

PUC DOCKET NO. 40000

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

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**PUBLIC UTILITY COMMISSION
OF TEXAS**

**COMMENTS OF SPEER (SOUTH-CENTRAL PARTNERSHIP FOR ENERGY
EFFICIENCY AS A RESOURCE) IN RESPONSE TO QUESTIONS POSED BY THE
COMMISSION IN THE AUGUST 29th OPEN MEETING.**

SPEER is a member-based, non-profit regional energy efficiency organization working in Texas to increase adoption of energy efficient products, services, and technologies. SPEER appreciates the opportunity to submit comments related to Project No. 40000, the proceeding to ensure resource adequacy in Texas.

We have recently published a report entitled “Toward a More Efficient Electric Market”¹ exploring how Texas might incorporate efficiency within the current or anticipated market constructs. We continue to evolve our thinking about how energy efficiency could be included as a resource in the ERCOT market. It is our hope to stimulate a more robust policy discussion among stakeholders in Texas, about how to include energy efficiency resources, such as improved building insulation, high efficiency air conditioning, appliances, and lighting, and permanent load shifts that do not require dispatch, in the market directly.

If the PUCT determines to develop a capacity market or acquire a marginal capacity service of some kind, it is clear from the experience in the markets in the east, northeast, and Midwest, that it is possible to allow end-use efficiency upgrades to compete directly to provide the additional capacity the State seeks. The existing capacity markets give us several years of experience upon which to draw to design a uniquely Texas alternative that fits with the market design selected.

¹ <http://eepartnership.files.wordpress.com/2013/06/toward-a-more-efficient-electric-market-june-2013.pdf>

Efficiency should be allowed to bid directly against new and existing generation resources. The capacity of efficiency measures could be defined based on reliable demand reduction contributed throughout the hours of peak demand in the summer, as in other markets.

Texas is unique in its reliance upon an energy-only market, however, and no market has developed a mechanism for reduced consumption to compete for energy generation and distribution in the daily or real-time energy markets. While we recognize this might prove more challenging, building science has advanced to the point where we can reliably determine the load reduction associated with most common efficiency measures throughout the year. Advanced meters, building monitoring systems, and communications technologies provide new avenues for near real-time verification. Therefore, efficiency could conceivably also participate in the energy market, whether a new capacity element is added to the ERCOT market design or not, through the application of building science and engineering or active monitoring.

Demand reduction curves can be constructed for any common measure or portfolio of measures, which can be used to modify the demand curve against which competing generation bids would be selected in the day-ahead or real-time markets. Such curves could be based upon more sophisticated models that respond to weather variability or simplified demand profiles.

Stimulating incremental efficiency investment through participation in the organized market could have a significant impact on the Texas market. To implement such a design enhancement would require that ERCOT develop additional analytical capabilities to qualify, register and verify the contribution of efficiency resources. This in turn, however, would also better equip ERCOT to understand the impact of efficiency on the market and on load forecasting, which is significant.

In fact, the Commission asked for comments on the inputs to the CDR, the accuracy of which becomes all the more critical should the Commission adopt a mandatory reserve margin. Overestimated demand would lead to procuring resources unnecessarily, while underestimating would lead to scarcity and even rolling outages.

In the PUCT open meeting on August 29, Commissioner Anderson noted that, with respect to ERCOT's load forecast, the relationship between economic growth and peak load growth seems to have shifted from its historic pattern.² Other regions have noticed the same phenomena. Nationally, energy efficiency has driven the realignment of economic activity and load growth (both peak and base load consumption), because energy productivity has substantially increased over the last three decades. The US now obtains 100% more economic output from each dollar spent on energy than it did in 1970 (see Figure 1 at the end of these comments).³

The trend toward increased energy productivity continues unabated. For instance, a house built to the 2012 International Energy Conservation Code uses between 18-29% less energy (see Figure 2)⁴ on peak than a house built to the 2009 energy code (which in turn was significantly more energy efficient than the code preceding it). In Texas, 22 cities have adopted the 2012 code thus far, and many more are considering it.

Appliance standards result in similarly significant savings. For instance, since 1990: new clothes washers must use 70% less energy; new dishwashers must use 40% less energy; and, new air conditioners must use 50% less energy. The US DOE recently began the process of updating standards for commercial refrigeration and walk-in coolers and freezers.

In addition, the relationship of peak and average consumption may be changing based on the market response to the escalating market offer caps and rate-related offerings such as “free nights and weekends” plans. A number of retailers are offering a variety of incentives or pricing options that are likely having an impact, which ERCOT has only recently made an attempt to identify. And larger customers are taking unilateral measures to reduce exposure to peak prices.

