Control Number: 24770

Item Number: 205

Addendum StartPage: 0

DOCKET NO. 24770

REPORT OF THE ELECTRIC RELIABILITY COUNCIL OF TEXAS (ERCOT) TO THE PUCT REGARDING IMPLEMENTATION OF THE ERCOT PROTOCOLS	§ § § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

COMMISSION STAFF'S RESPONSE TO ORDER 18

Thomas S. Hunter
Division Director - Legal Division

Keith Rogas
Director – Legal Division, Electric Section

April 3, 2003

206

DOCKET NO. 24770

REPORT OF THE ELECTRIC RELIABILITY COUNCIL OF TEXAS REGARDING CERTAIN MARKET DESIGN ISSUES	**§ § § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

COMMISSION STAFF'S RESPONSE TO ORDER 18[1]

I. INTRODUCTION

As explained below, Staff recommends that the Commission at this time: (1) decide to eliminate the July 4, 2003 generator balancing energy bid cap termination date as part of the final order in Docket No. 24770, and to not place a termination date on the other bid caps that it has approved on an interim basis in this docket; and (2) approve Staff's modified Competitive Solution Method (MCSM) for balancing energy service and to order its prompt implementation by ERCOT.

II. BACKGROUND

The genesis of the market failure mitigation issues in the current docket was a report from Dr. Oren, *prepared over two years ago*, in the docket in which the Commission approved the

[1] This pleading uses the following abbreviations: BES – balancing energy service; Commission – Public Utility Commission of Texas; CSM – Competitive Solution Method; DBES – down balancing energy service; DOJ – United States Department of Justice; ERCOT – Electric Reliability Council of Texas; IRS – United States Internal Revenue Service; MCP – market clearing price; MCSM – Modified Competitive Solution Method; MOD – Market Oversight Division of the Public Utility Commission of Texas; QSE – qualified scheduling entity; REP – retail electric provider; Staff – staff of the Public Utility Commission of Texas; STF – Special Task Force; TAC – Technical Advisory Committee; UBES – up balancing energy service.

initial Protocols.[2] In that docket, the Commission ordered ERCOT to consider certain issues raised by Dr. Oren and report back to the Commission by October 1, 2001, which ERCOT did.[3] In order to prepare the report ordered by the Commission, the ERCOT TAC created a Special Task Force (STF), which began meeting in July 2001 and was chaired by a Reliant representative. STF did not have a defined membership. Instead, it was open for participation by stakeholders, although only ERCOT members could vote at the meetings.[4] It was through the STF meetings that Staff developed CSM and received valuable feedback from stakeholders on earlier versions of CSM.[5] It was also through STF that many wholesale market participants developed their response to the Commission's concern about the potential for ancillary service market failure. According to these market participants that voted in favor of the STF report, the Commission should not order the implementation of market failure protections because "there is no indication of market failure."[6] These market participants have even opposed the $1,000 backstop bid/offer caps,[7] which the Commission has already approved on an interim basis in Order Nos. 13 and 14. However, they did provide "possible solutions" "to the extent that the operation of the market demonstrates that changes need to be made".[8] Nevertheless, Staff demonstrated in its initial brief in this docket the inadequacy of these "possible solutions".[9]

---

[2] Docket No. 23220, *Petition of the Electric Reliability Council of Texas for Approval of the ERCOT Protocols*, Docket No. 23220, Report to the Public Utility Commission of Texas on the ERCOT Protocols, Shmuel S. Oren, Ph.D. (2/9/01).

[3] Docket No. 23220, Order on Rehearing, p. 8, last paragraph – p. 9, second paragraph, p. 13, last paragraph, 53; Docket No. 24770, ERCOT Report (10/1/01); Docket No. 24770, Commission Staff's Initial Brief (1/25/02), p. 8, last paragraph – p. 10, first paragraph.

[4] ERCOT Report (10/1/01), p. 2, second paragraph.

[5] Commission Staff's Reply Brief (2/15/02), p. 16.

[6] Commission Staff's Initial Brief (1/25/02), p. 12, second paragraph. Neither TAC nor the ERCOT Board adopted the STF report. *See* ERCOT Report, p. 9.

[7] *See* Commission Staff's Initial Brief (1/25/02), p. 27.

[8] ERCOT Report, p. 27, first paragraph.

