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March 23, 2017

Suzanne Brownless, Esq.
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Florida Public Service Commission
2540 Shumard Oak Blvd.
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Re: Docket No. 170000-OT

Dear Suzanne:

At the February 9, 2017 workshop on incentive mechanisms for investor-owned electric utilities ("IOUs"), Staff asked that participants file written comments by March 23, 2017. Florida Power & Light Company's ("FPL") comments are set forth below.

First of all, FPL would like to thank Staff for the careful attention that it is giving this important topic. FPL has long supported this Commission's policy and leadership in providing incentives for utilities to find ways to save customers money by going above and beyond minimum regulatory requirements. As FPL's witness Sam Forrest pointed out in Docket No. 160088-EI, the incentive mechanism that the Commission approved for FPL as part of the 2012 rate case settlement agreement delivered nearly $22 million in additional customer benefits over just its first three years (i.e., 2013-2015). Done right, incentives help keep costs – and electric rates – down for customers, which is a goal that IOUs, their customers and this Commission share. Therefore, FPL is very supportive of Staff's efforts to explore ways to expand existing incentive mechanisms. FPL urges all participants to approach the topic with the attitude of looking for ways to make a wide range of appropriate incentives work, rather than reasons to limit them.

There were three issues addressed at the workshop that FPL would like to follow up with some additional detail and commentary.

Staff's "Strawman" Asset Optimization Incentive Mechanism

At the workshop, Staff presented a "Strawman" proposal for an asset optimization incentive mechanism that is generally similar to the incentive mechanism that was initially approved as part of FPL's 2012 rate case settlement agreement and has been recently approved with minor updates as part of FPL's 2016 rate case settlement agreement. FPL has demonstrated and continues to believe that this sort of mechanism can provide a useful set of incentives for a wide range of innovative performance that benefits customers. Staff proposes incentives for both short-term power sales and purchases. Just by itself, this represents a big improvement over the Commission's current incentive mechanism, which applies only to wholesale sales. As FPL has explained in support of both its original and updated incentive mechanisms, customers benefit

just as much when an IOU makes an economy purchase as they do when it makes an economy sale. Market conditions will fluctuate so that sometimes an IOU mainly has opportunities to make economy sales while at other times the opportunities are mostly on the purchase side. Because both are equally valuable to customers and both require the same level of market activity and creativity to execute, FPL believes that utilities should always be incented to look for cost savings opportunities, regardless of whether purchases or sales are favored at a particular point in time.

Likewise, FPL agrees with Staff's proposal to extend the incentives beyond power trading, to encourage optimal utilization of fuel acquisition, storage and transportation assets. At the workshop, Staff indicated that it does not intend to have a closed-ended list of assets or activities that would be eligible for incentives; rather Staff would encourage IOUs to get creative and bring innovative cost-savings ideas to the Commission for consideration as part of the incentive mechanism. FPL believes that it is important to leave the incentive mechanism open-ended, because it is almost a truism that the specific nature of innovations cannot be predicted in advance.

Staff's proposal would do away with the sharing threshold that FPL has in both the original (2012) and updated (2016) versions of its approved incentive mechanism. FPL agrees with Staff that setting an appropriate threshold potentially could be difficult and contentious, but believes that there are two benefits to having a threshold. First, a properly set threshold can address the concerns expressed by OPC and FIPUG representatives that IOUs should not get incentives for "business as usual" performance. A properly set threshold will help ensure that customers get the full benefit of savings that are achieved by an IOU in the ordinary course of business, focusing the incentives instead on rewarding performance that proactively seeks greater operational efficiencies and savings for customers. Second, and somewhat related, the use of a sharing threshold can justify giving an IOU an appropriately larger share of savings achieved through extraordinary performance. FPL can assure Staff from our personal experience that the level of shared savings above the sharing threshold in FPL's incentive mechanism provides a clear and substantial incentive to FPL's management and employees to reach and exceed the threshold. In contrast, FPL does not believe that the 5% share of savings suggested in Staff's Strawman proposal would be sufficient to spur cost-saving innovations. FPL agrees with TECO's recommendation at the workshop that an 80/20 split between customers and the IOU would be more reasonable if the Commission decides not to have a threshold.

