



INVESTING IN A CLEAN FUTURE



Austin Energy's Resource, Generation and
Climate Protection Plan to 2020 Update

April 30, 2014

Revised as requested on April 30, 2014

INVESTING IN A CLEAN FUTURE

Austin Energy Briefing to Austin Generation Resource Planning Task Force

Babu Chakka

Manager, Energy Market Analysis



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Agenda

- Austin Energy generating unit and overview, including PPA units
- 2011-2013 generation unit production information -annual, monthly and top 10 peak days
- Summary of proposed Generation Plan study scenarios





Austin Energy Generation Overview Sorted by Fuel

Resources/PPA	Rating	Fuel	Ownership / PPA	Install Year/ First year of commercial operation	PPA Expiration date
STP1	218	Nuclear	16% Ownership	1988	
STP2	218	Nuclear	16% Ownership	1989	
FPP 1	302	Coal	50% Ownership	1979	
FPP 2	300	Coal	50% Ownership	1980	
Decker ST1	315	Gas	100% Ownership	1970	
Decker ST2	420	Gas	100% Ownership	1977	
Decker GT1	48	Gas	100% Ownership	1988	
Decker GT2	48	Gas	100% Ownership	1988	
Decker GT3	48	Gas	100% Ownership	1988	
Decker GT4	48	Gas	100% Ownership	1988	
Sand Hill GT1	45	Gas	100% Ownership	2001	
Sand Hill GT2	45	Gas	100% Ownership	2001	
Sand Hill GT3	45	Gas	100% Ownership	2001	
Sand Hill GT4	45	Gas	100% Ownership	2001	
Sand Hill CC	300	Gas	100% Ownership	2004	
Sand Hill GT6	45	Gas	100% Ownership	2010	
Sand Hill GT7	45	Gas	100% Ownership	2010	
Nacogdoches	100	Biomass	PPA	2012	2032
Webberville	30	Solar	PPA	2011	2036
LCRA Wind	10	Wind	PPA	1995	2020
Sweetwater 2	92	Wind	PPA	2005	2017
Sweetwater 3	35	Wind	PPA	2006	2017
Whirlwind	60	Wind	PPA	2007	2027
Hackberry	166	Wind	PPA	2008	2023
Penascal	196	Wind	PPA	2011	2015
Losvientos II	202	Wind	PPA	2013	2037
Whitetail	92	Wind	PPA	2013	2037
Losvientos III	200	Wind	PPA	2015	2040
Losvientos IV	200	Wind	PPA	2016	2041
Hereford II/Jumbo Road	300	Wind	PPA	2016	2035

