more than Bid B.

Bid A will provide $63 million more in energy cost savings (= $84 million - $21 million); however, this is not enough to warrant paying $73.5 million more in fixed costs. Therefore, Bid B is the less expensive alternative.

Note that the RSM is described in more detail in the independent evaluation report that is attached to my testimony, Document AST-2.

Q. **With that understanding of the RSM process, what did you do to calibrate the RSM to EGEAS?**

A. I reviewed the production cost information that FPL provided at the start of the project and confirmed that the production costs were, for the most part, exhibiting smooth, correct trends (i.e., they were increasing where they should be increasing and declining where they should be declining). Having verified that the RSM production cost values were "smooth," I was confident that inputting variable cost parameters into the model for similar proposals would yield similar production cost results. Although the RSM is not a detailed model and could not simulate FPL's production costs with EGEAS' accuracy, in the end, the independent RSM evaluation results tracked the EGEAS results quite well.

Q. Once the RSM was calibrated, what was the next step?

A. I reviewed pricing information from all of the proposals that FPL received. Specifically, I received the following information for input into the RSM: contract capacity, capacity pricing, commencement and expiration dates, heat rates, fuel costs, firm gas transportation pipeline service (if applicable), variable operations and maintenance (O&M) and/or energy charges, and start-up costs.

Q. How was the firm gas transportation pipeline service determined?

A. All proposals involving natural-gas-fired projects were assumed to require

firm gas transportation from either the Florida Gas Transmission (FGT) pipeline, the new Gulfstream pipeline, or a bidder-specified supply. Bidders indicated in their proposals which pipeline they expected to tap for firm gas supplies.

Q. What other significant proposal assumptions or modeling issues did you discuss with the FPL evaluation team during the course of the evaluation?

A. There were a number of minor points, but the major ones were addressed in discussions pertaining to the following five areas:

1. Future resource costs that would be incurred at the end of short-term transactions
2. Firm gas transportation issues
3. Equity penalty
4. Residual value of resource lives beyond 2030
5. Transmission integration costs

Q. What do you mean by "future resource costs"?

A. There are several issues here that concern the evaluation of proposals of varying size or duration. Focusing first on the issue of varying duration, FPL received proposals for contract terms of anywhere from 3 to 25 years. In order for one to compare the value of a short-term option with that of a long-term option, one must make some assumptions about the future costs of new

resources. In other words, to compare a 3-year contract with a 25-year contract of the same capacity, one needs to assess the likely costs of acquiring or developing new capacity in years 4 through 25. The costs of acquiring or developing that new capacity are what I refer to as "future resource costs". If one believes that very low-cost options may be available in 4 years, the economic advantage may tilt toward the 3-year contract. Alternatively, if one believes that future resource costs may be high for years 4 through 25, the 25-year contract may appear more attractive. Of course, the fundamental comparison is directly dependent on the proposed prices inherent in both transactions. But to put both proposals on common footing, one needs to "fill in" behind the 3-year contract with some estimate of future resource costs or market prices that will be available to the buyer in those interim years. Thus, in both EGEAS and the RSM, future resource costs were characterized by a "filler" unit.

Q. What assumptions were used in the RSM for the filler unit?

A. The RSM used FPL's generic estimates of a greenfield combined-cycle facility similar to the 1,107 MW Manatee project that was selected in this evaluation. The filler had the same heat rates, variable O&M costs, annual incremental capital requirements and start-up costs. Its construction and fixed O&M costs were higher to account for the greenfield nature of the facility. Also, its firm gas transportation costs were based on the FGT tariff because of the fact that FGT can be accessed by new resources throughout the state. The

Gulfstream pipeline, on the other hand, supplies a limited geographical area. Given that the location of future filler resources could not be known, FGT supply was assumed. In total, the filler assumptions resulted in a combined-cycle facility that was rather low-cost – lower than most of the combined-cycle bids that FPL received. Of the 13 combined-cycle facilities that were offered by outside bidders, the filler resource was less expensive than nine of them. Thus, short-term proposals were afforded a favorable assumption with regard to the replacement capacity that FPL would acquire or develop upon the expiration of the proposed contract.

Also, it is important to note that a sensitivity analysis was performed by Sedway Consulting and is described in the independent evaluation report in Document AST-2. This analysis examined the effect of even lower filler costs (through a reduction in construction and other fixed costs and the accessing of Gulfstream firm gas supply) on the costs of the top-ranked portfolios. The All-FPL portfolio was still the least-cost portfolio by $125 million.

Q. In the RSM, was every short-term proposal replaced with a 1,107 MW combined-cycle filler resource?

A. No. The RSM sized the replacement capacity for each short-term proposal to equal the size of the expiring contact. All costs were scaled accordingly. Thus, small proposals were replaced with a small filler resource that had all of the economy-of-scale benefits of a large 1,107 MW generating plant.

Q. Is this MW-for-MW replacement assumption in the RSM reflective of what would actually happen on FPL's system?

A. No. FPL likely would be unable to exactly match additions MW for MW in the year needed, and smaller additions used to more closely match a specific year's need probably would be more expensive and/or less efficient that the scaled-down version of a large 1,107 MW facility. Therefore, the process followed by the RSM may slightly understate the total study period costs for short-term proposals.

Q. Did EGEAS follow the same process as was employed in the RSM?

A. Technically, no, although the final result is similar. EGEAS looks at the FPL system more comprehensively. EGEAS maintains FPL's 20% reserve margin by selecting proposals (during the 2005 and 2006 time frame) and full-scale filler resources (in the later years) to supplement FPL's existing fleet of resources. The EGEAS process is described more fully in Dr. Steven Sim's testimony. It is important to note, however, that both the RSM and EGEAS used the same assumptions for the costs and operating characteristics of the 1,107 MW filler resource.

Q. The second item on your list of discussion issues involved firm gas transportation. What was discussed and decided there?

A. I have already mentioned the designation of some resources as having lower firm gas transportation costs because of their access to the Gulfstream

pipeline. In addition, after seeking guidance from FPL's Energy Marketing and Trading Group, the evaluation team decided to assume that there would be no firm gas transportation charges for duct-fired capacity associated with a combined-cycle proposal.

Q. Item #3 on your list was the equity penalty. What is that and how was it applied to the evaluation process?

A. An equity penalty is a cost associated with contracting for power from an outside party. Rating agencies view some portion of a utility's capacity payment obligations to a power provider as the equivalent of debt on the utility's balance sheet. If a utility does not rebalance its capital structure with additional equity, this debt equivalent can negatively impact a utility's financial ratios, influencing rating agencies to downgrade their opinion of the utility's creditworthiness and increasing the utility's cost of borrowing. Consequently, an adjustment acknowledging this incremental cost of capital must be made to all capacity purchase options in order to put them on an equal footing with internal build or turnkey options. Thus, an equity penalty was calculated for each top-ranked proposal to represent the additional cost to FPL and its customers of rebalancing its capital structure were it to contract for the power associated with each proposal. This value was summed for all outside proposals in each portfolio, and added to the portfolio's total cost.

Q. Have you seen this equity penalty concept incorporated in other solicitations?

A. Yes, both inside and outside of Florida. Also, I believe that recent events in the electricity markets have only underscored the importance of energy companies maintaining strong balance sheets. Rating agencies have become quite severe in their evaluation of energy companies' financial ratios. Thus, it was appropriate for the bid evaluation team to incorporate into its analyses the estimated financial impact and imputed debt associated with the signing of purchase power agreements.

Q. Please describe the issue of residual value.

A. The residual value concept is associated with any resource that continues to have costs or value beyond the end of the study period (i.e., beyond 2030). None of the outside power purchase proposals extended beyond the end of the study. However, the FPL self-build options are likely to continue to operate beyond the 25-year time frame that formed the basis of the revenue requirements calculation for these resources. Thus, the costs of the self-build options were premised on FPL's customers paying for the capital costs over 25 years; but the customers will continue to enjoy the benefits of the power for operating lives that are likely to be 35 years or more. Given that, I calculated the present value of the net benefits of an additional 10 years of capacity from the FPL self-build options. I used a conservative estimate of the value of the capacity (i.e., an estimate of the market price that may be

associated with capacity in that time frame) and assumed that FPL customers would continue to pay fixed O&M costs and incremental capital costs (with the latter at reduced levels) to keep the facilities running. The net benefit of the capacity was calculated as the facilities' capacity value minus the costs.

Q. Did FPL's analysis include a residual value calculation?

A. No. Therefore, I believe that the FPL analysis understated the value of the FPL options by $34 million to $76 million. This is one of the primary reasons that the cost differences (between the All-FPL portfolio and the competing portfolios) depicted in Sedway Consulting's results are generally greater than those depicted in FPL's results.

Q. How were transmission integration costs factored into the evaluation?

A. In the final consideration of portfolios, various portfolios were analyzed to determine what transmission integration investments might be necessary to accommodate the development and receipt of power injections from specific points of delivery. This determination requires significant effort and transmission system modeling. Thus, the FPL evaluation team opted to send only 28 portfolios for analysis. The results showed that transmission integration costs may add from $5 million to $132 million (present value of revenue requirements) to the cost of a portfolio, depending on the specific geographic configuration of the resources in each portfolio.

Q. What were the final results of the evaluation?

A. The top portfolio included two FPL projects – the conversion of two CTs (and the addition of two more) at FPL's Martin generating facility to a 4-on-1 combined-cycle facility and a similar complete 4-on-1 combined-cycle facility at FPL's Manatee generating station. Both projects will be essentially the same type of facility, providing 1,107 MW each of summer capacity. Because the Martin expansion project will be converting two existing CTs that currently provide 318 MW of capacity, the net additional capacity from that project will be 789 MW. Thus, this portfolio of FPL self-build options will provide a total of 1,896 MW of summer capacity, meeting the FPL's minimum requirement of 1,722 MW. This portfolio was found to be at least $135 million less expensive than the next best portfolio without both FPL units. A complete list of the top-ranked portfolios is provided in the independent evaluation report (Document AST-2).

