DOCKETED

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2015.07.20

Steve Uhler's comments on 15-IEPR-5: Energy Efficiency 2015.07.06

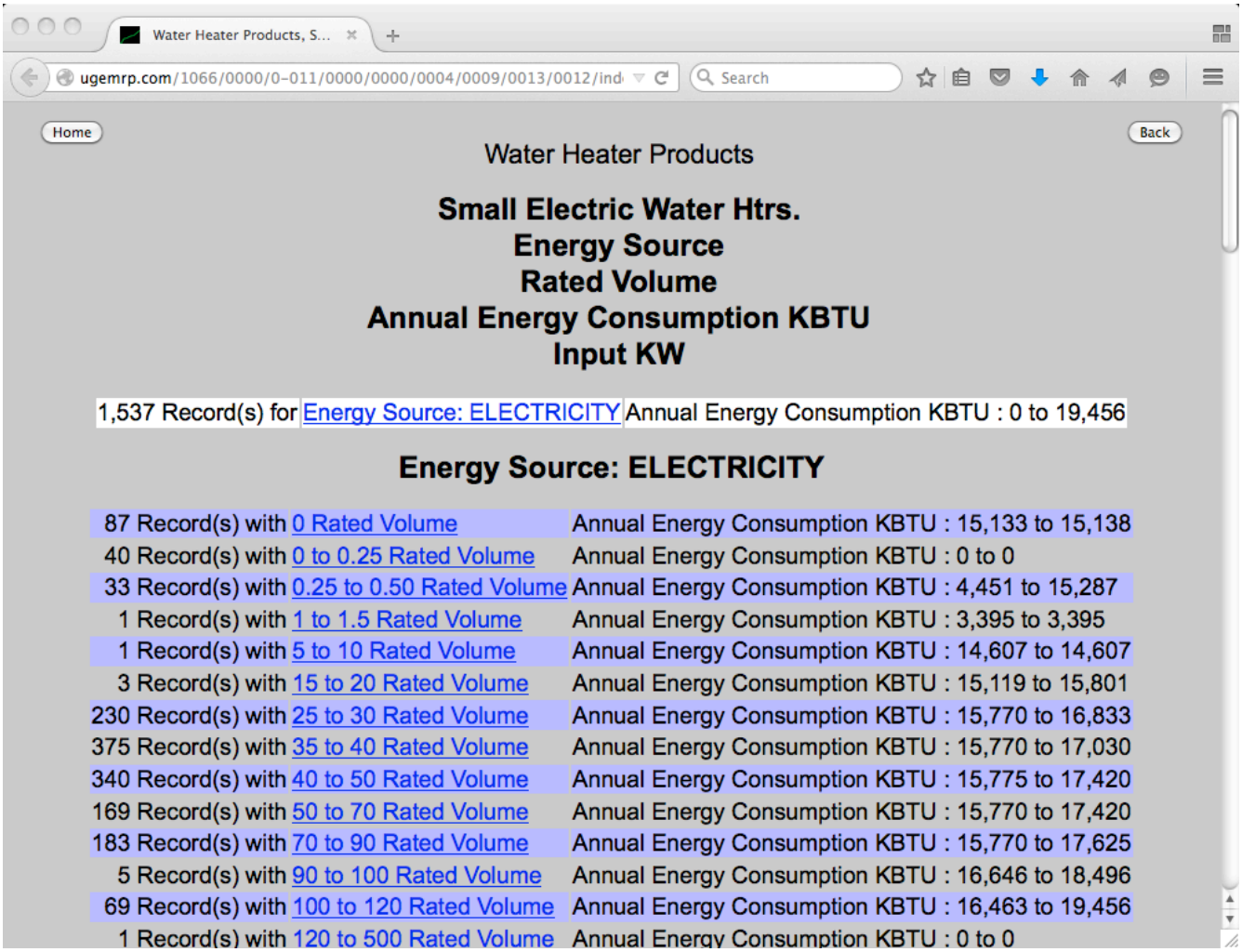
I endeavor to treat energy efficiency as a complete system.