• Does not include the 150 MW Solar currently under negotiation

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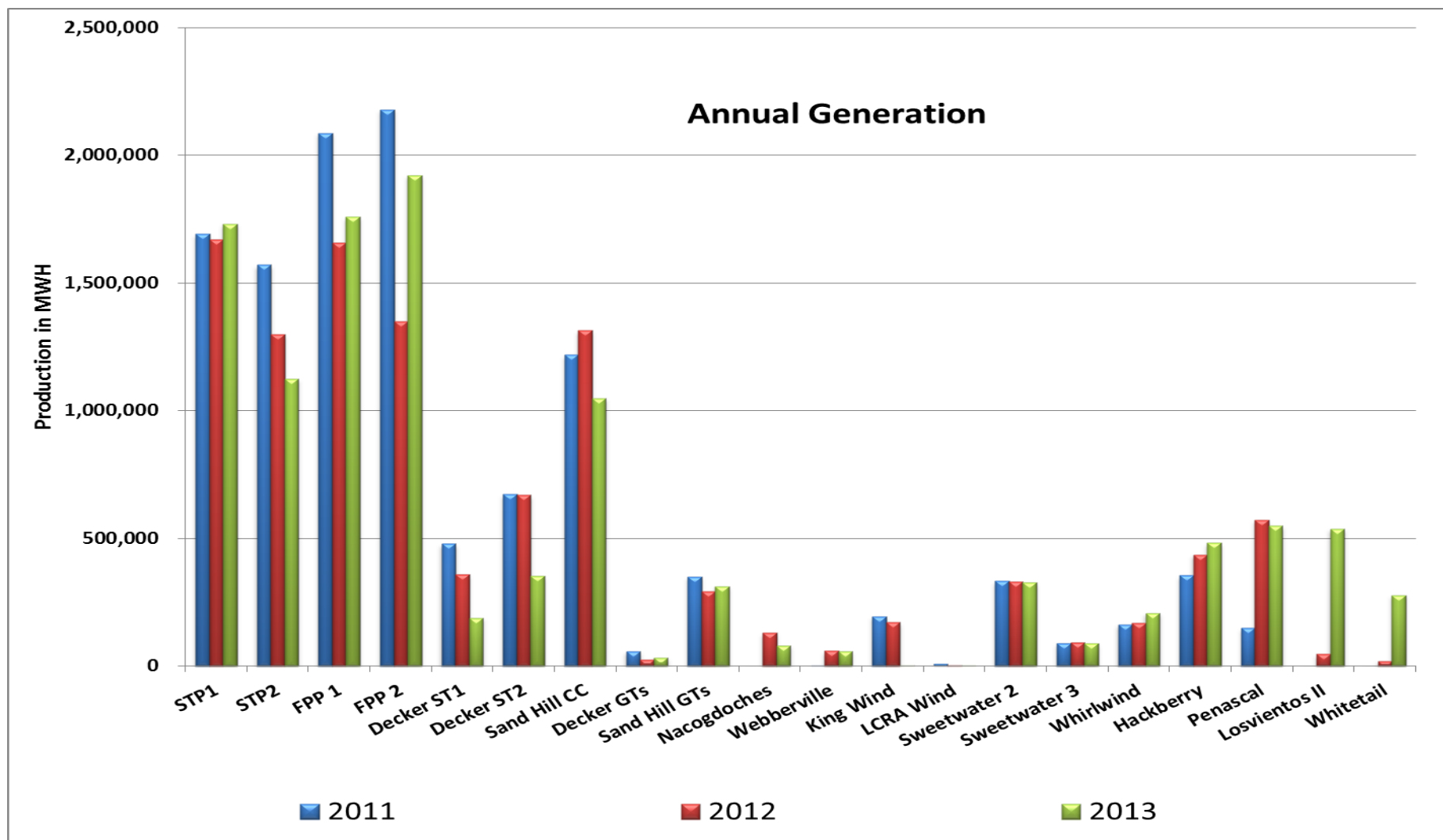
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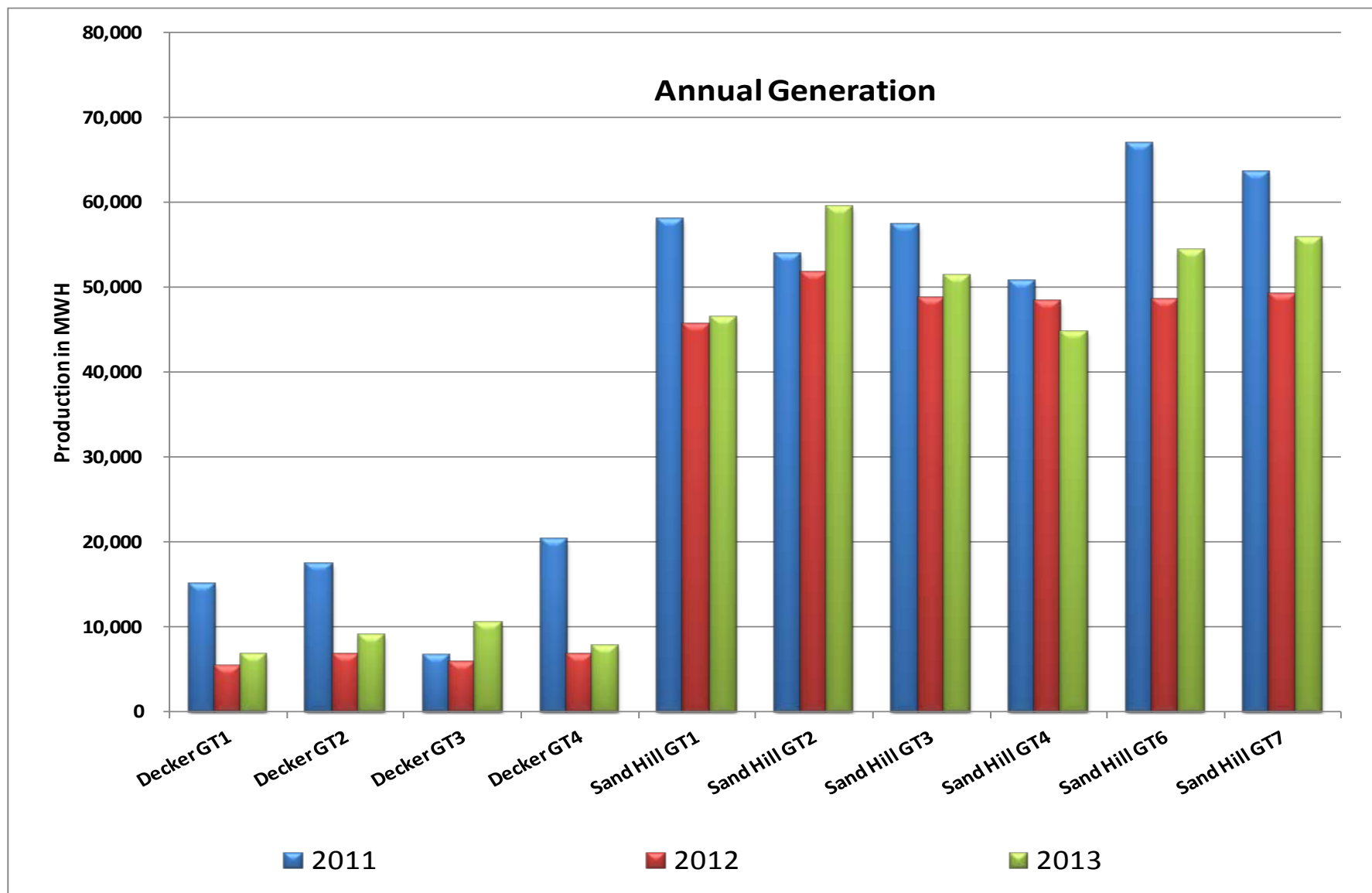


Austin Energy Historical Generation for all resources (2011 - 2013)





Austin Energy Historical Generation for Gas Turbines



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Austin Energy Historical Generation for 2011

Resources/PPA	Rating	2011 Austin Energy Generation in MWH													Capacity
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Factor
STP1	218	161,894	146,320	160,802	9,649	116,458	153,386	157,984	157,462	154,003	160,559	155,480	158,433	1,692,430	89%
STP2	218	161,199	146,918	161,577	154,510	160,196	154,025	158,229	141,256	154,225	148,278	30,688	0	1,571,100	82%
FPP 1	302	104,844	168,362	143,908	182,448	205,066	208,164	219,910	212,943	180,508	165,722	160,449	134,926	2,087,250	79%
FPP 2	300	178,422	169,632	147,757	197,904	202,686	204,684	216,985	172,452	180,695	172,666	160,164	174,241	2,178,288	83%
Decker ST1	315	5,090	19,775	44	16,680	20,484	69,621	117,644	127,727	41,195	11,311	25,178	24,498	479,248	17%
Decker ST2	420	0	29,494	26,096	46,858	70,858	97,249	124,782	154,374	107,130	15,789	0	189	672,818	18%
Decker GT1	48	291	4,325	224	576	754	1,185	2,038	4,682	870	124	0	12	15,080	4%
Decker GT2	48	222	3,673	731	287	709	990	2,581	6,290	1,428	434	35	21	17,401	4%
Decker GT3	48	4	1,696	49	181	271	659	1,059	2,512	167	0	0	0	6,596	2%
Decker GT4	48	225	4,276	608	682	571	1,908	2,946	6,031	1,446	1,269	231	57	20,250	5%
Sand Hill GT1	45	1,545	4,013	1,433	3,006	3,907	6,093	12,579	13,538	6,428	3,731	963	802	58,040	15%
Sand Hill GT2	45	705	3,364	1,054	2,101	3,375	6,296	12,558	13,794	6,757	1,192	1,909	869	53,974	14%
Sand Hill GT3	45	1,624	3,174	39	2,225	3,561	7,572	12,384	14,074	6,637	3,694	1,718	779	57,481	15%
Sand Hill GT4	45	1,190	3,141	1,188	2,396	3,463	6,991	11,796	11,382	5,190	2,486	767	727	50,717	13%
Sand Hill CC	300	119,490	0	49,602	101,155	0	105,677	169,232	168,541	148,702	149,650	63,401	142,684	1,218,135	46%
Sand Hill GT6	45	4,662	5,760	1,924	4,126	5,143	7,244	11,361	12,797	5,797	3,718	2,995	1,389	66,914	17%
Sand Hill GT7	45	3,994	3,729	1,615	3,999	4,789	7,423	11,716	13,032	5,634	4,160	2,438	1,099	63,629	16%
Nacogdoches	100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Webberville	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	283	283	1%
King Wind	77	12,119	15,446	19,935	18,310	18,488	23,943	16,568	13,607	10,475	15,821	16,786	13,025	194,523	29%
LCRA Wind	10	1,553	759	1,146	1,119	860	485	373	271	505	470	1,003	162	8,705	10%
Sweetwater 2	92	24,883	29,761	34,852	33,678	33,094	32,352	18,276	20,500	16,600	29,949	31,769	27,436	333,149	42%
Sweetwater 3	35	5,532	7,785	9,052	9,781	9,953	8,464	4,612	5,590	4,776	7,743	8,556	7,978	89,823	30%
Whirlwind	60	14,007	13,344	10,913	11,687	17,893	18,088	17,093	15,610	11,369	9,212	11,232	13,423	163,872	31%
Hackberry	166	25,353	29,885	26,217	22,744	38,985	37,396	33,106	35,732	26,634	27,430	22,073	29,622	355,178	24%
Penascal	196	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	41,539	61,623	46,039	149,202	35%
Losvientos II	202	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Whitetail	92	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Austin Energy Historical Generation for 2012

