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March 6, 2017

Carlotta Stauffer
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: Docket No. 170057-EI

Dear Ms. Stauffer:

At the February 21, 2017 workshop on fuel hedging for investor-owned electric utilities ("IOUs"), Staff asked that participants file written comments by March 6, 2017. Florida Power & Light Company ("FPL") submits the following comments, which are organized according to the agenda topics set forth in the January 26, 2017 notice for the workshop.

Purpose of and Need for Hedging

FPL's consistent position for more than 15 years has been that the primary objective of hedging is to reduce fuel price volatility. This objective was recognized by the Commission in Order No. PSC-02-1484-FOF-EI, which states that "[e]ach investor owned utility recognizes the importance of managing price volatility in the fuel and purchased power it purchases to provide electric service to its customers. Further, each investor-owned electric utility recognizes that the greater proportion of a particular fuel or purchased power it relies upon to provide electric service to its customers, the greater the importance of managing price volatility associated with that energy source." FPL has consistently taken the position and the Commisssion has likewise determined that IOU fuel hedging programs should not be aimed at outguessing the market. When the Commission adopted the current hedging guidelines in 2008, it approved as Guideline IV.b a finding that "a well-managed hedging program does not involve speculation or attempting to anticipate the most favorable point in time to place hedges." Order No. PSC-08-0667-PAA-EI.

FPL believes that hedging against natural gas price volatility continues to make sense. Approximately 70% of the electricity that FPL generates is fueled by natural gas, and the cost of that natural gas represents approximately 20% of a typical residential customer's bill. This is much lower than it otherwise would be, due to significant efficiency improvements that FPL has made to its fossil generating fleet; however, because natural gas is such an important fuel for FPL, a sharp increase in unhedged natural gas prices would have a substantial impact on

customers' monthly bills. While natural gas prices have been low for the past few years, there is no assurance that they will remain low. The use of annualized fuel factors lessens the short-term impact of natural gas price increases, but customers eventually have to bear the full amount of those increases in the absence of hedging. In FPL's view, it is preferable to hedge against the price increases, so that the ultimate impact on customers is reduced. Of course, whether or not IOUs should continue hedging is ultimately a policy decision that the Commission must make, and FPL will abide by that decision.[1]

If the Commission decides that hedging should continue, FPL understands that the Commission nonetheless is interested in exploring ways to minimize the paper losses that occur when natural gas prices decline from projected levels.[2] FPL recognizes that those paper losses have been substantial over the past several years, and customer-representative intervenors in the Fuel Clause dockets such as OPC and FIPUG have called for the Commission to discontinue hedging as a result. As will be discussed in more detail below, FPL believes that there is a straightforward hedging strategy using out-of-the-money ("OTM") call options that can provide customers with substantial protection against sustained, large increases in natural gas prices while allowing them to participate fully in price declines. Unlike the financial swaps that FPL and other IOUs have relied upon previously as the primary basis for their hedging programs, there is a premium cost for call options. However, FPL's analysis shows that a substantial measure of protection against sharp price increases can be achieved at a reasonable premium cost. If the Commission concludes that hedging should continue, FPL recommends that the Commission authorize IOUs to pursue an OTM call option hedging strategy.[3]

Hedging Opt-out for Industrial Customers

FIPUG has proposed that large customers be allowed to opt-out of participating in an IOU's hedging program, so that their bills would not reflect their share of either the benefits or costs of hedging. FPL has explored this concept before and concluded that it is likely to be cost-prohibitive as well as administratively cumbersome. FPL's Customer Information and Billing system contains information for over 4.8 million active customers and is highly automated for maximum efficiency. However, because of the high degree of automation and complexity,

