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PROJECT NO. 40000

**COMMISSION PROCEEDING TO
ENSURE RESOURCE ADEQUACY
IN TEXAS**

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**PUBLIC UTILITY COMMISSION
OF TEXAS**

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MACQUARIE ENERGY LLC'S COMMENTS

On April 3, 2013, the Public Utility Commission (“Commission”) requested that interested parties provide comments on questions submitted regarding the white paper by Professor William Hogan and ERCOT Staff, entitled “Back Cast of Interim Solution B+ to Improve Real Time Scarcity Pricing.” Macquarie Energy LLC (“Macquarie”) appreciates the opportunity to provide these comments responsive to the Commission’s request.

I. GENERAL COMMENTS ON INTERIM SOLUTION B+

ERCOT and Professor Hogan’s “Back Cast of Interim Solution B+ to Improve Real Time Scarcity Pricing” (“Solution B+”) white paper is a back cast of a market structure using an Operating Reserve Demand Curve (“ORDC”) to help approximate co-optimized energy and ancillary services. Solution B+ is intended to improve scarcity pricing by replacing the opportunity cost of reserves with an adder. The adder is the product of the Value of Lost Load (“VOLL”) and the Loss of Load Probability (“LOLP”).

It is well established that offer caps, conversion of ancillary services to energy, and other structural issues in electricity markets suppress electricity prices and create missing revenues. These missing revenues contribute to an underinvestment in electricity infrastructure that undermines sufficiency and reliability of the grid. The ORDC is a tool that can be used to mitigate the underinvestment if implemented appropriately.

A. Non-Spinning Reserve Service

An ORDC can assist in correcting energy price distortions related with most ancillary services; however, the ORDC does not effectively resolve issues related to Non-Spinning Reserve Service (“NSRS”). ERCOT deploys NSRS for both local and system wide issues and at varying levels of remaining reserves and all along the supply curve. In addition to the well-established fact that NSRS deployments suppress prices, deployment of NSRS also will reduce the ORDC adder.

Where logic would dictate that the ORDC adder would increase as NSRS is deployed to resolve the price suppression caused by out of merit deployment and reflect declining stores of ancillary services, deploying offline NSRS adds reserves to the ORDC calculation reducing the ORDC adder.

Online NSRS is also price distorting. Because units reserving capacity to provide NSRS are not fully loaded, NSRS may create excess online unit commitment. Units can shift from offline to online NSRS in response to prices, which further distorts prices. Finally, NSRS units that are brought online but not dispatched above their Low Sustainable Limit (“LSL”) distort the market by injecting unpriced energy into the grid. This LSL issue has been a difficult one to resolve with potential resolution seemingly a long way off.¹

The offer floors, designed to mitigate NSRS price suppression, are in fact price distorting. Online NSRS is effectively a basket of capacity that is priced at \$120 available to ERCOT’s Security Constrained Economic Dispatch (“SCED”) software in all hours. SCED automatically dispatches any online NSRS whenever the online NSRS

¹ On May 14, 2013 the ERCOT Board rejected NPRR 444 which is the only NPRR currently before ERCOT that would address the LSL problem.

offers are reached. Because of this, NSRS isn't really an ancillary service or "reserve," it is effectively a \$120 real-time call option financed by loads for the benefit of all entities that are short in the market both physically and financially by effectively capping otherwise higher prices at \$120. If market participants have an interest in limiting the downside of their short positions, call options are available in the market. There is no need for this to be subsidized by load serving entities.

NSRS is unnecessary. It is not an ancillary service used to meet any NERC requirement. It is a supplemental reserve that inarguably enhances reliability, but at what expense? Market efficiency is significantly hampered by NSRS. Macquarie suggests that ERCOT eliminate the use of NSRS and rely on market price signals to resolve short term capacity shortages.

The benefits of eliminating NSRS are numerous:

1. Price distortions from NSRS deployments are eliminated;
2. The LSL problem is largely solved without imposing additional uplift. Reliability Unit Commitment ("RUC") still poses an LSL issue, but it is minimized significantly because RUC deployments are infrequent;
3. The ORDC will more effectively resolve issues without distortions from NSRS;
4. Market distorting price floors can be eliminated (from all ancillary services except infrequently used RUC);
5. The market will have more efficient pricing and dispatch.

B. ORDC Contingency Level

As the back casts show, the ORDC contingency level is a significant factor; however, the back casts do not predict the change in behavior that takes place based on changes in market rules. The implementation of the ORDC adder is intended to set a new equilibrium increasing supply in the market. Consequently, while the numbers in the back casts may be a good data set for frame of reference or showing proportional differences in the numbers, it is highly unlikely that the numbers are an accurate depiction of what would have occurred in those years if the rule changes had been in place.

The contingency level of the ORDC should be set at the point where ERCOT operators begin to take out of merit actions to maintain reliability -- not after. At that point, maintaining reliability is ERCOT's main concern and running an efficient market is a secondary priority at best. It is not debatable that out of merit actions harm market prices and distort market outcomes. Quoting Professor Hogan "the long-term is a succession of short-term markets."² These short term suppressive activities will result in long term damage. The ORDC can help to mitigate the damage to market prices that out of merit actions cause and offset some of the price suppression, potentially correcting some of the underinvestment that occurs in this market.

ERCOT provided data on three separate contingency levels:

1. 1375MW;
2. 1750MW; and
3. 2300MW

² William W. Hogan, *Electricity Scarcity Pricing Through Operating Reserves: An ERCOT Window of Opportunity*, p. 2 (2012).

The 1375MW level approximates the NERC Single Largest Contingency Requirement.³ The 1750 level is where EEA2 begins and 2300MW is where EEA1 begins.

