

March 11, 2016

ENERGY COMMITTEE
Douglas County Board of Supervisors
Friday, March 18, 2016, 9:30 a.m., Room 207C, Courthouse
1313 Belknap Street, Superior, Wisconsin

Please call the Chair or the County Clerk's Office (395-1397) if you cannot attend.

MEMBERS:	Dave Sletten, Chair	David Conley, Vice Chair
	Rosemary Lear	Steve Wedan
	Keith Wiley	Mark Nelson, ECE (Advisor)

A G E N D A
**(Committee to maintain a two-hour meeting limit or take action
to continue meeting beyond that time.)**

1. Roll call.
2. Approval of minutes from the November 20, 2015 meeting (attachment).
3. Action items/referrals:
 - (a) Energy savings fact sheet;
 - (b) Boiler update/Boiler Improvement Plan;
 - (c) Steam Trap Survey/incentive; and
 - (d) Strategies for reducing peak demand (attachment).
4. Informational: Utility history reports (attachment).
5. Future agenda items.
6. Adjournment.

cc:	snelson@superiortelegam.com	Andy Lisak	Keith Kesler
	Candy Anderson	Tracy Ruppe	Bobbi Rongstad
	Matt Haley	Nicole Hynum	County Board Supervisors
	Russ Liupakka		

NOTE: Attachments to the agenda are available at the County Clerk's Office for review or copying and at the Douglas County website at www.douglascountywi.org. Action may be taken on any item listed on the agenda. The County of Douglas complies with the Americans with Disabilities Act of 1990. If you are in need of an accommodation to participate in the public meeting process, please contact the Douglas County Clerk's Office at (715) 395-1341 by 4:00 p.m. on the day prior to the scheduled meeting. Douglas County will attempt to accommodate any request depending on the amount of notice we receive.

Posted – Courthouse. Government Center: Daily Telegram emailed.

	03/11/2016
Name	Date

ENERGY COMMITTEE MISSION STATEMENT

To make cost-effective energy efficient practices central to the County's operating policies and to promote the principles of stewardship and sustainability as an integral part of the County's decision-making process.

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Friday, November 20, 2015, 9:30 a.m., Room 207C, Courthouse
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Meeting called to order by Vice Chair David Conley.

ROLL CALL: Present – Dave Conley, Rosemary Lear, Keith Wiley. Absent – Dave Sletten, Steve Wedan, Mark Nelson (Advisor). Others present – Bobbi Rongstad, Russell Liupakka, Keith Kesler, Cheryl Westman, Committee Clerk.

APPROVAL OF MINUTES: Motion by Lear, second Wiley, to approve the minutes from the July 17, 2015 meeting. Motion carried.

ACTION ITEMS/REFERRALS:

Boiler Update/Boiler Improvement Plan: Kesler reported that the boiler update project will be completed by month's end, which includes a new steam boiler and two new hot water heaters.

HVAC Operation After Normal Business Hours/Weekends: Due to staff working after hours and on weekends when the heating and cooling systems shut down, the set point for the Government Center handler has been lowered to 75 degrees to limit extreme temperature fluctuations in the building.

Energy Savings Fact Sheet: Included in member's meeting packet – reviewed. Bobbi Rongstad (Focus on Energy) suggested adding a few tips to the sheet: cleaning underneath and behind refrigerators regularly and removing dryer lint before every use. "Energy Actions" checklist distributed – Rongstad to check availability for additional copies to provide to the county.

ACTION: Motion by Lear, second Conley, to add energy conservation information in upcoming employee newsletter from Administration Office. Motion carried.

INFORMATIONAL: Utility History Reports: Reviewed.

Future Agenda Items: Strategies to reduce peak demand.

ADJOURNMENT: Motion by Lear, second Wiley, to adjourn. Motion carried. Meeting adjourned at 10:46 a.m.