[1] Pursuant to Paragraph 16 of FPL's 2016 rate case settlement agreement approved by Order No. PSC-16-0560-AS-EI, FPL has terminated its fuel hedging program for the Minimum Term of the agreement. If the Commission decides that IOUs should continue hedging, then FPL would file a risk management plan to resume hedging following the expiration of the Minimum Term.
[2] FPL characterizes these as "paper losses" because in fact customers will always see a reduction in their bills as a result of declining natural gas prices even when a substantial portion of the expected natural gas consumption is bought at a price that was locked in through hedging at the projected level. The "paper loss" simply represents how much lower the cost of gas would have been without the hedges.
[3] FPL would commence hedging with OTM call options upon the expiration of the 2016 rate case settlement's Minimum Term.

creating significant new functionality would require substantial system changes and thorough regression testing to assure data integrity and accuracy throughout the system. System changes to implement separate billing for hedging opt-out participants would require at least the following:

- Significant changes to the billing and tax calculation programs
- Modification to over 20 major system data files (tables) to store new values
- Changes to over 30 customer information screens to enter and display customer specific information pertaining to the Fuel Hedge Opt Out option and rate factors
- Changes to financial modules to recognize and record changes in the General Ledger new Fuel Hedge Opt Out clause revenues
- Changes to the billing statement programs to pass new values to the customer bill statements
- Changes to over 60 financial reports to display detail and summary charge amount information

FPL has estimated that these billing-system modifications to implement an opt-out mechanism would cost approximately $2 million. This cost would need to be recovered in its entirety from the opt-out customers, as it would be unfair to ask the general body of customers to help pay for system changes that don't benefit them.

Additionally, the fuel clause over/under accounting system and the fuel clause projections system would need to be modified to account for the opt-out customers' revenue requirements and true-up calculations. Determining the actual cost of gas for opt-out customers would require an ex-post calculation that necessarily involves simplifying assumptions about where "their" gas was actually consumed and the resulting impact on the fuel costs that they pay, thereby creating uncertainty and the potential for disputes over new issues in the annual fuel clause proceedings.

Beyond the administrative costs of an opt-out mechanism, FPL also believes that it would prove cumbersome. Typically, an IOU seeks approval of a risk management plan in Year 1, pursuant to which it will actively engage in placing hedges throughout Year 2 for natural gas purchases in Year 3 and potentially Year 4 and beyond. An opt-out customer would need to notify the IOU enough in advance of Year 1 for the IOU to adjust the volumes of hedges in its risk management plan. And then, the customer would not be able to change its opt-out decision with respect to those hedges, which would be in place during Year 3 and perhaps beyond. While this might not be difficult for a customer who had made a firm decision never again to participate in hedging, it would substantially limit the ability of customers to move in and out of the hedging program from year to year. Also, limiting the opt-out option to just a few very large customers may not be possible. Smaller customers that operate under a single owner such as chain stores may request that their load be aggregated for purposes of qualifying for hedging opt-out, creating additional administrative customer tracking requirements.

Recommended Hedging Approach

Risk-Responsive Hedging. As noted above, FPL perceives that the Commission would like to continue its policy of natural gas hedging in order to provide customers protection against large price increases, but has become dissatisfied with the reduced opportunity for customers to benefit from price declines, a characteristic of the IOUs' swap-based hedging programs. The Commission has hired Michael Gettings as a consultant to recommend a hedging approach that is intended to address that concern.

Mr. Gettings calls his recommended approach "risk-responsive hedging." In broad outline, his approach would continue to rely primarily upon financial swaps, but would have IOUs initially hedge only a small percentage of their projected natural gas consumption (the "programmatic" element). Then, Mr. Gettings proposes that utilities continue to monitor the value at risk ("VaR") of their natural gas portfolio throughout the year, and either enter into additional swaps if the VaR data indicate an increased likelihood of large price increases (the "defensive" element) or else stop entering into swaps, unwind existing swaps and/or purchase put options if the VaR data indicate an increased likelihood of large price decreases (the "contingent" element). Mr. Gettings analyzed data from 2002 through 2011 and concluded that his approach would be as effective at controlling customer exposure to price increases as the IOUs' traditional fixed-volume hedging approach and would be better at allowing customers to benefit from price declines.

