CREDA Operations Committee

Purchase Power Presentation

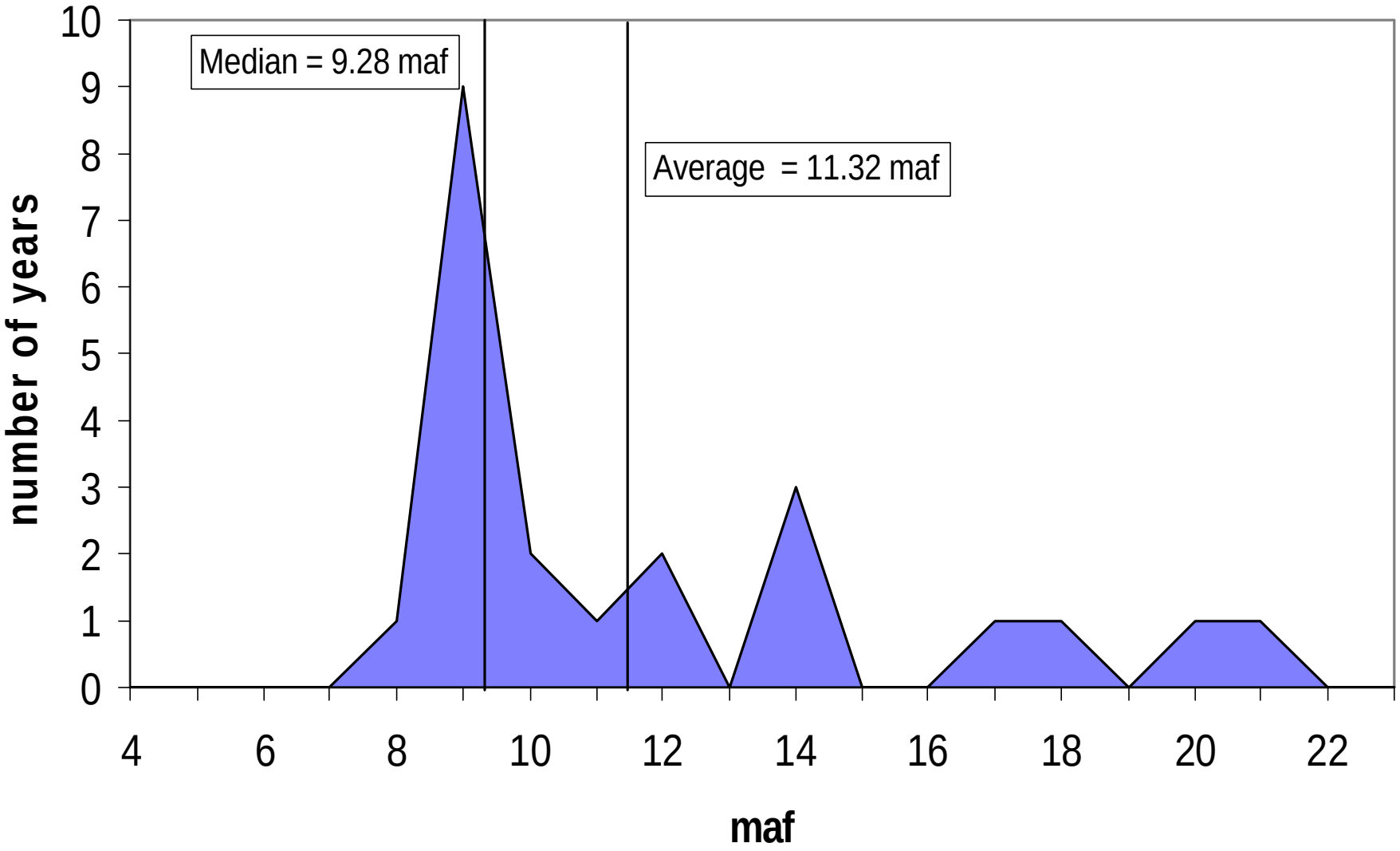
September 28, 2001

Colorado River Storage Project
Management Center

Need for Purchase

- Skewed distribution of water releases in Colorado River Basin,
- Median hydrology vs. SHP energy allocation,
- Asymmetric purchase and sales.

Colorado River Release Distribution
1980-2001



Comparing SHP Energy to Median Hydrology Generation Forecasts					
Year	SHP Allocation (MWH)	Median Generation less Losses (MWh)	Less Project Use (MWH)	Net Generation for Allocation (MWH)	Difference Between SHP and Median (MWh)
2001	6,007,000	6,077,420	121,720	5,955,700	51,300
2002	6,007,000	5,976,084	158,240	5,817,844	189,156
2003	6,007,000	5,869,749	165,240	5,704,509	302,491
2004	6,007,000	5,834,816	173,240	5,661,576	345,424
2005	6,007,000	5,799,650	181,240	5,618,410	388,590
2006	6,007,000	5,799,650	181,240	5,618,410	388,590
2007	6,007,000	5,799,650	211,640	5,588,010	418,990
2008	6,007,000	5,799,650	211,640	5,588,010	418,990
2009	6,007,000	5,799,650	233,640	5,566,010	440,990
2010	6,007,000	5,799,650	239,640	5,560,010	446,990
2011	6,007,000	5,799,650	258,640	5,541,010	465,990

Calculation of the Expected Value of Energy Purchases for the CRSP - Using Historic Data

WY	Total Net Generation less losses & Project Use (MWH)	SHP Energy Commitment Level (MWH)	Surplus/ Deficit (MWH)	Surplus Price $/MW	Deficit Price $/MW	Surplus/Deficit Expense or Revenue	Surplus or Deficit Expense or Revenue Times Probability of Occurance
1979	4,966,451.283	6,007,610	-1,041,159	$8.10	$37.34	($38,877,908)	($1,690,344)
1980	6,134,792.143	6,007,610	127,182	$8.10	$37.34	$1,030,175	$44,790
1981	4,656,790.331	6,007,610	-1,350,820	$8.10	$37.34	($50,440,957)	($2,193,085)
1982	4,635,494.057	6,007,610	-1,372,116	$8.10	$37.34	($51,236,181)	($2,227,660)
1983	8,199,696.307	6,007,610	2,192,086	$8.10	$37.34	$17,755,899	$771,996
1984	10,250,334.486	6,007,610	4,242,724	$8.10	$37.34	$34,366,068	$1,494,177
1985	10,049,944.133	6,007,610	4,042,334	$8.10	$37.34	$32,742,906	$1,423,605
1986	8,939,706.292	6,007,610	2,932,096	$8.10	$37.34	$23,749,980	$1,032,608
1987	7,687,146.229	6,007,610	1,679,536	$8.10	$37.34	$13,604,243	$591,489
1988	4,848,299.618	6,007,610	-1,159,310	$8.10	$37.34	($43,289,809)	($1,882,166)
1989	4,353,207.717	6,007,610	-1,654,402	$8.10	$37.34	($61,777,036)	($2,685,958)
1990	4,256,090.194	6,007,610	-1,751,520	$8.10	$37.34	($65,403,501)	($2,843,630)
1991	4,301,073.957	6,007,610	-1,706,536	$8.10	$37.34	($63,723,762)	($2,770,598)
1992	4,375,066.854	6,007,610	-1,632,543	$8.10	$37.34	($60,960,794)	($2,650,469)
1993	4,686,623.605	6,007,610	-1,320,986	$8.10	$37.34	($49,326,953)	($2,144,650)
1994	4,727,898.610	6,007,610	-1,279,711	$8.10	$37.34	($47,785,703)	($2,077,639)
1995	5,528,671.635	6,007,610	-478,938	$8.10	$37.34	($17,884,038)	($777,567)
1996	6,788,794.790	6,007,610	781,185	$8.10	$37.34	$6,327,597	$275,113
1997	7,963,574.418	6,007,610	1,955,964	$8.10	$37.34	$15,843,312	$688,840
1998	7,803,663.532	6,007,610	1,796,054	$8.10	$37.34	$14,548,034	$632,523
1999	6,671,223.518	6,007,610	663,614	$8.10	$37.34	$5,375,269	$233,707
2000	5,545,549.363	6,007,610	-462,061	$8.10	$37.34	($17,253,806)	($750,165)
2001	3,280,343.291	6,007,610	-2,727,267	$8.10	$37.34	($101,838,866)	($4,427,777)
5						Expected Value	($21,932,862.16)