<u>After-the-Fact True-Up of Gains on Cost-Saving Transactions</u>

An issue was raised at the workshop discussing whether calculations of gains on economy power and potentially other types of cost-savings transactions should be trued up once actual system costs are known for the time period in which the transactions were implemented. For the reasons addressed by Gerry Yupp and others, FPL does not believe that the substantial cost of tracking and calculating such true-ups would be justified. As Mr. Yupp explained, the determination of whether to enter into a cost-saving transaction, and the amount of the cost savings for that transaction, is made at the time of the decision to enter into the transaction. The determination uses the same projections of marginal system costs that FPL uses to operate its

system. There is no reason to expect bias in those projections.[1] Therefore, Mr. Yupp explained that instances where actual gains are lower than projected should be offset by instances where the actual gains are higher, so that over time the total amount of actual gains will be very close to the projections.

Setting up and maintaining a tracking system to even attempt to calculate the actual gains on the thousands of trading transactions in which FPL engages each year would be extremely costly, likely requiring additional personnel as well as IT enhancements. And that extra cost would be unwarranted. As noted above, there is no reason to expect that the projections are biased toward either over- or under-reporting gains, so incremental tracking costs would be incurred with little prospect for compensating benefits over time. Even more fundamentally, the very notion of "actual" gains is illusory, if the intent is accounting precision. While the actual costs of a particular off-system purchase or sale are known, in order to determine the gain on that transaction one must compare that actual cost to what it would have cost the utility if the transaction had not taken place. The latter is necessarily hypothetical, involving many of the same types of assumptions and projections that must be made to determine projected gains in the first place.[2]

Interaction of the Asset Optimization Incentive Mechanism with the GPIF

As part of its Strawman incentive mechanism, Staff proposes to eliminate the GPIF. FPL strongly disagrees with this part of Staff's proposal, because we believe the GPIF provides an important and independent incentive for cost savings that can and does benefit customers.

Historical Perspective. The GPIF was incorporated into the fuel adjustment clause in 1980 by Order No. 9558, as part of the proceeding that resulted in the current approach of projecting fuel costs and then trueing up the cost recovery to ensure that the IOUs recovered the exact amount of their actual fuel costs. The Commission made it clear that, in order to be comfortable with allowing IOUs full and complete recovery of actual fuel costs in the fuel adjustment clause, the Commission was determined "to incorporate within the clause an explicit formula designed to provide to the utilities a monetary incentive to operate their generating units as efficiently as possible and thus minimize fuel costs borne by their customers."

In 2006, the Commission conducted an in-depth review of the GPIF in response to modifications proposed by OPC. In Order No. PSC-06-1069-FOF-EI, the Commission declined to adopt OPC's proposed modifications, finding that "[t]he ultimate purpose of the GPIF mechanism is to create fuel savings by rewarding electric utilities when they efficiently operate

[1] Neither is there any way that a bias could consistently benefit the determination of savings. For example, a bias toward low marginal system cost would increase the calculated gain on an economy sale, but that same bias would *decrease* the calculated gain on an economy purchase.

[2] FPL pointed out this problem in responding to discovery several years ago related to the calculation of fuel cost savings for West County Energy Center Unit 3: "In order to supply the fuel costs without WCEC 3 as requested 'based on actual fuel prices and operating conditions,' FPL would need to run a hypothetical simulation of how the FPL system would have been dispatched had the WCEC 3 unit not been available given actual conditions. FPL believes that such a 'backwards looking' approach would provide results of questionable accuracy since there is no way of knowing what the operating conditions would have been without WCEC 3." FPL's response to Staff's 7th Set of Interrogatories, Interrogatory No. 52, Docket No. 110001-EI.

their base load units. We believe that the purpose for the GPIF mechanism, as established by Order No. 9558, is being achieved."

Most recently, the Commission reviewed the GPIF, in connection with the incentive mechanism that was approved for FPL in the 2012 rate case settlement agreement. Order No. PSC-13-0665-FOF-EI contains the following statement about the relationship between the GPIF and that incentive mechanism:

> FPL responded to a Staff interrogatory that "[f]rom a high-level perspective, performance improvements in availability and heat rate should increase FPL's ability to make off-system economy sales as these improvements drive lower marginal costs and therefore, improve FPL's competitive position in the power market." On the flip-side, FPL also stated that degradation in base load unit availability and heat rate increase FPL's opportunity to make off-system wholesale purchases. FPL witness Rote testified that theoretically, unit performance can impact FPL's position in the wholesale market. We find that the efficient operation of the utility's base load units are the foundation for any off-system sales or purchases.