[9] Commission Staff's Initial Brief (1/25/02), p. 24, second paragraph – p. 28, second paragraph.

The parties in this docket agreed to waive the right to a hearing and instead brief the issues.[10] Nevertheless, the Commissioners presided over a technical conference that included a discussion of the ancillary service issues addressed by CSM. Sworn witnesses participated in this discussion.[11] After this technical conference, the Commissioners discussed CSM during a number of Open Meetings and asked for additional information, including application of CSM to historical data and a procedural schedule to consider implementation issues. Staff filed a report in which it described the application of CSM to historical data for the daily ancillary capacity services; parties commented on the report; and Staff replied to the comments.[12]

In response to Order No. 17, Staff developed Protocol language to implement CSM for the daily ancillary capacity services, and ERCOT expects to complete by early this month a high-level cost and schedule estimate to implement CSM for these services.[13]

In a filing made on December 16, 2002, Staff recommended that implementation of CSM for balancing energy service (BES) proceed on a separate track, for three reasons. First, implementation of CSM to BES is dependent upon the congestion management method adopted by the Commission in Project No. 26376, *Rulemaking Proceeding on Wholesale Market Design Issues in the Electric Reliability Council of Texas*. If the Commission orders ERCOT to change from the current zonal congestion management model to a nodal congestion management model, then Staff believes that application of CSM to energy service would not be feasible, and the Commission would need to consider other market failure mitigation measures for energy service,

---

[10] *See* Order No. 7.

[11] *See* Order No. 11.

[12] Application of Competitive Solution Method to Data from ERCOT Ancillary Capacity Services (10/11/02); Commission Staff's Response to Comments on Staff Report (12/13/02).

[13] *See* January 30, 2003 letter from Keith Rogas to Marc Burns; Appendix to the March 18, 2003 memo from MOD to Commissioners; March 21, 2003 Open Meeting transcript, p. 234, l. 21 – p. 235, l. 2.

for example the New York Independent System Operator's Automated Mitigation Procedure.[14] Second, Staff has not yet applied CSM to historical BES data (as it has for the daily ancillary capacity services), and doing so will take a considerable amount of time. Third, application of CSM to BES would be significantly more involved than application to the daily ancillary capacity services.[15]

In response to the price spikes in the BES market in February 2003 and the resulting bankruptcy of Texas Commercial Energy, Staff developed MCSM. ERCOT has stated that MCSM could be implemented immediately, with no system impacts.[16]

III. BID CAPS

The ERCOT bid portal accepts an unlimited number of digits. As a result, without the $1,000 bid caps currently in place, a QSE could bid $999,999 (or $1 trillion), and that bid could set the market clearing price. More specifically, during the period February 24-25, 2003, the price for up balancing energy service (UBES) hit $990/MWh for a total of seven hours, due to a single market participant bidding a single megawatt-hour at $990.[17] Absent the $1,000/MWh bid cap, this single market participant could have bid this single megawatt-hour at $999,999 for those seven hours, which would have increased the price for all UBES purchased by ERCOT for these seven hours to $999,999/MWh, at a total cost of $31.6 **billion**. In other words, for seven hours in a recent two-day period, ERCOT's purchases of relatively small amounts of energy would have

---

[14] *See* Staff's October 23, 2002 filing, which describes this Procedure. Staff believes that application of CSM to the daily ancillary capacity services would be feasible under a nodal congestion management model, although it would require the additional step of aggregating affiliated resource-specific bids, if bidding for the daily ancillary capacity services became resource-specific.

[15] Commission Staff's Response to Order No. 17 concerning Procedural Schedule (12/16/02), p. 2, last paragraph – p. 3, first paragraph.

[16] March 21, 2003 Open Meeting transcript, p. 236, l. 5–15 (ERCOT indicated that a manual process could be used so long as MCSM was applied infrequently, which is consistent with historical data).

cost an amount that would dwarf the cost of the multi-year California energy crises that is currently in multi-year litigation. Undoubtedly, a number of market participants would have joined Texas Commercial Energy in filing for bankruptcy had UBES cleared at $999,999/MWh instead of $990/MWh. In California, before bid caps were implemented, the bid portal accepted up to four digits and the market cleared at $9,999/MW per hour.[18]