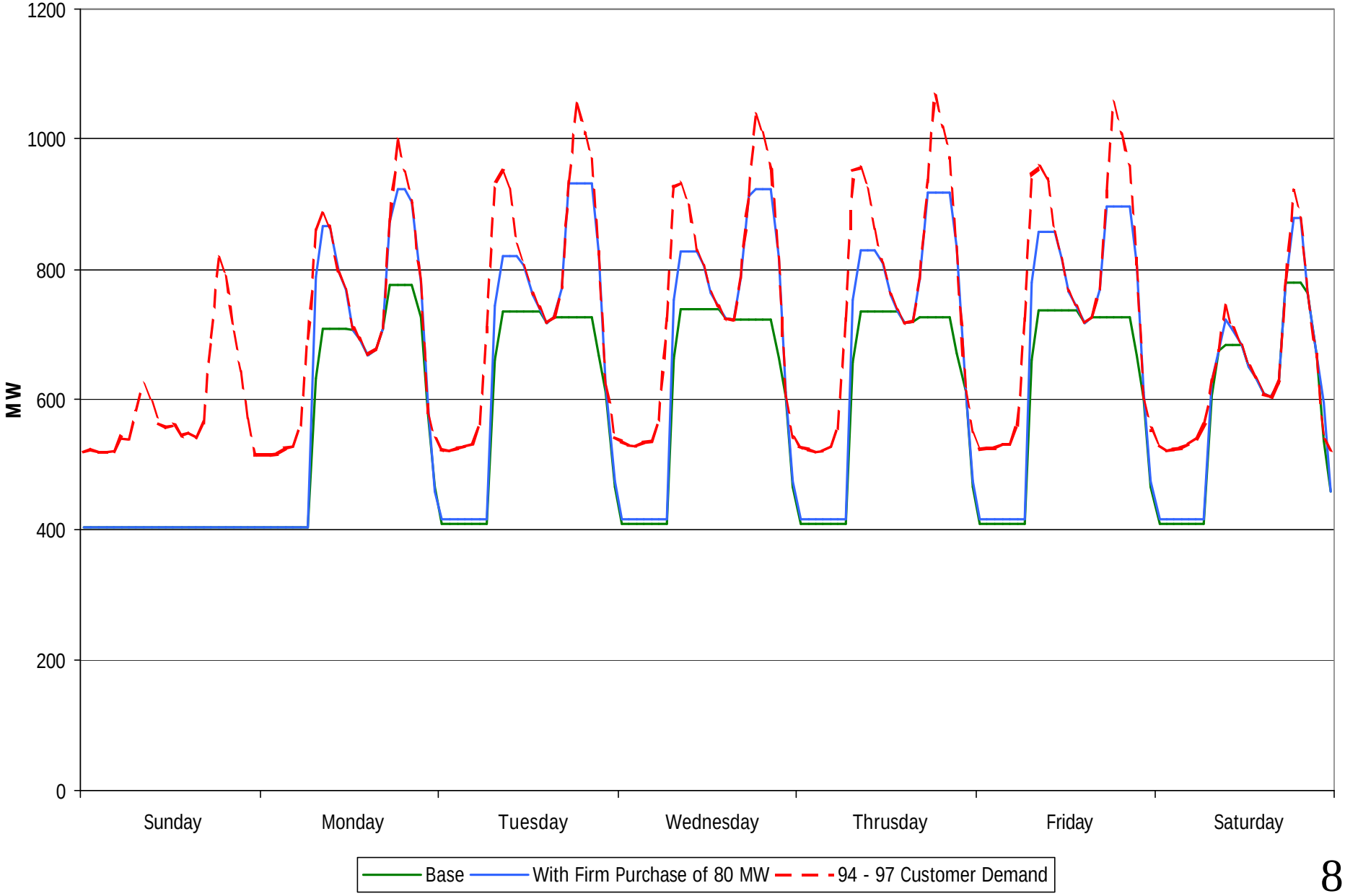
Type of Purchases Studied

- 7X24 purchase of block energy,
- On-peak 6X16 purchase of firm energy,
- 40, 80, or 120 megawatts (200, 400, or 600 on-peak GWH/year).