While the risk-responsive approach may appear attractive in theory, FPL believes that there are several flaws in practice. These flaws lead us to recommend strongly against the Commission directing IOUs to take Mr. Gettings' suggested approach:

- It is complex and unavoidably requires the exercise of a considerable amount of discretion in determining when and to what extent to take action in the defensive and contingent elements. This would take the IOUs and, indirectly, the Commission into the realm of "outguessing" the market, a function that is neither practicable nor desirable from a policy standpoint, as has been discussed in prior Commission orders. While Mr. Gettings showed benefits in a "backcasted" application of his approach, he necessarily had the benefit of hindsight in doing so. FPL is not confident that one would have enough information available to make correspondingly astute discretionary decisions on a real-world, forward-looking basis. Said more simply, how is one supposed to know enough about the future to know which way to move an IOUs' hedging percentages until the future arrives?!
- So far as FPL has been able to determine, there is essentially no IOU experience with fully implementing risk-responsive hedging anywhere in the United States. FPL was only able to identify the State of Washington Public Utility Commission as actively considering implementation of the risk-responsive approach. That commission appears to have been studying the approach and holding workshops about it for a couple of years, and so far no IOU in Washington has implemented the full risk-responsive approach. Interestingly, the one utility that has begun adopting elements of the risk-responsive approach into its hedging plan (Avista) has not yet incorporated the contingent element.

And that is the element that is responsible for delivering the increased participation in declining market prices that this Commission is especially interested in securing.

- Because of the complexity and lack of existing industry experience with the risk-responsive approach, FPL does not believe that any IOU in Florida could adequately prepare to implement it in less than two years. IOUs would need first to build their in-house capabilities to make the necessary evaluations and decisions on executing the defensive and contingent elements, then would need to simulate its implementation for a year or more to gain experience before commencing implementation with actual customer money at stake.
- The complexity is also likely to require additional resources, which would increase the cost of the hedging program to customers.
- Finally, FPL is also concerned that the complexity would make review and approval of risk management plans and their execution difficult for the Commission and discomfiting for the IOUs. Put simply, the large amount of discretion that inescapably must be exercised by an IOU in implementing the risk-responsive approach is fundamentally at odds with the process that has worked so well under the Commission's 2008 hedging guidelines: specify a plan for hedging in the upcoming year; direct the IOU to implement the approved plan; and then audit the IOUs implementation to ensure that it conformed to the plan. If a risk management plan says essentially "we'll stay flexible about how much to hedge depending on how things turn out," it is nearly impossible for the Commission to make a straightforward decision on whether the IOU appropriately followed that plan, or for the IOU to know how it can ensure that its discretionary decisions will be found prudent. Again, such a plan would put the IOUs in a position of having to outguess the market, and the Commission in a position of having to decide whether in fact the IOUs did so prudently. Neither the IOUs nor the Commission is equipped for such tasks.

For these reasons, FPL does not recommend risk-responsive hedging. FPL believes that there is a much simpler and better approach that would address the Commission's objective of protecting customers against large price increases while allowing them to participate more fully in the benefits of a declining market, without the delays, expense and uncertainty associated with risk-responsive hedging.

OTM Call Options. The Commission's objective of protecting customers against large price increases while allowing them to participate more fully in the benefits of a declining market describes almost exactly the purpose of a call option. Fundamentally, a call option is a financial instrument in which the holder pays a premium and then is allowed but not required to buy a commodity at a specified price on a specified future date. For example, an IOU could buy a call option that would allow it to buy natural gas at $3.00 per MMBtu for July 2017. If natural gas turns out to cost $3.50 per MMBtu for the month of July, the IOU would exercise the call option and buy the gas for $3.00 per MMBtu, saving $.50 per MMBtu in the process. On the other hand, if natural gas cost $2.50 per MMBtu for the month of July, then the IOU would not exercise the call option but instead would simply buy gas at the market price. Customers are thus protected against price increases (*i.e.*, the IOU would be able to buy gas at $3.00 per MMbtu even if the price in July went up to $3.50 per MMBtu). And, at the same time, the IOU can

participate fully in market declines (*i.e.*, it would be able to buy gas at a market price of $2.50 per MMBtu rather than being locked in to buying it at $3.00 per MMBtu).