Based on these supposedly firm relationships between changes in generating unit availability/heat rate on the one hand, and the ability to make economy sales or purchases on the other, Order No. PSC-13-0665-FOF-EI went on to conclude that "if FPL receives either a reward or penalty under the GPIF for 2014, it is likely that the Company also would receive a credit towards its threshold goal under the Pilot Program [i.e., FPL's incentive mechanism]."

These conclusions are based on an incomplete summary of FPL's discovery responses, which FPL believes may be responsible in part for a potential misunderstanding on the Commission's and Staff's part about the relationship between the GPIF and FPL's incentive mechanism. Here is what FPL actually said in response to Staff Interrogatory No. 24 about the relationship between improvements in generating unit availability/heat rate and the ability to make off-system economy sales:

> FPL's ability to participate in the power market is primarily driven by its marginal cost position relative to other utility systems. From a high-level perspective, performance improvements in availability and heat rate should increase FPL's ability to make off-system economy sales as these improvements drive lower marginal costs and therefore, improve FPL's competitive position in the power market. *However, there are many other factors which also impact FPL's marginal costs and its competitive position in the power sales market. The relationship between fuel prices, FPL's system load versus the load on other utility systems, generation availability (by unit/fuel type) and planned maintenance are all important factors that impact FPL's marginal costs at any given point in time.* For example, a day with higher system loads coupled with planned maintenance on a baseload combined cycle unit may result in FPL having higher marginal costs relative to the power market, putting FPL at a competitive disadvantage for power sales, but allowing for economic power purchases. Therefore, while availability and heat rate improvements can help FPL's overall competitive position, these two factors, considered in isolation on a real-time basis, will not accurately determine FPL's ability to participate in the power sales

> market. Finally, separate from a cost perspective, transmission service must be available for FPL to make economy sales.
>
> (Emphasis added).

Similarly, FPL's response to Interrogatory No. 25 had this to say about the relationship between degradation in generating unit availability/heat rate and the ability to make off-system economy purchases:

> FPL's ability to participate in the power market is primarily driven by its marginal cost position relative to other utility systems. From a high-level perspective, performance degradation in availability and heat rate should increase FPL's opportunity to make off-system economy purchases as these factors drive higher marginal costs and therefore, increase the likelihood that FPL could purchase power at a lower cost than its own generation. *There are many other factors, however, that also impact FPL's marginal costs and its position relative to the power market. The relationship between fuel prices, FPL's system load versus the load on other utility systems, generation availability (by unit/fuel type) and planned maintenance are all equally important factors that impact FPL's marginal costs at any given point in time. Changing the weather assumptions in the example given in Interrogatory No. 24 demonstrates the importance of other factors on FPL's relative position in the power market. For example, mild temperatures in Florida, coupled with cold temperatures in Georgia, could mitigate the impact that FPL's higher marginal costs have on its relative position in the power market. FPL could move from a buyer to a seller in this scenario as the marginal costs for other utilities move higher, due to increased load in their territories resulting from cold temperatures. While FPL's marginal costs are higher due to the planned maintenance, the weather impact may put FPL at a competitive advantage in the power sales market. Therefore, while availability and heat rate degradation can lead to an increase in economy purchases, these two factors, taken in isolation on a real-time basis, will not accurately determine FPL's ability to participate in the power purchases market.* Finally, separate from a cost perspective, transmission service must be available for FPL to make economy purchases.
>
> (Emphasis added).

Correlation Analysis. As stated in both of the foregoing interrogatory responses, it is FPL's view that there are numerous market variables and confounding factors that make it impossible to conclude with any confidence that changes in generating unit availability or heat rate correlate with corresponding changes in FPL's ability to make economy sales or purchases. To test this assertion, FPL has undertaken a statistical evaluation of some key parameters in order to either confirm or refute the correlation.

Attached to this letter as Appendix 1 is a description of a commonly-used statistical evaluation process that FPL has used. In broad outline, this evaluation consisted of calculating R^2 statistics for the relationship between measures of unit performance relevant to the GPIF, versus measures of FPL's success in making beneficial economy sales and purchases. Attached as Appendix 2 is a file containing three graphs on which data points for these metrics are plotted for each year from 2000-2016 and then the best-fit regression lines for the data points are presented. The R^2 statistic is the fit of the data points to that regression line and is also shown on

each graph. The lower the R^2 value, the lower the correlation and interdependence is among the data points. Finally, Appendix 2 also includes a summary table commenting on the results of each of the three comparisons. While Appendix 2 speaks for itself, here is a very high-level summary of what it shows:

- The first comparison is between the GPIF reward in each year and the value of economy purchases for that year. If poor generating unit performance leads to more opportunities for productive economy energy purchases, then one would expect a strong negative correlation between the level of GPIF rewards and the value of economy energy purchases. However, what the statistical evaluation actually shows is an extremely poor correlation (i.e., 99% confidence that there is no correlation between the variables).
- The second comparison is between the GPIF heat rate target for a year and the level of economy sales for that year. If FPL's GPIF generating units were targeted to operate very efficiently, then one would expect that FPL would have more opportunities for economy sales from those efficient units. However, what the statistical evaluation actually shows is another extremely poor correlation between expected GPIF unit efficiency and the ability to make economy sales.
- The third comparison is between the GPIF availability target for a year and the level of economy sales for that year. The statistical correlation between those two parameters is once again extremely poor and is directionally counter-intuitive (i.e., high targeted availability for FPL's GPIF generating units weakly correlates with *lower* rather than higher economy sales).

Thus, none of these three statistical analyses bears out the intuition that GPIF performance metrics will significantly affect the level of economy purchases or sales. Moreover, as FPL pointed out at the workshop, the asset optimization incentive mechanism and the GPIF incent completely different behavior, for completely separate departments within FPL and so both serve important, distinct purposes. The availability of an asset optimization incentive mechanism is no justification for eliminating the GPIF.

Conclusion

FPL believes that the incentive mechanism included in Staff's Strawman proposal is a very good start and agrees that it should be structured to be open-ended in order to both accommodate and encourage continued innovation. FPL is concerned that Staff's proposal to allow IOUs to retain only a 5% share of savings would be insufficient to spur cost-saving innovations. FPL agrees with TECO's recommendation at the workshop that an 80/20 split between customers and the IOU would be more reasonable if the Commission decides not to have a sharing threshold. FPL's main concern with Staff's Strawman is that it proposes to eliminate the GPIF. The GPIF serves an important, independent role in incenting IOU performance. Nothing in either FPL's existing asset optimization incentive mechanism or the modified version in Staff's Strawman proposal provides incentives for the operational performance of generating units, and FPL does not believe that the incentive mechanism is structurally suited to doing so nearly as well as the GPIF. In FPL's view, it would be counterproductive to couple the availability of an asset optimization incentive mechanism with the elimination of the GPIF. The Commission would be moving appropriately toward broadening the range of incentives for customer savings in one dimension while simultaneously eliminating an important set of incentives in another, distinct and separate dimension. The GPIF

should be retained regardless of the Commission's ultimate decision on adding an asset optimization incentive mechanism.

Thank you for this opportunity to provide written comments.

Sincerely,

/s/ John T. Butler
John T. Butler

Enclosures
Cc: Tom Ballinger (w/encl.)
Philip Ellis (w/encl.)
James Beasley (w/encl.)
Russell Badders (w/encl.)
Matthew Bernier (w/encl.)
Patricia Christenson (w/encl.)
Jon Moyle (w/encl.)

Appendix 1 - Testing significance of a correlation (or lack of correlation)

Correlation is a way to mathematically express the relationship between variables. More precisely, it is a coefficient which ranges between -1 and +1. Perfect positive correlation (a correlation coefficient of +1) implies that as one variable moves, either up or down, the other one will move in lockstep, in the same direction. Alternatively, perfect negative correlation means that if one variable moves in either direction the other that is perfectly negatively correlated will move exactly in the opposite direction. If the correlation is 0, the movements of the variables are said to have no correlation whatsoever; they are completely random from each other. If you take this coefficient and multiply it by itself or square it, the resulting value, called R square, represents the percent of the movement of one variable that can be explained by the movement of another variable. This value ranges from 0 to 1, the closer the value is to zero the less, changes in one variable, can be attributed to the other.

For example, on Chart 1 (attached here), the R^2 of the two variables is 0.095. This value is so close to zero, that increases in economy purchases savings cannot explain decreases in GPIF rewards or vice versa. This is contrary to Staff's assertion.

So let's test the significance of the observed R^2 or, in other words, how real is this observation:

An R^2 of 0.095 represents a correlation 'r' of 0.3082 (r=square-root(R^2)). Since the two variables appear to move in opposite directions, one would say r=-0.3082.