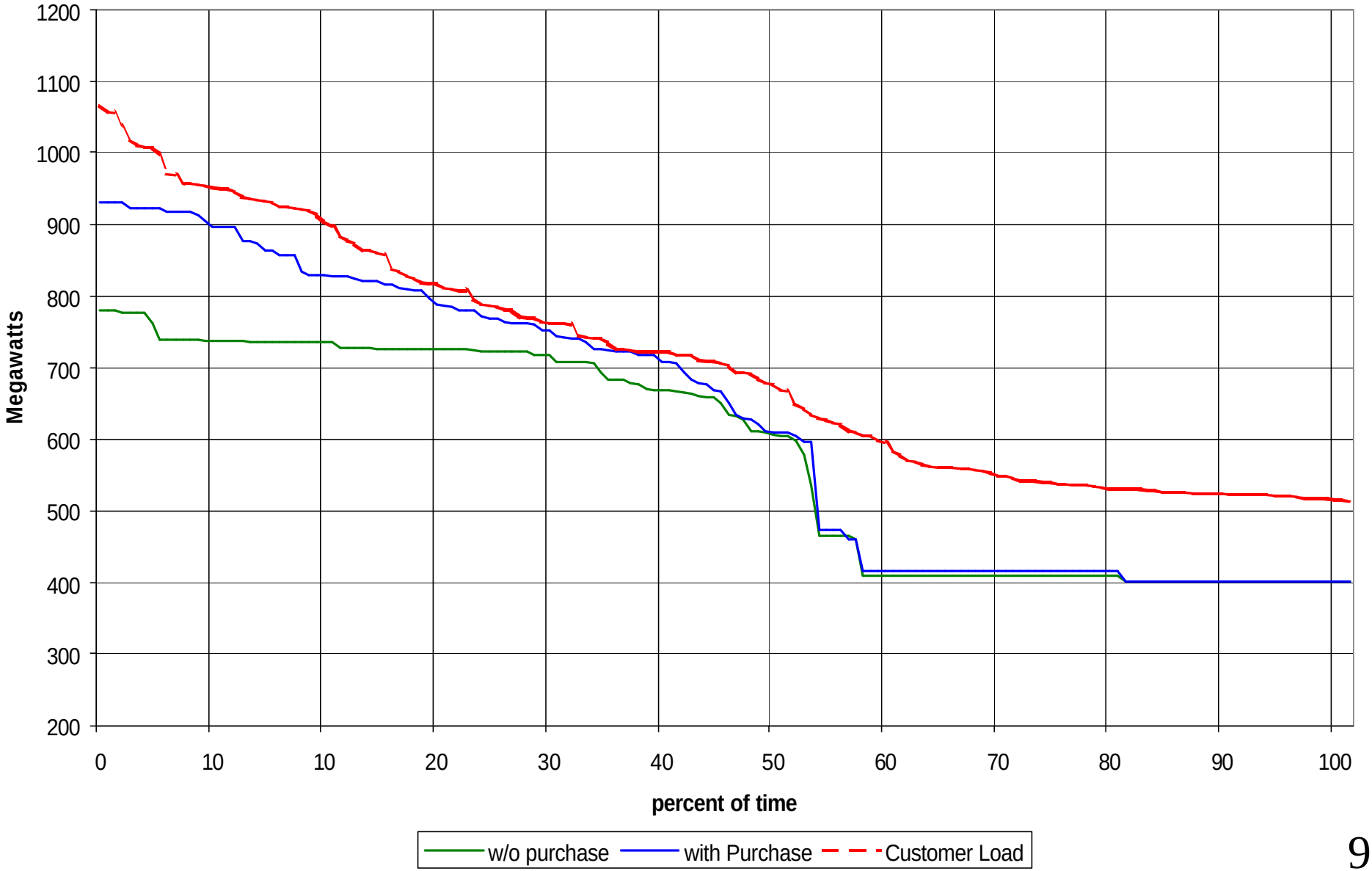
Model Simulations

- Dry (minimum release) hydrology,
- Average hydrology,
- Wet hydrology,
- 12 monthly simulations,
- Average of 1994-1997 (before Amendment 4) actual customer scheduled loads.

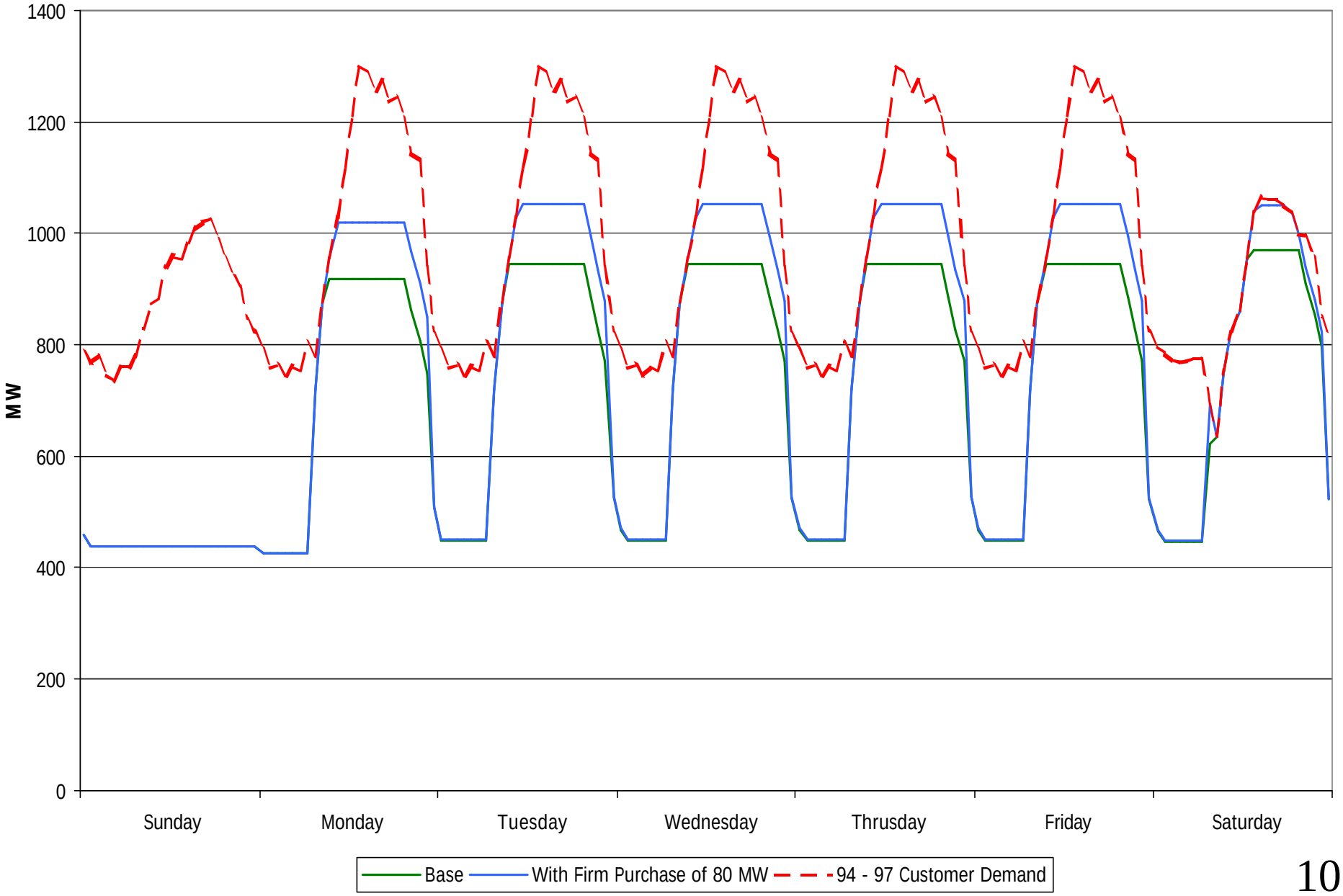
January Total CRSP Generation: Dry Water Condition



January Load/Capacity Duration Curve
80 Megawatt Onpeak Purchase
Dry (Minimum Release) Hydrology