I have made tools to help in finding the most efficient appliances for a given use.

I am using data is from CEC Appliance Database to make these reports.

Example for small electric water heaters:

http://ugemrp.com/1066/0000/0-011/0000/0000/0004/0009/0013/0012/index.htm



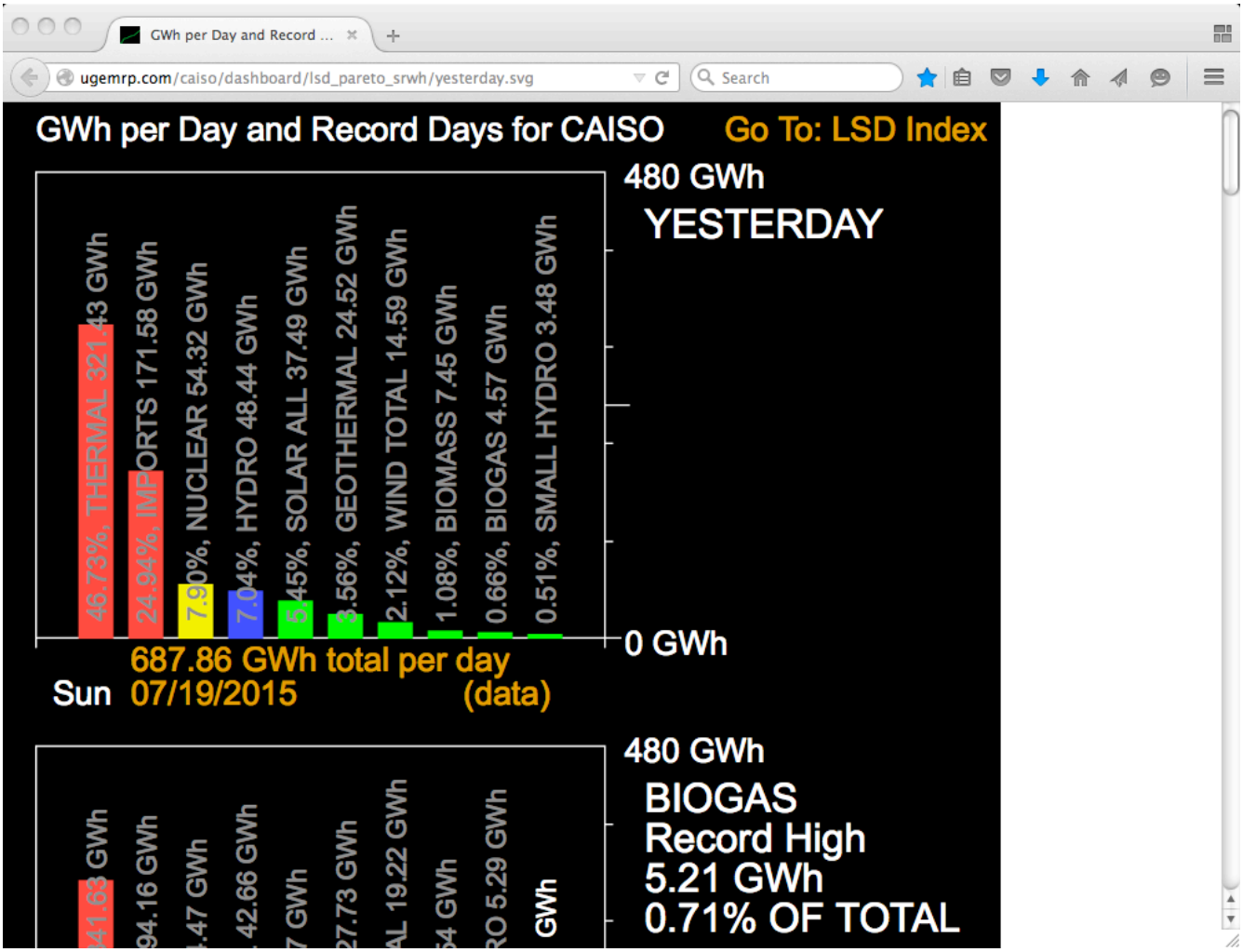
I like to eat healthy and fresh and local, I like to use low or no carbon electricity that is locally produced.