To test the significance of the correlation between these two variables, in other words, to test if what we are observing here is just chance or is real, we conduct formal statistical hypothesis testing. We start by establishing or setting up mutually exclusive hypotheses that will statistically be either proved or disproved:

Null hypothesis (H0) => r=0 (meaning no correlation, positive or negative) which is our prediction. This hypothesis will be tested against the:
Alternative hypothesis (Ha) => r different from 0 (meaning there is correlation and our assertion is wrong)

As with all hypotheses testing, we need to determine the test significance level (called Alpha), the degrees of freedom (df) and whether we are conducting a "one-tail" or "two-tail" hypothesis testing.

We also need a table of the critical values of r (found in just about any statistical book). When one's prediction does not specify a direction, as is our prediction, we say we have a "two-tailed" test; hence, we will be looking for a "two-tailed" critical value of r.

We could start with a significance level of 0.05 for our hypothesis testing. This means we are conducting a test where the probability that the observed statistic, in this case 'r', occurs by chance in no more than 5 out of 100 (or that is real 95 out of 100). If we fail to reject (meaning accept) the Null hypothesis, then one can conclude that the correlation between these two variables is zero or non-existent 95 out of 100.

Now, let's calculate the degrees of freedom, which is simply equal to the number of observations minus two. In this case, since we have 17 observations, df=17-2=15.

With these three pieces of information (the significance level (Alpha = .05)), degrees of freedom (df = 15), and type of test (two-tailed), we can now test the significance of the correlation we found.

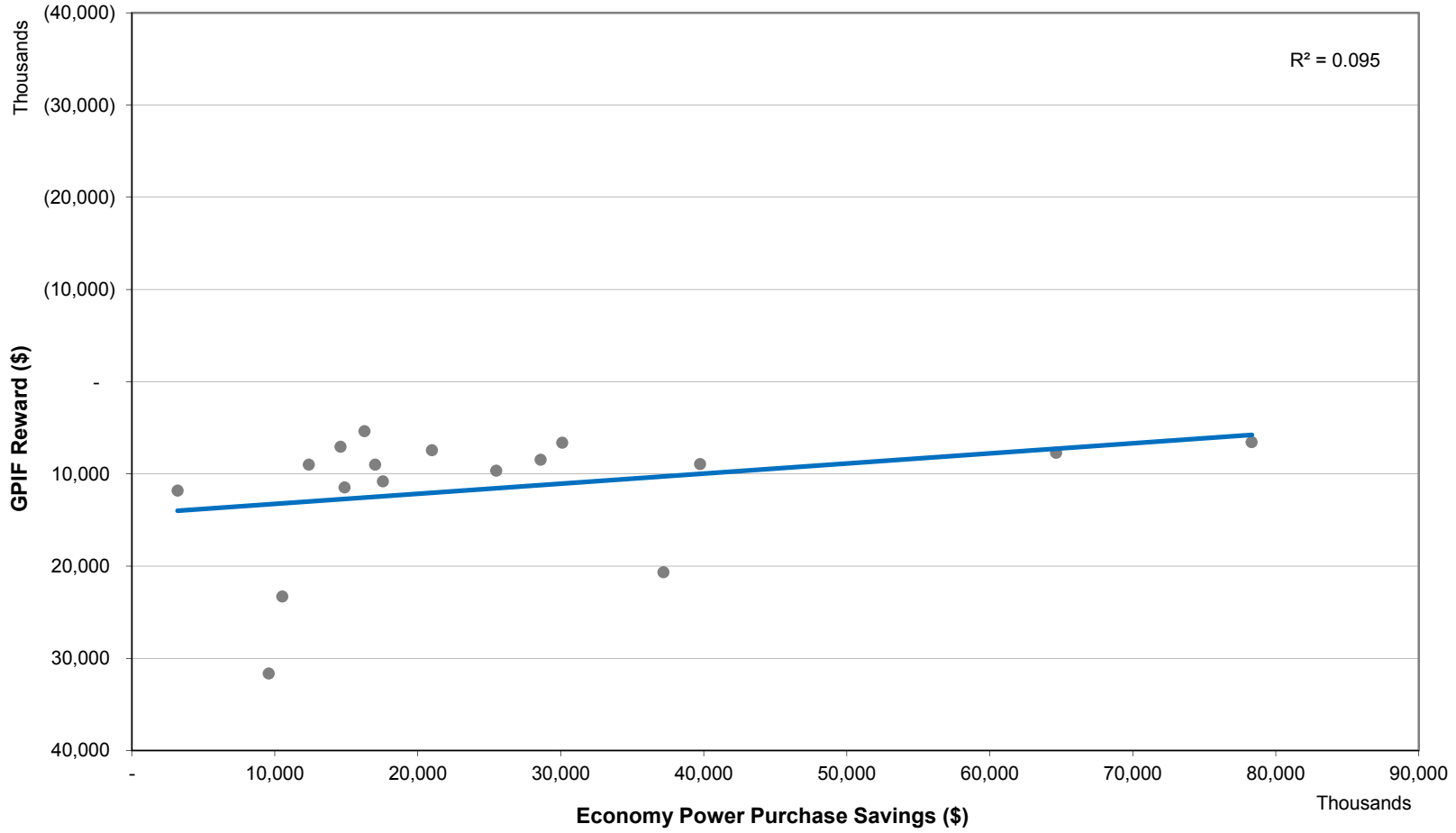
When we look up the critical value of 'r' in the statistics table using these three pieces of information, we find that the critical value of r is 0.482. This means that if r is greater than 0.482 or less than -0.482 (since this is a two-tailed test) we can conclude that our Null hypothesis is wrong and we must accept the Alternative hypothesis that there is correlation. However, since our correlation 'r' of -0.3082 is actually lower than 0.482 and higher than -0.482, we can not reject the null hypothesis. Meaning, we must accept the Null hypothesis that there is no correlation between these two variables. In other words, there is not enough evidence to claim there is a relationship, positive or negative, between increases in economy purchases savings and decreases in GPIF rewards.