July Total CRSP Generation: Dry Water Condition



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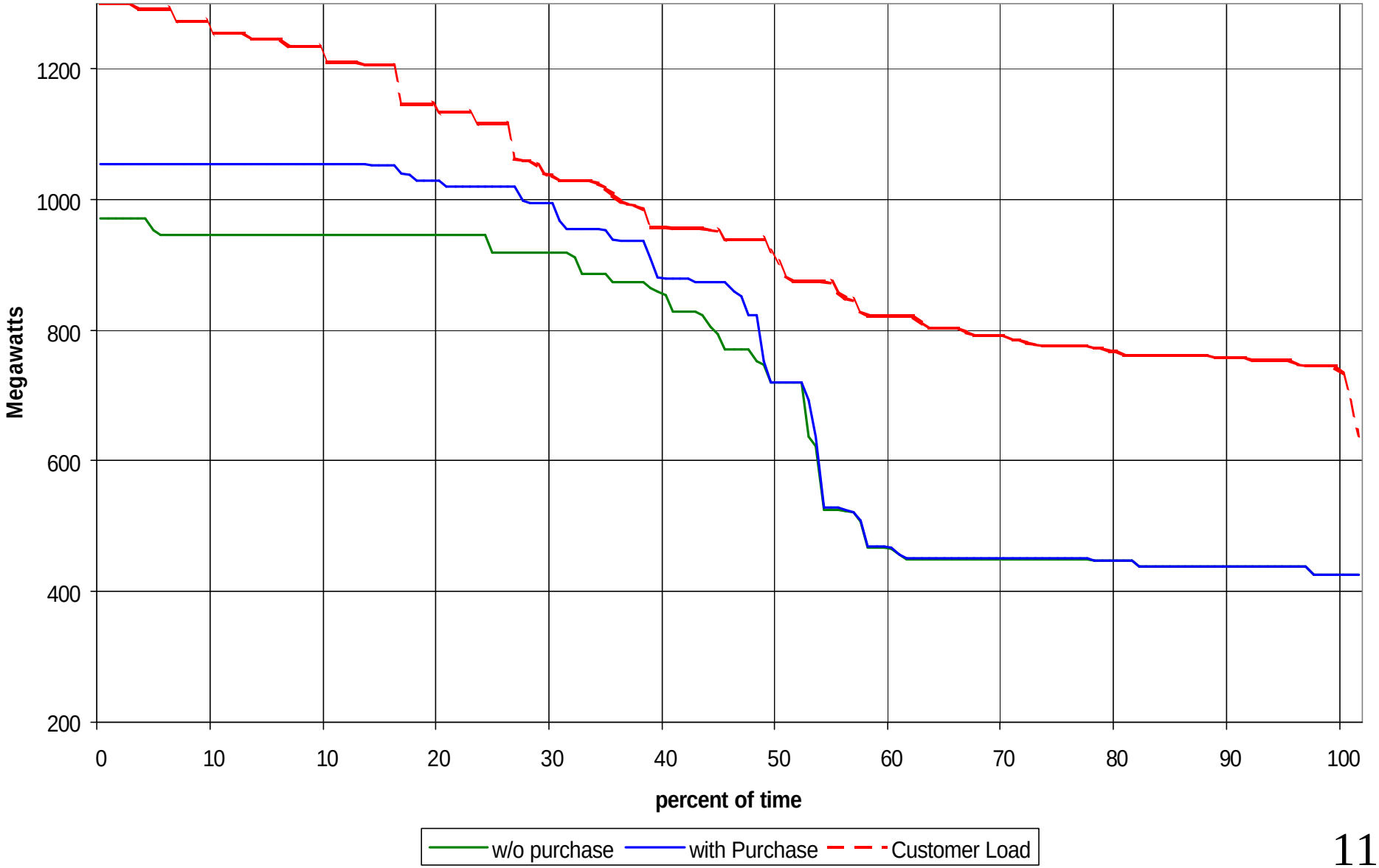
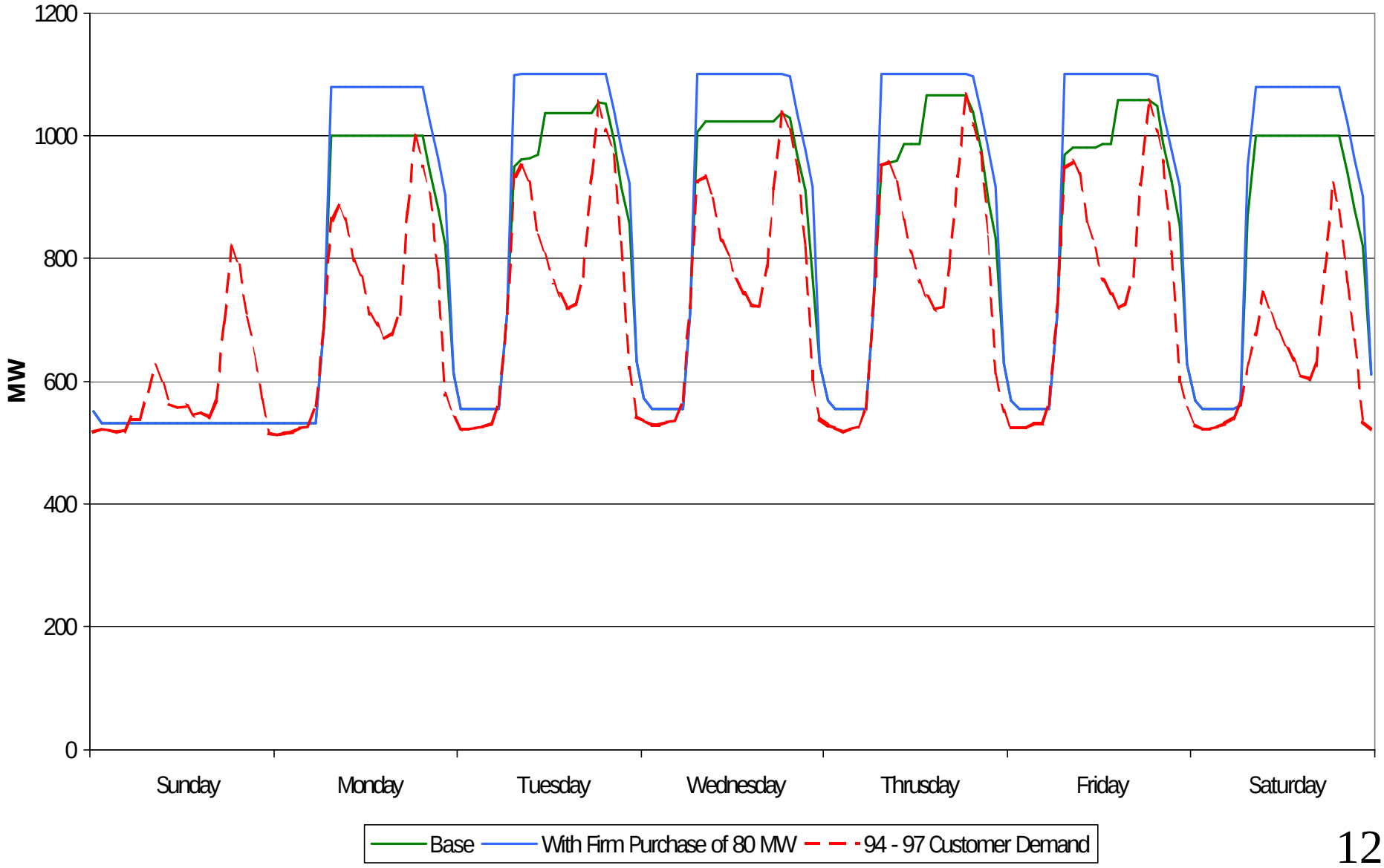
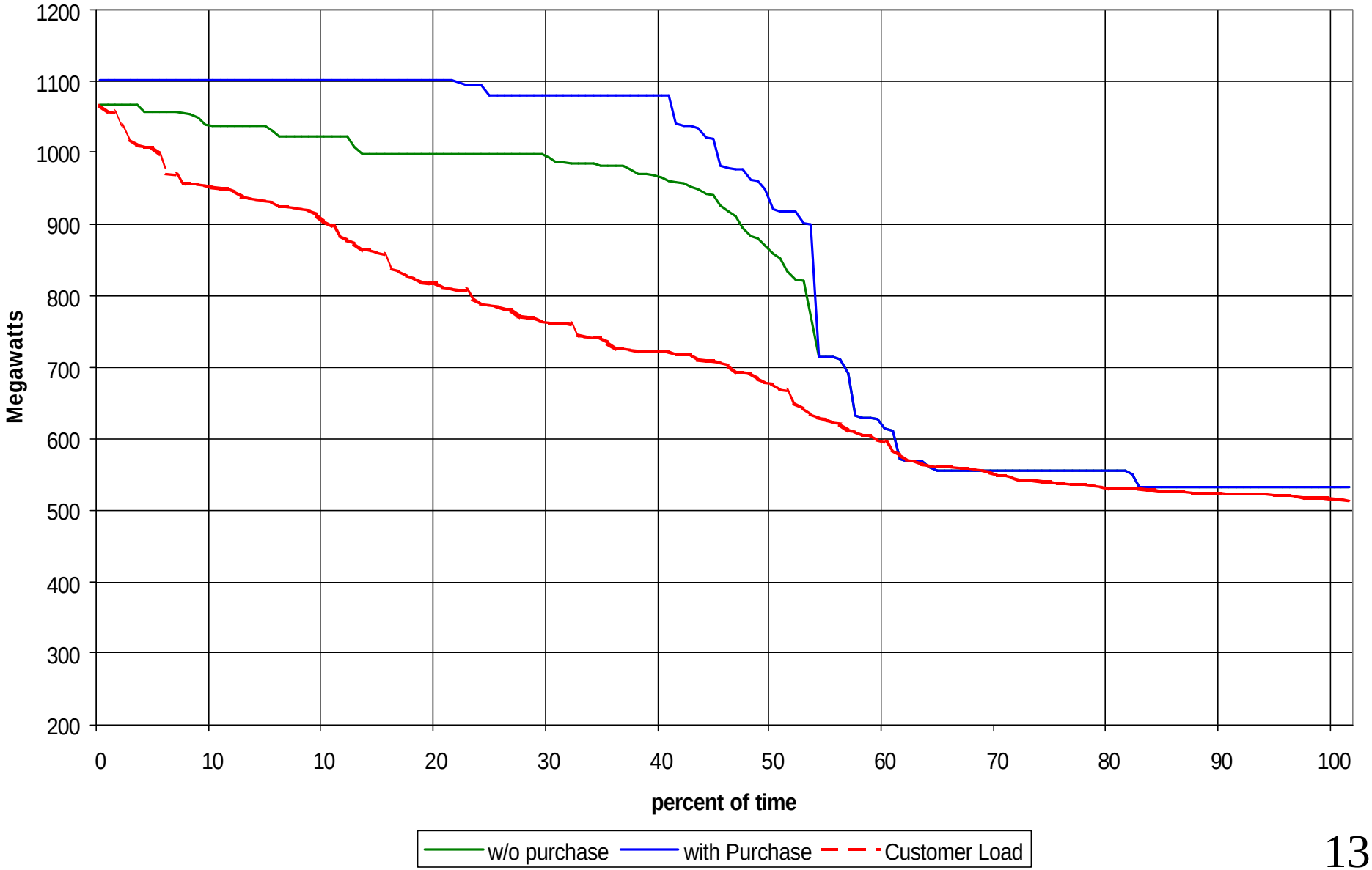
80 Megawatt Onpeak Purchase
Dry (Minimum Release) Hydrology