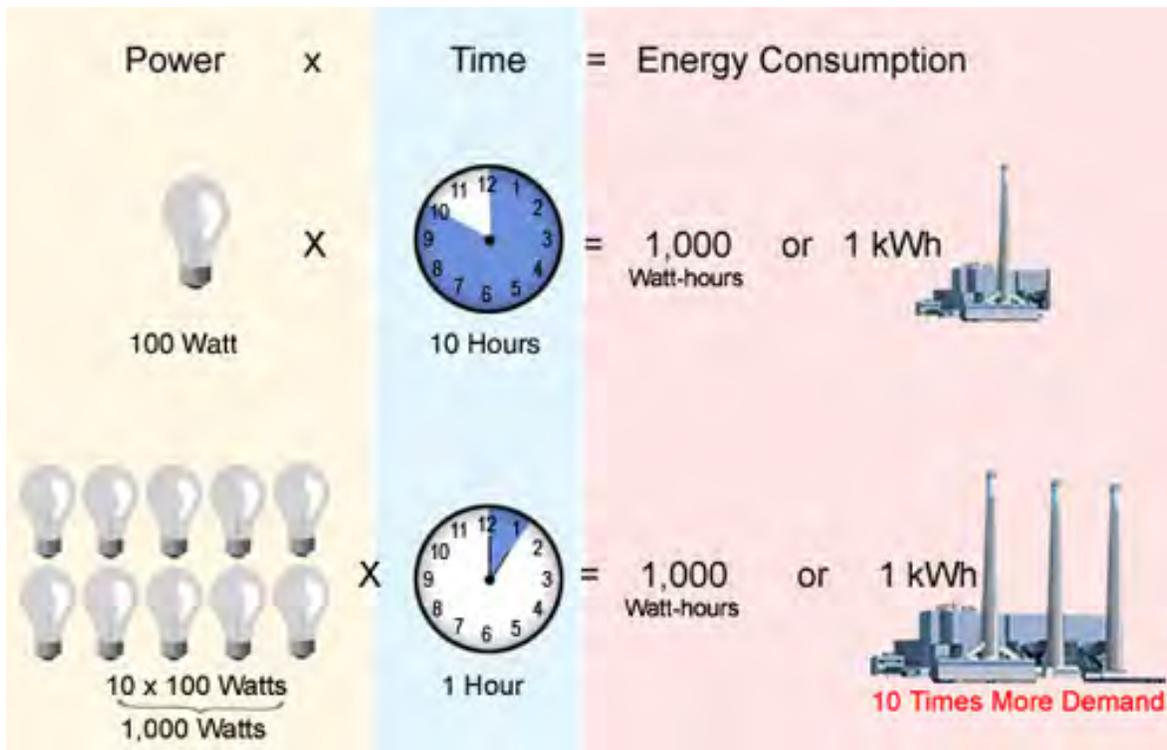
Submitted by,

Cheryl Westman, Committee Clerk

Douglas County

Summer Peak Demand

What is Demand and why do we pay for it?



Your utility must provide capacity to serve the highest demand that you and other customers may hit at any one time. You hit your peak on a hot summer day and so do other businesses.

So they charge you for the peak demand that you hit each month and also the peak you hit in a year.

GENERAL SERVICE – TIME-OF-DAY (EC5) Over 500 kW

APPLICATION

Service under this rate schedule is mandatory for all customers having demands of 500 kW or greater and who take service at less than nominally 13,800 volts phase to phase. Customers will not be removed from this rate schedule unless their 15-minute demand remains below 500 kW for 12 consecutive months

CUSTOMER CHARGE: \$150.00 for each metered service

ENERGY CHARGE: **

All On-Peak kWh

Winter Months \$0.06352 per kWh

Summer Months \$0.05992 per kWh

All Off-Peak kWh

Annually \$0.03777 per kWh

**Base Charge - [Subject to Purchased Power Adjustment Clause \(PCAC\)](#) - Positive or negative amount indicated as PCAC on your Billing Statement.

(See [PCAC Factors](#) for most recent rate factors)

DEMAND CHARGE: sum of the following:

Current month billed demand @

Winter Months \$9.00 per kW

Summer Months **\$8.25 per kW**

Highest annual demand (on- or off-peak) in excess of the current month billed demand @ \$1.80 per kW.

MINIMUM CHARGE Monthly)

The applicable Customer Charge plus the Demand Charges

ON-PEAK AND OFF-PEAK PERIODS DEFINED

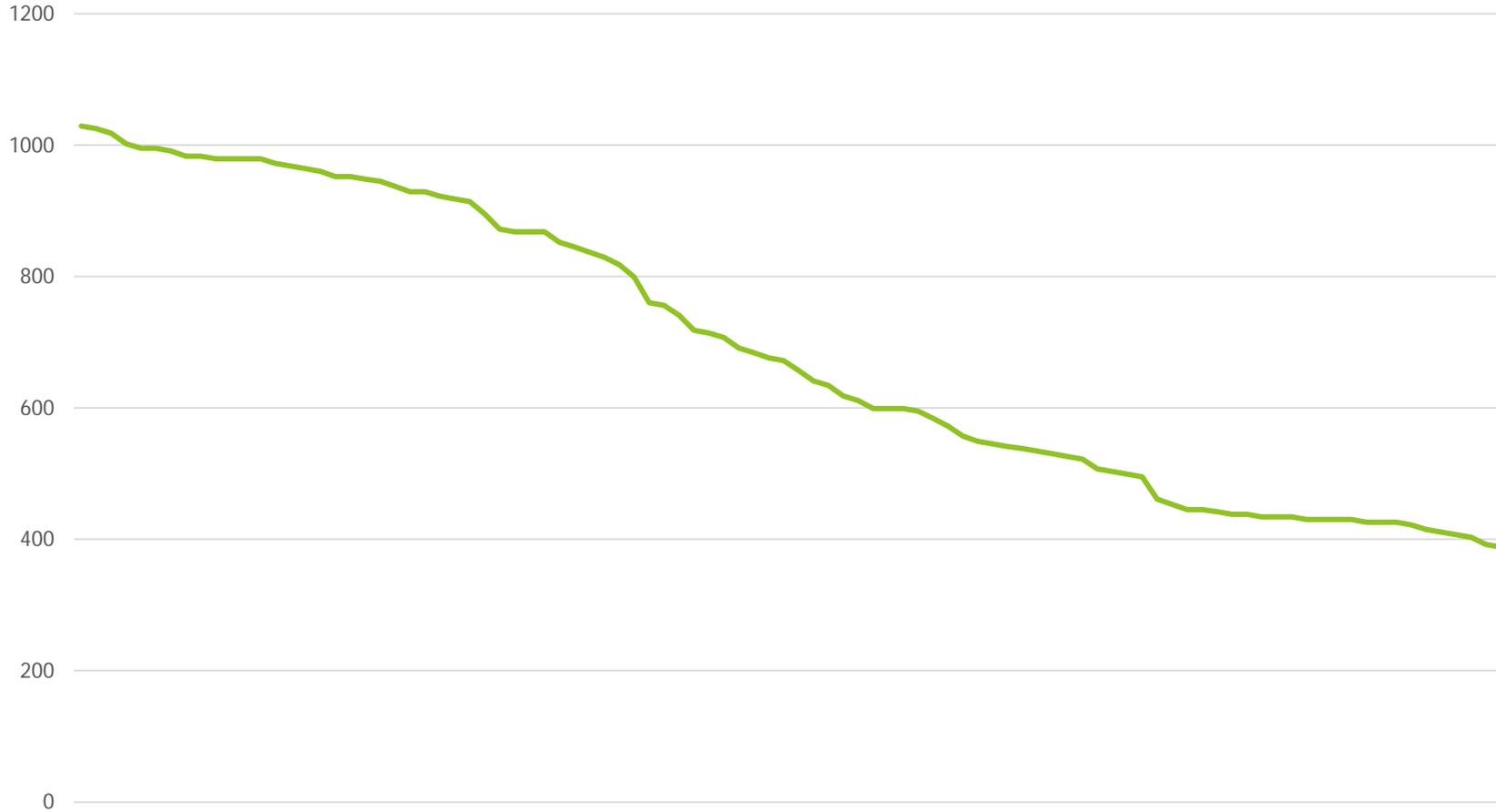
On-Peak Hours: 9 A.M. - 9 P.M., Monday through Friday, inclusive, excluding holidays.