Resources/PPA	Rating	2012 Austin Energy Generation in MWH													Capacity Factor
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
STP1	218	159,648	149,235	153,039	153,193	159,912	153,608	158,044	157,643	153,424	99,007	12,647	162,289	1,671,688	87%
STP2	218	0	0	0	37,775	160,299	153,111	157,535	157,400	153,466	160,340	154,794	162,841	1,297,562	68%
FPP 1	302	103,434	86,503	132,942	68,026	186,127	194,166	195,719	154,620	123,043	135,794	144,236	134,284	1,658,893	63%
FPP 2	300	115,407	80,920	131,000	139,926	156,005	190,945	204,225	167,729	122,409	18,882	0	21,659	1,349,106	51%
Decker ST1	315	3,824	0	24,119	81,395	30,213	33,393	42,272	90,713	45,037	5,759	2,624	0	359,350	13%
Decker ST2	420	4,452	0	23,031	102,706	86,450	92,618	114,053	112,632	47,958	51,238	29,305	4,958	669,400	18%
Decker GT1	48	0	0	1,061	889	816	431	372	913	324	440	0	62	5,308	1%
Decker GT2	48	0	0	1,143	1,368	916	736	538	1,588	448	78	0	43	6,857	2%
Decker GT3	48	0	0	0	390	127	1,543	789	1,628	778	573	0	44	5,872	1%
Decker GT4	48	0	0	1,572	1,588	1,344	1,259	316	355	68	241	25	67	6,837	2%
Sand Hill GT1	45	389	138	3,591	6,964	6,374	5,885	6,960	9,132	5,201	0	49	942	45,625	12%
Sand Hill GT2	45	517	372	4,802	6,328	3,591	4,132	7,894	10,433	6,052	3,259	2,986	1,411	51,777	13%
Sand Hill GT3	45	504	219	4,277	6,392	4,495	4,511	7,072	9,261	5,993	2,595	2,313	1,090	48,721	12%
Sand Hill GT4	45	217	0	5,744	7,063	5,874	3,727	7,652	8,594	6,394	693	1,650	827	48,434	12%
Sand Hill CC	300	144,119	130,232	44,270	0	20,652	153,142	163,564	167,398	131,172	145,712	93,785	119,853	1,313,899	50%
Sand Hill GT6	45	1,202	811	3,469	5,590	5,160	5,794	6,908	8,830	5,276	2,297	1,482	1,733	48,553	12%
Sand Hill GT7	45	1,077	565	3,648	6,086	6,102	4,872	7,004	8,877	5,484	2,280	1,550	1,565	49,110	12%
Nacogdoches	100	0	0	0	0	17,942	48,135	19,862	29,374	0	14,168	0	0	129,480	15%
Webberville	30	3,050	2,932	4,140	6,298	6,342	6,689	6,117	6,485	5,432	4,734	4,321	3,162	59,703	23%
King Wind	77	13,234	16,017	17,593	17,765	14,956	17,672	12,715	10,808	11,990	13,314	12,472	13,086	171,624	25%
LCRA Wind	10	456	590	389	333	270	121	75	142	243	512	337	449	3,917	4%
Sweetwater 2	92	34,516	29,101	36,931	30,375	29,976	25,525	18,308	15,016	23,492	28,507	28,521	31,994	332,261	41%
Sweetwater 3	35	10,055	7,615	10,705	8,676	7,929	7,357	4,970	4,424	6,208	7,279	7,677	9,307	92,202	30%
Whirlwind	60	10,203	6,318	9,031	10,716	16,994	16,016	16,665	12,020	12,828	18,888	18,492	21,902	170,072	32%
Hackberry	166	31,592	26,637	32,298	35,033	41,903	35,027	32,064	29,149	34,626	43,002	46,492	47,939	435,762	30%
Penascal	196	47,642	44,478	67,196	60,476	55,051	39,013	54,003	42,880	32,970	48,970	38,524	40,996	572,197	33%
Losvientos II	202	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5,346	42,112	47,457	16%
Whitetail	92	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,177	18,991	20,168	15%

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Austin Energy Historical Generation for 2013