This finding is significant since at the 0.05 significance level, it means that our observation is real 95 out of 100 and only 5% by chance. If we were to make our test significance level even more stringent, like 0.01 (99% confidence level), in other words, conduct an even more rigorous hypothesis test, then the critical value of r from our table is 0.606. This means that since r (-0.3082) is still lower (quite lower actually) than 0.606, one could say that our conclusion (that there is no correlation) is real 99% of the time. Put in context, since this is an annual process, this means that if we repeat this process for the next 100 years, 99 of those there will be no correlation between these two variables. That's an exceptionally high probability or confidence that our observation is real.

Appendix 2 - Summary

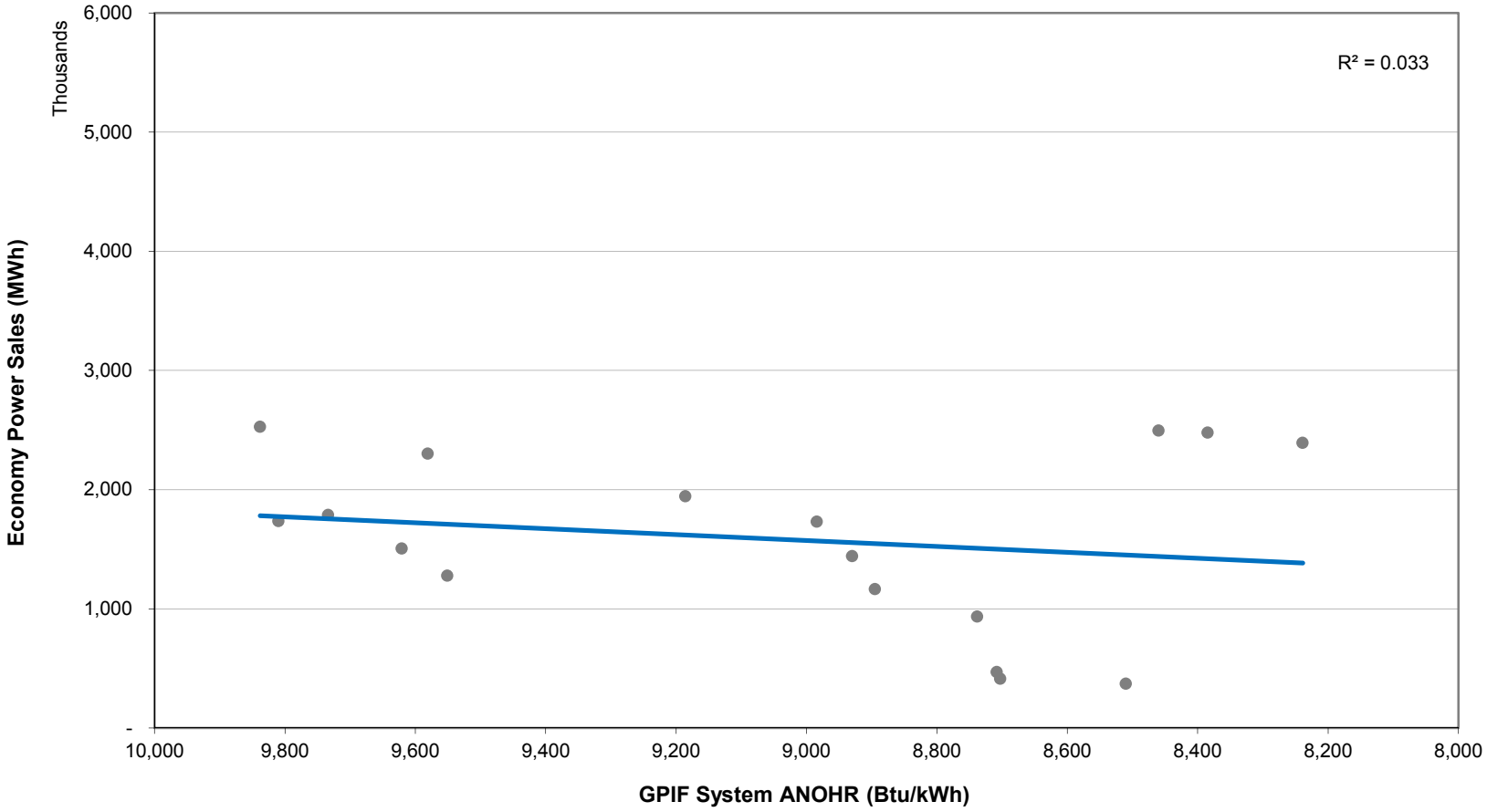
Chart #	Analysis Description	Pearson Correlation Coefficient 'r'	Correlation Direction	Coefficient of Determination 'R^2' (=r^2)	Years Analyzed	Take Away	Comments	Test Significance Level (Alpha α)	Test Confidence Level (1-Alpha)	p value
1	GPIF Reward ($) vs. Economy Power Purchase Savings ($)	-0.3082	Slightly negative, but basically no correlation	0.095	2000-2016	The low R^2 indicates that higher off-system purchase savings and lower GPIF rewards are not strongly correlated and that the weak correlation is not statistically significant to support the notion that a GPIF reduction in rewards is offset by increases in economy purchase gains. This is contrary to Staff's assertion.	Such low R^2 and almost flat regression line means decreased GPIF reward is not offset by off-system purchase savings.	0.01	99% confident that observation is real, that there is no correlation.	0.229 (p>α)