Off-Peak Hours: Those hours not designated as on-peak hours.

Holidays: Those days nationally designated and celebrated as New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas.

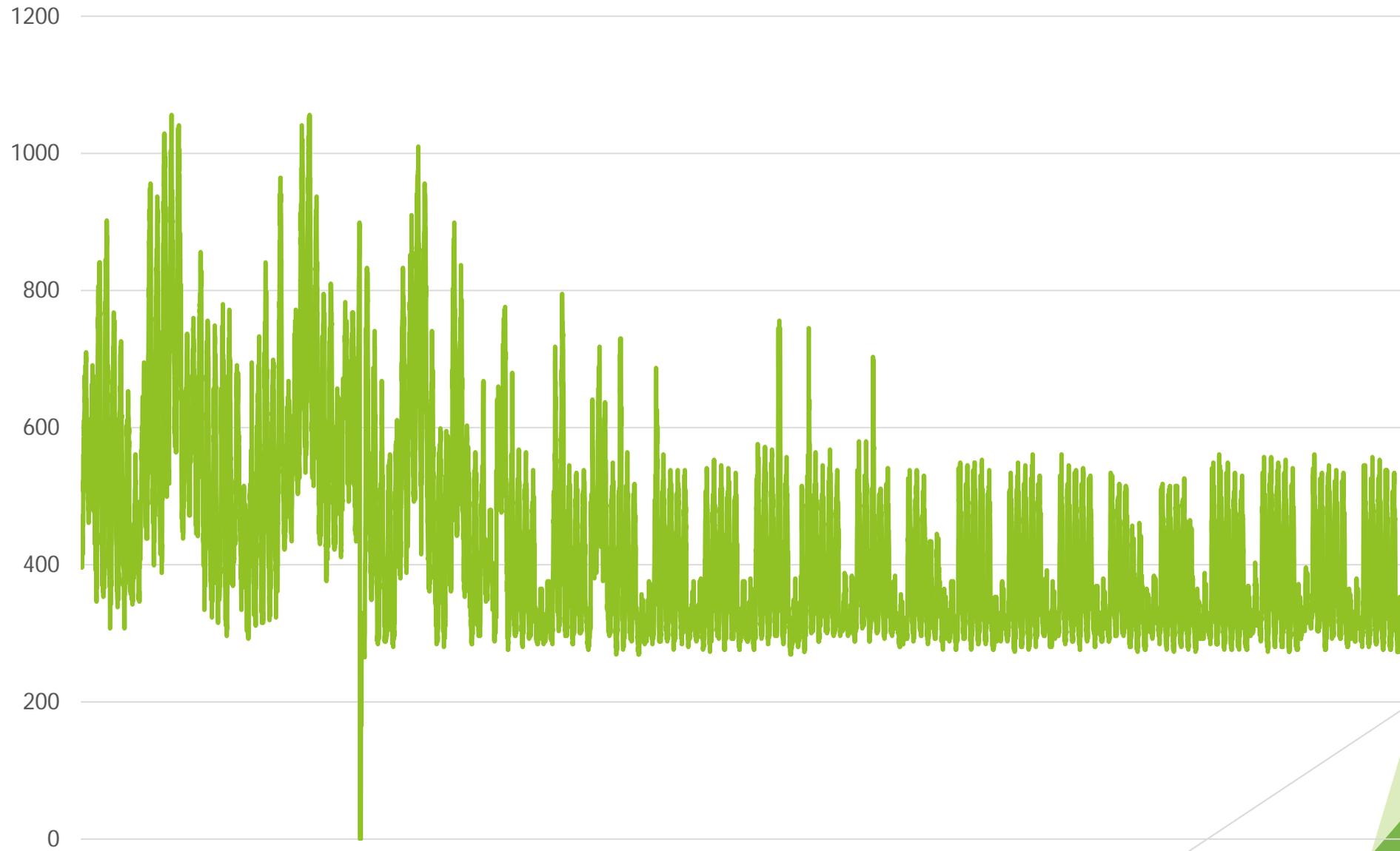
Winter Period: The winter period is designated as the November, December, January and February billing months. All other months of the year are considered to be in the summer period for billing purposes (March through October).