Apparently, Reliant's response to the risk of extremely high market clearing prices is that market participants should not rely at all on ERCOT-administered ancillary service markets.[19] However, in well functioning commodity markets, market participants do rely on spot markets to meet a portion of their needs. Furthermore, in the absence of market failure mitigation measures and given the inelastic demands for ERCOT ancillary services, market participants will either have to substantially overprocure supply to avoid the risk of relying on the ERCOT-administered spot markets or will have to take the risk of relying on those markets and filing for bankruptcy if the markets clear at very high prices.[20]

Bid caps are a well-established, essential measure to avoid an immediate market meltdown in competitive electricity markets.[21] To confirm the efficacy of the bid caps in ERCOT, MOD reviewed the ERCOT MCPs and found that, since the opening of the new market in July 31, 2001, the ERCOT-administered ancillary service markets have cleared above $990 the

---

[17] March 17, 2003 letter from Keith Rogas to Commissioners, attached MOD report, p. 2, second paragraph.

[18] Commission Staff's Initial Brief (1/25/02), p. 26, last paragraph, last sentence.

[19] *See* Reliant Resources, Inc.'s Response to Staff Proposal of March 18, 2003 (3/20/03), p. 3, second paragraph.

[20] A load serving entity could seek to transfer the risk of relying on the ERCOT-administered markets to a wholesale supplier. However, that risk would be reflected in the contract between the two, or the wholesale supplier would have to declare bankruptcy if it was caught short due to resource outages during a very high MCP period.

[21] If quick demand-side response to prices substantially increases in the future, the bid cap for up balancing energy service could become superfluous. However, it is not clear that increased demand response will ever be able to render superfluous the bid caps for down balancing energy service or the ancillary capacity services.

following number of times: UBES – 207; down balancing energy service (DBES) - 162;[22] up regulation reserve service – 15; down regulation reserve service – 1; responsive reserve service – 25; and non-spinning reserve service – 41.

Staff urges the Commission to decide at this time to eliminate the July 4, 2003 generator balancing energy bid cap termination date as part of the final order in Docket No. 24770, and to not place a termination date on the other bid caps that it has approved on an interim basis in this docket. Staff recognizes that the bid caps should be periodically reviewed to ensure that they do not become too low (or too high) and thereby adversely affect generation investment and other market decisions.[23] The Commission will have an opportunity to revisit the level of the bid caps as part of Project No. 24255, *Rulemaking concerning Planning Reserve Margin Requirements*.[24]

IV. MODIFIED COMPETITIVE SOLUTION METHOD FOR BALANCING ENERGY SERVICE

A. Overview

Staff has already extensively explained the justification for CSM.[25] As indicated above in section II, Staff believes that the Commission should order ERCOT to promptly implement CSM to the daily ancillary capacity services, once ERCOT provides its high-level cost and schedule estimate early this month. However, for the reasons described above in section II, the Commission should delay consideration of implementation of CSM to balancing energy service.

---

[22] The numbers for UBES and DBES count each zone separately, even when there was no congestion.

[23] March 17, 2003 memo from Keith Rogas to Commissioners, p. 2, first paragraph; Commission Staff's Reply Comments pursuant to Order No. 13 (8/13/02), p. 1, last paragraph.

[24] March 17, 2003 memo from Keith Rogas to Commissioners, p. 2, last paragraph.

Nevertheless, the price spikes in the BES market in February 2003 and the resulting bankruptcy of Texas Commercial Energy made clear the need for some automatic market failure mitigation measures in the short run for BES, in addition to the bid cap. To fill this need, Staff developed MCSM. ERCOT has stated that MCSM could be implemented immediately, with no system impacts.[26]

It is important to note that MCSM essentially *is* CSM. The only modification is that the threshold triggering the procedure is increased. CSM would produce exactly the same result as MCSM in circumstances where ERCOT procures all eligible UBES or DBES bids from a particular zone or procures all eligible UBES or DBES bids for all of ERCOT.[27] MCSM would apply only in these circumstances, whereas CSM would apply in other circumstances as well. As a result, there is ample support in the record of this docket to support Commission adoption of MCSM. Therefore, as a legal matter, the Commission need not succumb to the delay tactic of a party requesting additional study or a hearing.