I look to see what is in season, I try to put off large uses on days where renewables aren't as available.

Here are Pareto charts of power sources for yesterday and record days:

http://ugemrp.com/caiso/dashboard/lsd_pareto_srwh/yesterday.svg

Html5 web browser is required to view the chart.



I like to know how much carbon my electric utility produces in their power generation. They may buy most of their power from someone else, I like to know if they are reducing the carbon in what they generate.

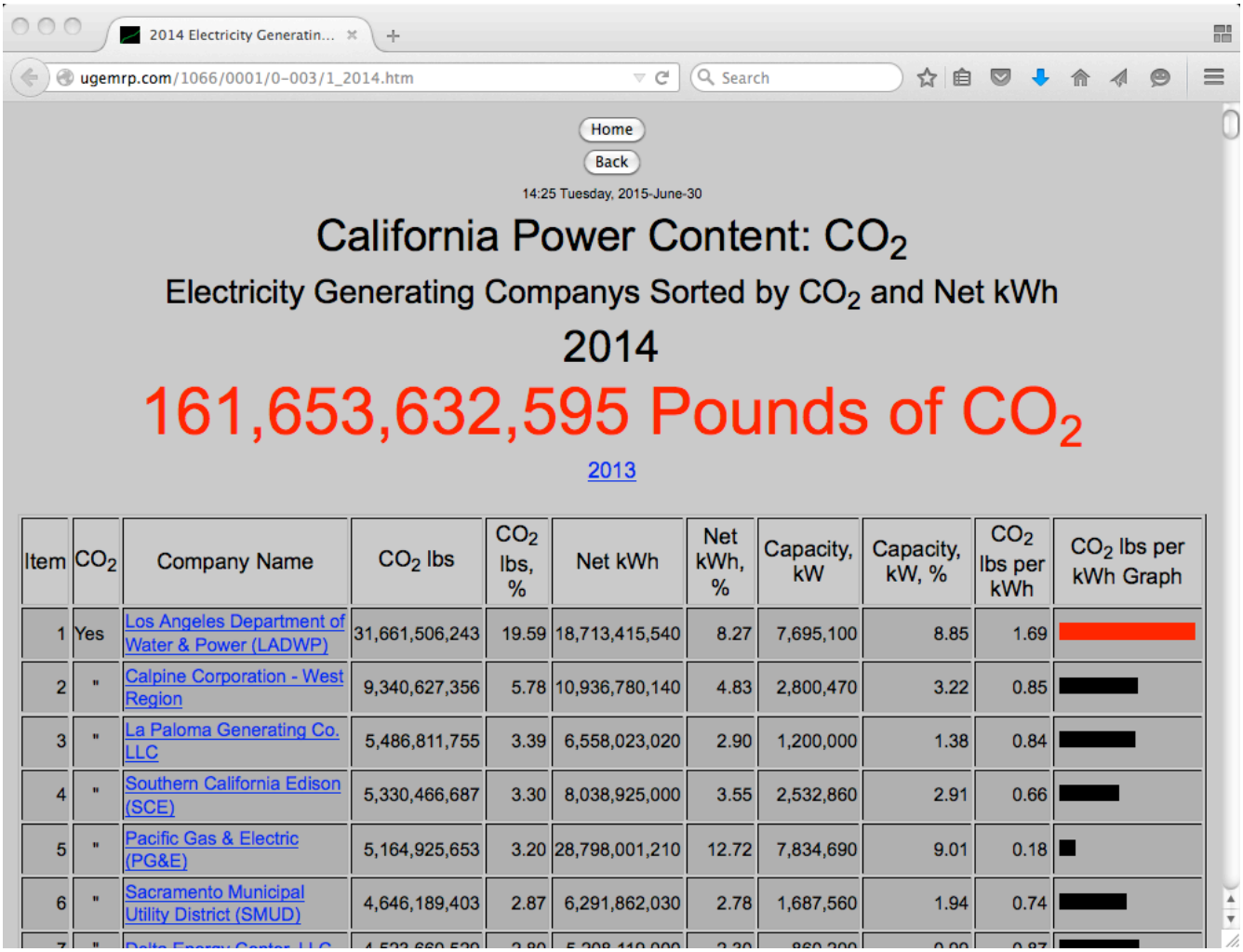
Here are tables of Generators for CO^2 per kWh based on CEC QFER, EPA and EIA data, a living document that I will endeavor to improve its accuracy as better data becomes available.