January Average Water Condition Generation, Purchase, Load Comparison



January Load/Capacity Duration Curve
80 Megawatt Onpeak Purchase
Average Hydrology



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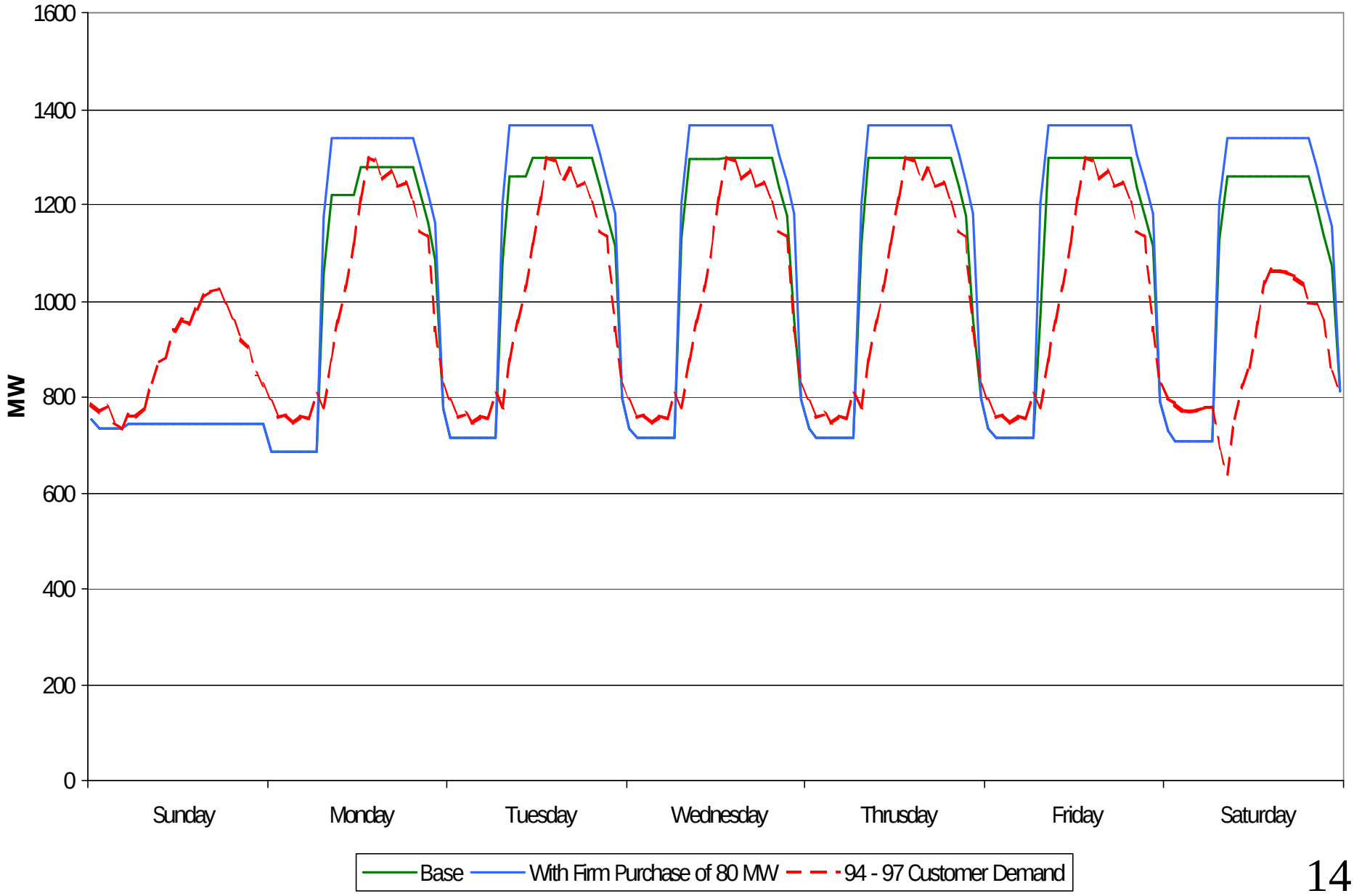
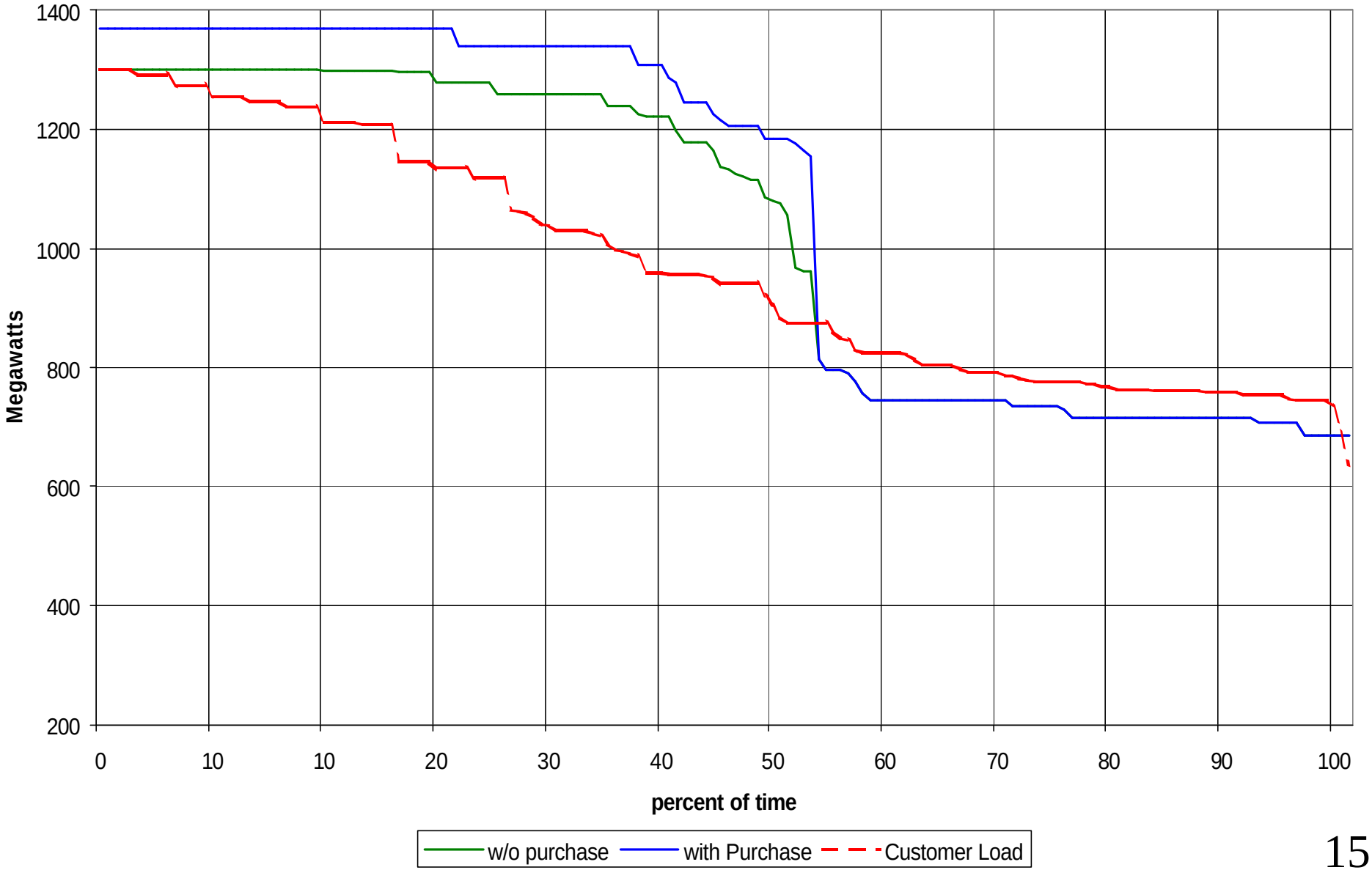
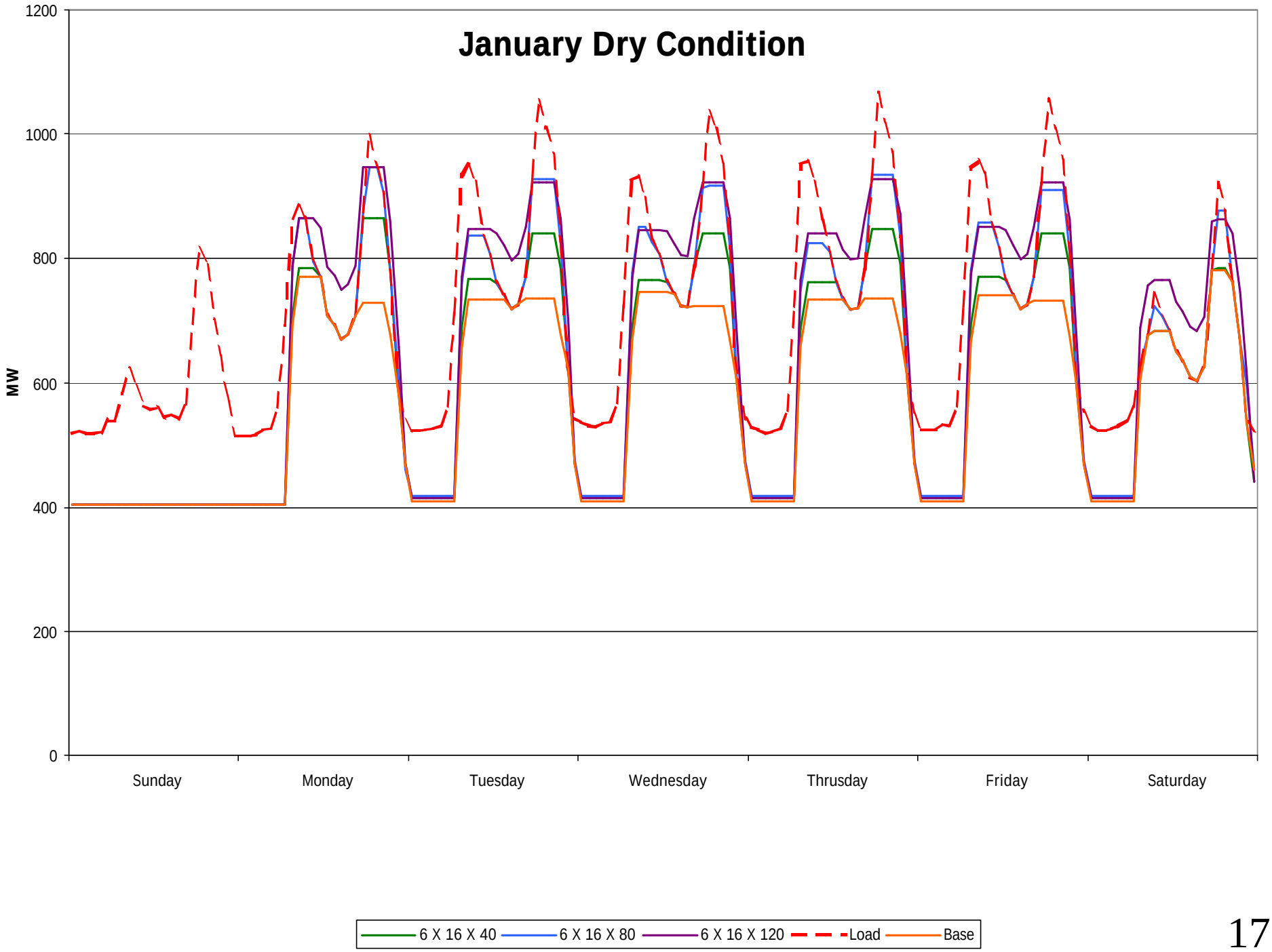