Q. What do you conclude about FPL's solicitation?

A. I conclude that the All-FPL portfolio is the least-cost portfolio and concur with FPL's decision to move forward with Martin Unit 8 and Manatee Unit 3. The solicitation process yielded the best results for FPL's customers while treating developers fairly. The FPL Supplemental RFP was sufficiently detailed to provide necessary information to bidders. The economic evaluation methodology and assumptions were appropriate and unbiased, and the independent evaluation procedures provided a cross-check of FPL's bid

representation in EGEAS and confirmed FPL's EGEAS results. Finally, I conclude that the All-FPL portfolio of the Martin and Manatee projects is the most cost-effective portfolio by at least $135 million.

Q. Does this conclude your testimony?

A. Yes.

RESUME OF ALAN S. TAYLOR

AREAS OF QUALIFICATION

Competitive bidding resource selection, integrated resource planning, risk assessment, market analysis and strategic planning

EMPLOYMENT HISTORY

- President, Sedway Consulting, Inc., Boulder, CO, 2001-present
- Senior Member of PA Consulting, Inc., Boulder, CO, 2001
- Vice President, Global Energy Business Sector, PHB Hagler Bailly, Inc., Boulder, CO, 2000
- From Senior Associate to Principal, Utility Services Group, Hagler Bailly Consulting, Inc., Boulder, CO, 1991-1999
- Senior Consultant, Energy Management Associates, Atlanta, GA, 1983-1988
- Internships at: Pacific Gas & Electric Company, San Francisco, CA (1990)
  Lawrence Berkeley Laboratory, Berkeley, CA (1989-1991)
  MIT Resource Extraction Laboratory, Cambridge, MA (1982)
  Baltimore Gas and Electric Company, Baltimore, MD (1980)

EDUCATION

- Walter A. Haas School of Business, University of California at Berkeley, MBA, Valedictorian, Corporate Finance, 1991
- Massachusetts Institute of Technology, BS, Energy Engineering, 1983

PROFESSIONAL EXPERIENCE

- Developed and/or reviewed dozens of requests for proposals for utility resource solicitations.
- Conducted numerous competitive bidding project evaluations for conventional generating resources, renewable facilities, and off-system power purchases.
- Assisted in contract negotiations with shortlisted bidders in utility resource solicitations.
- Testified on utility competitive bidding solicitation results, affiliate transactions, cost recovery procedures, rate case calculations, and incentive ratemaking proposals.
- Managed the development of market price forecasts of North American and European electricity markets under deregulation.
- Performed financial modeling of electric utility bankruptcy workout plans.
- Managed the technical and economic appraisal of cogeneration facilities and brownfield generation sites.
- Trained and assisted many of the nation's largest electric and gas utilities in their use of operational and strategic planning computer models.

SELECTED PROJECTS

2002 **Solicitation for New Resources**
Client: Northern States Power

Currently assisting in the evaluation of a large number of multi-option proposals for new power supplies in the 2005-2009 time frame. Mr. Taylor is managing a team of individuals in the evaluation of responses in two separate solicitations. In the first solicitation, contingent proposals have been received that may serve as replacement contracts for 1,100 MW of nuclear capacity should NSP be forced to decommission its Prairie Island power plant in 2007. In the second solicitation, NSP is seeking approximately 1,000 MW of new supplies to supplement its existing supply portfolio.

2001- **Testimony Concerning Competitive Bidding Solicitations**
pres. Client: MidWest Independent Power Suppliers

Provided testimony in a proceeding before the Wisconsin Public Service Commission on behalf of a consortium of independent power producers. Mr. Taylor testified on the benefits and timing of a competitive bidding solicitation that Wisconsin Electric Power Company (WEPCO) should be ordered to conduct prior to the utility's development of $2.8 billion in self-build generation facilities (embodied in a WEPCO proposal called Power the Future – 2). Without the benefits of a competitive solicitation, there would be no defensible means of ensuring that the utility's customers were being offered the best, most cost-effective resources.

2001- **Regulatory Support of Commission Staff**
pres. Client: Utah Division of Public Utilities

Assisting staff for the Utah Division of Public Utilities in the division's efforts to analyze PacifiCorp's Strategic Restructuring Proposal (SRP). Mr. Taylor's efforts are primarily focused on the area of the proposed power supply agreements that will govern the sale of power from PacifiCorp's proposed new unregulated generation company to the regulated distribution company.

2001 **Negotiation of Full-Requirements Purchase Contract**
Client: Georgia cooperative utility

Assisted in negotiation of a $2 billion power purchase contract. Mr. Taylor worked with a team of legal experts and other consultants to assist the client in negotiating a 15-year full-requirements contract with a large, national power supplier. Detailed modeling simulations were performed to compare the complex transaction to the utility's own self-build alternatives. Mr.

Taylor helped investigate and negotiate detailed provisions in the power supply contract concerning ancillary services and other operational parameters.

2001 **Evaluation of Resource Proposals**
Client: North Carolina municipal utility

Reviewed responses to a utility resource solicitation and assisted the client in developing a short list of the best bidders. Mr. Taylor reviewed the results of the client's economic analysis of the proposals and provided insights on various nonprice factors related to each of the top-ranked proposals. Mr. Taylor helped the client in structuring and strategizing for the negotiation process.

2000- **Solicitation for New Resources**
2001 Client: Public Service of Colorado

Assisted in the evaluation of a large number of multi-option proposals for new power supplies in the 2002-2005 time frame. Mr. Taylor managed a team of a dozen individuals who performed economic and nonprice evaluations of the proposals. Mr. Taylor developed recommendations for a short list of the best resources and managed a supplemental evaluation of second-tier bidders when the client's capacity needs subsequently increased. Ultimately, over $2 billion of contracts were negotiated for over 1,700 MW of new power supplies under terms of up to 10 years. Mr. Taylor testified before the Colorado Public Utilities Commission on the processes and results of both the primary and supplemental evaluations.

1999- **Solicitation for New Resources**
2000 Client: MidAmerican Energy

Reviewed MidAmerican's solicitation for new power supplies for the 2000-2005 resource planning period. Mr. Taylor managed a team of individuals who performed an independent parallel evaluation of MidAmerican's analysis of responses to the utility's request for proposals (RFP). Mr. Taylor reviewed MidAmerican's evaluation and negotiation process and testified to the fairness and appropriateness of MidAmerican's actions. He filed testimony before the utility regulatory commissions in Iowa, Illinois, and South Dakota.

2000 **Forecasting of Electricity Market Prices**
Client: various European clients

Helped develop electricity market prices for regional electricity markets in Austria, Belgium, France, Germany, and the Netherlands. Mr. Taylor worked with a project team in Europe to develop simulation models and databases to forecast energy and capacity prices in the deregulating European power markets.

1999 **Evaluation of New Resources**
Client: Florida Power Corporation

Helped prepare the FPC's RFP for long-term supply-side resources and assisted in the independent evaluation of responses. Mr. Taylor oversaw the review of FPC's computer simulations (in PROVIEW and PROSYM) of the proposals that were received. The project team also evaluated the proposals by using a response surface model to approximate the results that might be produced in the more detailed simulations. Mr. Taylor testified before the Florida Public Service Commission concerning his assessment of FPC's solicitation and the results of the analysis.

1998 **Evaluation of New Resources**
Client: Public Service of Colorado

Assisted the evaluation of proposals for PSCo's near-term 1999 resource additions and managed the complete third party evaluation of proposals for resources in the 2000-2007 time frame. Such resources included third-party facilities and power purchases, as well as company-sponsored interruptible tariffs. Mr. Taylor assisted with the development of the request for proposals and oversaw the evaluation of all responses. He and his team monitored subsequent negotiations with shortlisted bidders. Mr. Taylor testified before the Colorado Public Utilities Commission on the fairness of the solicitation and the results of the evaluation.

1997- **Evaluation/Negotiation of Transmission Interconnection Solicitation**
1999 Client: New Century Energies

Managed a solicitation for participation in a major transmission project interconnecting Southwestern Public Service (a Texas member of the Southwest Power Pool) and Public Service of Colorado (a member of the Western Systems Coordinating Council). As the first major inter-reliability-council transmission project in the era of open access, FERC required that SPS and PSCo solicit third-party interest in participation. This project required the development of an RFP and evaluation of responses for both equity participation and long-term transmission service for over 21 alternative high-voltage AC/DC/AC transmission projects. The evaluation focused on the costs and intangible risks of different transmission alternatives relative to the benefits and savings associated with increased economy interchange, avoided future generating capacity, and reductions in single-system spinning reserve and reliability requirements.

1996- **Evaluation/Negotiation of All-Source Solicitation**
1997 Client: Southwestern Public Service

Managed the evaluation of a broad array of responses to an all-source solicitation that was issued by Southwestern Public Service (SPS). Resources in the areas of conventional supply-side generation, renewable resources, off-system transactions, DSM, and interruptible loads were proposed. The evaluation entailed scoring the proposals for a variety of price and nonprice attributes. Mr. Taylor assisted Southwestern in its negotiations with the bidders and performed the detailed evaluation of the best and final offers.

1996-1997 **Risk Assessment for 1,000-MW Solicitation**
Client: Seminole Electric Cooperative

Managed the review and assessment of risks associated with responses to a 1,000-MW solicitation that was issued by Seminole Electric Cooperative. The evaluation entailed reviewing selected proposals' financial feasibility, performance guarantees, fuel supply plans, O&M plans, project siting, dispatching flexibility, and bidder qualifications.