Interval graph
Aug 12 2015

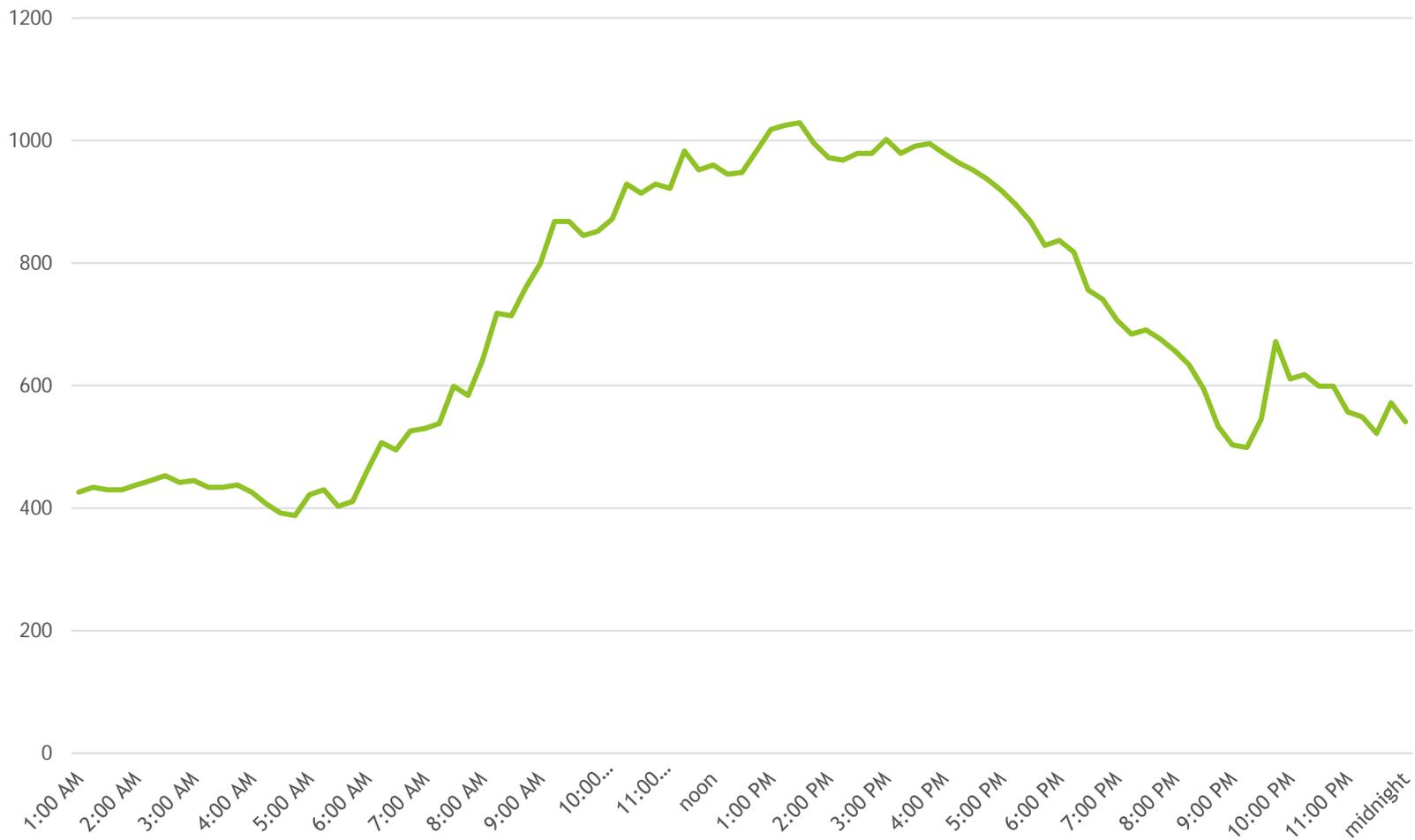


This shows in 15 minute increments the amount of time the meter recorded demand at various levels during the 24-hour period.

