

## **8.3 Power Supply**

### **8.3.1 Present Generation Capacity**

Installed generation capacity in the ERCOT region is approximately 81,000 MW, which includes 7,260 MW of “mothballed” natural gas-fired generation capacity, that is, units that have suspended operations from the grid for more than six months (Reference 8.3-1).

Although not a formal definition, ERCOT considers the cost of operation as the identifier of baseload generation units. Currently, ERCOT considers the larger solid fuel (nuclear and coal  $\geq 550$  MW) units to be the baseload generation units. Approximately 22% of the currently installed generation capacity is provided by baseload generation units. ERCOT would consider STP 3 & 4 to be baseload generation units.

### **8.3.2 Generation Capacity Forecast**

ERCOT prepares an annual working paper known as the Capacity, Demand, and Resources Report or CDR (Reference 8.3-2). It is developed from data provided by the market participants as part of the annual load data request, the generation asset registrations, and from data collected for the annual U.S. Department of Energy Coordinated Bulk Power Supply Program Report. The working paper calculates the generation resources reported to be available by market participants.

The CDR considers all of the generation resources in the ERCOT region including coal, natural gas, nuclear, wind, landfill gas, water, petroleum coke, diesel, waste heat, generation available from private networks, the asynchronous ties, and switchable resources.

There are several constraints on which resources are listed as available in the CDR. Those most important to this discussion are:

- Only those new generation resources for which the owners have initiated full transmission interconnection study requests through ERCOT are included as planned generation.
- If an air permit is required for a new generation unit, the unit must have received that permit before it is included as planned generation.

Thus, the May 2007 CDR did not include STP 3 & 4, because the owners had not filed a full transmission interconnection study request with ERCOT.

Table 8.3-1 provides the complete summary from the CDR of the resources expected to be available each summer from 2007-2012. The focus is on the summer, because the loads in ERCOT are substantially higher in the summer than the winter. Table 8.3-1 establishes the extent of the CDR analysis. Table 8.3-2 concentrates on the contribution of baseload generation units to meeting the forecast summer peak demand. Table 8.3-3 is a list of generation units considered to be the baseload units used to develop Table 8.3-2.

Figure 8.3-1 is contained in the CDR and provides the ERCOT generation capacity projections for 2012-2027. The program that develops the curves takes many factors into consideration:

- Increasing age of generation units, which may lead to inefficiency, increased outage time, or reduced output capacity
- New units being connected to the grid (capacity and date) based on market participants' reported plans
- Units being decommissioned (capacity and date) in accordance with market participants' reported plans
- Units being mothballed (capacity and date) based on market participants' reported plans
- Units being taken out of mothballed status and reconnected to the grid (capacity and date) based on market participants' reported plans

The figure provides three possible capacity scenarios based on the aging of existing units to assist the market participants in making sound economic decisions. Based on company operating experience and specific economic constraints, some market participants may choose to not operate their units past thirty years, some past forty years, or some past fifty years. The three aging scenarios allow the market participants to understand the forecast generation capacity with and without units of various ages. This provides the market participants flexibility in their economic decisions.

ERCOT does not dictate to the market participants which units should be mothballed, or when mothballed units should be returned to the grid, or when new units should be planned and constructed. ERCOT relies on market economic forces to provide the market participants with the impetus to make such economic decisions. ERCOT simply provides as much information as possible to assist the market participants in making good economic decisions that will benefit the whole ERCOT region.

### **8.3.3 References**

- 8.3-1 ERCOT Report on Existing and Potential Electric System Constraints and Needs, December 2006, available at [http://www.ercot.com/news/presentations/2006/2006\\_ERCOT\\_Reports\\_Transmission\\_Constraints\\_and\\_Needs.pdf](http://www.ercot.com/news/presentations/2006/2006_ERCOT_Reports_Transmission_Constraints_and_Needs.pdf).
- 8.3-2 Report on the Capacity, Demand, and Reserves in the ERCOT Region, May 2007, available at <http://www.ercot.com/news/presentations/2007/07CDR05172007-final.xls>.

Table 8.3-1 Forecast Summer Resources for 2007-2012

<b>Resources:</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Installed Capacity, MW	61,424	61,424	61,424	61,424	61,424	61,424
Capacity from Private Networks, MW	6,513	6,217	6,217	6,217	6,217	6,217
Effective Load-Carrying Capability (ELCC) of Wind Generation, MW	298	298	298	298	298	298
RMR Units under Contract, MW	169	169	169	169	0	0
<b>Operational Generation, MW</b>	<b>68,404</b>	<b>68,108</b>	<b>68,108</b>	<b>68,108</b>	<b>67,939</b>	<b>67,939</b>
50 % of Non-Synchronous Ties, MW	553	553	553	553	553	553
Switchable Units, MW	2,848	2,848	2,848	2,848	2,848	2,848
Available Mothballed Generation, MW	165	510	419	594	558	522
Planned Units (not wind) with Signed IA and Air Permit, MW	0	550	550	550	1,300	2,100
ELCC of Planned Wind Units with Signed IA, MW	0	171	174	174	174	174
<b>Total Resources, MW</b>	<b>71,970</b>	<b>72,740</b>	<b>72,652</b>	<b>72,827</b>	<b>73,372</b>	<b>74,136</b>
less Switchable Units Unavailable to ERCOT, MW	158	317	317	0	0	0
less Retiring Units, MW	0	375	375	433	433	433
<b>Resources, MW</b>	<b>71,812</b>	<b>72,048</b>	<b>71,960</b>	<b>72,394</b>	<b>72,939</b>	<b>73,703</b>