1997 **Analysis/Testimony Concerning Louisville Gas & Electric's Fuel Adjustment Clause**
Client: Kentucky Industrial Utility Customers

Performed a detailed examination of Louisville Gas & Electric's (LG&E) fuel adjustment clause and identified misallocated costs in the areas of transmission line losses and purchased power fuel costs. Mr. Taylor also critiqued LG&E's rate adjustment methodology and recommended closer scrutiny of costs associated with jurisdictional and non-jurisdictional sales. Mr. Taylor testified before the Kentucky Public Service Commission and presented the findings of his analysis.

1997 **Analysis/Testimony Concerning Kentucky Utilities' Fuel Adjustment Clause**
Client: Kentucky Industrial Utility Customers

Performed a detailed examination of Kentucky Utilities' fuel adjustment clause and recommended more appropriate allocations of costs among jurisdictional and non-jurisdictional customers. Particular emphasis was placed on inter-system sales (and the line losses associated with such sales), purchase power fuel costs, the correct determination of jurisdictional sales. Mr. Taylor testified before the Kentucky Public Service Commission and presented the findings of his analysis.

1995 **Development of All-Source Solicitation RFPs**
Client: Southwestern Public Service

Managed the development of five RFPs that solicited resources in the areas of conventional supply-side generation, renewable resources, off-system transactions, DSM, and interruptible

loads. The RFPs were issued by SPS as part of an all-source solicitation to identify resources that may be competitive with two generation facilities that SPS intended to develop.

1995 **Environmental Compliance Analysis**
Client: Western utility

Performed a confidential detailed environmental analysis that involved executing hundreds of production simulations of the client utility's system (using PROSCREEN II) to analyze SO_2, NO_x, and particulate reductions associated with different fuel-switching, capital investment, and retirement scenarios.

1994-1996 **Implementation of Continuous Emission Monitoring Regulations**
Clients: Various

Assisted over 80 utilities in ensuring their compliance with the CAAA's continuous emission monitoring (CEM) regulations (40 CFR Part 75). Using *75check*, a CEM quality assurance software system developed by Hagler Bailly, Inc., the project team analyzed the electronic data reports that utilities must file with the U.S. EPA on a quarterly basis. These reports contain detailed hourly emissions information for every CAAA-affected plant and serve as the foundation for the SO_2 emission allowance market.

1994 **Evaluation of Big Rivers' Clean Air Act Compliance Plan**
Client: Kentucky Industrial Utility Customers

Performed a detailed analysis of Big Rivers Electric Corporation to determine the appropriate SO_2 emission reduction strategy that the utility should undertake to comply with the 1990 Clean Air Act Amendments (CAAA). The utility's historical operations were studied and dozens of hourly production cost simulations of Big Rivers' utility system were performed to assess the operational and economic impacts of different CAAA compliance strategies. Risk/sensitivity analyses were undertaken to determine the affects of varying assumptions of fuel prices, capital costs, and operating and maintenance costs. Mr. Taylor testified before the Kentucky Public Service Commission, endorsing the implementation of a specific incentive ratemaking methodology that would encourage the utility to minimize its compliance costs.

1994 **Fuel Procurement Audit of Columbia Gas Company**
Client: Public Utilities Commission of Ohio

Assisted in a fuel procurement audit of Columbia Gas Company in Ohio. The utility's gas transportation programs were scrutinized to ensure that full service customers were not subsidizing transportation customers. Cost allocation procedures were studied and marginal costs

of service for transportation customers were examined. In addition, the audit included an investigation of how the utility calculated and monitored unaccounted-for-gas.

1994 **Development of Competitive Bidding RFP**
Client: Empire District Electric Company

Based on knowledge gained from the review of dozens of other utility RFPs, developed a combined-cycle resource RFP for Empire District Electric Company. The project team was responsible for the RFP's entire development, including the development of scoring provisions for price and nonprice project attributes.

1993 **Selection of Developer for 25 MW Wind Facility**
Cient: Northern States Power

Evaluated ten bids that were received by NSP in a solicitation for the development of a 25 MW wind facility in Minnesota. The proposals were scored and ranked through a point-based evaluation system that was developed prior to the solicitation. The scoring involved an assessment of operational and financial feasibility, power purchase pricing terms, construction schedules, and community acceptance issues.

1993 **Competitive Bidding Design**
Client: Northern States Power

Assisted NSP in the utility's effort to design a generic competitive bidding RFP that could be issued for a variety of generation resources. Two dozen RFPs from other utilities were reviewed to determine the appropriate weights and mechanisms that should be used to score various project attributes.

1993 **Evaluation of 500 MW Supply-Side Solicitation**
Client: San Diego Gas & Electric

Assisted in the evaluation of 15 bids that were received from a 500 MW solicitation for power by SDG&E. The utility wanted to determine whether or not there were less expensive alternatives to the implementation of its plan to repower one of its own units. The 15 projects represented over 4,000 MW. The bids were evaluated using extensive production costing modeling, in which over 1,000 model runs were performed to evaluate each bid under a variety of scenarios.

1992-1993 **Integration of DSM Programs into Utility IRP Filing**
Client: Public Service Company of Colorado

Assisted utility in DSM modeling and IRP optimization using PROSCREEN II/PROVIEW. A data transfer system was designed to translate DSM program information from various utility departments. Simulations were performed to assess the cost-effectiveness of different demand- and supply-side options.

SELECTED PUBLICATIONS AND PRESENTATIONS

"Ancillary Services, A Market Unto Itself" Financial Times Energy Conference: Navigating the New Transmission Roadmap Under FERC Order 2000, June 2000.

"Forecasting Ancillary Service Prices," Infocast Conference: How to Buy, Sell, and Price Ancillary Services in Competitive Markets, October 1999.

"Fundamentals of Electricity Deregulation," American Association of Petroleum Geologists/Electric Power Research Institute Conference, April 1999.

"The Coal/Natural Gas Balance in a Reconfigured Utility Industry," American Bar Association Conference on Electricity Law and Regulation, February 1998.

"Asset Divestitures in the Deregulating Power Markets," Hybrid U.S. Power Market Conference, February 1998.

Modeling Renewable Energy Resources in Integrated Resource Planning, D. Logan, C. Neil, and A. Taylor, National Renewable Energy Laboratory, May 1994.

Regulatory Treatment of Electric Utility Clean Air Act Compliance Strategies, Costs, and Emission Allowances, K. Rose, M. Harunuzzaman, and A. Taylor, The National Regulatory Research Institute, December 1993.

"Risk Management Under the 1990 Clean Air Act Amendments: A Study of Emissions Allowance Reserves," Electric Power Research Institute, November 1993.

"Regulatory Accounting for Acid Rain Compliance Planning," 8th Biennial Regulatory Information Conference, September 1992.

"A Seminar on the Techniques and Approaches to Integrated Resource Planning," Hawaii Public Utilities Commission, September 1992.

"A Comparison of the Uranium and Emissions Allowance Markets," A. Taylor and M. Yokell, Electric Power Research Institute, February 1992.

RESUME OF ALAN S. TAYLOR

"State Regulation of Utility Compliance Plans and Its Impact on the Emissions Allowance Marketplace," 103rd National Association of Regulatory Utility Commissioners Annual Convention, November 1991.

"Repowering and Site Recycling in a Competitive Environment," A. Taylor and E.P. Kahn, Lawrence Berkeley Laboratory, March 1991.

Sedway Consulting, Inc.

INDEPENDENT EVALUATION REPORT FOR FLORIDA POWER & LIGHT'S 2002 SUPPLEMENTAL SOLICITATION FOR NEW POWER SUPPLIES

Submitted by:

Alan S. Taylor
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Boulder, Colorado

July 8, 2002

Introduction and Background

On April 26, 2002, Florida Power & Light Company (FPL) issued a Supplemental Request for Proposals (Supplemental RFP) for capacity and energy to satisfy the utility's projected incremental resource needs for 2005 and 2006. The SRFP noted that power supply proposals would compete with FPL's power plant construction options in addressing a projected capacity need of 1,122 MW in 2005 and 600 MW in 2006 – for a cumulative capacity need of approximately 1,722 MW.

Sedway Consulting, Inc. (Sedway Consulting) was retained to advise FPL in the economic evaluation of responses to the Supplemental RFP and to provide a parallel economic evaluation of the proposals. Alan Taylor, Sedway Consulting's president and the individual who provided all of the consulting services for this project, has assisted numerous utilities around the country in similar solicitations for power supplies.

On May 24, 2002, FPL received proposals from 16 power suppliers. Many of these proposals provided options for different amounts of capacity and/or different in-service dates, ultimately resulting in 53 separate options for consideration. Sedway Consulting was provided with the economic portion of all of these proposals. Of the original 53 proposals, four were withdrawn by the bidder and 18 bids were declared ineligible by FPL, thereby resulting in 31 eligible bids. In all cases, the identities of the bidders were redacted in the information provided to me to eliminate the possibility of bias. Thus, this independent evaluation report depicts portfolios of firm capacity resources that include bid identification numbers (P1 through P53) without revealing the identities of the bidders.

Sedway Consulting conducted its parallel economic evaluation of the proposals by using a proprietary response surface model (RSM). The RSM is a power supply evaluation tool that can be calibrated to simulate the expected resource dispatch and resulting production costs of a specific utility's operations. Prior to the opening of the proposals, Sedway Consulting requested FPL to execute several dozen runs of its system simulation planning tool – The Electric Generation Expansion and Analysis System (EGEAS). The results of these runs were used to calibrate the RSM and allowed Sedway Consulting to evaluate the production cost impacts of all proposed resources.

This independent evaluation report documents the evaluation process and presents the results of the solicitation. It describes the RSM, the ranking methodology that was employed, fundamental assumptions that were applied, and additional economic factors that affected the final cost of each portfolio of resources. Also, it presents the evaluation results and depicts the top-ranked resource portfolios without disclosing bidders' identities or any specific proposal pricing information.