Of course, there is no free lunch. The holder of a call option must pay a premium for it, and the premiums can be substantial if the market is highly volatile. However, the price for call options is much lower if the holder is willing to buy them "out of the money," meaning that the price at which the holder may buy the commodity in question is higher than the current estimate of the market price on the day that the option can be exercised. Using the example above, suppose that the forward curve price for gas in July 2017 is $3.00 per MMBtu. If the IOU were willing to buy the call option at a strike price of $3.30 per MMBtu rather than $3.00 per MMBtu, it would pay considerably less for it. With this OTM call option, if natural gas turned out to cost $3.50 per MMBtu in July, the IOU would exercise the call option and buy the gas for $3.30 per MMBtu, saving $.20 per MMBtu in the process. On the other hand, if natural gas cost $2.50 per MMBtu in July, then the IOU would not exercise the call option but instead would simply buy gas at the market price. The IOU thus is protected against price increases above $3.30 per MMBtu (*i.e.*, it would be able to buy gas at $3.30 per MMbtu even if the price for July went up to $3.50 per MMBtu) and could participate fully in market declines (*i.e.*, it would be able to buy gas at a market price of $2.50 per MMBtu rather than being locked in to buying it at $3.30 per MMBtu).

Because the use of OTM call options seems to fit well with the Commission's objectives for hedging programs, FPL has evaluated how a program relying on them would fare in comparison to the results of the risk-responsive hedging strategy that Mr. Gettings presented. FPL's evaluation uses data for the ten-year period from 2007 through 2016, which reflects the most recent actual market experience and includes a period of rapid, large price swings (up and down) as well as a period of relative market stability. The risk-responsive hedging strategy in this comparison is based on the same parameters and action boundaries that Mr. Gettings used for the illustrative program that he presented in the January 2017 meetings with the IOUs and intervenors. The illustrative OTM call option strategy reflects the purchase of call options for 60% of the projected annual natural gas burn, with the options having a strike price that is 15% above the market price that is projected for the date on which they are to be exercised. The illustrative strategy applies to the following calendar year only (*i.e.*, the options would be bought throughout Year 1 to cover fuel purchases in Year 2).

Attached to this letter as Exhibit 1 is a spreadsheet comparing the results of the risk-responsive and OTM call option strategies. It shows costs for gas, net of hedges, in dollars per MMBtu under both strategies for each year in the 2007-2016 period. As can be seen, the OTM call option strategy has a lower net cost of gas in seven out of ten years and a lower average cost over the ten-year period. While the risk-responsive strategy has a slightly lower net gas cost in periods of rising prices, the OTM call option strategy is substantially better at allowing customers to participate in falling prices (in 2009, it is more than a dollar per MMBtu better). Thus, over the decade-long evaluation period, the OTM call option strategy appears better suited than the risk-responsive strategy to meeting the Commission's goal of providing a measure of protection against sharp price increases while allowing fuller participation in the benefits of

falling market prices. And it can be implemented with far less complexity and ambiguity, thus making it much more transparent for Commission review, approval and auditing.