15 minute KW Aug 2015 - Jan 2016

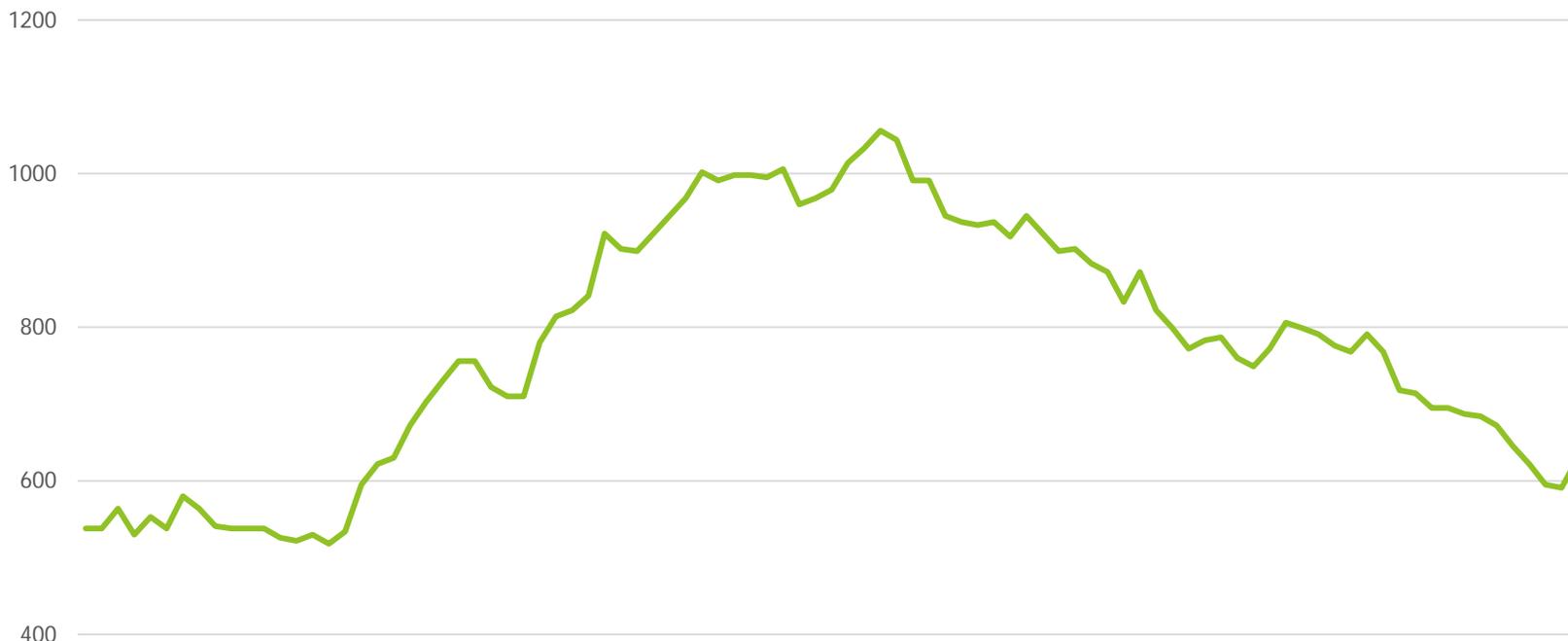


Aug 12 2015
demand

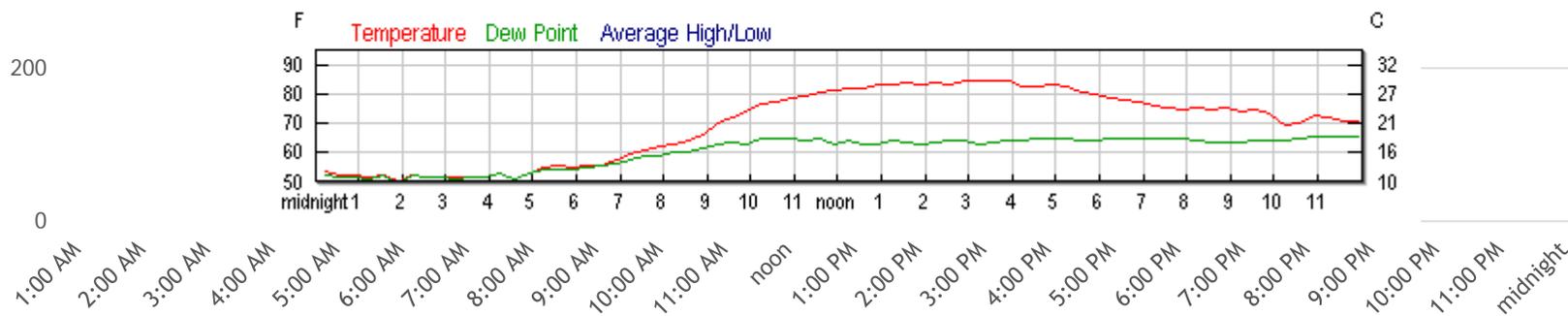


Thursday

Aug 13 2015



Daily Weather History Graph



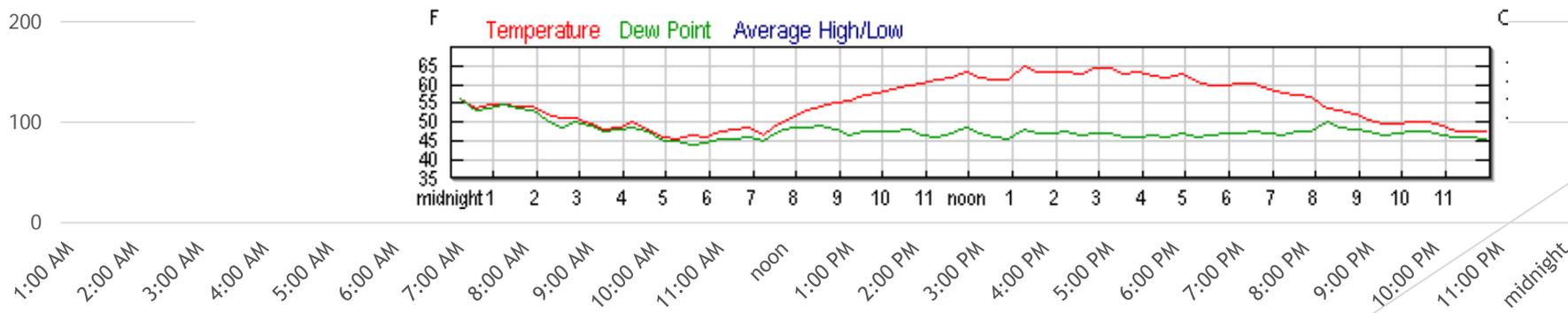
Friday

Notice
scale here

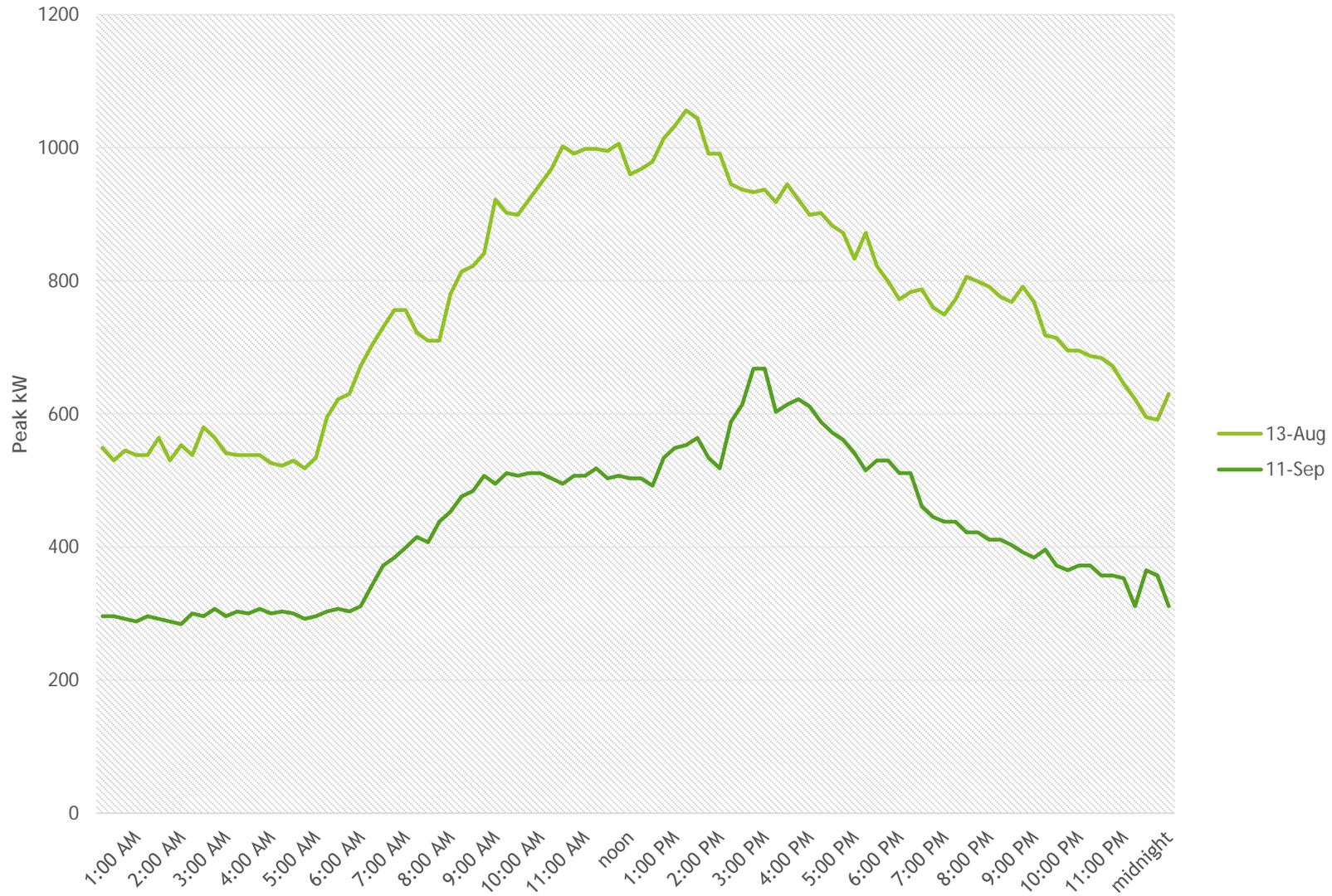
Sept 10 2015