Resources/PPA	Rating	2013 Austin Energy Generation in MWH													Capacity Factor
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
STP1	218	160,577	145,495	160,613	152,926	129,170	153,272	158,268	152,250	128,728	75,771	156,390	158,626	1,732,088	91%
STP2	218	20,579	0	0	41,600	157,525	153,106	158,071	157,929	152,643	158,492	82,486	43,280	1,125,711	59%
FPP 1	302	138,087	122,630	170,856	185,665	187,618	182,673	175,844	150,763	179,962	140,469	0	123,693	1,758,261	66%
FPP 2	300	123,092	72,085	120,183	143,814	189,850	187,919	179,455	168,174	187,903	179,051	167,922	201,890	1,921,337	73%
Decker ST1	315	0	0	6,026	145	7,596	46,337	28,521	60,133	30,464	7,199	0	1,596	188,015	7%
Decker ST2	420	0	0	18,862	4,204	12,141	78,830	62,756	63,959	51,716	26,095	10,981	23,331	352,876	10%
Decker GT1	48	23	91	247	386	461	2,162	1,626	576	207	109	755	163	6,807	2%
Decker GT2	48	5	37	6	282	24	1,423	2,317	2,634	1,286	30	400	535	8,979	2%
Decker GT3	48	59	143	394	417	423	2,045	1,773	2,117	972	936	856	294	10,429	2%
Decker GT4	48	68	102	13	296	267	1,926	2,198	1,647	535	330	311	56	7,748	2%
Sand Hill GT1	45	82	1,235	1,665	1,637	2,759	8,557	1,630	8,336	8,349	2,659	3,770	5,798	46,477	12%
Sand Hill GT2	45	91	346	1,159	3,226	3,606	10,079	11,352	11,938	8,887	1,719	3,836	3,208	59,446	15%
Sand Hill GT3	45	94	902	1,317	2,848	3,630	8,840	10,560	10,252	7,358	1,461	815	3,387	51,465	13%
Sand Hill GT4	45	157	594	859	1,755	3,150	2,858	1,228	11,309	8,669	3,904	4,365	5,876	44,722	11%
Sand Hill CC	300	131,452	94,994	82,499	0	0	32,268	170,117	176,139	83,256	83,386	77,801	116,800	1,048,711	40%
Sand Hill GT6	45	974	2,204	942	2,206	3,004	7,424	9,819	11,118	8,017	2,631	2,323	3,675	54,336	14%
Sand Hill GT7	45	793	1,580	1,079	2,460	2,889	8,139	9,983	10,897	8,217	2,634	2,794	4,385	55,850	14%
Nacogdoches	100	0	0	0	4,618	0	9,094	0	57,323	46	0	0	10,170	81,252	9%
Webberville	30	3,297	4,110	6,112	5,017	6,069	5,862	6,218	6,449	5,281	4,639	3,112	2,944	59,110	22%
King Wind	77	2,445	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,445	4%
LCRA Wind	10	361	430	332	452	333	128	78	59	45	61	108	0	2,388	3%
Sweetwater 2	92	23,772	24,790	35,508	37,167	38,693	28,460	17,932	19,032	16,961	31,425	29,256	24,285	327,280	41%
Sweetwater 3	35	7,038	7,889	9,437	10,235	10,184	7,356	4,314	4,584	4,404	8,215	7,959	6,954	88,570	29%
Whirlwind	60	17,140	3,846	18,357	18,442	22,326	20,333	16,214	13,854	14,798	21,896	19,512	21,869	208,587	40%
Hackberry	166	34,152	43,818	46,887	46,590	57,728	43,486	30,160	27,212	25,879	44,317	44,137	37,675	482,041	33%
Penascal	196	28,687	47,154	60,276	62,701	71,665	52,697	45,735	34,884	29,416	40,946	39,284	36,246	549,690	32%
Losvientos II	202	33,959	38,297	66,077	63,830	66,078	46,642	46,821	35,646	26,897	43,220	40,053	31,084	538,603	30%
Whitetail	92	22,037	23,367	30,876	26,087	32,770	29,186	25,064	20,152	10,599	22,371	19,037	16,096	277,642	34%

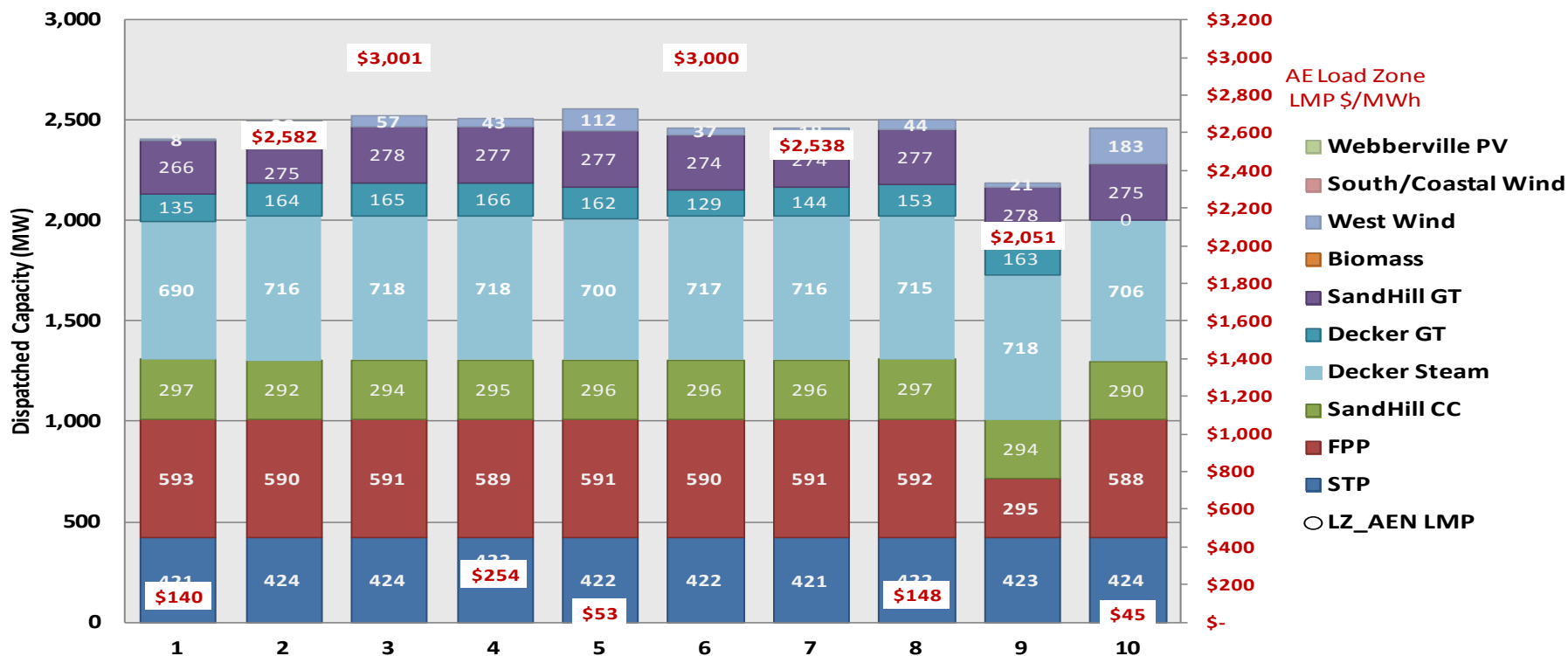
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2011 Top 10 Summer Peaks