The unique features of current electricity markets – the essential nature of the service; the short-run inelasticities of both demand and supply; the inability to cost-effectively store supply; and the need to balance demand and supply in real time – make them particularly susceptible to market failure.[28] In a typical competitive market, when prices rise, customers buy less, which thereby moderates prices while supply increases. In addition, a short-term supply imbalance is moderated by the use of stored quantities of the product. In contrast, ERCOT ancillary capacity

---

[25] Commission Staff's Initial Brief (1/25/02), p. 15-24; Commission Staff's Reply Brief (2/15/02), p. 22-30; July 19, 2002 Technical Conference; Application of Competitive Solution Method to Data from ERCOT Ancillary Capacity Services (10/11/02).

[26] March 21, 2003 Open Meeting transcript, p. 236, l. 5–15 (ERCOT indicated that a manual process could be used so long as MCSM was applied infrequently, which is consistent with historical data).

[27] March 18, 2003 memo from MOD to Commissioners; Commission Staff's Initial Brief (1/25/02), p. 16-20.

[28] Commission Staff's Reply Brief, p. 20, first paragraph – p. 21, first paragraph.

service quantities will not be reduced at all in response to price increases. Instead, ERCOT specifies the quantities needed from a reliability perspective, and these quantities are procured, regardless of price. In addition, there is little potential to cost-effectively store the ancillary capacity services. Compared to the ERCOT ancillary capacity services, customers do have some ability to respond to high electric energy prices. In California, when the price of electricity rose substantially for a sustained period of time, consumption dropped substantially, which had a significant dampening effect on prices. However, for the ERCOT balancing energy market, which is where supply and demand must be balanced in real time, price spikes generally occur for only short periods of time. Therefore, it is much more difficult for customers to respond to such short-term price spikes. In ERCOT, consumption is measured and settled in 15-minute increments. Therefore, for a customer to capture the benefit of decreasing consumption in response to short-term balancing energy price increases, the customer's consumption must be measured in short intervals. Such short-term consumption measurement is currently limited primarily to very large customers in ERCOT.

B. The Need for Mitigation

John D. Chandley of LECG, LLC has recently commented on MCSM, and Staff would like to take this opportunity to respond to Mr. Chandley's comments.[29] Mr. Chandley acknowledges not knowing the specifics of either the February BES price spike or MCSM, yet that does not deter him from challenging the merits of MCSM on theoretical grounds. He states that "hockey stick bidding *may* well track marginal costs", "bids at or above $1,000 for the last increments *may* be legitimate", and "there are other reasons why prices *can legitimately* spike" (italics added), then fails to address the heart of the matter: when are high prices legitimate and

when are they not? Staff submits that Mr. Chandley's failure to address the crucial question reveals his predilection towards a dogma that rejects any price mitigation under any circumstance – a predilection that seems to be shared by many generators for whom such a dogma would be conveniently profitable, to the detriment of load-serving entities.

Mr. Chandley's opposition to MCSM appears to be based on the premise that bids should always be left untouched, because there is a remote possibility that a high bid is justified. This argument stands on its head the entire philosophy of market mitigation, as well as the rationale underlying merger audits and market concentration limits imposed by DOJ. The relevant question is not, "is it possible that a justifiably high price will be mitigated?", but rather "is it possible that an unjustifiably high price will create massive transfers of wealth between consumers and producers?" The objective of automatic market mitigation is to close loopholes and abate gaming. One should operate on the assumption that when such gaming opportunities exist, profit seeking companies will exploit them. Indeed, competitive electricity markets have an abundance of experience where loopholes were gamed for profit. ERCOT has not been immune from such gaming, and will continue to be at risk of such gaming until the loopholes are closed. The fact that an unjustified hockey stick bidding strategy can profit its perpetrator at essentially no risk is ample reason for market mitigation and audit of such bidding strategies, whether it turns out that the high prices where justified or not.

The DOJ market concentration criteria, for instance, are based on the same principles as market mitigation in competitive electricity markets. It is well known that high market concentration is harmless in a market with high demand elasticity, yet the HHI threshold (which does not account for elasticity) automatically triggers an elaborate DOJ audit, regardless of

---

[29] *See* March 27, 2003 memo from Commissioner Perlman.

whether the high concentration would actually lead to the exercise of market power. IRS audits are also based on general metrics even though in some cases it turns out that deviations from the norm are justified. MCSM should be viewed in this spirit. Given the great potential for abuse when the bid stack is fully exhausted, MCSM triggers an audit of all bids that exceed the 90% bid stack price level and limit the price setting ability of bids above such level. Such a measure is fully justified by the potential for gaming and the severe financial consequences of such behavior for consumers.