Overview of Results

Sedway Consulting found that the least-cost portfolio included two resource proposals that were offered by FPL's Power Generation Division:

- **Martin Conversion** – a conversion of two existing combustion turbines (CTs) at FPL's Martin generating station into a 4-on-1 combined-cycle (CC) facility, with the addition of two more CTs, four heat recovery steam generators (HRSG), and a steam turbine generator. The net incremental summer capacity is expected to be 789 MW.

- **Manatee Brownfield** – the development of a new 4-on-1 CC facility at FPL's Manatee generating station, with a total summer capacity of 1,107 MW.

Sedway Consulting estimated that the lowest cost portfolio of only outside (i.e., non-FPL) proposals that met FPL's resource needs would be at least $423 million more expensive (net present value, 2001 base year) than the Martin expansion and Manatee projects. This outside portfolio included four resources – three new facilities (two coming on line in 2005 and a third in 2006) that would provide power under 10-year, 15-year, and 25-year power purchase agreements (PPAs), respectively, and one system sale commencing in 2005 with a term of 5 years.

The lowest cost portfolio of resources that met FPL's resource needs and that included a combination of outside bids and only one of the FPL options was at least $135 million more expensive than the Martin expansion and Manatee projects. This portfolio included the Manatee project along with two outside proposals – one for a system sale in 2005 with a term of 3 years and another for a new generation facility in 2006 with a 25-year PPA.

Sedway Consulting concluded that the recommended Martin-Manatee portfolio represented a lower-cost combination of proposed resources than any of the other top-ranked portfolios.

Detailed information is provided later in this report.

Evaluation Process

Sedway Consulting received the following economic information for each proposal:

- Capacity (winter and summer; base, duct-fired, and other, where applicable)
- Commencement and expiration dates of contract
- Capacity pricing, including transmission interconnection costs
- Fixed operation and maintenance (O&M) and capital replacement pricing
- Firm fuel transportation pricing

- Fuel pricing or indexing
- Guaranteed heat rate (base, duct-fired, and other, where applicable)
- Variable O&M pricing (base, duct-fired, and other, where applicable)
- Start-up costs.

The same information was received for FPL's Martin and Manatee options.

The remainder of this report section addresses the following topics:

- a description of the RSM and the ranking process that it employed,
- the use of a "filler" resource in evaluating proposed transactions that expired before the end of the study period,
- special issues concerning input assumptions, and
- the process of developing cost estimates for portfolios of resources

RSM and Net Levelized Fixed Price Ranking

The economic information for all qualified outside and FPL proposals was input into Sedway Consulting's RSM – a power supply evaluation tool that was calibrated to approximate the impact of each bid on FPL's system production costs. The RSM calculated each proposal's annual fixed costs and variable dispatch costs, estimated the production cost impacts of each proposal, accounted for capacity replacement costs for all proposed contracts that expired before the end of the study period, and developed a ranking of all proposals. That ranking was based on the net levelized fixed price of each proposal, expressed in $/kW-month.

A proposal's net cost was a combination of fixed and variable cost factors. On the fixed side, the RSM calculated annual fixed costs associated with capacity payments, fixed O&M costs, incremental capital charges, firm gas transportation reservation costs, and estimated start-up costs. These annual total fixed costs were discounted and converted into an equivalent levelized fixed price, expressed in $/kW-month. This was done by taking the present value of the stream of costs and dividing it by the present value of the kW-months of capacity in the proposal.

On the variable cost side, the RSM first developed a variable dispatch charge (in $/MWh) for each proposal for each year. This charge was calculated by multiplying the proposal's heat rate by the specified annual fuel index price and adding the variable O&M charge.

The RSM then estimated FPL's system production costs for each year and each proposal by interpolating between production costs estimates that were extracted from a set of EGEAS runs. These EGEAS runs were performed at the start of the project and were used to calibrate the RSM by varying the capacity and annual variable dispatch charge for a proxy proposal and recording the resulting FPL system production cost.

For the same capacity as the proposal under consideration, the RSM also estimated FPL's system production costs for a reference unit that had a high variable dispatch charge of $100/MWh. Thus, for each proposal, the RSM yielded estimates of the annual production costs that FPL would be projected to experience if the utility acquired the proposed transaction, as well as a second set of annual estimates that represented the system production costs of accepting the same sized transaction but at $100/MWh. The difference between these estimates represented the annual production cost savings that each proposal was likely to provide, relative to a common high-cost reference resource. The lower a proposal's variable dispatch charge, the greater the production cost savings.

The RSM then converted these annual savings into a levelized $/kW-month value, using the same arithmetic process that was performed with the annual fixed costs. Although energy-related costs are not normally expressed this way, this conversion normalized the production cost savings (i.e., accounted for the different amounts of capacity offered by each proposal) and yielded a value that could be subtracted from the levelized fixed price. Because the purpose of the solicitation was to acquire firm capacity, this conversion process translated energy savings into a metric (i.e., a comparable standard of measurement) that was tied to the capacity that a proposal offered.

For each proposal, the RSM then subtracted the levelized production cost savings from the levelized fixed price to yield a net levelized fixed price – a value expressed in $/kW-month that embodied both the fixed costs and variable production cost impacts of a proposed resource. For each in-service year (2005 and 2006), the applicable proposals were ranked in ascending order based on this net levelized fixed price. The top-ranked proposals had the lowest net levelized fixed prices, representing those proposals with the lowest fixed costs, or the greatest production cost savings, or a good combination of both.

Filler Resource

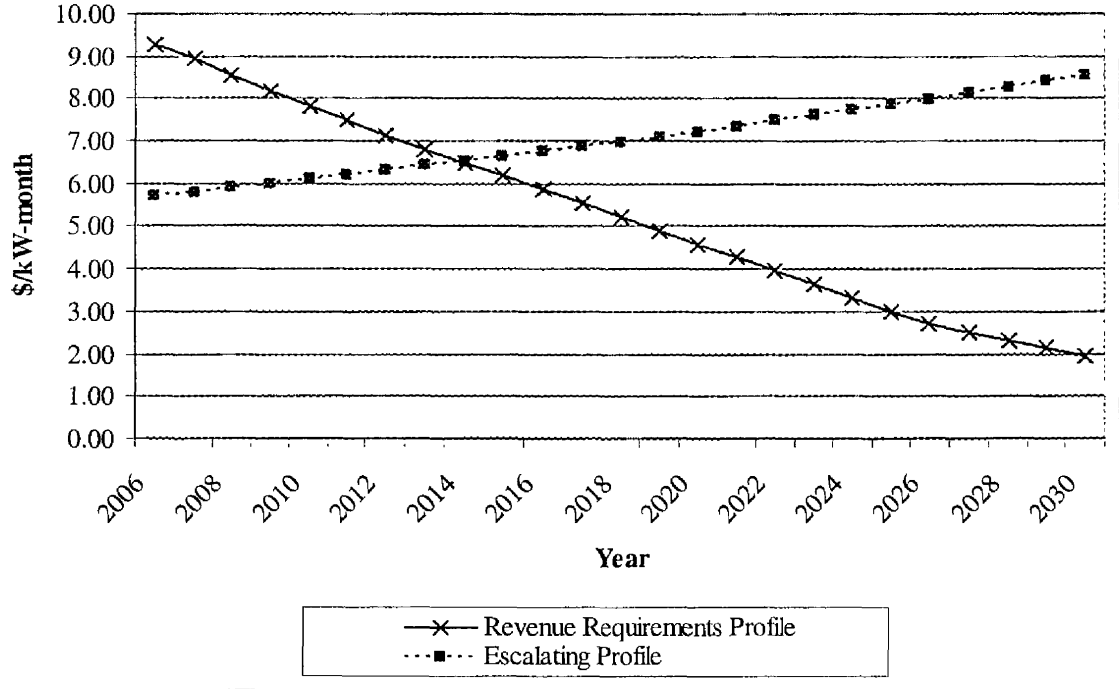
As was mentioned earlier, the RSM accounted for the costs of replacing capacity for all proposed contracts that expired before the end of the study period (which was 2030). This was done by "filling in" for the lost capacity at the end of each proposal's term of service. This allowed for a side-by-side comparison of the value of proposals that had varying contract durations. Also, the RSM had been calibrated with EGEAS runs that assumed a proxy proposed resource would provide its capacity for the entire duration of the study period. Thus, it was necessary to continue a proposal's capacity throughout the entire period so as to maintain consistent and sufficient reserve margins. In effect, by supplementing each short-term proposal with a filler resource for the later years, the RSM was simulating what FPL would have to do when a proposed transaction expired – acquire or develop an amount of replacement capacity equal to that expired resource.

As the basis for cost assumptions for the filler resource, Sedway Consulting used the same future combined-cycle resource as was used in the EGEAS optimization runs. The RSM scaled the replacement capacity to exactly equal the size of the expiring proposal

resource. Thus, all bids enjoyed the benefit of being replaced at the end of their terms with a resource that exhibited the operating efficiencies and economy-of-scale benefits of a 1,107 MW combined-cycle plant. In other words, if a 400 MW proposal ended in 2010, the RSM assumed that a 400 MW combined-cycle facility replaced it in 2011; however, the construction costs for the replacement facility were not those that would typically be associated with a 400 MW combined-cycle plant, but rather, they were a prorated portion (i.e., 400/1107) of the construction costs of a large combined-cycle facility.