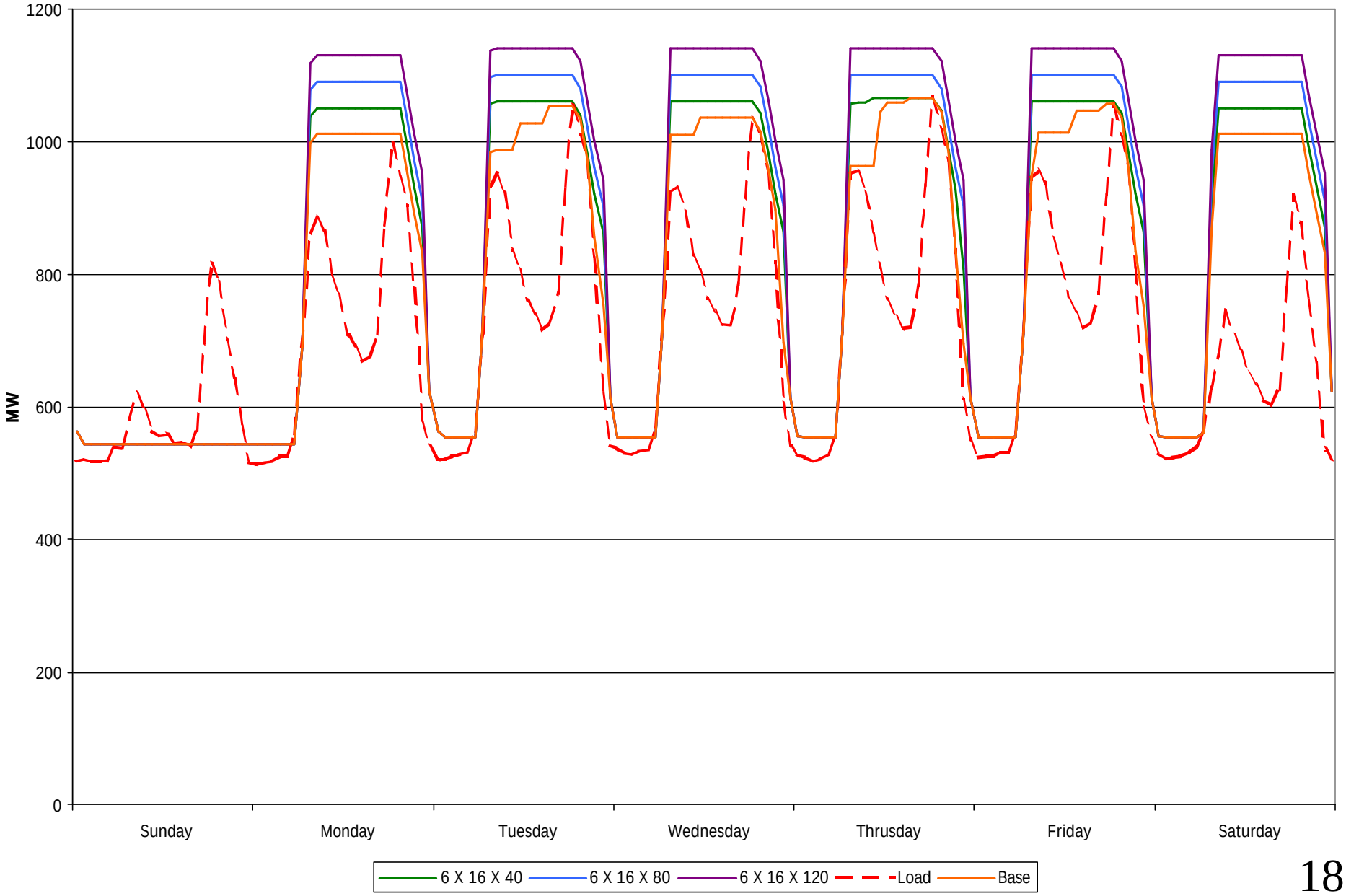
July Load/Capacity Duration Curve
80 Megawatt Onpeak Purchase
Average Hydrology



