

Public Utility Commission of Texas

Memorandum

TO: Chairman Donna L. Nelson
Commissioner Brandy D. Marty

FROM: Commissioner Kenneth W. Anderson, Jr.

DATE: February 5, 2014

RE: **Project No. 40000** -- *Commission Proceeding to Ensure Resource Adequacy in Texas.*

Originally, this memorandum was going to list further issues that I thought needed to be considered by the additional study requested by the Chairman in her memorandum of January 22, 2014 (Chairman's Memorandum).¹ However, since the Chairman's Memorandum was filed, we have received both the revised load forecast data produced by ERCOT² and the report "Estimating the Economically Optimal Reserve Margin in ERCOT" (January 2014 Brattle Study)³ prepared by The Brattle Group. The combination of the information contained in both reports has caused me to rethink how we should proceed going forward.

The revised load forecast produced by ERCOT on January 22, 2014, shows a significant reduction in the overall forecasted peak load growth in ERCOT through 2023. I've included it as an attachment to this memorandum. When applied to the ERCOT May 2013, Capacity Demand and Reserves report, the new revised peak load estimates produce the revised forecasted reserve margins set out in Table 1 below. The new reserve margins show that ERCOT will not drop below the current target reserve margin of 13.75% until 2019 (and then by only 0.15%), and even then it will still be far above the economically optimal reserve margin of 10.2%⁴ determined by Brattle in the January 2014 Brattle Study. The equilibrium reserve margin of 11.5%⁵ determined by Brattle will not be reached until 2021 (if then), and the economically optimal reserve margin of 10.2% not until 2022.

Accordingly, nothing before us today shows there is any problem with the reserve margin in ERCOT's energy-only market. This leads me to conclude that analyzing various alternative market structures or their respective costs is premature, because the market that we currently have is functioning reasonably well. By 2019 our energy market will be twenty years old, and still operating at a reserve capacity above the Brattle predicted natural equilibrium of 11.5% or the economically optimal reserve margin of 10.2%, and only slightly below ERCOT's current 13.75% target reserve margin.

¹ Memorandum of Chairman Donna Nelson, Project No. 40000 (January 22, 2014).

² ERCOT Preliminary Load Forecast 012014 (available at <http://www.ercot.com/calendar/2014/01/20140127-CDRWorkshop>).

³ Samuel A. Newell, et al., *Estimating the Economically Optimal Reserve Margin in ERCOT*, at v. (January 31, 2014).

⁴ *Id.* at iv.

⁵ *Id.* at vi.

However, Brattle has raised an issue which this Commission has somewhat hastily passed over — specifically, whether our current target reserve margin based upon a 1-in-10 year loss of load event (0.1 LOLE) is the most appropriate reliability standard. Given the lack of urgency in moving from our current market design, I submit we should first analyze the appropriateness of ERCOT’s reliability standard and whether a change in that reliability standard is warranted. Brattle more than implicitly recommends that the Commission undertake this action. If the Commission were to adopt a mandatory reserve margin, what Brattle refers to as a “reliability-based standard,” they recommend the adoption of the “normalized expected unserved energy” (EUE)⁶ standard because it considers the magnitude and duration of events among its factors.⁷ Adopting a EUE approach would constitute a total redesign of ERCOT’s reliability standard, which should not be done without careful evaluation by the Commission and the ERCOT stakeholders. Analyzing the EUE recommendation should be conducted as part of a truly broad and intensive study of the appropriateness of ERCOT’s reliability standard and resulting reserve margin.

Therefore, I would urge this Commission to open a particular project focused upon all aspects of ERCOT’s reliability standard and resulting reserve margin, including, without limitation, whether it is necessary to adopt the resulting standard as a target or a requirement. At this point I have no opinion as to whether we should ultimately stick with ERCOT’s current 0.1 LOLE standard⁸, modify the LOLE standard or adopt a EUE standard at a level to be determined. It does, however, strike me as premature to study alternatives to ERCOT’s current market design unless and until this Commission determines the appropriate reliability standard, the installed capacity reserve margin required to achieve the standard and nature of the resulting reserve margin.

Initially, I would ask ERCOT to provide us with information as to what installed capacity reserve margin is required to meet a 6 hour LOLE, a 12 hour LOLE and a 15 hour LOLE.⁹ Staff can take that information and develop a process over the next few months that can lead to one or more workshops this summer or early fall so that this Commission and the stakeholders can make an informed decision before the end of this year.

Consequently, both for reasons of cost and need, I would defer asking Brattle to do an additional study along the lines laid out in the Chairman’s Memorandum until we determine, based upon real data, ERCOT’s appropriate reliability standard and the nature of the standard. Only then should we consider conducting a study to compare ERCOT’s current market design with any other market design.

⁶ *Id.*

⁷ The EUE reliability standard used in those markets is usually set at a 0.001% level. Newell et al. *supra* note 3, at vi. For further reference, see North American Electric Reliability Corporation, *2012 Long-Term Reliability Assessment*, (November 2012).