Depending on the "in-service date" for the filler resource, the filler's capital costs were escalated from a 2005 base-year value by 1.7% per annum. This escalation assumption represented FPL's estimate of how construction costs were likely to increase for its self-build alternatives. Sedway Consulting decided to use this escalation value to trend the filler's annual capacity charges over time. Thus, instead of using FPL's declining revenue requirements profile for the recovery of capacity costs, Sedway Consulting used an escalating pattern that yielded the same long-term present value of revenue requirements. A traditional revenue requirements profile – as was used for calculating the annual revenue requirements for bidders' turnkey proposals and FPL's self-build options – results in the highest capital charges in a project's first year. Thereafter, the capital-related charges decline. This is the opposite from what is usually seen in most power purchase proposals in power supply solicitations. Most power purchase proposals tend to have flat or escalating capacity charges, presumably reflecting expectations that general inflation will increase the costs of constructing new facilities in the future. Sedway Consulting therefore restructured the filler's profile of capacity costs to match what is seen in the marketplace. This meant that the filler's first year's capacity costs were the lowest, with each year thereafter escalating at 1.7%. Figure 1 displays the escalating capacity price profile used by Sedway Consulting as well as the traditional declining revenue requirements profile. Both profiles have the same present value.

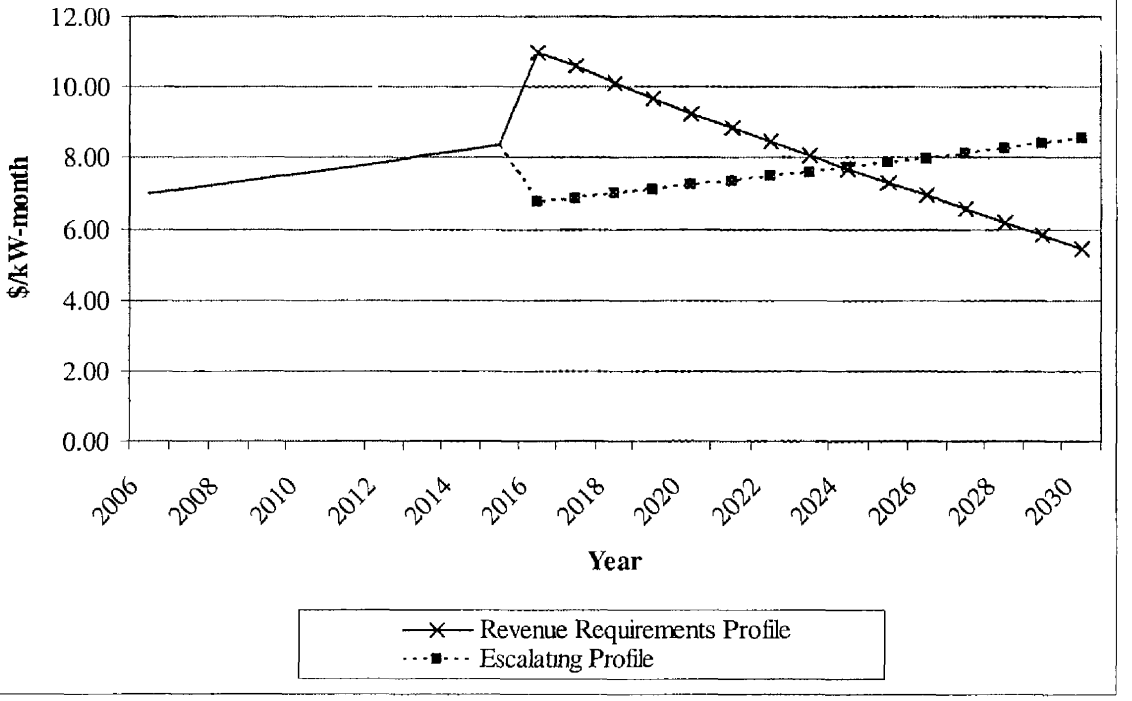
Figure 1
Comparison of Capacity Price Profiles



Over the full 25 years, the restructuring of the filler's capacity costs made no difference to the present value of the facility's revenue requirements. However, in the evaluation of outside proposals that were less than 25 years in duration, it provided the most favorable basis for such proposals' evaluation. In effect, it assumed that, following the expiration of an outside proposal's term, FPL would procure replacement power supplies at a prevailing market price. In reality, if an FPL self-build resource was determined to be most cost-effective at this future decision point, the revenue requirements profile would present the actual annual costs that FPL's customers would pay.

Figure 2 depicts a comparison of the two approaches for replacing a hypothetical 10-year proposed power supply contract. The proposed contract is assumed to have a capacity charge that begins at $7/kW-month and escalates at 2% per annum.

Figure 2
Comparison of Filler Capacity Price Methodologies



Relative to the declining revenue requirements methodology, the escalating filler capacity price methodology favors the 10-year proposed power supply because it defers the most expensive years of capacity costs until beyond the end of the study period. Thus, the present value of total study-period capacity costs (i.e., power supply proposal plus filler resource) is lower under the escalating filler methodology than under the declining revenue requirements methodology.

Another important assumption associated with the filler resource concerned firm gas transportation costs. Currently, certain generating locations in Florida have access to natural gas supplies via a new pipeline service – Gulfstream – which is likely to provide firm gas transportation at a lower cost than the tariff for Florida's primary gas pipeline service – Florida Gas Transmission (FGT). However, the FGT pipeline provides gas across the entire state whereas the Gulfstream pipeline serves a relatively limited geographic area. Given that the location of future filler resources could not be known, the filler resource was assumed to be supplied with gas from the FGT pipeline (at the firm gas transportation charge of $0.76/mmBtu). As is discussed later in this report, Sedway Consulting conducted a sensitivity analysis to investigate the impact of assuming that the filler resource may have access to the lower cost Gulfstream supply.

In all, the total net cost of the filler resource (in levelized $/kW-month) was lower than most of the combined-cycle proposals that FPL received. Of the 13 combined-cycle facilities that were proposed in FPL's supplemental solicitation, the filler resource was less expensive than nine of them. Thus, Sedway Consulting believes that the filler resource assumptions provided a favorable backdrop for all of the proposed power supply agreements that had expiration dates prior to the end of the study period.

Input Assumptions

Most of the input assumptions for the proposals and FPL's self-build options were directly input into the RSM in a straightforward fashion. This section addresses some unique considerations relating to:

- Timing of resources
- Fuel costs
- Duct-fired capacity
- Firm gas transportation costs
- Start-up costs

Timing of resources: FPL's Supplemental RFP requested power supplies commencing no later than June 1 of either 2005 or 2006. Some bidders provided proposals for power by June 1; others offered to commence delivery by January 1. In both EGEAS and the RSM, all resources were assumed to commence operation on January 1 of the in-service year, thereby providing full calendar years of operation rather than having contract years that were split between two calendar years. This put all proposals on a consistent foundation.

Fuel Costs: Many bidders did not specify a fuel index and/or formula as the basis for their contract's energy pricing. Instead, they instructed FPL to use the utility's general fuel price forecast, with a fuel indexing process to be determined in negotiations. Thus, for such proposals, the evaluation relied on FPL's natural gas price forecast and presumed that the bidders would agree to a formula/index approach that would match the price at which FPL would be able to procure natural gas.

Duct-fired capacity: Some of the proposed combined-cycle facilities included duct-firing or power augmentation capabilities. A standard combined-cycle facility is one where combustion turbines consume fuel and generate both electricity and "waste" heat – the latter of which is sent through a heat recovery steam generator (HRSG) to produce steam which is fed through a steam turbine generator to produce additional electricity. Duct-firing is a technology that allows an operator to boost the total capacity of a combined-cycle facility by burning additional fuel to supplement the waste heat that is being recovered from the combustion turbine exhaust. This capacity boost has a negative impact on the efficiency of the overall facility and, therefore, is typically called on only during periods of high customer demand. Thus, a duct-fired combined-cycle facility has

two portions of capacity – a base portion that is more efficient and usually runs in an intermediate/baseload operating mode and a duct-fired portion that is less efficient and usually runs in peaking mode. For the FPL options and for each of the duct-fired proposals for which information was provided in the bid for the different operational modes, these separate portions of capacity were modeled independently – both in EGEAS and in the RSM. This was a preferable representation to simply modeling such a facility in one block with a blended efficiency or heat rate in that it allowed the models to recognize the benefits of the low-cost power from the base portion and only utilize the duct-fired portion for peaking needs. This is how such facilities would be operated in reality. Also, FPL's Supplemental RFP afforded bidders the opportunity to specify different capacity pricing and variable O&M pricing for the base and duct-fired portions of proposed facilities. Thus, it was important to model these portions of capacity separately to appropriately represent any pricing differences.

Firm gas transportation costs: It was assumed that all intermediate/baseload natural-gas-fired facilities would require firm gas transportation service to ensure reliable, uninterrupted operations. Such costs are rather significant – often adding over $3.00/kW-month to a resource's capacity-related costs. As mentioned above, there are now two major pipelines that can provide firm transportation for natural gas deliveries to specific areas of FPL's service territory: FGT and Gulfstream. The cost for firm transportation on FGT was assumed to be $0.76/mmBtu; the cost on Gulfstream was $0.60/mmBtu. In their proposals, bidders specified the pipeline (FGT, Gulfstream, or "other") from which they expected to acquire their firm gas supplies. Each resource's firm gas transportation costs were calculated as an annual fixed value that was based on 90% of the facility's maximum annual gas consumption.

After discussions with FPL's Energy Marketing and Trading Group, it was decided not to model firm gas transportation as a requirement for duct-fired or conventional peaking portions of proposed facilities. Particularly for duct-fired combined-cycle plants, it was recognized that FPL or a bidder probably would have some flexibility in utilizing a daily nominated quantity of firm gas for duct-firing during peak hours of the day, at the expense of reduced off-peak generation. Thus, even without firm gas transportation to serve the entire facility's daily maximum consumption, duct-fired capacity could be counted on for the peak hours.