(Generation output (MW) & Generation relative to Full Capacity(%) statistics)

2011 Top 10 Summer Peaks - AE Capacity Dispatched vs. AE Load Zone Price



	Statistics (%) - 2011 top 10 Summer Peaks				
	Average	Median	Min	Max	Stdev
STP	97%	97%	97%	97%	0%
FPP	93%	98%	49%	98%	16%
SandHill CC	98%	98%	97%	99%	1%
Decker Steam	97%	97%	94%	98%	1%
Decker GT	72%	82%	0%	86%	26%
SandHill GT	100%	100%	99%	100%	0%
Biomass	0%	0%	0%	0%	0%
Webberville PV	0%	0%	0%	0%	0%
West Wind	13%	9%	2%	42%	12%
South/Coastal Wind	0%	0%	0%	0%	0%

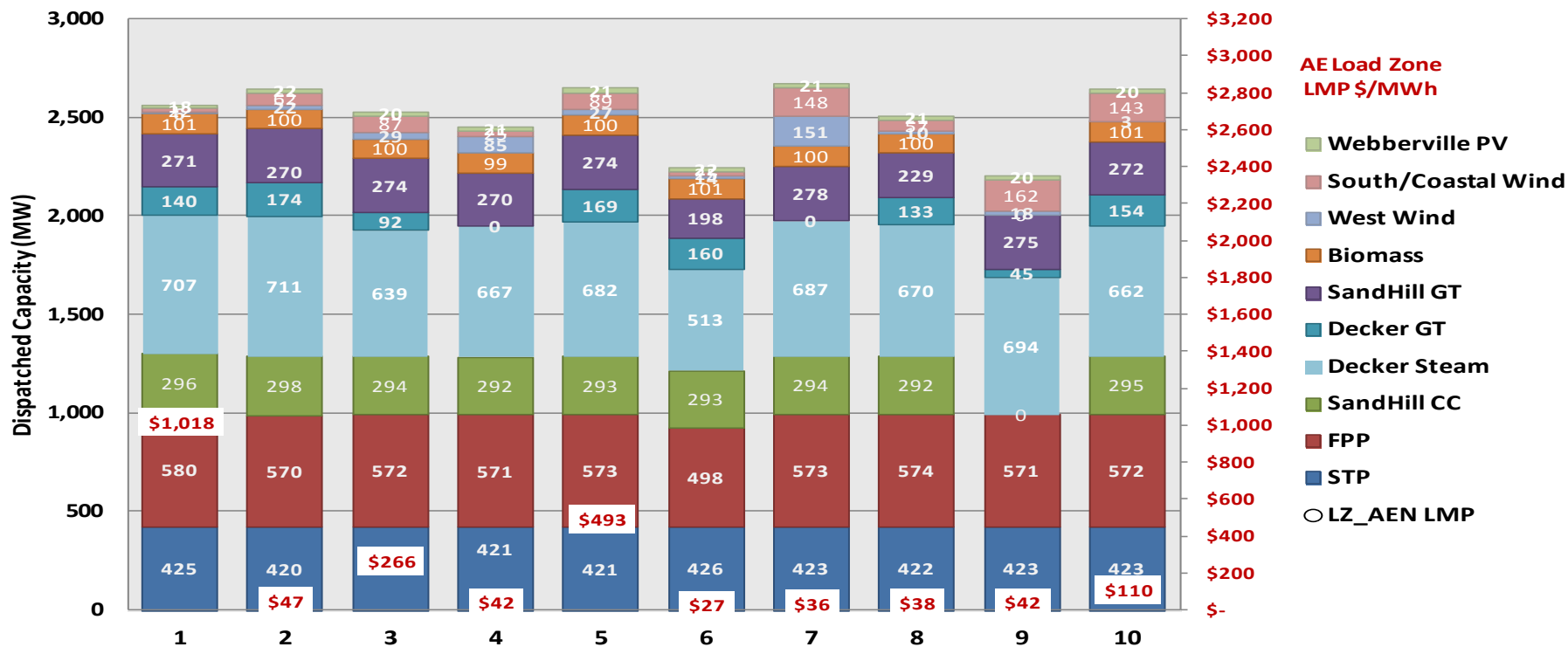
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2012 Top 10 Summer Peaks

(Generation output (MW) & Generation relative to Full Capacity(%) statistics)

2012 Top 10 Summer Peaks - AE Capacity Dispatched vs. AE Load Zone Price



	Statistics (%) - 2012 top 10 Summer Peaks				
	Average	Median	Min	Max	Stdev
STP	97%	97%	96%	98%	0%
FPP	94%	95%	83%	96%	4%
SandHill CC	88%	98%	0%	99%	31%
Decker Steam	90%	92%	70%	97%	8%
Decker GT	56%	71%	0%	91%	36%
SandHill GT	96%	100%	73%	100%	9%
Biomass	90%	100%	0%	100%	32%
Webberville PV	69%	68%	62%	74%	4%
West Wind	8%	5%	1%	34%	11%
South/Coastal Wind	17%	15%	4%	33%	11%