2	Economy Sales Volume (MWh) vs. GPIF System ANOHR Targets (Btu/kWh)	0.1817	Slightly positive, but basically no correlation	0.033	2000-2016	The basically flat regression line and very low R^2 indicate that there is no correlation between GPIF units' lower (better) heat rate targets (increase efficiency) and increase off-system sales. This is expected when both factors are not related which is contrary to Staff's assertion.	Such low R^2 and basically flat regression line means increased GPIF unit efficiency does not affect off-system sales one way or the other.	0.01	99% confident that observation is real, that there is no correlation.	0.485 (p>α)
3	Economy Sales Volume (MWh) vs. GPIF System EAF Targets (%)	-0.4412	Slightly negative, but basically no correlation	0.1947	2000-2016	The regression line and relatively high R^2 seem to indicate fairly good negative correlation between GPIF units' higher (better) availability targets and lower off-system sale gains. This is contrary to Staff's assertion of a positive correlation that "increase... availability may increase sales"	The data seems to indicate that increases in GPIF system availability is somewhat correlated to decreases in off-system sales, thus it appears that there is an inverse or negative relationship between the two. This is contrary to Staff's assertion that increases in availability may increase off-system sales. However, a correlation test (alpha=0.01), shows that instead of a negative correlation, that there is no statistically significant correlation. This is still contrary to Staff's assertion that there is a positive correlation.	0.01	99% confident that observation is real, that there is no correlation.	0.076 (p>α)

Appendix 2
Chart 1 - GPIF Reward ($000) vs. Economy Power Purchases ($000)
2000-2016