The graph bars in red are for those who produce electricity with more than 1.5 pounds of CO^2 per kWh.

I would like to know a CO^2 per kWh value for the 2050 carbon goal and the goals for each year in the past and future. If anyone knows a good source, let me know.

I would use these carbon goal numbers to plan my improvements and help others do the same.

http://ugemrp.com/1066/0001/0-003/1_2014.htm



Item	CO_2	Company Name	CO_2 lbs	CO_2 lbs, %	Net kWh	Net kWh, %	Capacity, kW	Capacity, kW, %	CO_2 lbs per kWh	CO_2 lbs per kWh Graph
1	Yes	Los Angeles Department of Water & Power (LADWP)	31,661,506,243	19.59	18,713,415,540	8.27	7,695,100	8.85	1.69	
2	"	Calpine Corporation - West Region	9,340,627,356	5.78	10,936,780,140	4.83	2,800,470	3.22	0.85	
3	"	La Paloma Generating Co. LLC	5,486,811,755	3.39	6,558,023,020	2.90	1,200,000	1.38	0.84	
4	"	Southern California Edison (SCE)	5,330,466,687	3.30	8,038,925,000	3.55	2,532,860	2.91	0.66	
5	"	Pacific Gas & Electric (PG&E)	5,164,925,653	3.20	28,798,001,210	12.72	7,834,690	9.01	0.18	
6	"	Sacramento Municipal Utility District (SMUD)	4,646,189,403	2.87	6,291,862,030	2.78	1,687,560	1.94	0.74	