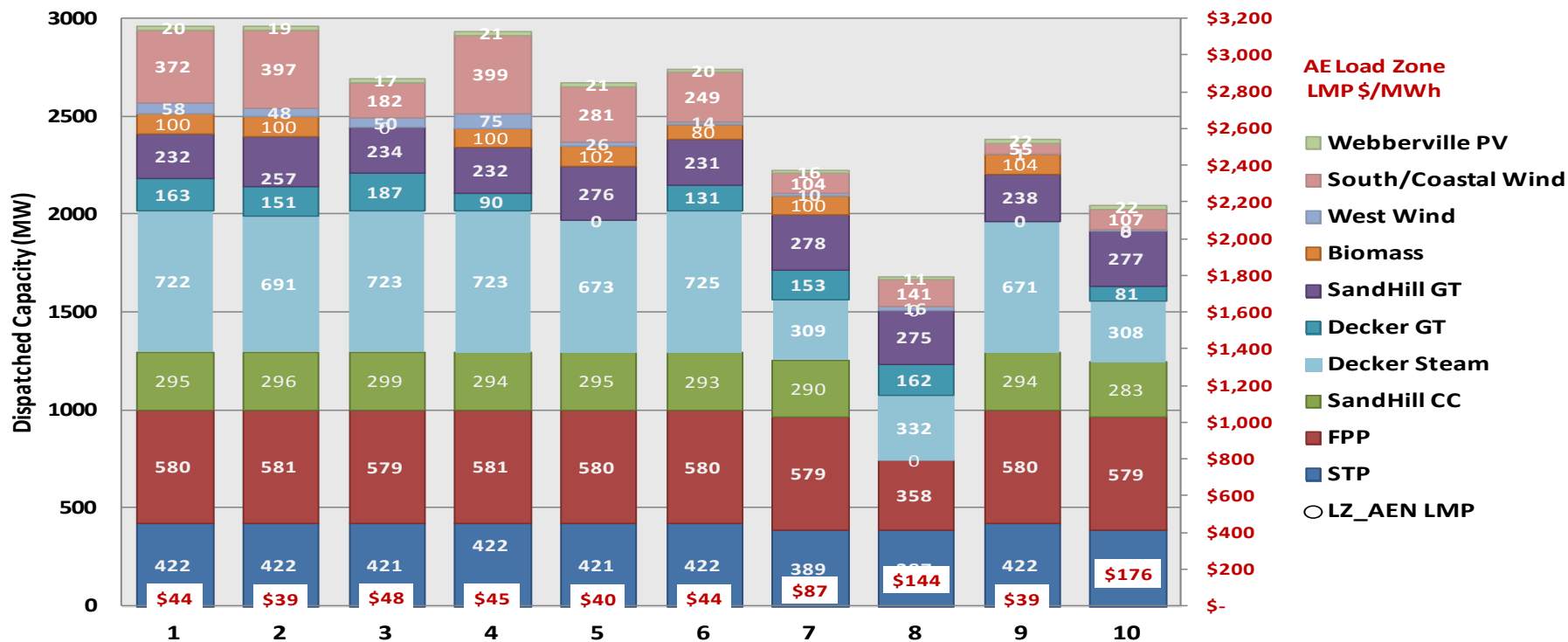
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2013 Top 10 Summer Peaks

(Generation output (MW) & Generation relative to Full Capacity(%) statistics)

2013 Top 10 Summer Peaks - AE Capacity Dispatched vs. AE Load Zone Price



	Statistics (%) - 2013 top 10 Summer Peaks				
	Average	Median	Min	Max	Stdev
STP	94%	97%	89%	97%	4%
FPP	93%	96%	59%	96%	12%
SandHill CC	88%	98%	0%	100%	31%
Decker Steam	80%	93%	42%	99%	26%
Decker GT	58%	73%	0%	97%	35%
SandHill GT	93%	92%	86%	100%	7%
Biomass	68%	100%	0%	100%	47%
Webberville PV	63%	67%	36%	72%	11%
West Wind	7%	5%	0%	17%	6%
South/Coastal Wind	47%	44%	11%	81%	26%

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AE Conventional Generation During Top 10 Peaking Days (in MWH)

DAY_HOUR	STP1	STP2	FPP1	FPP2	DeckerST1	DeckerST2	DeckerGT1	DeckerGT2	DeckerGT3	DeckerGT4	SandHillGT1	SandHillGT2	SandHillGT3	SandHillGT4	SandHillGT6	SandHillGT7
20110829_1600	211	210	300	293	298	392	14	50	20	50	45	46	46	36	46	46
20110802_1600	212	212	297	293	309	407	43	50	21	49	45	46	46	44	47	47
20110803_1700	212	212	297	293	309	409	44	50	21	50	45	46	46	45	48	47
20110801_1800	212	212	296	293	309	409	43	50	22	51	46	46	46	45	47	47
20110819_1800	211	211	299	293	302	398	42	50	21	48	45	47	46	45	48	47
20110823_1700	211	211	296	293	309	409	21	43	21	44	45	46	46	45	46	46
20110824_1700	211	210	297	293	309	407	22	50	22	51	45	46	46	45	45	46
20110818_1700	211	211	299	293	309	406	43	44	21	44	46	46	46	45	47	47
20110804_1700	211	212	295	0	309	409	44	50	21	48	46	46	46	45	48	47
20110811_1800	212	212	295	293	302	404	0	0	0	0	45	46	45	44	48	47
20120626_1700	213	212	295	286	312	395	0	46	49	45	45	46	45	44	45	44
20120627_1700	210	209	285	285	312	399	43	43	44	44	44	45	45	44	45	47
20120813_1700	211	211	285	287	281	358	0	49	21	22	45	47	44	45	47	47
20120810_1500	211	210	285	285	289	377	0	0	0	0	44	46	45	45	46	45
20120809_1700	211	210	285	288	294	387	47	50	50	22	45	47	45	45	45	47
20120625_1700	214	213	254	244	162	352	15	49	50	47	32	45	45	44	32	0
20120814_1700	211	211	286	287	305	383	0	0	0	0	45	47	46	46	48	46
20120807_1700	211	211	287	287	290	380	44	44	45	0	46	46	45	0	46	47
20120906_1800	211	211	285	286	302	392	0	0	45	0	45	47	46	45	46	47
20120731_1800	212	211	285	287	288	374	44	44	45	22	45	46	46	46	46	43
20130807_1800	210	212	286	294	309	413	21	50	50	42	0	46	47	46	47	47
20130808_1800	210	212	286	294	299	391	21	44	44	43	27	46	47	45	47	46
20130628_1800	209	212	282	298	309	414	46	49	50	42	46	48	46	0	47	47
20130806_1800	210	212	287	294	310	413	0	37	33	20	0	46	46	46	47	47
20130813_1800	210	212	286	294	308	365	0	0	0	0	46	45	46	45	47	47
20130801_1800	210	212	286	294	311	415	0	44	44	43	0	46	47	45	47	47
20130830_1700	178	211	286	293	309	0	21	45	44	43	46	47	46	44	47	48
20130904_1700	177	210	195	162	307	24	22	51	51	38	46	46	46	43	47	47
20130814_1500	210	212	286	294	308	363	0	0	0	0	44	46	10	45	46	47
20130903_1600	177	210	285	293	308	0	0	45	19	17	46	46	46	44	47	47