Daily Weather History Graph



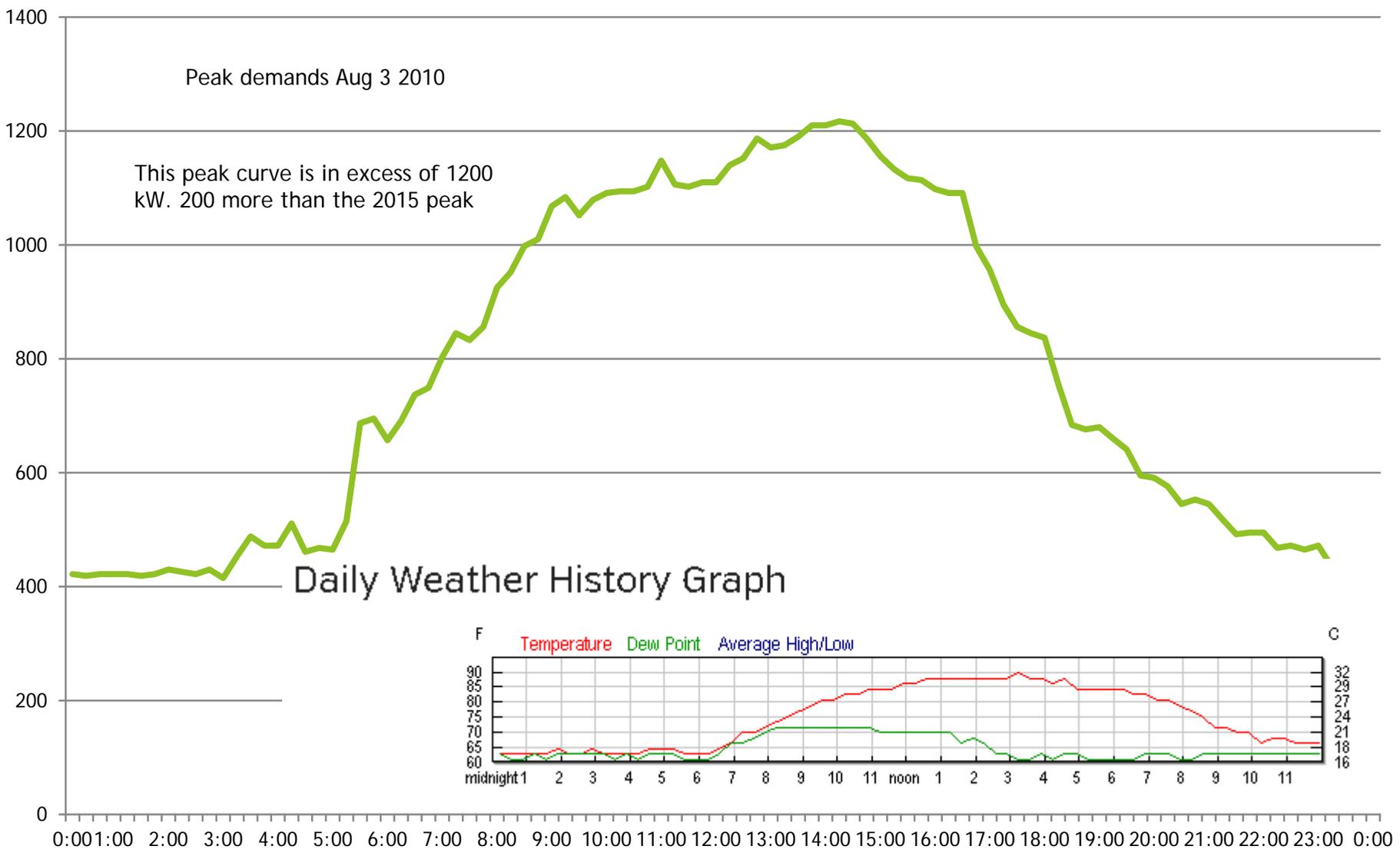
Compare a hot August day with a Sept day





2 206 ton air cooled chillers

- 427 kW of demand when both are operating at full capacity, not including fan load
- Staged - they can each operate $\frac{1}{2}$ at a time or full on
- Could stages be staggered?