Reference 8.3-2

Table 8.3-2 Forecast Summer Capacity, Baseload Generation Units Only

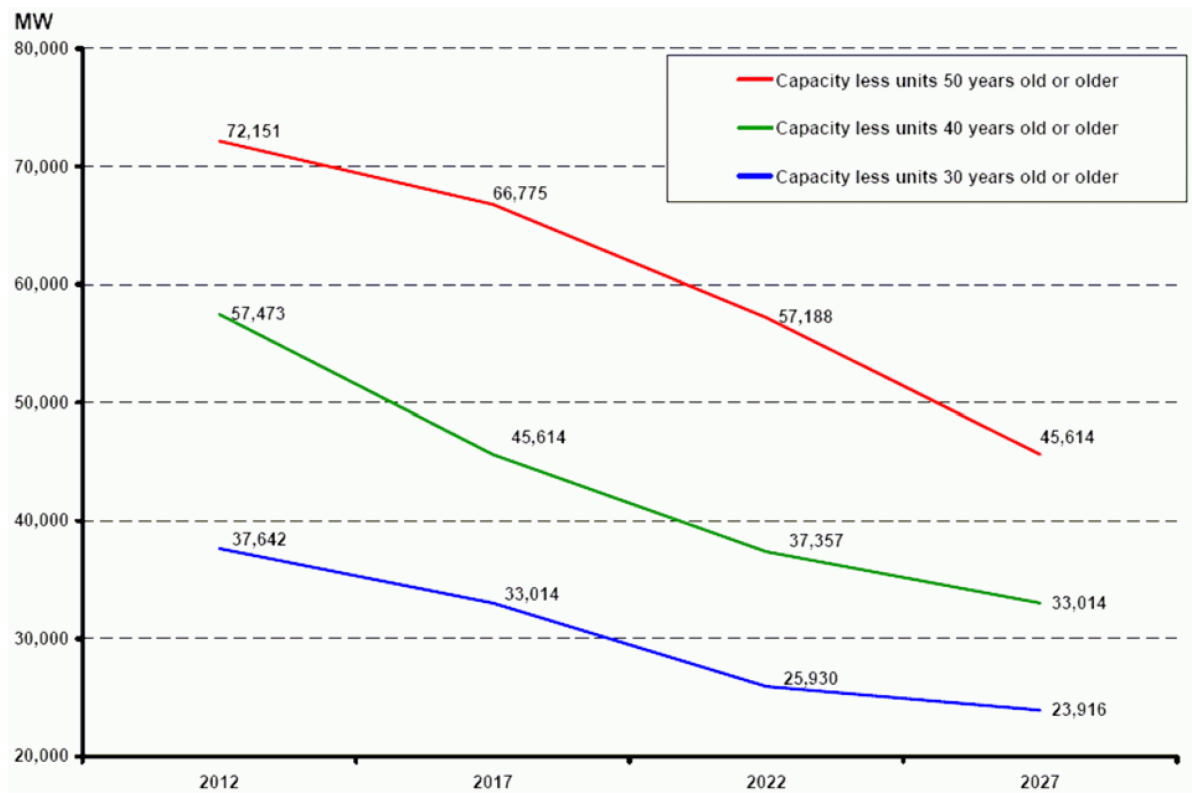
	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
<b>Resources, MW</b>	71,812	72,048	71,960	72,394	72,939	73,703
<b>Baseload Generation, MW</b>	17,621	17,621	19,057	19,998	21,378	22,178
<b>% of Resources that are Baseload Generation</b>	24.5%	24.5%	26.5%	27.6%	29.3%	30.1%

Compiled from Reference 8.3-2

**Table 8.3-3 Baseload Generation Units for Summer Capacity Forecast**

<b>Unit Name</b>	<b>Summer Capacity, MW</b>					
	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
Big Brown 1	597	597	597	597	597	597
Big Brown 2	610	610	610	610	610	610
Coleta Creek 1	633	633	633	633	633	633
Comanche Peak 1	1,164	1,164	1,164	1,164	1,164	1,164
Comanche Peak 2	1,164	1,164	1,164	1,164	1,164	1,164
Fayette Power Project 1	596	596	596	596	596	596
Fayette Power Project 2	608	608	608	608	608	608
J K Spruce 1	560	560	560	560	560	560
Limestone 1	826	826	826	826	826	826
Limestone 2	853	853	853	853	853	853
Martin Lake 1	799	799	799	799	799	799
Martin Lake 2	795	795	795	795	795	795
Martin Lake 3	804	804	804	804	804	804
Monticello 1	560	560	560	560	560	560
Monticello 2	579	579	579	579	579	579
Monticello 3	808	808	808	808	808	808
Oklahoma 1	629	629	629	629	629	629
South Texas 1	1,282	1,282	1,282	1,282	1,282	1,282
South Texas 2	1,282	1,282	1,282	1,282	1,282	1,282
W A Parish 5	657	657	657	657	657	657
W A Parish 6	645	645	645	645	645	645
W A Parish 7	567	567	567	567	567	567
W A Parish 8	603	603	603	603	603	603
Oak Grove 1			855	855	855	855
Sandow 5			581	581	581	581
Oak Grove 2				855	855	855
Comanche Peak 1&2 Upgrade				86	86	86
J K Spruce 2					750	750
Twin Oaks 3					630	630
Sandy Creek 1						800
	<b>17,621</b>	<b>17,621</b>	<b>19,057</b>	<b>19,998</b>	<b>21,378</b>	<b>22,178</b>

Compiled from Reference 8.3-2



Compiled from Reference 8.3-2

**Figure 8.3-1 ERCOT Generation Capacity Projections (MW)**