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AE Renewable Generation During Top 10 Peaking Days (in MWH)

DAY_HOUR	Biomass	Webberville PV	KingWind	LCWind	SW2	SW3	Whirlwind	Hackberry	Penascal	LVII	Whitetail
20110829_1600	N/A	N/A	2	0	5	0	0	0	N/A	N/A	N/A
20110802_1600	N/A	N/A	8	0	10	3	6	11	N/A	N/A	N/A
20110803_1700	N/A	N/A	12	1	15	5	1	23	N/A	N/A	N/A
20110801_1800	N/A	N/A	12	0	10	3	11	8	N/A	N/A	N/A
20110819_1800	N/A	N/A	23	0	34	9	13	33	N/A	N/A	N/A
20110823_1700	N/A	N/A	7	0	9	3	8	10	N/A	N/A	N/A
20110824_1700	N/A	N/A	9	1	4	1	1	2	N/A	N/A	N/A
20110818_1700	N/A	N/A	5	0	12	4	6	17	N/A	N/A	N/A
20110804_1700	N/A	N/A	7	0	2	1	1	9	N/A	N/A	N/A
20110811_1800	N/A	N/A	6	0	47	9	24	97	N/A	N/A	N/A
20120626_1700	101	18	N/A	0	0	0	3	3	22	N/A	N/A
20120627_1700	100	22	N/A	0	6	1	2	12	62	N/A	N/A
20120813_1700	100	20	N/A	0	5	1	5	19	87	N/A	N/A
20120810_1500	99	21	N/A	1	19	6	10	49	25	N/A	N/A
20120809_1700	100	21	N/A	0	5	1	7	15	89	N/A	N/A
20120625_1700	101	22	N/A	0	3	0	2	8	25	N/A	N/A
20120814_1700	100	21	N/A	0	36	9	36	69	148	N/A	N/A
20120807_1700	100	21	N/A	0	4	2	3	1	57	N/A	N/A
20120906_1800	0	20	N/A	0	8	2	4	4	162	N/A	N/A
20120731_1800	101	20	N/A	0	0	0	2	0	143	N/A	N/A
20130807_1800	100	20	N/A	0	8	1	5	43	183	171	18
20130808_1800	100	19	N/A	0	30	2	3	13	186	182	30
20130628_1800	0	17	N/A	0	17	4	5	25	75	105	2
20130806_1800	100	21	N/A	0	13	6	6	50	185	184	30
20130813_1800	102	21	N/A	0	1	0	23	2	151	108	22
20130801_1800	80	20	N/A	0	5	0	5	3	82	156	10
20130830_1700	100	16	N/A	0	2	0	3	4	39	55	11
20130904_1700	0	11	N/A	0	4	1	5	6	48	81	13
20130814_1500	104	22	N/A	0	0	0	0	1	39	11	5
20130903_1600	0	22	N/A	0	3	0	0	5	56	46	5

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AE Conventional Generation Relative to Full Capacity

During Top 10 Peaking Days

DAY_HOUR	STP1	STP2	FPP1	FPP2	DeckerST1	DeckerST2	DeckerGT1	DeckerGT2	DeckerGT3	DeckerGT4	SandHillGT1	SandHillGT2	SandHillGT3	SandHillGT4	SandHillGT6	SandHillGT7
20110829_1600	97%	97%	99%	98%	95%	93%	30%	103%	42%	105%	101%	103%	102%	80%	103%	103%
20110802_1600	97%	97%	98%	98%	98%	97%	89%	104%	45%	103%	100%	102%	102%	98%	104%	105%
20110803_1700	97%	97%	98%	98%	98%	97%	91%	104%	44%	105%	101%	103%	102%	99%	106%	105%
20110801_1800	97%	97%	98%	98%	98%	97%	90%	105%	45%	105%	101%	103%	102%	99%	105%	106%
20110819_1800	97%	97%	99%	98%	96%	95%	88%	104%	44%	101%	100%	103%	102%	99%	107%	105%
20110823_1700	97%	97%	98%	98%	98%	97%	43%	90%	45%	91%	100%	103%	102%	100%	102%	102%
20110824_1700	97%	96%	98%	98%	98%	97%	45%	105%	45%	106%	100%	103%	102%	99%	101%	103%
20110818_1700	97%	97%	99%	98%	98%	97%	91%	92%	45%	92%	101%	103%	103%	100%	104%	105%
20110804_1700	97%	97%	98%	0%	98%	97%	91%	104%	44%	101%	101%	103%	102%	99%	106%	105%
20110811_1800	97%	97%	98%	98%	96%	96%	0%	0%	0%	0%	100%	102%	101%	97%	107%	105%
20120626_1700	98%	97%	98%	95%	99%	94%	0%	96%	102%	94%	100%	103%	100%	99%	101%	99%
20120627_1700	96%	96%	94%	95%	99%	95%	90%	90%	92%	91%	99%	100%	99%	97%	101%	104%
20120813_1700	97%	97%	95%	96%	89%	85%	0%	102%	44%	45%	100%	104%	97%	100%	104%	104%
20120810_1500	97%	96%	94%	95%	92%	90%	0%	0%	0%	0%	97%	102%	101%	99%	102%	101%
20120809_1700	97%	96%	94%	96%	93%	92%	99%	104%	105%	46%	100%	103%	101%	101%	101%	104%
20120625_1700	98%	98%	84%	81%	51%	84%	30%	102%	104%	97%	71%	101%	99%	98%	71%	0%
20120814_1700	97%	97%	95%	96%	97%	91%	0%	0%	0%	0%	100%	104%	103%	101%	106%	103%
20120807_1700	97%	97%	95%	96%	92%	90%	92%	91%	94%	0%	101%	103%	100%	0%	101%	103%
20120906_1800	97%	97%	94%	95%	96%	93%	0%	0%	93%	0%	100%	104%	101%	100%	102%	104%
20120731_1800	97%	97%	94%	96%	91%	89%	91%	91%	94%	46%	100%	103%	102%	102%	101%	96%
20130807_1800	96%	97%	95%	98%	98%	98%	43%	104%	104%	88%	0%	102%	103%	103%	104%	104%
20130808_1800	96%	97%	95%	98%	95%	93%	43%	92%	91%	89%	59%	102%	103%	99%	104%	103%
20130628_1800	96%	97%	93%	99%	98%	99%	96%	101%	104%	88%	103%	106%	103%	0%	104%	104%
20130806_1800	96%	97%	95%	98%	98%	98%	0%	78%	68%	41%	0%	102%	103%	102%	104%	104%
20130813_1800	96%	97%	95%	98%	98%	87%	0%	0%	0%	0%	102%	101%	103%	99%	104%	103%
20130801_1800	96%	97%	95%	98%	99%	99%	0%	93%	92%	89%	0%	102%	104%	100%	104%	104%
20130830_1700	81%	97%	95%	98%	98%	0%	44%	93%	92%	90%	102%	104%	103%	99%	104%	106%
20130904_1700	81%	96%	65%	54%	98%	6%	45%	106%	107%	79%	101%	102%	102%	97%	104%	105%
20130814_1500	97%	97%	95%	98%	98%	86%	0%	0%	0%	0%	98%	102%	22%	100%	103%	103%
20130903_1600	81%	96%	94%	98%	98%	0%	0%	94%	39%	36%	102%	103%	102%	98%	104%	105%