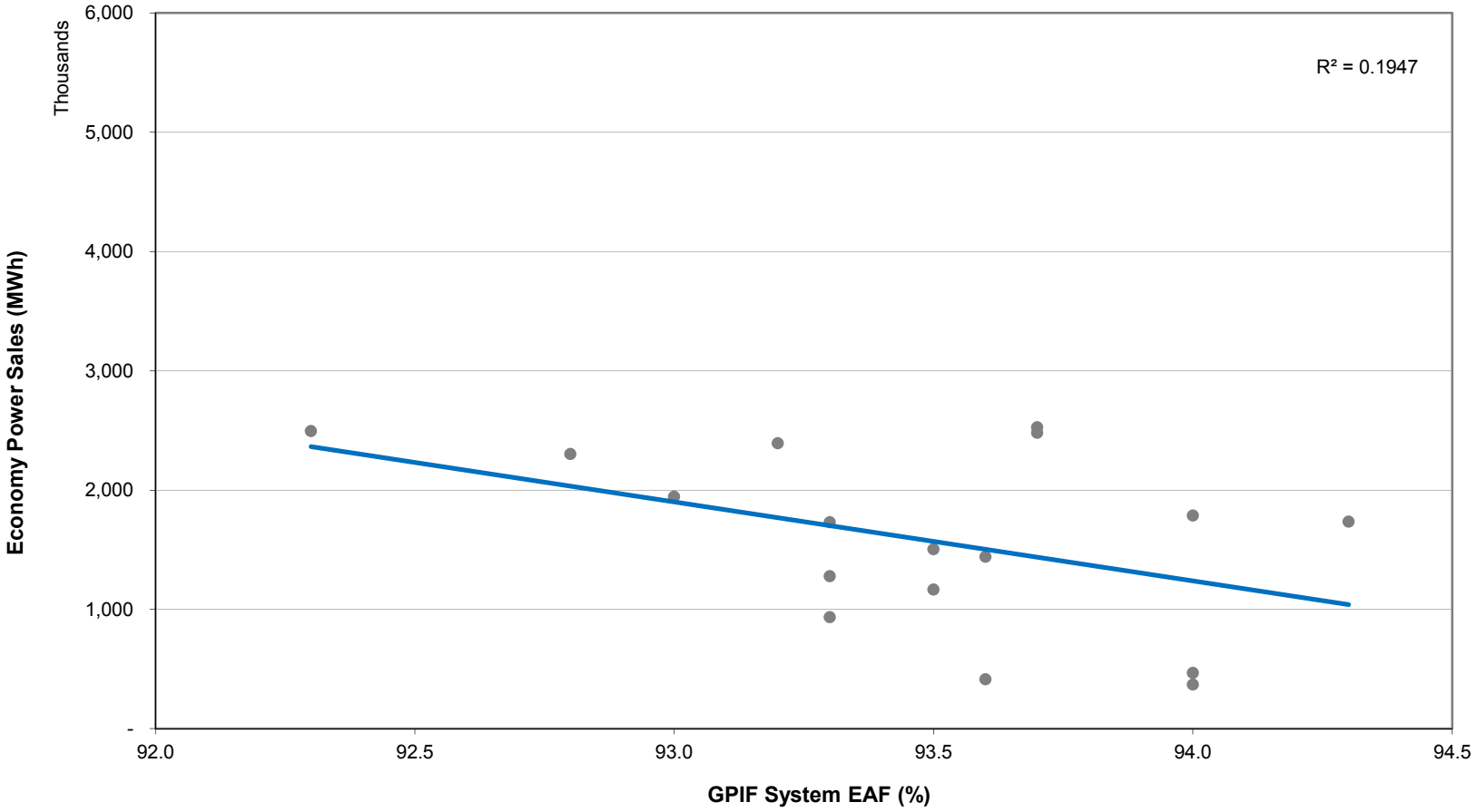
If poor generating unit performance leads to more opportunities for productive economy energy purchases, then one would expect a strong negative correlation between the level of GPIF rewards and the value of economy energy purchases. However, what the statistical evaluation actually shows is an extremely poor correlation (i.e., 99% confidence that there is no correlation between the variables).

Appendix 2
Chart 2 - GPIF System ANOHR Targets vs. Economy Power Sales (MWh)
2000-2016



The statistical evaluation actually shows another extremely poor correlation between expected GPIF unit efficiency and the ability to make economy sales.

Appendix 2
Chart 3 - GPIF System EAF Targets vs. Economy Power Sales (MWh)
2000-2016



The statistical correlation between expected GPIF unit availability (EAF %) and the ability to make economy sales is once again extremely poor and is directionally counter-intuitive (i.e., high targeted availability for FPL's GPIF generating units weakly correlates with *lower* rather than higher economy sales).