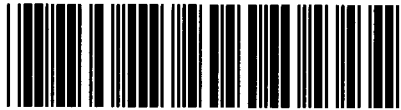


Control Number: 40000



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October 30, 2013

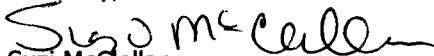
Donna Nelson, Chair  
Kenneth Anderson, Commissioner  
Brandy Marty, Commissioner  
Public Utility Commission of Texas  
1701 N. Congress Ave  
P.O. Box 13326  
Austin, TX 78711-3326

Re: Project No. 40000 Commission Proceeding to Ensure Resource Adequacy

Dear Commissioners:

Attached please find a presentation summarizing the recommendations made by Tom Pierson with TAS Energy, as a representative of the thermal members of TESA, at the October 8, 2013 Workshop. TAS appreciates the opportunity to work with the Commission and ERCOT to improve the data included in the CDR by accurately reflecting the output of the current fleet of generation during the system peak. Adding thermal storage to the existing gas generation resources can significantly increase this output by lowering the temperature of the resource.

Sincerely,

  
Suzi McClellan

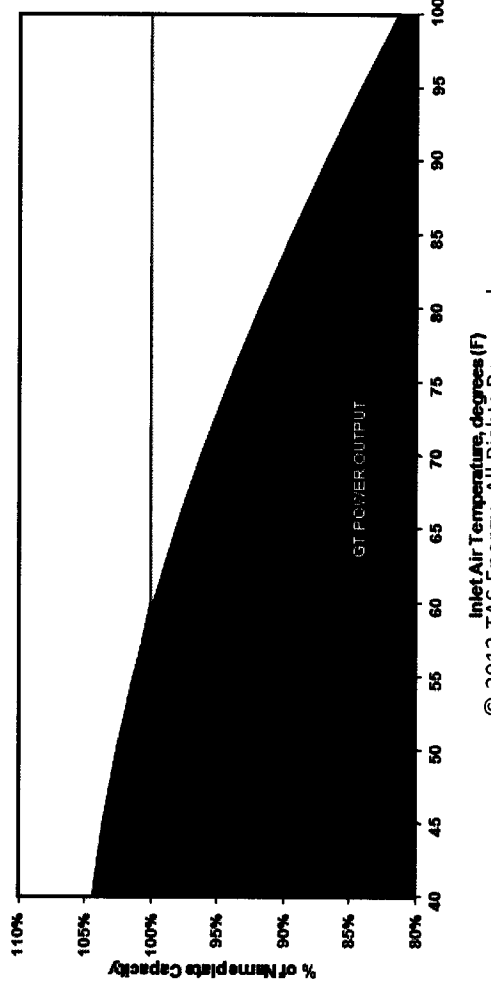
Texas Energy Storage Alliance  
Good Company Associates  
3103 Bee Caves Road, Suite 135  
Austin, Texas 78746  
512-279-0758 (office)  
512-270-0760 (fax)

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# Demand AND Generation are BOTH affected by Temperature



- **DEMAND:** As is expected, ERCOT's Peak Power Demand coincided with Peak Temperature periods for each of the last 3 years:
  - Aug 7, 2013 Peak = 67,180 MWs (59.3% from Nat Gas, 3.4% Wind)
  - June 25 and July 25, 2012 = approx. 65,000 MWs
  - Aug 3, 2011 = 68,370 MWs
- **GENERATION:** ERCOT's peak power supply decreases as temperatures increase- At 100F, gas turbines (GT) have lost nearly 20% of their nameplate capacity. This is because GT output declines about 1% from its nameplate capacity for every 2.5 to 4F increase in temperature (nameplate capacity is set at 59F).
  - Every summer, ERCOT is strained with a loss of conservatively 2,500 MWs due to this temperature affected decline in gas generation capability.



Inlet Air Temperature, Degrees (F)  
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# Currently for Resource Adequacy



- Resource entities in ERCOT currently report capacity deration at certain temperatures on the Resource Asset Registration Form (RARF), however they can choose any number of temperature points to report at, and there is no set temperature (ie peak) that every resource **must** report.
- Protocol Section 8.1.1.2 states that the Resource Entity is to perform Seasonal HSL (High Sustainable Limit) tests within first 15 days of each Season. There are no requirements to run these tests at specified temperature at the time of the test – as long as the test is ran within the Season.
  - Summer season is June, July and August. The first 15 days of June is not necessarily going to provide the summer peak and each generator could be reporting on different days and at different temperatures
- These pieces of RARF data are used for the CDR and SARA reports

# Re-evaluating Resource Adequacy



- Since GTs make up the primary generation used for ERCOT Summer Peaks (approximately 60% of peak generation), this resource needs to be rated/evaluated at actual peak temperatures to accurately gauge resource adequacy from each gas generation resource
- By not establishing Peak Generation Capacity ratings at the peak summer temperatures, Reserve Margin forecasts are inaccurate
- As it turns out, it is actually much lower cost and provides greater certainty/performance to eliminate the weather derate on the Gas Turbine generation rather than build more generation, however currently the ERCOT market does not support getting financing to support this retrofit (or new generation)

# Generation Storage on a Combined Cycle in PJM



*Installed cost per  
incremental megawatt  
can range from:*

**\$250-\$300/KW Greenfield  
\$350-\$550/KW Retrofit**

# Conclusion



- Assessments of summer time capacity should be measured at a true summertime PEAK temp (not an average)...probably 100 or 105F for every gas generation resource
- Market value needs to be provided for ensuring adequate Summer Peak capacity. PJM has shown that a capacity market & a peak summer temperature rating point ensures a cost-effective way to meet summer peaks.