C. Inelastic Demand

If any market is to work for the benefit of society, it must be either competitive or regulated, or a combination of both. If a market is to be competitive, buyers must have the potential to substitute one supplier for another. Without the ability to switch (or to cut back demand) buyers are hostage to market forces they are unable to influence. When any supplier can command any price without fear of diminishing demand, the price reflects little more than the whim of the least merciful supplier and does not provide a rational, coherent signal for market behavior. This is what the economic term "inelastic demand" means.

Substitution is not possible when all available supplies are being deployed. It is full deployment and the resulting lack of substitutability – not, as some parties have implied, the mere occurrence of high prices – that Staff proposes to be the trigger for MCSM in the balancing energy market.

Substitution is also impossible when the clearing price is set by a pivotal supplier, even though a small amount of supply remains unprocured. Because its absence would create a shortfall, a pivotal supplier cannot be swapped out for another supplier. Therefore, the market has no economic choice but to accept whatever price the pivotal bidder chooses to charge –

again, the market is compromised by inelasticity in demand. Pivotal suppliers are easily identified in the daily ancillary capacity markets, and CSM would apply a pivotal supplier test to these markets.

If scarcity characterizes the market as a whole and all bid prices increase, the price corresponding to the 90th percentile of available supply (the floor price proposed in CSM and MCSM) will rise along with all other prices and will reflect changes in the entire market. By contrast, the highest price can reflect blatant opportunism. Mr. Chandley argues that a generator could legitimately bid a dramatically higher price for its last possible increment of output in order to compensate for the resulting dramatically increased risk of forced outage for the entire facility. Staff submits that ERCOT consumers would be better off if such a high bid were not made, rather than face a dramatically increased risk of a forced outage for the entire facility. MCSM covers two scenarios: where the zonal bid stack is depleted, but ERCOT can turn to another zonal bid stack to relieve the congestion, or a system-wide shortage where the bid in question is the last one available to ERCOT. In the latter case, if the generator doesn't make the very high bid due to MCSM, then ERCOT will have to shed firm load. Then, the question is whether the value of lost load is less than the reduced payments resulting from application of MCSM. Because application of MCSM reduces the MCP whereas the value of lost load relates only to the small increment that was interrupted, the answer is yes. As to the first scenario, depletion of only a zonal bid stack, the cost savings from MCSM will be greater than the cost of having to turn to another zonal bid stack. Like bid caps, MCSM would help avoid imposing excessive costs on consumers.

D. Price volatility

Although it is true that reasonably high prices can provide appropriate economic signals to the market, wide variances and unpredictability of prices only undermine market stability and can confuse the economic signals. Price volatility adds a risk burden to REPs, but it also makes it more difficult for supply-side investors to judge the value of new generation.

Mitigating unwarranted swings in prices would result in lower average prices, and it would also reduce price volatility to an even greater degree. In addition, the prices at which the market operates most of the time would not be affected by MCSM. Thus investors (and REPs) would largely see the same costs without the unpredictable danger of capricious price swings, while generators would still be assured of recovering at least their verifiable costs on an individual basis.

V. CONCLUSION

The basic market failure mitigation issues in this docket were first raised by Dr. Oren in February 2001; they have been under consideration by the ERCOT generators since July 2001; and they have been under consideration by the Commission since October 2001. The extensive information that Staff has provided in this docket, along with actual experiences in ERCOT and other competitive electricity markets, provide ample support for the two modest measures addressed in this pleading: continued existence of the bid caps already in place and implementation of MCSM. Staff urges the Commission to adopt Staff's recommendations on these issues at this time.

Dated: April 3, 2003

Respectfully Submitted,

Thomas S. Hunter
Division Director - Legal Division

Keith Rogas
Director – Legal Division, Electric Section
State Bar No. 00784867
(512) 936-7277 telephone
(512) 936-7268 fax
keith.rogas@puc.state.tx.us

Public Utility Commission of Texas
1701 North Congress Avenue
P.O. Box 13326
Austin, Texas 78711-3326

CERTIFICATE OF SERVICE

I, Keith Rogas, certify that copies of this document will be served on all parties on April 3, 2003, in accordance with Public Utility Commission of Texas Procedural Rule 22.74.

Keith Rogas