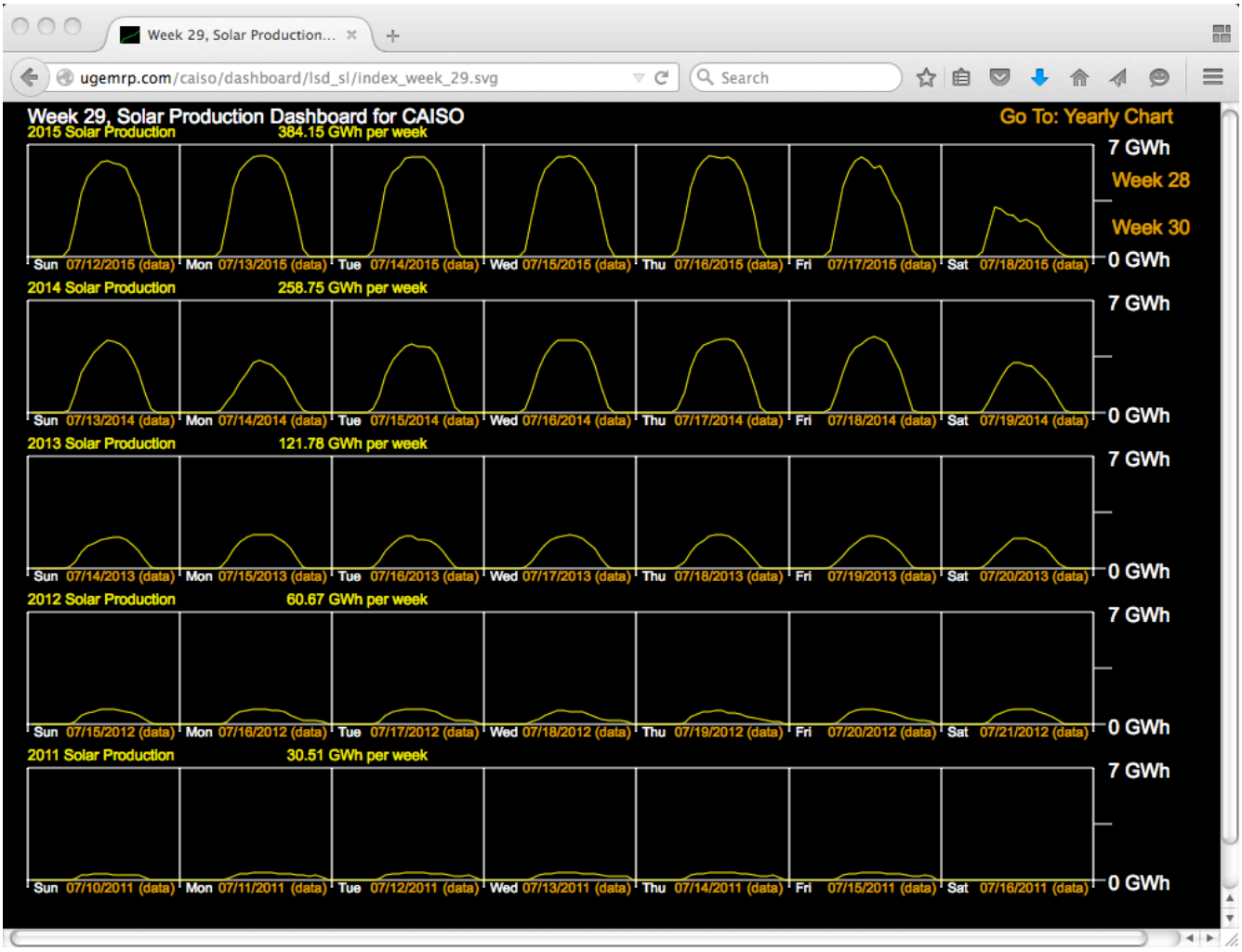
I like to see the solar production. As it increases during the day, I increase my electricity use to take advantage of the cleaner power.

That is what I mean by using electricity when it is “in season”.

A look at total solar by week and year:

http://ugemrp.com/caiso/dashboard/lsd_sl/index_week_29.svg

Html5 web browser is required to view the chart.



I hear folks talking about the "duck chart" and daily ramping. I wanted to know what caused the ramping and how often the duck shows its belly and how upright its breast is.

I have made my "Little Red Hen Chart". It combines the total and net load curves with a Pareto chart with white bars with the ramp helpers to the left (blue lettering) and those not helping (red lettering) to the right.