The assumptions surrounding outside proposals for simple-cycle combustion turbine peaking facilities were trickier. Ultimately, in the RSM, such peaking proposals were modeled as not requiring firm gas transportation for any of the proposed capacity. This was a favorable assumption for such outside proposals, particularly since such proposals did not include any back-up fuel to accommodate gas supply interruptions. It is likely that such peaking capacity would not be available during FPL's winter peaking conditions; and while gas supplies during FPL's summer peak periods have not been constrained historically, many utilities around the country are finding that summer gas supplies are getting tighter as a considerable amount of natural-gas-fired generation gets added to the nation's generating base. This new generation is reshaping the annual pattern of natural gas consumption that used to be driven primarily by winter heating

loads. To the extent that this leveling out of annual gas consumption and constraints drives FPL to require firm gas transportation for peaking resources in the future, then the assumptions for the outside peaking proposals may have been overly favorable.

Start-up costs: The annual costs for starting up facilities (either outside bidders' or FPL options) were premised on FPL's assumption of six starts/year for most facilities. FPL determined that this was an appropriate number of starts for both intermediate/baseload and very-high-dispatch-cost peaking proposals. For standard peaking resources, FPL assumed 100 starts/year. The start-up costs were incorporated into the RSM as annual fixed costs.

Portfolio Development

The RSM provided a ranking of all outside bids and FPL self-build options based on net levelized costs (in $/kW-month). In addition, the RSM provided for each proposal the net costs in total present value dollars. The ranking was segregated into two lists – one for resources available in 2005 and one for resources in 2006. Sedway Consulting developed potential portfolios of resources by examining combinations of the top-ranked bids/options that satisfied FPL's resource needs in 2005 and 2006. These needs were determined by FPL to be at least 1,122 MW of firm capacity in 2005 and another 600 MW in 2006 (for a total cumulative need of 1,722 MW). The preliminary total cost of a portfolio was simply the sum of the present value net costs of each of the bids/options that made up the portfolio. However, five additional elements needed to be considered in the calculation of a final total cost for each portfolio:

- Surplus Capacity
- Residual Value
- Equity Penalty
- Transmission Integration
- Single Self-Build Adjustment

Surplus Capacity: If a portfolio provided more than 1,722 MW in 2006, then the portfolio was deemed to have surplus capacity. This capacity had value because it would reduce FPL's need in 2007 and beyond. Thus, in subsequent solicitations, FPL would not have to request as much capacity as it otherwise would if it only acquired or developed exactly 1,722 MW of capacity in its current efforts. The value of surplus capacity is dependent on the market price for capacity in 2007 and beyond. Sedway Consulting assumed a value of $5.00/kW-month in 2007, escalating thereafter at 1.7% per year. In Sedway Consulting's experience, this value has represented a low price for a standard CT-based power supply. This is a conservative value in that the price of new capacity is likely to be higher. In fact, in other solicitations, Sedway Consulting has used higher estimates (e.g., $7.00/kW-month). The present value of the surplus capacity benefits for a portfolio was deducted from the portfolio's preliminary total cost. Thus, a portfolio that was well in excess of the required capacity would have a rather high preliminary total

cost (associated with the large amount of capacity in the portfolio) but would have a mitigating deduction in the form of surplus capacity benefits.

The inclusion of a surplus capacity benefit in the RSM portfolio results placed those results on a more comparable footing with the EGEAS portfolios. While no explicit surplus capacity benefit was calculated to supplement the EGEAS results, EGEAS largely captures this benefit in the long-range expansion plans that it develops for each portfolio.

Residual Value: The revenue requirements calculations for the FPL options were based on a cost recovery period of 25 years. Thus, if brought in service in 2005, they were assumed to be paid off by 2030 – the end of the study period. However, the combined-cycle projects that represented the least-cost portfolio will probably have operating lives beyond the end of the study period. Thus, based on the revenue requirements assumptions that were used in the analysis, FPL's customers will have paid for these combined-cycle facilities by 2030 and will continue to benefit from the project's capacity for a number of years beyond that. Given this, Sedway Consulting calculated a residual value for both of the FPL self-build options and deducted this value from the preliminary total cost of each portfolio that included one or both of these facilities. The residual value calculation valued the post-2030 capacity of the FPL options for another 10 years based on an escalating assumption for the value of capacity. Thus, the capacity for each relevant FPL option was multiplied by a $/kW-year value in each year from 2031 through 2040. That $/kW-year capacity value was the same $60/kW-year (i.e., $5/kW-month) – escalated out to 2031 and beyond – as was used in the surplus capacity calculation. This additional 10 years of capacity was not assumed to be free, however. Although construction costs will be entirely paid off, FPL customers will still have to pay continuing capacity-related charges such as fixed O&M, incremental annual capital costs, and start-up costs. Typically, when a facility nears the end of its operating life, the owner curtails additional investment of incremental capital costs. Thus, for the final 10 years (2031 through 2040), Sedway Consulting assumed that the annual incremental capital investments would be approximately one-half of the annual projections for the 2005-2030 time period.

The energy benefits of the FPL facilities were ignored in the residual value analysis; thus, the residual value was a conservative estimate. Indeed, it is likely that the FPL options will continue to operate at substantial capacity factors during the 10 years of the residual value period – thereby providing less expensive energy for FPL's customers (by displacing more expensive power supplies) than would be the case if the options were never developed. Because EGEAS was not run past 2030, these energy or production cost benefits were not determined. However, they could be substantial.

Equity Penalty: Rating agencies view some portion of a utility's capacity payment obligations to a power provider as the equivalent of debt on the utility's balance sheet. If a utility does not rebalance its capital structure by issuing stock, this debt equivalent can negatively impact a utility's financial ratios and cause rating agencies to downgrade their opinion of the utility's creditworthiness. This can increase the utility's cost of borrowing.

In some cases, it can trigger certain provisions in a utility's bond covenants that may advance the bonds' repayment schedules. Recent events in the energy industry have underscored the need for companies to maintain a strong balance sheet.

Sedway Consulting reviewed FPL's estimate for each top-ranked proposal of the costs for FPL to rebalance its capital structure if it were to enter into a PPA with a bidder. This estimate was referred to as an "equity penalty" because it reflected the present value of the incremental cost of the additional equity that FPL would need to raise to preserve the integrity of its balance sheet. For each portfolio, the sum of the equity penalties for whichever outside bids were in the portfolio was added to the preliminary total cost.

Transmission Integration: Under the direction of an independent consultant, FPL developed estimates of the costs of integrating different portfolios of specific proposals into the FPL network. With a large addition of new generation to a utility system, several portions of the transmission grid invariably need to be reinforced. This can entail the construction of new circuits or the reconductoring and upgrading of existing transmission lines. The present value of revenue requirements for these transmission integration projects was added to each portfolio, based on the estimation of the necessary investments to accommodate each of the elements of that portfolio.

Single Self-Build Adjustment: FPL's construction estimates for the Martin and Manatee facilities were based on the assumption that both projects would be constructed at the same time. There are certain efficiencies included in this joint construction process than would not be achieved if only one of the facilities is developed. Thus, for those portfolios that included only one of the self-build options, the additional construction costs to develop the relevant self-build option on its own were added to the cost of the portfolio. This amounted to an extra $14.8 million (present value) for portfolios that included only the Martin facility and an extra $15.7 million (present value) for portfolios that included only the Manatee facility. No cost adjustment was necessary for portfolios that included either both or neither of the FPL self-build options.

The final total cost of each portfolio was determined to be the preliminary total costs, minus surplus capacity benefits, minus residual values, plus equity penalties, plus transmission integration costs, plus the single self-build adjustment.

Review of EGEAS Results

In addition to the parallel evaluation process involving the RSM, Sedway Consulting assisted FPL in a review of the EGEAS model results. This involved three activities:

- Comparing rankings for all bids
- Verifying that the EGEAS output results reflected the correct input assumptions
- Examining the impacts of future generation expansion plans.

Sedway Consulting and FPL independently developed rankings of all qualifying proposals. In comparing these rankings, Sedway Consulting and FPL were able to confirm that the proposals were being interpreted correctly and that all of the latest assumptions and information from bidder clarification communications were incorporated into the EGEAS and RSM models. Generally speaking, the rankings lined up fairly well. In instances where the rankings differed somewhat, Sedway Consulting reviewed the EGEAS output results to confirm that both models were using the same assumptions.

The EGEAS generation expansion plans were studied by Sedway Consulting. These plans represented the model's efforts to maintain the necessary 20% reserve margin for the FPL system over time. Given FPL's annual load growth, the retirement of existing resources, and expiration of the new power supply contracts under consideration, EGEAS had to add future generic resources in various years after 2006 to satisfy FPL's reserve margin requirements. This was a more comprehensive process than what was achieved with the RSM. The RSM simply examined single bids, one at a time, and assumed that they would be replaced with a filler resource of exactly the same size upon the expiration of the proposed PPA. EGEAS had a broader focus. However, given numerous factors that influenced the timing of the addition of new generic resources throughout the study period, the "lumpiness" of EGEAS' long-range generation expansion plans could affect the present value of a portfolio's long-term costs. This "lumpiness" comes from the fact that EGEAS adds new resources in any year in which FPL's reserve margin drops below 20% – even if the shortfall is only 1 MW. If the new resource options are large facilities, this can lead to varying levels of surplus capacity in each year. However, initial concerns in this area were assuaged when FPL revised the planning constraints regarding the type and timing of future generic resource alternatives (i.e., filler units) so that the long-term expansion plans exhibited a "smoother" pattern.

RSM Evaluation Results

Table 1 provides a ranking of the qualifying outside proposals, separated into two groups based on the proposed start year for each contract. The table shows the capacity, length of contract, and net levelized fixed cost (as described above) for each proposal. The information reflects the final RSM ranking, including information gained from the negotiation sessions in early July, 2002.

