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PROJECT NO. 40268

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COMMISSION PROCEEDING TO
ENSURE RESOURCE ADEQUACY
IN TEXAS

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PUBLIC UTILITY COMMISSION

OF TEXAS

**COMMENTS OF ENCHANTED ROCK, LTD.
RELATING TO DISTRIBUTED GENERATION &
RESOURCE ADEQUACY IN TEXAS**

As it relates to the Public Utility Commission workshop on Project Number 40268, Commission Proceeding to Ensure Resource Adequacy in Texas, Enchanted Rock submits the following comments with respect to the participation of Distributed Generation (DG) in ERCOT market.

I. Background

Enchanted Rock designs, installs, commissions and operates Distributed Generation in the ERCOT market capable of grid synchronous export and/or disconnected, isochronous operations. In March 2012 and April 2012 respectively, the Commission and ERCOT approved changes to the Emergency Response Service (ERS) market, allowing Distributed Generation (DG) to participate in the new *ERS – Generation* category, receiving payment for the amount exported, not just load displaced. Since this approval and the increase of the system wide offer cap in August 2012, Enchanted Rock has responded by raising project financing, securing sites, coordinating with TDSPs for interconnection and mobilizing its supply chain to add over 150 MW of diversified *ERS – Generation* capacity in multiple Load Zones during 2013.

II. Comments

- A. Enchanted Rock believes that DG is one of the most robust, cost-effective forms of generation, avoiding transmission and distribution losses and quickly responding to a number of different energy and reliability needs and prices. If DG has export capability, the net MW addition to the broader ERCOT market is not linked to any specific load's consumption.

- B. Enchanted Rock's current project is Reliability DG. Reliability DG typically only runs when there is a specific distribution or transmission grid reliability need, or about 0.5-2% of the time. Not coincidentally, this is also the period the reserve margin is set. Because of the low deployment hours, Reliability DG typically must have a capital cost on the lower end of the spectrum with a resulting variable costs towards the higher, making them very effective and efficient assets for managing reserve margin. DG shares this capital/variable cost profile with Demand Response (DR), but there are significant differences as described below.
- C. Based on the reading of the report, its own experience and discussion with Mr. Newell, Enchanted Rock thinks the Brattle Group's reports, ERCOT Investment and Resource Adequacy, dated June 1, 2012 and the Composite of Policy Options, dated October 19, 2012, significantly underestimate the MW contribution of DG to Resource Adequacy for three primary reasons:
- 1) Both reports assume that DG is a subset of DR. DR is assumed to have a maximum participation level of approximately 8-15% of peak load (Figure 30 of June 1 report). This is probably accurate for true DR, but DG has the ability to displace substantially more than 15% of the peak as the market energy and/or capacity price determines true magnitude of the net MW addition, not the discretion of the electricity consumer to curtail. In fact, certain types of export-capable Combined Heat and Power (CHP) DG displace in excess of 100% of the load for the vast majority of operating hours.
 - 2) The reports' capital cost assumptions for the addition of a new MW, just under \$700/kw for a Frame turbine, is significantly higher than the capital cost of most Reliability DG.
 - 3) Construction lead times for DG are much less than traditional generation.

Taken individually or in aggregate, these factors have resulted in a material understatement of the DG's MW contribution to reserve margin and Resource Adequacy.

- D. The broader electricity markets are in the midst of amazing and exponential increases the efficacy and decrease of cost of the enabling technologies for DR, DG and storage. These enabling technologies include but are not limited to broadband connectivity,

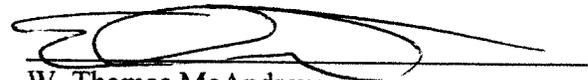
embedded computing, sensors, chemical and kinetic energy storage, and the control and aggregation networks for the above. These technologies are creating assets that are pushing down the cost of both reliability and energy. It seems counter-trend to assume that these distributed assets will not vigorously and accurately respond to a higher system wide offer cap coupled with a true scarcity curve.

- E. Enchanted Rock does not have a dedicated regulatory staff and is unaware of any direction the Brattle Group may have been given for its most recent report. With that said, it was surprising and confusing to see the field of policy options narrow from five to effectively one, without any significant public discourse. This type of sudden and radical change is the most disruptive to the small firms, and their investors, which are bringing new, innovative DR, DG and storage technologies and solutions to market.

III. Conclusion

Enchanted Rock suggests that the market is responding to recent changes, and will do so at an increasing rate over time if the changes are deliberate, and evolutionary to the current structure, not revolutionary. Additionally, Enchanted Rock welcomes the opportunity to address the Commission on DG and its effect on Resource Adequacy.

Respectfully submitted,



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