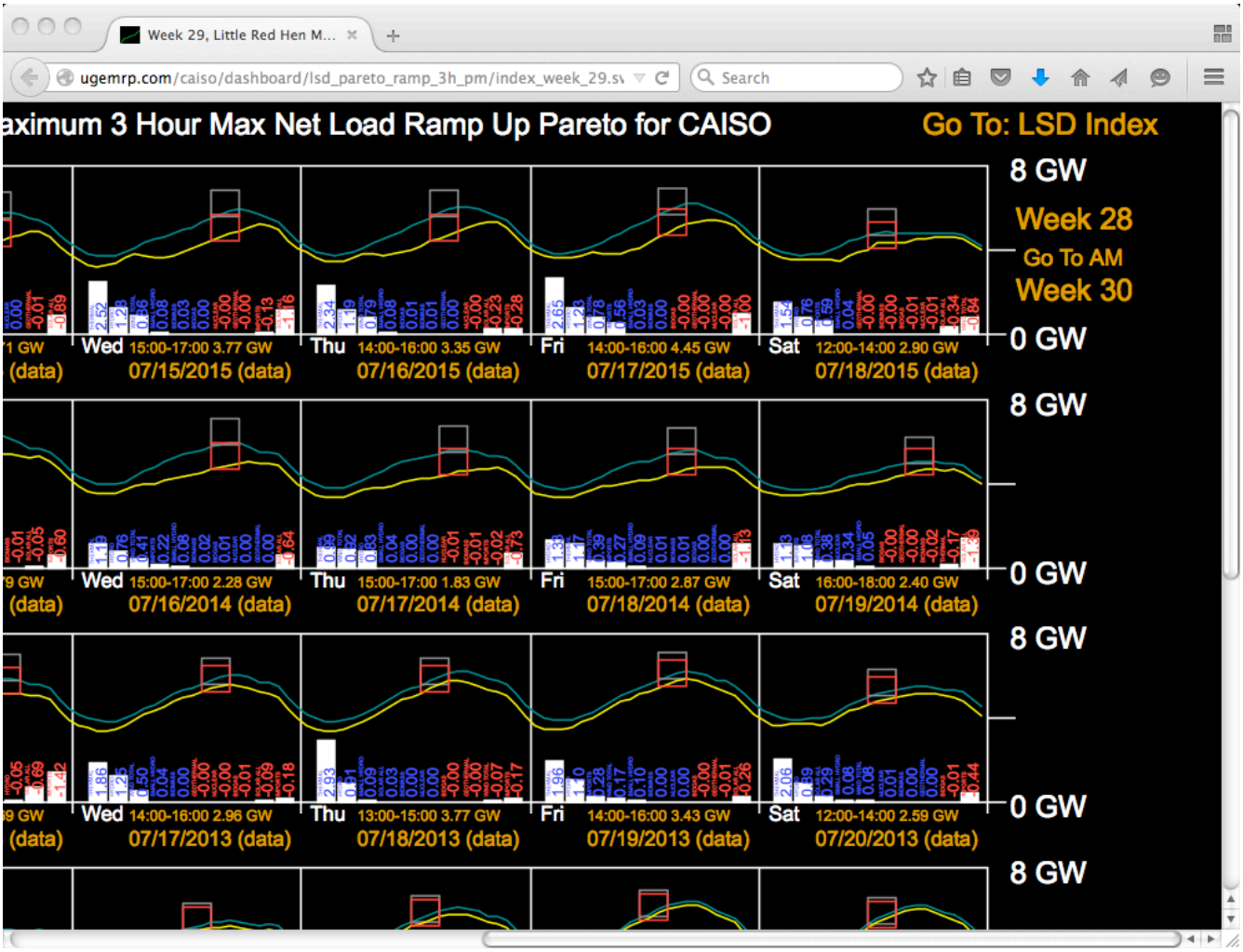
The squares on the load line are where the largest three hour ramp is.

The time of the ramp is shown by the day of the week label.

View more than four years of CAISO load and net load curves with power sources:

http://ugemrp.com/caiso/dashboard/lsd_pareto_ramp_3h_pm/index_week_29.svg

Html5 web browser is required to view the chart, use your browser's zoom feature to get a closeup view of each day.



