Operations Analysis of the ERCOT Capacity, Demand and Reserves (CDR) Report

Bill Blevins

Generation Adequacy Task Force Meeting

August 1, 2011

Goal of Operations in analyzing the CDR

- Reconcile the CDR report in Real Time
- Identify impacts of Outages related to Capacity in the CDR and the impact to Reliability Margins
- Identify areas to focus on for improvement in the Operating Horizon(Current or upcoming season)

Comparison June 27 2011 at 3:30 PM

2011 Report on the Capacity, Demand, and Reserves in the ERCOT Region

Summer Summary

Load Forecast:	**REAL TIME**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Total Summer Peak Demand, MW	62353	63,898	65,665	67,757	70,540	72,591	74,198	75,365	76,654	77,866	79,274
less LAARs Serving as Responsive Reserve, MW	1,063	1,063	1,063	1,063	1,063	1,063	1,063	1,063	1,063	1,063	1,063
less LAARs Serving as Non-Spinning Reserve, MW	0	0	0	0	0	0	0	0	0	0	0
less Emergency Interruptible Load Service	421	421	463	509	560	616	678	745	820	902	992
less Energy Efficiency Programs (per SB1125)	128	128	259	395	536	681	829	980	1133	1289	1448
Firm Load Forecast, MW	**60,742**	**62,286**	**63,880**	**65,790**	**68,381**	**70,231**	**71,628**	**72,576**	**73,638**	**74,612**	**75,771**

Resources:	**REAL TIME**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Installed Capacity, MW	56,244	63,859	63,859	63,859	63,859	63,859	63,859	63,859	63,859	63,859	63,859
Capacity from Private Networks, MW	3,935	5,023	5,071	5,074	5,074	5,074	5,074	5,074	5,074	5,074	5,074
Effective Load-Carrying Capability (ELCC) of Wind Generation, MW	1,378	822	822	822	822	822	822	822	822	822	822
RMR Units to be under Contract, MW	0	0	0	0	0	0	0	0	0	0	0
Operational Generation, MW	**61,557**	**69,704**	**69,752**	**69,755**	**69,755**	**69,755**	**69,755**	**69,755**	**69,755**	**69,755**	**69,755**
50% of Non-Synchronous Ties, MW	625	553	553	553	553	553	553	553	553	553	553
Switchable Units, MW	2,830	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962
Available Mothballed Generation , MW	0	0	110	146	164	181	198	198	198	198	198
Planned Units (not wind) with Signed IA and Air Permit, MW	0	260	1,940	1,940	2,720	4,880	5,500	6,780	6,780	6,780	6,780
ELCC of Planned Wind Units with Signed IA, MW	70	13	65	113	131	131	131	131	131	131	131
Total Resources, MW	**65,082**	**73,492**	**75,382**	**75,469**	**76,284**	**78,461**	**79,099**	**80,379**	**80,379**	**80,379**	**80,379**
less Switchable Units Unavailable to ERCOT, MW	317	317	317	317	317	317	317	0	0	0	0
less Retiring Units, MW	0	0	0	0	0	0	0	0	0	0	0
Resources, MW	**64,765**	**73,175**	**75,065**	**75,152**	**75,967**	**78,144**	**78,782**	**80,379**	**80,379**	**80,379**	**80,379**
Reserve Margin	**6.6%**	**17.5%**	**17.5%**	**14.2%**	**11.1%**	**11.3%**	**10.0%**	**10.8%**	**9.2%**	**7.7%**	**6.1%**