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AE Renewable Generation Relative to Full Capacity During Top 10 Peaking Days

DAY_HOUR	Biomass	Webberville PV	KingWind	LCWind	SW2	SW3	Whirlwind	Hackberry	Penascal	LVII	Whitetail
20110829_1600	N/A	N/A	3%	1%	5%	0%	1%	0%	N/A	N/A	N/A
20110802_1600	N/A	N/A	10%	0%	11%	10%	9%	7%	N/A	N/A	N/A
20110803_1700	N/A	N/A	16%	8%	16%	13%	1%	14%	N/A	N/A	N/A
20110801_1800	N/A	N/A	15%	0%	10%	7%	18%	5%	N/A	N/A	N/A
20110819_1800	N/A	N/A	30%	0%	37%	27%	22%	20%	N/A	N/A	N/A
20110823_1700	N/A	N/A	9%	0%	10%	8%	14%	6%	N/A	N/A	N/A
20110824_1700	N/A	N/A	12%	11%	5%	4%	1%	1%	N/A	N/A	N/A
20110818_1700	N/A	N/A	7%	1%	13%	11%	11%	10%	N/A	N/A	N/A
20110804_1700	N/A	N/A	10%	1%	2%	3%	2%	6%	N/A	N/A	N/A
20110811_1800	N/A	N/A	8%	0%	52%	25%	40%	58%	N/A	N/A	N/A
20120626_1700	101%	62%	N/A	0%	0%	0%	5%	2%	11%	N/A	N/A
20120627_1700	100%	74%	N/A	0%	7%	4%	3%	7%	31%	N/A	N/A
20120813_1700	100%	66%	N/A	1%	5%	2%	8%	11%	45%	N/A	N/A
20120810_1500	99%	71%	N/A	6%	21%	17%	17%	30%	13%	N/A	N/A
20120809_1700	100%	71%	N/A	1%	5%	3%	12%	9%	45%	N/A	N/A
20120625_1700	101%	72%	N/A	1%	3%	1%	4%	5%	13%	N/A	N/A
20120814_1700	100%	68%	N/A	0%	40%	27%	60%	42%	76%	N/A	N/A
20120807_1700	100%	69%	N/A	1%	5%	5%	5%	1%	29%	N/A	N/A
20120906_1800	0%	67%	N/A	0%	9%	5%	7%	2%	83%	N/A	N/A
20120731_1800	101%	65%	N/A	0%	0%	0%	4%	0%	73%	N/A	N/A
20130807_1800	100%	68%	N/A	2%	9%	4%	8%	26%	93%	85%	19%
20130808_1800	100%	64%	N/A	2%	32%	6%	5%	8%	95%	90%	32%
20130628_1800	0%	57%	N/A	1%	18%	11%	8%	15%	39%	52%	2%
20130806_1800	100%	71%	N/A	1%	14%	17%	11%	30%	95%	91%	33%
20130813_1800	102%	69%	N/A	1%	1%	0%	38%	1%	77%	54%	24%
20130801_1800	80%	67%	N/A	1%	6%	1%	9%	2%	42%	77%	11%
20130830_1700	100%	55%	N/A	0%	2%	1%	6%	3%	20%	27%	12%
20130904_1700	0%	36%	N/A	1%	5%	2%	8%	3%	24%	40%	14%
20130814_1500	104%	72%	N/A	3%	0%	0%	0%	1%	20%	6%	5%
20130903_1600	0%	72%	N/A	1%	3%	1%	1%	3%	29%	23%	5%

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Summary of Proposed Scenarios Representing Most Feedback from the Stakeholders

		Potential Scenarios							
		Least Cost Plan Meeting Council Goals	No Additional Generation	Increase Goals			Replace FPP & Decker		
				1000 MW of DSM with 40% Renewables by 2020	1200 MW of DSM with 50% Renewables by 2025	100% Emission Free by 2025	With Renewables + Natural Gas Simple Cycle Peakers	With Renewables + Natural Gas Combined Cycle	With Renewables + Compressed Air Energy Storage
Key Uncertainties (Relative to Current Forecasts)	High Gas								
	Low Gas								
	High Load								
	Low Load								
	High Carbon								
	Low Carbon								
	Capacity Market								
	PTC/ITC Extn								

- Scenarios cover a wide range of values for key uncertainties