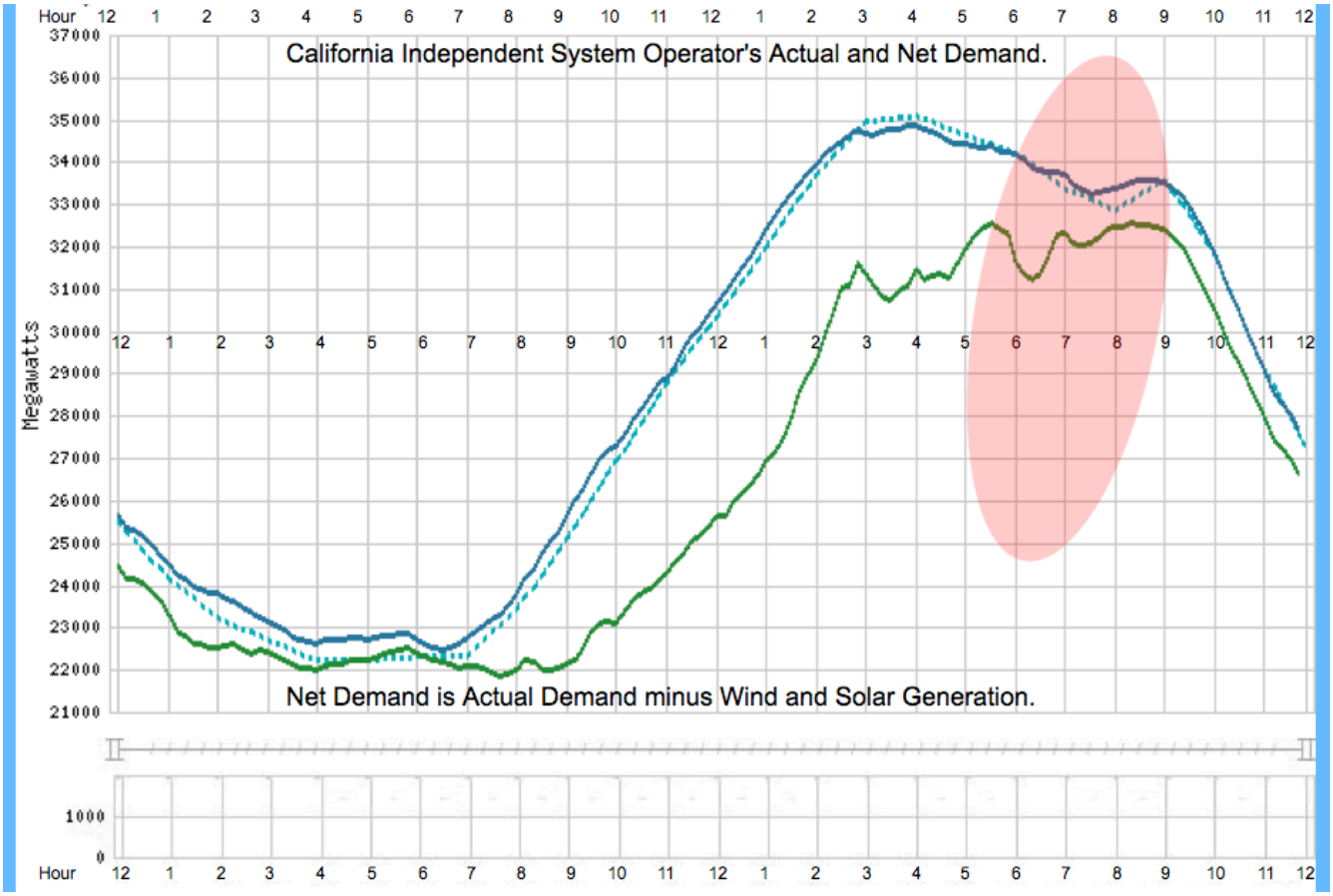
I made this web page http://wwmpd.com/index.svg for use on small screens such as phones. It allows a quick look to see what low or no carbon power sources are in season so I can plan my usage.

After using the system for a while, I have come to know when low or no carbon power sources are in season, so looking daily is not necessary to achieve my carbon goals.

This image taken from 7/19/2015 CAISO net load chart I placed on http://wwmpd.com/index.svg.

Looks like a "Mosquito Chart", might be more trouble than the "Duck Chart".

Html5 web browser is required to view the chart.



Hope some of these ideas are helpful, please try the website and let me know what works and what can be improved.

Please view clip from Senate Energy, Utilities and Communications Committee video on making efficient use of energy a way of life.

https://youtu.be/_BE47rMtAWM

I have made efficient use of energy a way of life.

Please enjoy,

Steve Uhler
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