Table 2 provides the same information for the Martin and Manatee facilities. Note, however, that the term for the Martin and Manatee facilities is simply represented as the number of years from the start date through the end of the study period (2030) – although the actual lifetime of the facilities is likely to be significantly longer.

Table 1 Ranking of Outside Proposals			
Bid	**Capacity (MW)**	**Term (years)**	**Net Levelized Fixed Price ($/kW-month)**
2005 Start Dates			
P 6	50	5	$5.42
P 5	50	3	$5.58
P 31	506	10	$5.80
P 21	1216	15	$5.83
P 20	608	15	$6.02
P 32	506	20	$6.04
P 24	250	10	$6.37
P 1	800	15	$6.51
P 25	250	15	$6.55
P 3	200	7	$6.77
P 19	200	7	$6.77
P 26	250	25	$6.87
P 40	418	9	$7.86
P 51	730	22	$8.71
P 41	418	26	$8.93
P 50	230	20	$11.84
P 52	230	26	$13.63
2006 Start Dates			
P 42	708	25	$2.58 *
P 44	699	25	$2.73 *
P 33	550	25	$3.70
P 45	699	25	$5.09
P 27	611	10	$5.58
P 28	611	15	$5.61
P 29	611	25	$5.75
P 43	708	25	$6.00
P 37	567	20	$6.05
P 39	576	10	$6.18
P 2	800	15	$6.57
P 4	200	6	$6.72
P 30	611	25	$7.65
P 53	506	25	$8.76
* Includes information gained from negotiation sessions.			

Table 2 Statistics for FPL Options			
Bid	**Capacity (MW)**	**Term (years)**	**Net Levelized Fixed Price ($/kW-month)**
2005 Start Dates			
Martin	789	26	$2.81
Manatee	1107	26	$3.92
2006 Start Dates			
Martin	789	25	$2.87
Manatee	1107	25	$3.99

Table 3 depicts the least-cost portfolio (the All-FPL portfolio of the Martin expansion and Manatee combined-cycle projects) and other top-ranked portfolios that represent the best combinations of FPL and outside proposals. For each element of the portfolios, the table presents the resource's capacity, in-service year, term (i.e., duration), and net cost. The net cost is developed in the RSM and was described above. Also included in the table are additional costs or credits for each portfolio pertaining to surplus capacity benefits, transmission integration costs, residual values, equity penalties, and single self-build adjustments. The values in the far right column show the difference in costs (in millions of dollars) between the top-ranked combination portfolios and the least-cost All-FPL portfolio. All costs are 2001 present values, based on a discount rate of 8.5%.

Table 3 shows the top ten portfolios (i.e., the lowest total cost portfolios, inclusive of all quantified costs and benefits), plus the two best all-outside proposals. All of the top ten portfolios included Martin and/or Manatee. The best all-outside portfolios represent the lowest-cost resource plans that did not include either Martin or Manatee.

The All-FPL portfolio is less expensive than the rest of the top-ranked combination portfolios (one FPL unit plus one or more outside proposals) by $135 million to $168 million. Technically, the next best portfolios are only $13 million to $135 million more expensive that the All-FPL portfolio; however, these next best portfolios are simply combinations of both FPL projects with one or more outside proposals that allow either the Martin or Manatee project to be deferred one year. Indeed, these portfolios represent plans that simply add more capacity to the All-FPL portfolio – a portfolio that already exceeds FPL's stated resource needs. Thus, Sedway Consulting believes that the relevant comparison is between the All-FPL portfolio and the next best portfolio that does not involve the development of both the FPL self-build options but instead entails the displacement of at least one of the FPL options with one or more outside proposals. That next best portfolio is Combination Portfolio #5, which is $135 million more expensive than the All-FPL portfolio. The best all-outside portfolio was found to be $423 million more expensive than the All-FPL portfolio.

Table 3
Comparison of Best All-FPL, Combination, and All-Outside Portfolios

		Net Capacity (MW)	In-Service Year	Term (years)	Net Cost ($M)	Difference from All-FPL Portfolio ($M)
Best All-FPL Portfolio						
FPL	Martin Expansion CC	789	2005	26	$216	
FPL	Manatee 4x1 Brownfield CC	1107	2005	26	$422	
	Total:	1896			$637	
	Surplus Capacity:	174			($81)	
	Transmission Integration:				$28	
	Residual Value:				($76)	
	Equity Penalty:				$0	
	Single Self-Build Adjustment:				$0	
			Net Total Cost:		$509	**$0**
Combination Portfolio #1						
FPL	Manatee 4x1 Brownfield CC	1107	2005	26	$422	
P 5		50	2005	3	$27	
FPL	Martin Expansion CC	789	2006	25	$201	
	Total:	1946			$650	
	Surplus Capacity:	224			($104)	
	Transmission Integration:				$52	
	Residual Value:				($76)	
	Equity Penalty:				$1	
	Single Self-Build Adjustment:				$0	
			Net Total Cost:		$522	**$13**
Combination Portfolio #2						
FPL	Martin Expansion CC	789	2005	26	$216	
P 32		506	2005	20	$297	
FPL	Manatee 4x1 Brownfield CC	1107	2006	25	$391	
	Total:	2402			$904	
	Surplus Capacity:	680			($315)	
	Transmission Integration:				$28	
	Residual Value:				($76)	
	Equity Penalty:				$78	
	Single Self-Build Adjustment:				$0	
			Net Total Cost:		$619	**$110**
Combination Portfolio #3						
FPL	Manatee 4x1 Brownfield CC	1107	2005	26	$422	
P 26		250	2005	25	$167	
FPL	Martin Expansion CC	789	2006	25	$201	
	Total:	2146			$790	
	Surplus Capacity:	424			($196)	
	Transmission Integration:				$70	
	Residual Value:				($76)	
	Equity Penalty:				$49	
	Single Self-Build Adjustment:				$0	
			Net Total Cost:		$636	**$127**

Table 3 - Continued
Comparison of Best All-FPL, Combination, and All-Outside Portfolios

		Net Capacity (MW)	In-Service Year	Term (years)	Net Cost ($M)	Difference from All-FPL Portfolio ($M)
Combination Portfolio #4						
FPL	Martin Expansion CC	789	2005	26	$216	
P 3		200	2005	7	$132	
P 26		250	2005	25	$167	
FPL	Manatee 4x1 Brownfield CC	1107	2006	25	$391	
	Total:	2346			$906	
	Surplus Capacity:	624			($289)	
	Transmission Integration:				$45	
	Residual Value:				($76)	
	Equity Penalty				$58	
	Single Self-Build Adjustment:				$0	
			Net Total Cost:		$643	**$135**
Combination Portfolio #5						
FPL	Manatee 4x1 Brownfield CC	1107	2005	26	$422	
P 5		50	2005	3	$27	
P 42		708	2006	25	$162	
	Total:	1865			$611	
	Surplus Capacity:	143			($66)	
	Transmission Integration:				$45	
	Residual Value:				($43)	
	Equity Penalty:				$81	
	Single Self-Build Adjustment:				$16	
			Net Total Cost:		$644	**$135**
Combination Portfolio #6						
FPL	Manatee 4x1 Brownfield CC	1107	2005	26	$422	
P 6		50	2005	5	$26	
P 42		708	2006	25	$162	
	Total:	1865			$610	
	Surplus Capacity:	143			($66)	
	Transmission Integration:				$45	
	Residual Value:				($43)	
	Equity Penalty:				$82	
	Single Self-Build Adjustment:				$16	
			Net Total Cost:		$644	**$135**
Combination Portfolio #7						
FPL	Martin Expansion CC	789	2005	26	$216	
P 31		506	2005	10	$285	
P 42		708	2006	25	$162	
	Total:	2003			$663	
	Surplus Capacity:	281			($130)	
	Transmission Integration:				$32	
	Residual Value:				($34)	
	Equity Penalty:				$108	
	Single Self-Build Adjustment:				$15	
			Net Total Cost:		$654	**$145**

Table 3 - Continued
Comparison of Best All-FPL, Combination, and All-Outside Portfolios

		Net Capacity (MW)	In-Service Year	Term (years)	Net Cost ($M)	Difference from All-FPL Portfolio ($M)
Combination Portfolio #8						
FPL	Martin Expansion CC	789	2005	26	$216	
P 31		506	2005	10	$285	
P 44		699	2006	25	$169	
	Total:	1994			$670	
	Surplus Capacity:	272			($126)	
	Transmission Integration:				$26	
	Residual Value:				($34)	
	Equity Penalty:				$111	
	Single Self-Build Adjustment.				$15	
			Net Total Cost:		$663	**$154**
Combination Portfolio #9						
FPL	Manatee 4x1 Brownfield CC	1107	2005	26	$422	
P 5		50	2005	3	$27	
P 4		200	2006	6	$119	
P 42		708	2006	25	$162	
	Total:	2065			$730	
	Surplus Capacity:	343			($159)	
	Transmission Integration:				$45	
	Residual Value:				($43)	
	Equity Penalty:				$87	
	Single Self-Build Adjustment:				$16	
			Net Total Cost:		$677	**$168**
Outside Portfolio #1						
P 6		50	2005	5	$26	
P 20		608	2005	15	$356	
P 31		506	2005	10	$285	
P 42		708	2006	25	$162	
	Total:	1872			$830	
	Surplus Capacity:	150			($69)	
	Transmission Integration:				$5	
	Residual Value:				$0	
	Equity Penalty.				$166	
	Single Self-Build Adjustment:				$0	
			Net Total Cost:		$932	**$423**
Outside Portfolio #2						
P 5		50	2005	3	$27	
P 20		608	2005	15	$356	
P 32		506	2005	20	$297	
P 42		708	2006	25	$162	
	Total:	1872			$843	
	Surplus Capacity:	150			($69)	
	Transmission Integration:				$5	
	Residual Value:				$0	
	Equity Penalty:				$215	
	Single Self-Build Adjustment:				$0	
			Net Total Cost:		$994	**$485**

Sensitivities

Sedway Consulting believes that the base case analysis of the proposals provided a rigorous assessment of the outside proposals and FPL options. However, it is important to consider whether changes in the study's fundamental assumptions might alter the conclusions. Probably the two most important sensitivities in this type of analysis involve changes in the assumptions concerning gas prices and future resource costs. Given that the preponderance of proposals were power supplies from gas-fired facilities, a high gas price scenario would have little effect on the cost difference between portfolios. In fact, given that the FPL options at Martin and Manatee had better efficiencies (i.e., lower heat rates) than most of the proposals in the competing portfolios, a high gas price scenario would probably increase the economic difference between the All-FPL recommended portfolio and the runners-up. The bids in the competing portfolios that did not involve gas-fired facilities were short-term system sales for a relatively small amount of capacity. Although they might have provided a slight hedge against high gas prices, their small size and short duration would have limited their effect in a high gas price sensitivity. Thus, Sedway Consulting focused on the second area (future resource costs) as an appropriate sensitivity.