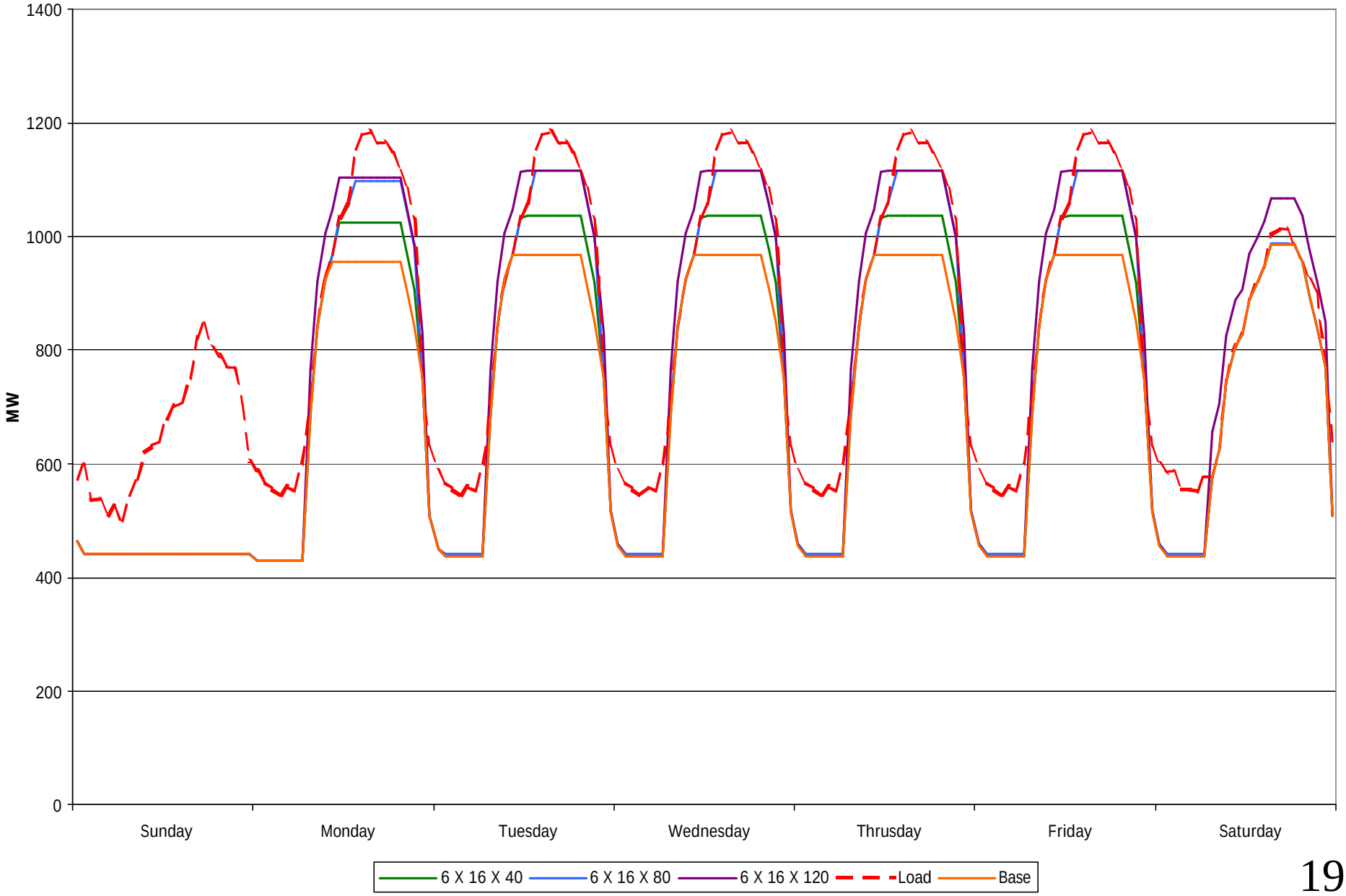
Comparison of 40, 80 and 120 Megawatt Purchases


January Dry Condition
MW
1200
1000
800
600
400
200
0
Sunday
Monday
Tuesday
Wednesday
Thrusday
Friday
Saturday
6 X 16 X 40
6 X 16 X 80
6 X 16 X 120
Load
Base

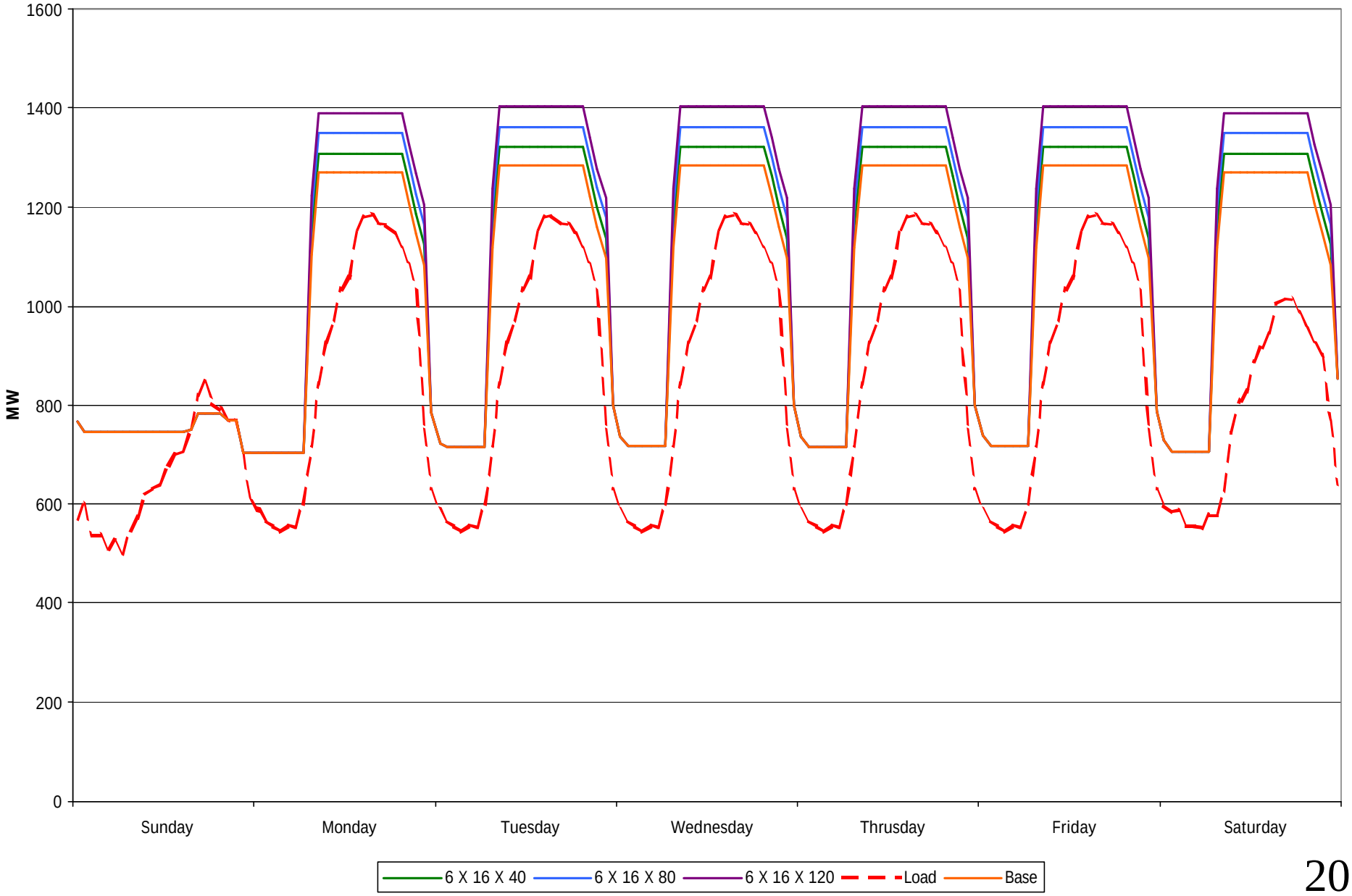
January Avg Condition



July Dry Condition



July Avg Condition



Conclusions

- On-peak purchase can provide substantial additional peak load-following capacity to SCLA/IP customers beyond the amount purchased.
- The most load-following benefit is received in minimum release to average conditions.
- Based on studies to date, 80 megawatts appears to be more beneficial than 40 or 120 megawatts.

Questions?

Colorado River Storage Project
Management Center