(Resources - Firm Load Forecast)/Firm Load Forecast

Comparison July 14 2011 at 5:00 PM

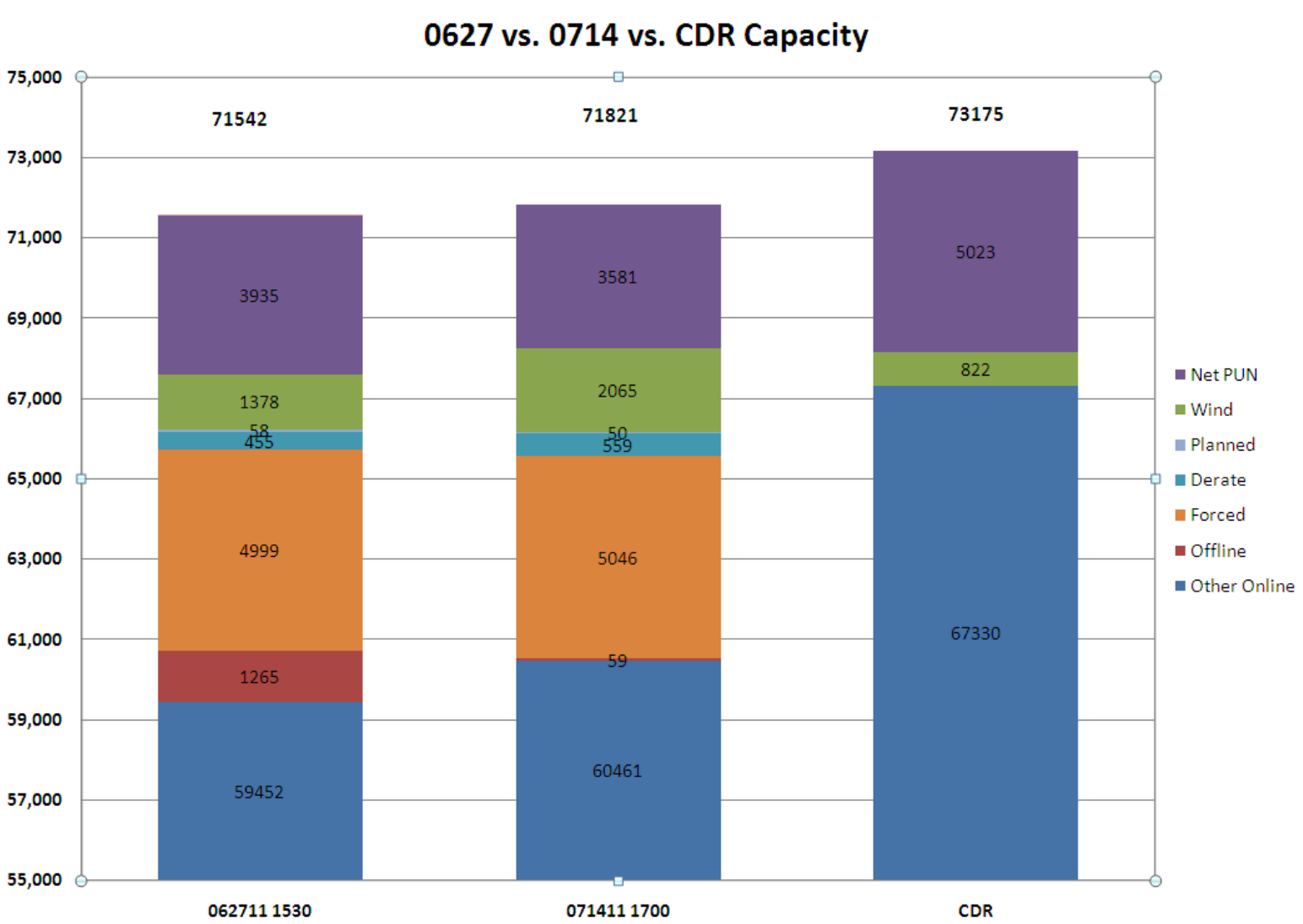
2011 Report on the Capacity, Demand, and Reserves in the ERCOT Region

Summer Summary

Load Forecast:	REAL TIME	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Summer Peak Demand, MW	64180	63,898	65,665	67,757	70,540	72,591	74,198	75,365	76,654	77,866	79,274
less LAARs Serving as Responsive Reserve, MW	1,063	1,063	1,063	1,063	1,063	1,063	1,063	1,063	1,063	1,063	1,063
less LAARs Serving as Non-Spinning Reserve, MW	0	0	0	0	0	0	0	0	0	0	0
less Emergency Interruptible Load Service	421	421	463	509	560	616	678	745	820	902	992
less Energy Efficiency Programs (per SB1125)	128	128	259	395	536	681	829	980	1133	1289	1448
Firm Load Forecast, MW	**62,568**	**62,286**	**63,880**	**65,790**	**68,381**	**70,231**	**71,628**	**72,576**	**73,638**	**74,612**	**75,771**