Please note that Exhibit 1 also shows for baseline comparison purposes the annual average market price of gas and the net gas cost under a hedging strategy that enters into fixed swaps for 60% of the projected gas burn (similar to FPL's prior hedging program). As can be seen, the fixed-swap strategy is actually better than both the risk-responsive and OTM call option strategies at controlling the net gas cost in periods of high prices, but tends not to allow as much participation in falling markets and thus has a significantly higher average net cost of gas for the ten-year period. The average annual market prices shown on Exhibit 1 are lower than the average net gas cost under either the risk-responsive or OTM call option premium hedging strategies, including in 2008 when prices peaked. However, this does not indicate that hedging should be discontinued as OPC and FIPUG maintain. The ten-year evaluation period does not contain any years in which prices increased substantially and stayed high throughout the year. For example, in 2008 the price of gas increased to about $13.00 per MMBtu by mid-year but had fallen back down to about $5.00 per MMBtu by the end of the year. OTM call options worked effectively to reduce the net gas cost when the gas price was at its peak, but they were out of the money later in the year when prices fell rapidly. There is, however, no certainty that a large price increase will be followed in quick succession by a rapid decline as happened in 2008. If gas prices for August through December 2008 had remained at the May-July 2008 levels instead of rapidly falling – a completely realistic possibility -- Exhibit 1 shows that OTM call options would have saved customers $0.46 per MMBtu compared to market prices in 2008. OTM call options are well suited to the task of protecting customers against extreme price increases.

Attached as Exhibit 2 to this letter is a summary of the key elements that would be specified in a risk management plan for an OTM call option strategy. Essentially, the risk management plan would specify the following:

- the duration to be covered by the call options (*e.g.*, one year out or two years out);
- the percentage of the projected gas burn to be covered with the options;
- how much out of the money the options would be (*i.e.*, how much will the options' strike price be above the projected gas price);
- what the IOU's authorized budget would be for buying the options; and
- what steps the IOU would take if market conditions change such that the authorized budget is insufficient to purchase the options contemplated by the risk management plan.

As can be seen from this list of key elements, the OTM call option strategy could be quite straightforward to implement, with key parameters specified in advance so that an IOU's adherence to those parameters could be readily confirmed by the Commission.

Conclusion

FPL recommends that natural gas hedging continue and that the Commission authorize IOUs to implement a hedging program utilizing OTM call options as described above. FPL urges the Commission not to require that IOUs implement a risk-responsive hedging program because of the delay, expense and uncertainty it would entail. FPL's positions on the three hedging issues that were identified at the February 21 workshop are shown on the attached Exhibit 3.

Thank you for this opportunity to provide written comments.

Sincerely,

s/ John T. Butler
John T. Butler

Enclosures

cc: Suzanne Brownless (w/encl.)
James Beasley (w/encl.)
Russell Badders (w/encl.)
Matthew Bernier (w/encl.)
Erik Sayler (w/encl.)
Jon Moyle (w/encl.)
Jay Brew (w/encl.)
Schef Wright (w/encl.)
Joshua Smith (w/encl.)

	Gettings' original File 50% Fixed Swaps	FPL's version of Gettings file 50% Fixed Swaps	Gettings' original File 65% Risk/Resp Program	FPL's version of Gettings file 65% Risk/Resp Program	FPL Hedges 60% actual 40% Mkt Settle	Options only 60% 40% Mkt Settle	Option Budget		Options Cost minus R/R Cost	
					Portfolio Cost ($/MMBtu)					
	Market Settle	50% Fixed Swaps 2 Year Hedge		Risk/Resp Program	60% Fixed Swaps 1 Year Hedge	60% Options 1 Year Hedge (includes Cost of Options)	60% Options Option Cost Dollars 1 Year Hedge	60% Options Option price $/Mmbtu 1 Year Hedge	Difference in Average Annual Cost	Average Hedge % 65% Risk/Resp Program
2007	$6.86	$7.98	$8.00	$7.64	$7.70	**$8.20**	**$7.49**	$394,274,867	**$ 0.66**	$ (0.21)	54%
2008	$9.03	$8.81	$8.84	$8.89	$9.07	**$8.58**	**$9.15**	$277,851,799	**$ 0.46**	$ 0.09	53%
2009	$4.04	$6.52	$6.51	$5.63	$5.56	**$7.16**	**$4.48**	$312,071,905	**$ 0.52**	$ (1.08)	25%
2010	$4.40	$6.01	$5.94	$5.19	$5.17	**$5.36**	**$4.77**	$231,378,134	**$ 0.39**	$ (0.40)	26%
2011	$4.05	$5.07	$5.07	$4.49	$4.47	$4.81	$4.32	$143,012,315	$ 0.27	$ (0.15)	57%
2012	$2.79		$3.93		$3.52	$3.95	$2.92	$87,293,390	$ 0.15	$ (0.60)	35%
2013	$3.65		$3.91		$3.92	$3.62	$3.80	$81,694,820	$ 0.16	$ (0.11)	51%
2014	$4.41		$4.22		$4.28	$4.19	$4.46	$65,532,945	$ 0.12	$ 0.18	62%
2015	$2.66		$3.39		$3.27	$3.53	$2.78	$64,438,095	$ 0.11	$ (0.49)	35%
2016	$2.46		$3.02		$2.57	$2.84	$2.58	$65,361,170	$ 0.11	$ 0.01	50%
Average	**$4.44**		**$5.28**		**$4.95**	**$5.22**	**$4.67**	**$172,290,944**	**$0.29**	**-$0.28**	**48%**
					Special case where Aug-Dec 2008 settle at high price average of May-July 2008 average					
2008	$10.87	n/a	n/a	n/a	n/a	**$9.32**	**$10.34**	$277,851,799	**$ 0.46**	n/a	53%