While it may seem logical to set the contingency at these levels, that logic ignores the fact that ERCOT procures more than twice that amount in Responsive Reserve Service (“RRS”) and takes out of merit actions long before the 1750MW threshold. If ERCOT were to reduce the amount of RRS procured to the minimum required by NERC then the logic of 1375MW is sound. However, we cannot ignore the additional 1425MW that ERCOT purchases and uses in out of merit activity. Each of the 2800MW of RRS that ERCOT procures daily has an identical ability to distort prices. Because the full 2800 MW are indistinguishable with respect to their harm to the market, the fact that 1375MW is the NERC requirement is irrelevant.

If ERCOT has engineering and reliability reasons to procure greater amounts of RRS than is required by NERC, it should do so. This decision certainly provides additional security to the grid and may be prudent. At the same time, the Commission must recognize that the greater quantity of ancillary services procured, the greater the distortional impact to the market.

If additional recommendations (included herein) are followed, Macquarie supports a contingency level consistent with the full amount of RRS procured by ERCOT. If ERCOT has made the decision that 2800MW is the appropriate amount of RRS to maintain system reliability, then it has logically decided the NERC standard is insufficient and that a higher standard is required for reliability. In that case we should look to the standard that ERCOT is using rather than what is required by NERC.

³ NERC Standard BAL-002-1a – Disturbance Control Performance (B,R3.1) states “As a minimum the Balancing Authority or Reserve Sharing Group shall carry at least enough Contingency Reserve to cover the most severe single contingency.”

To the extent ERCOT continues to procure 2800MW of RRS, Macquarie supports a 2800MW ORDC contingency level. If ERCOT decides to reduce that amount back to 2300MW, the contingency level of the ORDC should be set there. If ERCOT decides to use the minimum NERC required amount, then the contingency level should be set there.

II. RESPONSES TO SPECIFIC QUESTIONS

1. HOW LONG WILL IT TAKE AND WHAT IS THE COST TO IMPLEMENT SOLUTION B+?

ERCOT has addressed this in its impact analysis filed in this docket on May 17, 2013.

2. IF SOLUTION B+ IS IMPLEMENTED, WILL THE BENEFITS OF IMPLEMENTING FULL REAL-TIME CO-OPTIMIZATION EXCEED THE INCREMENTAL COSTS OF SUCH IMPLEMENTATION?

Macquarie is unsure whether the solution B+ will obviate the need for full Real-Time Co-Optimization of energy and ancillary services. What is certain is that the Commission should address the apparent price suppression that exists in ERCOT today. The cost of inaction on price suppression is far larger than the cost of implementing Solution B+ or something like it.

3. IF SOLUTION B+ IS IMPLEMENTED, ARE BIDDING FLOORS FOR ANCILLARY SERVICES STILL NEEDED TO AVOID PRICE REVERSAL? IF SO, SHOULD MINIMUM BIDS FOR ANCILLARY SERVICES BE SET ACCORDING TO A CURVE WHERE MINIMUM BIDS INCREASE AS RESERVE CAPACITY IS DEPLETED, OR SHOULD THE MINIMUM BID BE SET AT A DISCRETE LEVEL?

4. WITH REGARD TO MINIMUM BIDS FOR ANCILLARY SERVICES, SHOULD DIFFERENT ANCILLARY SERVICES (SUCH AS ON-LINE NON-SPIN AND OFF-LINE NON-SPIN) BE TREATED DIFFERENTLY?

The most obvious out of merit actions by ERCOT come from deployment of RRS, RUC, and NSRS. RRS has been addressed above. If the ORDC is set at a contingency equal to the amount of RRS procured, then the offer floors should be removed. From a pricing perspective, this is equivalent to maintaining the offer floors, because the LOLP will equal 1 when RRS is deployed; however, distortive dispatch effects will be eliminated by elimination of the offer floors.

Because RUC is used for local issues, reserves could be high or at any level when RUC units are deployed. Consequently, the ORDC will not address all RUC impacts and offer floors on RUC should remain in place. RUC acts similarly to NSRS in that its existence will distort market prices and the ORDC adder. Efforts should be spent on minimizing RUC because unlike NSRS it can be necessary for reliability.

NSRS is more problematic. Macquarie supports elimination of NSRS service. To the extent the Commission decides to continue the use of NSRS, offer floors are necessary and should be higher than the current \$120/\$180 per MWH. The Commission should also adopt a higher contingency level for the ORDC to account for the additional out of merit activity that will occur.

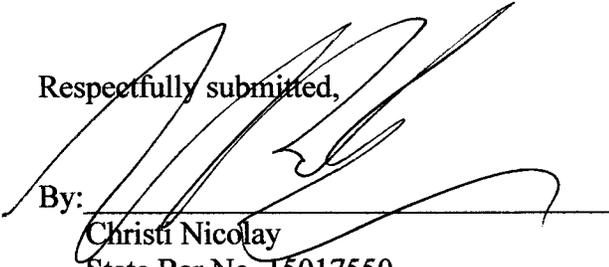
III. CONCLUSION

Macquarie appreciates the Commission's work on resolving issues relating to resource adequacy. Interim Solution B+ can be a tool that helps in these efforts if implemented correctly. The Commission should craft the ORDC in a manner that best accounts for price suppressive ancillary service deployments.

The Commission should:

1. Eliminate the use of NSRS;
2. Institute an ORDC with a contingency level equal to the amount of RRS (Currently 2800MW);
3. Eliminate offer floors for ancillary services other than RUC; and
4. Set the minimum ORDC equal to the amount of RRS, NSRS, and RUC procured for the operating day if NSRS is not eliminated.

Respectfully submitted,

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