⁸ In the interest of full disclosure, I must confess to a healthy skepticism of the utility of the 1 in 10 standard.

⁹ Newell et al., *supra* note 3, at v. The January 2014 Brattle Study determines the economically optimal reserve margin for 0.1 LOLE and 0.001% EUE standards.

Memo Re: Corrected load forecast/reliability standard
Project No. 40000
February 5, 2014
Page 3 of 5

I realize that this is a pretty significant change from my original intended memorandum. Our next open meeting is tomorrow and I understand that you may each wish to have more time to contemplate my proposal. Should either of you so desire, I am more than willing to wait until our next open meeting to discuss these issues with you. As I am still digesting the January 2014 Brattle Study, I would ask that we defer a decision on the Chairman's Memorandum until the next open meeting as well.

I look forward to discussing this issue with you at the open meeting.

Table 1: Forecasted Reserve Margins with Corrected Peak Demand

2013 Report on the Capacity, Demand, and Reserves in the ERCOT Region Summer Summary With Peak Demand Corrected for Forecast Errors

These values come from the updated preliminary load forecast.

Load Forecast:	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Summer Peak Demand, MW	68,096	69,057	70,014	70,871	71,806	72,859	73,784	74,710	75,631	76,550
less LRS Serving as Responsive Reserve, MW	1,222	1,222	1,222	1,222	1,222	1,222	1,222	1,222	1,222	1,222
less LRS Serving as Non-Spinning Reserve, MW	0	0	0	0	0	0	0	0	0	0
less Emergency Response Service	475	523	575	632	696	765	842	926	1019	1121
less Energy Efficiency Programs (per Utilities Code Section 39.905 (b-4))	518	648	781	917	1054	1193	1210	1225	1238	1238
Firm Load Forecast, MW	65,881	66,665	67,436	68,099	68,834	69,679	70,510	71,337	72,152	72,969
Resources:	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Installed Capacity, MW	64,998	64,998	64,998	64,998	64,998	64,998	64,998	64,998	64,998	64,998
Capacity from Private Networks, MW	4,331	4,331	4,331	4,331	4,331	4,331	4,331	4,331	4,331	4,331
Effective Load-Carrying Capability (ELCC) of Wind Generation, MW	920	920	920	920	920	920	920	920	920	920
RMR Units to be under Contract, MW	0	0	0	0	0	0	0	0	0	0
Operational Generation, MW	70,248									
50% of Non-Synchronous Ties, MW	628	628	628	628	628	628	628	628	628	628
Switchable Units, MW	2,977	2,977	2,977	2,977	2,977	2,977	2,977	2,977	2,977	2,977
Available Mothballed Generation, MW	618	722	590	430	246	167	167	167	167	167
Planned Units (not wind) with Signed IA and Air Permit, MW	2,927	3,497	4,881	6,261	6,261	6,261	6,261	6,261	6,261	6,261
ELCC of Planned Wind Units with Signed IA, MW	187	389	399	399	399	399	399	399	399	399
Total Resources, MW	77,586	78,462	79,724	80,944	80,760	80,681	80,681	80,681	80,681	80,681
less Switchable Units Unavailable to ERCOT, MW	-317	-317	-317	-317	-317	-317	-317	0	0	0
less Retiring Units, MW	-354	-354	-354	-354	-354	-1,199	-1,199	-1,199	-1,199	-1,199
Resources, MW	76,915	77,791	79,053	80,273	80,089	79,165	79,165	79,482	79,482	79,482
Reserve Margin (Resources - Firm Load Forecast)/Firm Load Forecast	16.7%	16.7%	17.2%	17.9%	16.4%	13.6%	12.3%	11.4%	10.2%	8.9%

Resulting in these calculated reserve margins. No other changes to the CDR are made.

ERCOT Revised Load Forecast

			Preliminary			Annual
	May CDR	Peak	Forecast	Peak	Annual	Energy
Year	Peak (MW)	Growth %	Peak (MW)	Growth %	Energy (Mwh)	Growth %
2014	69,807		68,096		336,339,278	
2015	72,071	3.2%	69,057	1.4%	342,899,083	2.0%
2016	74,191	2.9%	70,014	1.4%	349,440,151	1.9%
2017	75,409	1.6%	70,871	1.2%	355,921,959	1.9%
2018	76,186	1.0%	71,806	1.3%	362,338,206	1.8%
2019	76,882	0.9%	72,859	1.5%	368,702,126	1.8%
2020	77,608	0.9%	73,784	1.3%	375,033,707	1.7%
2021	78,380	1.0%	74,710	1.3%	381,368,883	1.7%
2022	79,055	0.9%	75,631	1.2%	387,675,537	1.7%
2023	79,651	0.8%	76,550	1.2%	393,961,028	1.6%
2024	N/A	N/A	77,471	1.2%	400,247,436	1.6%