Elements of OTM Call Option Risk Management Plan

Time Periods

Year 0: Plan Filed

Year 1: OTM Call Options purchased per plan approved in Year 0

Year 2: Year 1 OTM Call Options apply to fuel purchases

General Objective

I. Protect ratepayers from large price increases while preserving full participation in fuel cost reduction when prices decline

Projected Expenses

I. Projected Annual Cost of Managing Option Hedging Strategy

II. Specify Option Budget (e.g. $30 million per year) based on intended objectives for protection against price increases
   a. Specify/identify parameters to be used to determine option budget (e.g. premium/mmbtu limit, % of projected fuel bill?, VaR based?)
   b. Moneyness vs. Cost tradeoff determination (e.g. more upside risk vs. option cost)

Execution

1. Forward Period Hedged (e.g. 12 months – Year 1)
2. Out of the moneyness (e.g. 5% / 10%/15%)
3. Base Target Percentage (e.g. 30%)
4. Accumulation of Hedges: Range per Month (e.g. Year 2 - 1.5% to 2.5% per month, Year 3 – 1% to 2% per month, and Year 4 – 0.5% to 1.5% per month)

HEDGING ISSUES TO BE DECIDED

Issue 1A: **Is it in the consumers' best interest for the utilities to continue natural gas financial hedging activities?**

FPL: Yes. Hedging activities have long been recognized by the Commission to provide customer protections against natural gas price volatility. The IOUs' proposed OTM call option hedging strategy will continue to provide that benefit while eliminating the risk of hedging losses in a declining natural gas market.

Issue 1B: **What changes, if any, should be made to the manner in which electric utilities conduct their natural gas financial hedging activities?**

FPL: FPL recommends that future hedging should employ the OTM call option strategy proposed by FPL and the other IOUs. Implementation of that strategy would achieve the dual goals of protecting utility customers from large natural gas price spikes while at the same time allowing customers to enjoy benefits associated with declining natural gas prices and avoid hedging losses that in recent years have been associated with the previous hedging model. It will do this while avoiding the complexity, significant additional costs and delay associated with the Gettings risk-responsive hedging approach.

Issue 2: **If changes are made to the manner in which electric utilities conduct their natural gas financial hedging activities, what regulatory implementation process should be followed?**

FPL: FPL would be capable of implementing its proposed OTM call option hedging strategy within the regulatory framework established by the existing hedging guidelines, which provides for annual review and approval of risk management plans and semi-annual reports on hedging results. FPL would commence hedging with the OTM call option hedging strategy at the end of the moratorium on hedging imposed by Paragraph 16 of its 2016 rate case settlement that was approved by the Commission in Order No. PSC-16-0560-AS-EI.