² Kelso King, “Texas PUC Open Meeting – August 29, 2013 – Highlights”

³ US Energy Information Administration, “AEO2013 Overview.”

http://www.eia.gov/forecasts/aeo/er/early_intensity.cfm

⁴ Depending on climate zone, see Kim, Hyojin (2012). “A Comparison of Building Energy Code Stringency.” Texas A&M Energy Systems Laboratory. http://esl.tamu.edu/docs/terp/legislative/ESL-TR-11-12-05_Revised%20AUG282012.pdf

The ERCOT Generation Adequacy Task Force made efforts earlier this year to evaluate whether a “bottom-up” approach could be used to compile an accurate accounting of efficiency’s effects. It was ultimately decided that there is insufficient information available upon which to base such a forecast, so ERCOT has adopted a “top-down” approach in which it is hoped that higher level aggregate data will inherently reflect the native rate of adoption of energy efficiency, including the effect of ongoing efficiency programs administered by the TDUs.⁵ We expect neither option is likely to be wholly satisfactory unless the ERCOT staff is allowed and encouraged to develop additional analytical capabilities in the area of energy efficiency.

While it is possible to anticipate the efficiency gains likely to be associated with planned implementation of building codes and appliance standards, adoption rates and enforcement practices impact its timing. Even more difficult to anticipate will be the efficiency gains from energy efficiency retrofits, all the more so because these activities are occurring outside the organized electric market. Were Texas to accommodate the inclusion of efficiency resources in the operation of the ERCOT market, it would certainly expand its ability to anticipate additional impacts as they evolve, such as the coming array of digital energy management tools for customers of all sizes, tied to the advanced metering infrastructure in the state, distributed generation, thermal and electric energy storage, electric vehicles, advanced lighting, and so on.

In conclusion, Chairman Nelson has herself said, whenever a resource is excluded from the market, prices are made artificially higher. We propose that a concerted effort be made to bring energy efficiency into the market so that:

- Incremental efficiency resources can contribute to resource adequacy cost effectively.
- Energy efficiency can compete with other resources and contribute to price formation.
- ERCOT can develop a more robust understanding of ever advancing energy efficient equipment, technologies, processes, and practices, and how they shape future demand.

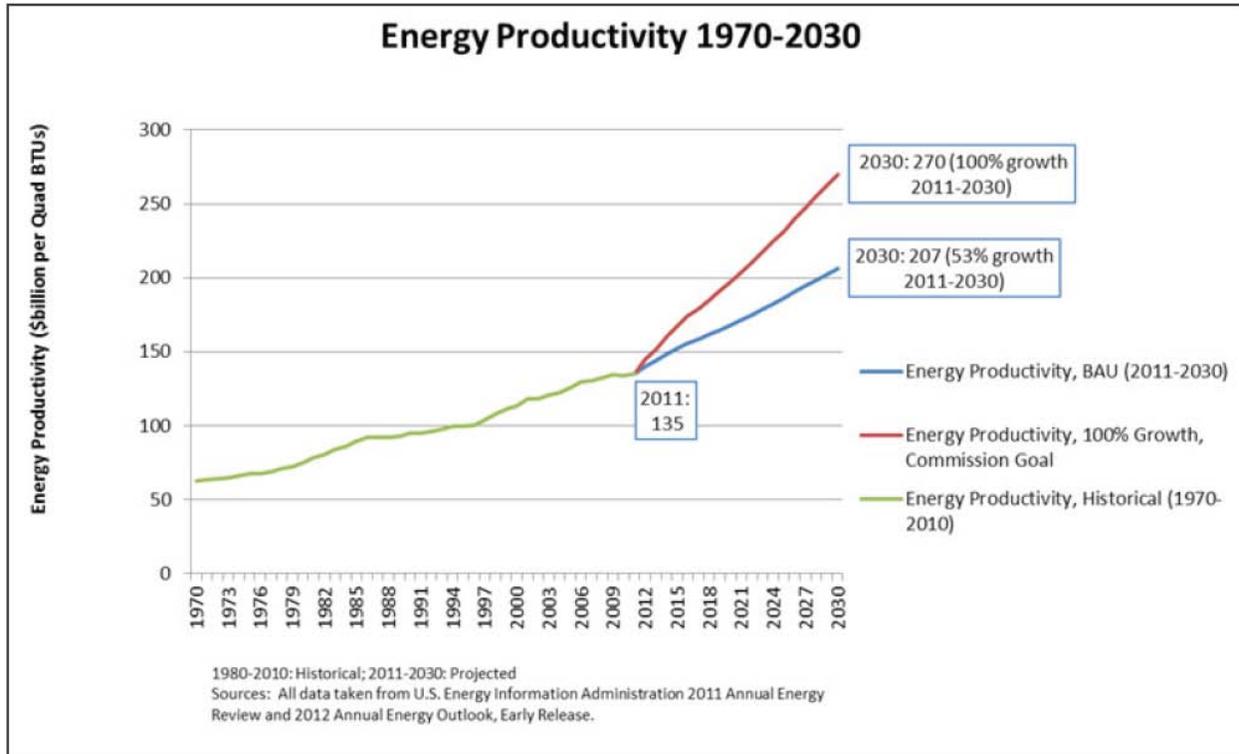
⁵http://www.ercot.com/content/meetings/gatf/keydocs/2013/0610/GATF_CDR_EnergyEfficiencyCapacityForecastMethodology.ppt