Resources:	REAL TIME	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Installed Capacity, MW	57,094	63,859	63,859	63,859	63,859	63,859	63,859	63,859	63,859	63,859	63,859
Capacity from Private Networks, MW	3,581	5,023	5,071	5,074	5,074	5,074	5,074	5,074	5,074	5,074	5,074
Effective Load-Carrying Capability (ELCC) of Wind Generation, MW	2,065	822	822	822	822	822	822	822	822	822	822
RMR Units to be under Contract, MW	0	0	0	0	0	0	0	0	0	0	0
Operational Generation, MW	**62,740**	**69,704**	**69,752**	**69,755**	**69,755**	**69,755**	**69,755**	**69,755**	**69,755**	**69,755**	**69,755**
50% of Non-Synchronous Ties, MW	731	553	553	553	553	553	553	553	553	553	553
Switchable Units, MW	2,861	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962
Available Mothballed Generation , MW	0	0	110	146	164	181	198	198	198	198	198
Planned Units (not wind) with Signed IA and Air Permit, MW	0	260	1,940	1,940	2,720	4,880	5,500	6,780	6,780	6,780	6,780
ELCC of Planned Wind Units with Signed IA, MW	92	13	65	113	131	131	131	131	131	131	131
Total Resources, MW	**66,424**	**73,492**	**75,382**	**75,469**	**76,284**	**78,461**	**79,099**	**80,379**	**80,379**	**80,379**	**80,379**
less Switchable Units Unavailable to ERCOT, MW	317	317	317	317	317	317	317	0	0	0	0
less Retiring Units, MW	0	0	0	0	0	0	0	0	0	0	0
Resources, MW	**66,107**	**73,175**	**75,065**	**75,152**	**75,967**	**78,144**	**78,782**	**80,379**	**80,379**	**80,379**	**80,379**
Reserve Margin	**5.7%**	**17.5%**	**17.5%**	**14.2%**	**11.1%**	**11.3%**	**10.0%**	**10.8%**	**9.2%**	**7.7%**	**6.1%**
(Resources - Firm Load Forecast)/Firm Load Forecast											

Operations Capacity and CDR comparison



06/27/2011 1,500 MW of the Capacity was not submitted in the Outage Scheduler as a forced outage per Nodal Protocol 3.1.4.6 provisions but has been included in the forced outage category because the Resources tripped,

Summary for GATF

- The CDR Reserve margin in ERCOT typically will accommodate normal Forced Outage/Derate and load variation above normal. This margin can be consumed if both conditions occur simultaneously.

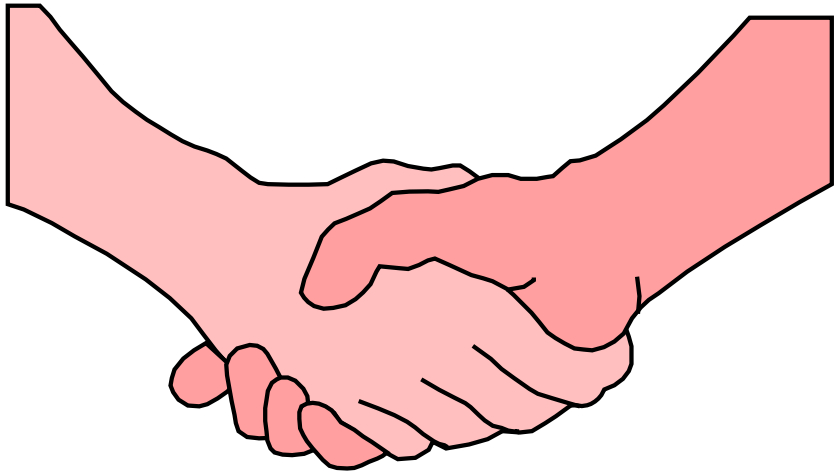
- Installed Capacity MW- Outages and Derates are consuming the capacity.

- Capacity from Private Networks are lower ERCOT is considering revising the questions sent to Private Networks to better capture expected output to the grid.

- Effective Load-Carrying Capability (ELCC) of Wind Generation, MW is producing higher and could be counted more in the CDR.

- Planned Units (not wind) with Signed IA and Air Permit, MW- Resource is delayed and is expected to be on in the fall.

- If in the next month the current Resource Forced Outage/Derate of capacity continues and ERCOT experiences loads above 66,500 MW then ERCOT would possibly be in an Energy Emergency Alert (EEA) level 1 or higher.



Thank U !!