Future resource costs are characterized in the "filler" resource in the RSM. The filler resource served as replacement capacity for any proposed contract that would expire before 2030. The All-FPL portfolio did not include any filler resource because the two FPL combined-cycle facilities will continue to operate through 2030 (and beyond). Thus, a scenario with higher costs for the filler resource would only have increased the costs of outside bids and thus the portfolio cost differences. The important consideration involved whether future resource costs might be lower than the base case filler assumptions. As was noted earlier, the filler resource was less expensive than most of the combined-cycle bids in the solicitation. However, the FPL Manatee combined-cycle project was less expensive than the filler, and arguably the Manatee project could be delayed, with its construction following the expiration of some of the shorter-term proposals. Thus, Sedway Consulting performed a sensitivity analysis whereby the Manatee project costs were used for the filler resource, with one adjustment. As was the case in the primary analysis, the Manatee present value of revenue requirements were assumed to be $15.7 million higher because of the loss of joint construction savings that will be achieved by FPL in building both the Manatee and Martin projects in the same time frame. Also, it is important to note that the Gulfstream firm gas transportation option was assumed to be available for this hypothetical Manatee filler, thereby reducing its costs further.

The results of this sensitivity analysis are shown in Table 2. Any portfolios that included Manatee in 2005 or 2006 were excluded from consideration as having Manatee as a filler unit in later years. All other portfolios were found to be at least $125 million more expensive than the All-FPL portfolio. Also, this sensitivity analysis assumed that the Manatee project could be sliced up and deferred in pieces (because the outside contracts

in the competing proposals expire in many different years). Obviously, this could not be accomplished in reality.

Table 2 depicts the top ten portfolios under the revised filler assumptions, plus the two best all-outside proposals. All of the top ten portfolios included Martin and/or Manatee. The best all-outside portfolios represent the lowest-cost resource plans that did not include either Martin or Manatee.

Table 4
Filler Sensitivity - Comparison of Top Portfolios

		Net Capacity (MW)	In-Service Year	Term (years)	Net Cost ($M)	Difference from All-FPL Portfolio ($M)
Best All-FPL Portfolio						
FPL	Martin Expansion CC	789	2005	26	$216	
FPL	Manatee 4x1 Brownfield CC	1107	2005	26	$422	
	Total:	1896			$637	
	Surplus Capacity:	174			($81)	
	Transmission Integration:				$28	
	Residual Value:				($76)	
	Equity Penalty:				$0	
	Single Self-Build Adjustment:				$0	
			Net Total Cost:		$509	**$0**
Combination Portfolio #1						
FPL	Martin Expansion CC	789	2005	26	$216	
P 31		506	2005	10	$265	
P 42		708	2006	25	$162	
	Total:	2003			$643	
	Surplus Capacity:	281			($130)	
	Transmission Integration:				$32	
	Residual Value:				($34)	
	Equity Penalty:				$108	
	Single Self-Build Adjustment:				$15	
			Net Total Cost:		$634	**$125**
Combination Portfolio #2						
FPL	Martin Expansion CC	789	2005	26	$216	
P 31		506	2005	10	$265	
P 44		699	2006	25	$169	
	Total:	1994			$651	
	Surplus Capacity:	272			($126)	
	Transmission Integration:				$26	
	Residual Value:				($34)	
	Equity Penalty:				$111	
	Single Self-Build Adjustment:				$15	
			Net Total Cost:		$643	**$134**
Combination Portfolio #3						
FPL	Martin Expansion CC	789	2005	26	$216	
P 3		200	2005	7	$121	
P 24		250	2005	10	$145	
P 42		708	2006	25	$162	
	Total:	1947			$644	
	Surplus Capacity:	225			($104)	
	Transmission Integration:				$40	
	Residual Value:				($34)	
	Equity Penalty:				$102	
	Single Self-Build Adjustment:				$15	
			Net Total Cost:		$663	**$154**

Table 4 - Continued
Filler Sensitivity - Comparison of Top Portfolios

		Net Capacity (MW)	In-Service Year	Term (years)	Net Cost ($M)	Difference from All-FPL Portfolio ($M)
Combination Portfolio #4						
FPL	Martin Expansion CC	789	2005	26	$216	
P 3		200	2005	7	$121	
P 24		250	2005	10	$145	
P 44		699	2006	25	$169	
	Total:	1938			$651	
	Surplus Capacity:	216			($100)	
	Transmission Integration:				$26	
	Residual Value.				($34)	
	Equity Penalty.				$105	
	Single Self-Build Adjustment:				$15	
			Net Total Cost:		$664	**$155**
Combination Portfolio #5						
FPL	Martin Expansion CC	789	2005	26	$216	
P 3		200	2005	7	$121	
P 25		250	2005	15	$154	
P 42		708	2006	25	$162	
	Total.	1947			$653	
	Surplus Capacity:	225			($104)	
	Transmission Integration:				$40	
	Residual Value:				($34)	
	Equity Penalty:				$114	
	Single Self-Build Adjustment:				$15	
			Net Total Cost:		$683	**$174**
Combination Portfolio #6						
FPL	Martin Expansion CC	789	2005	26	$216	
P 3		200	2005	7	$121	
P 25		250	2005	15	$154	
P 44		699	2006	25	$169	
	Total:	1938			$660	
	Surplus Capacity:	216			($100)	
	Transmission Integration:				$26	
	Residual Value:				($34)	
	Equity Penalty.				$117	
	Single Self-Build Adjustment:				$15	
			Net Total Cost:		$684	**$175**
Combination Portfolio #7						
FPL	Martin Expansion CC	789	2005	26	$216	
P 20		608	2005	15	$343	
P 42		708	2006	25	$162	
	Total:	2105			$721	
	Surplus Capacity.	383			($177)	
	Transmission Integration:				$32	
	Residual Value:				($34)	
	Equity Penalty:				$137	
	Single Self-Build Adjustment:				$15	
			Net Total Cost:		$693	**$185**

Table 4 - Continued
Filler Sensitivity - Comparison of Top Portfolios

		Net Capacity (MW)	In-Service Year	Term (years)	Net Cost ($M)	Difference from All-FPL Portfolio ($M)
Combination Portfolio #8						
FPL	Martin Expansion CC	789	2005	26	$216	
P 6		50	2005	5	$23	
P 20		608	2005	15	$343	
P 42		708	2006	25	$162	
	Total:	2155			$744	
	Surplus Capacity:	433			($200)	
	Transmission Integration.				$32	
	Residual Value:				($34)	
	Equity Penalty:				$139	
	Single Self-Build Adjustment:				$15	
			Net Total Cost:		$695	**$186**
Combination Portfolio #9						
FPL	Martin Expansion CC	789	2005	26	$216	
P 6		50	2005	5	$23	
P 20		608	2005	15	$343	
P 44		699	2006	25	$169	
	Total:	2146			$751	
	Surplus Capacity:	424			($196)	
	Transmission Integration:				$26	
	Residual Value:				($34)	
	Equity Penalty:				$142	
	Single Self-Build Adjustment:				$15	
			Net Total Cost:		$704	**$195**
Outside Portfolio #1						
P 6		50	2005	5	$23	
P 20		608	2005	15	$343	
P 31		506	2005	10	$265	
P 42		708	2006	25	$162	
	Total:	1872			$794	
	Surplus Capacity:	150			($69)	
	Transmission Integration:				$5	
	Residual Value:				$0	
	Equity Penalty:				$166	
	Single Self-Build Adjustment:				$0	
			Net Total Cost:		$896	**$387**
Outside Portfolio #2						
P 5		50	2005	3	$23	
P 20		608	2005	15	$343	
P 32		506	2005	20	$293	
P 42		708	2006	25	$162	
	Total:	1872			$821	
	Surplus Capacity:	150			($69)	
	Transmission Integration:				$5	
	Residual Value:				$0	
	Equity Penalty:				$215	
	Single Self-Build Adjustment:				$0	
			Net Total Cost:		$972	**$463**

Conclusions

Sedway Consulting performed an independent and parallel evaluation of the responses to FPL's 2001 resource Supplemental RFP and concluded that a combination of FPL's conversion of its Martin CTs to a 4-on-1 combined-cycle facility and the development of a similar 4-on-1 combined-cycle facility at its Manatee site represented the lowest-cost portfolio for meeting FPL's resource needs. This All-FPL portfolio was found to be $135 million less expensive under base case assumptions than the next best portfolio (which included the FPL Manatee project as well). Also, in the sensitivity analysis, the All-FPL portfolio was found to be the least-cost portfolio by $125 million relative to the next best portfolio (which included the FPL Martin project as well).