We look forward to participating in the public discussion of market design and working with the Commission, ERCOT, and market stakeholders to create a framework for energy efficiency to participate in the market and more fully contribute to resource adequacy in Texas.

Respectfully Submitted,

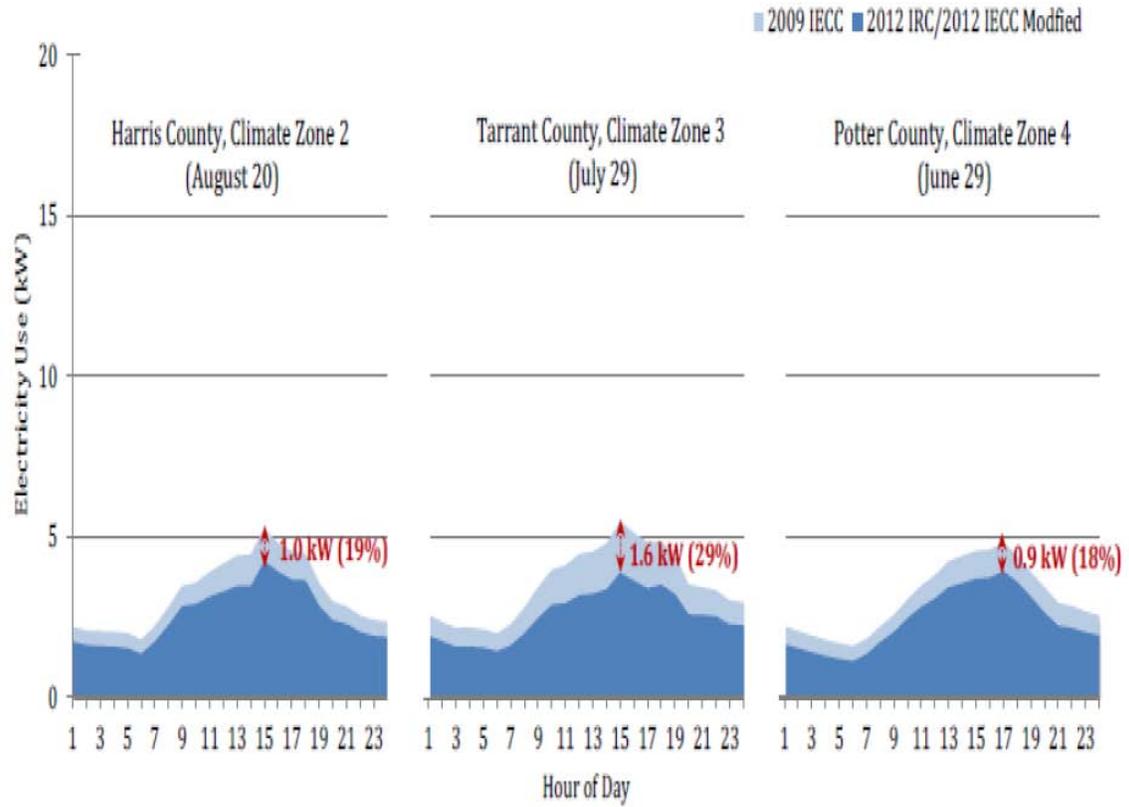
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Figure 1: Energy Productivity has more than doubled in the last 40 years. Under a Business as Usual case, it will increase another 50% by 2030. If the programs and policies outlined by the Alliance Commission on National Energy Efficiency Policy are implemented, energy productivity could increase even faster, doubling again in the next 17 years.



⁶From the Alliance to Save Energy http://www.ase.org/sites/default/files/full_commission_report.pdf

Figure 2: The 2012 IECC has been adopted by 22 cities and will likely be adopted by many more. Compared to the 2009 IECC, it reduced peak load in a comparable house 18-29% depending on climate zone.



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⁷ Kim, Hyojin (2012). "A Comparison of Building Energy Code Stringency." Texas A&M Energy Systems Laboratory. http://esl.tamu.edu/docs/terp/legislative/ESL-TR-11-12-05_Revised%20AUG282012.pdf