Possible ways to reduce demand?

► Pre-cool the building on off-peak

ON-PEAK AND OFF-PEAK PERIODS DEFINED

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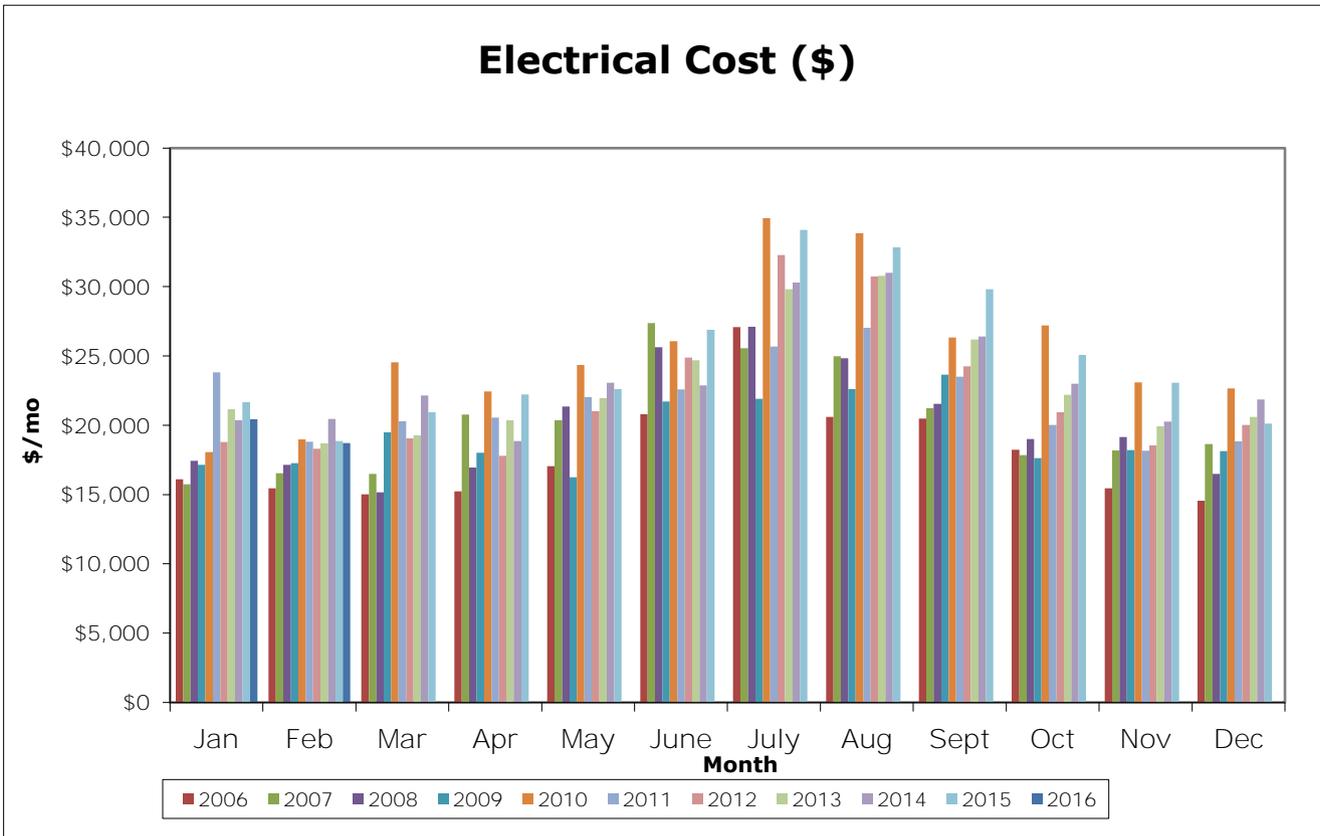
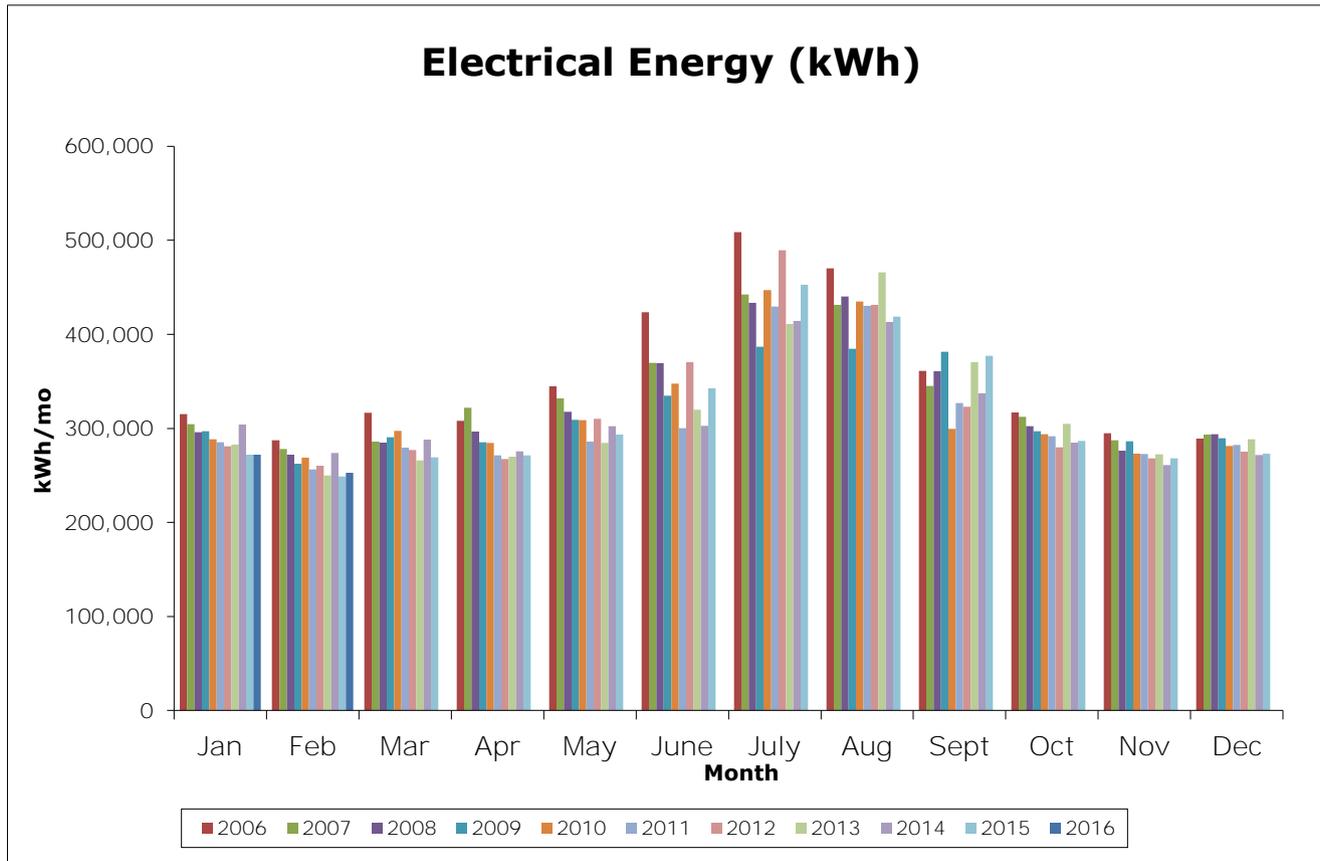
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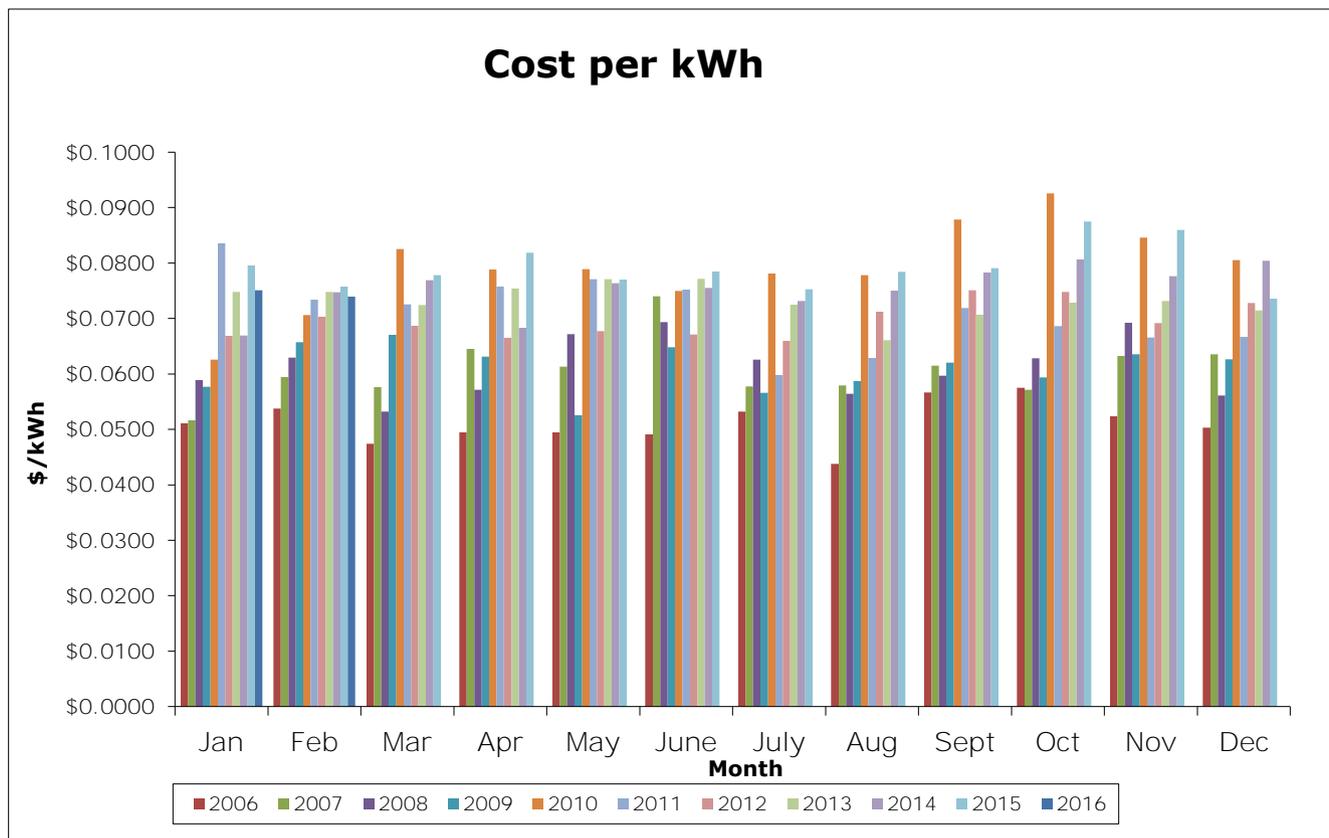
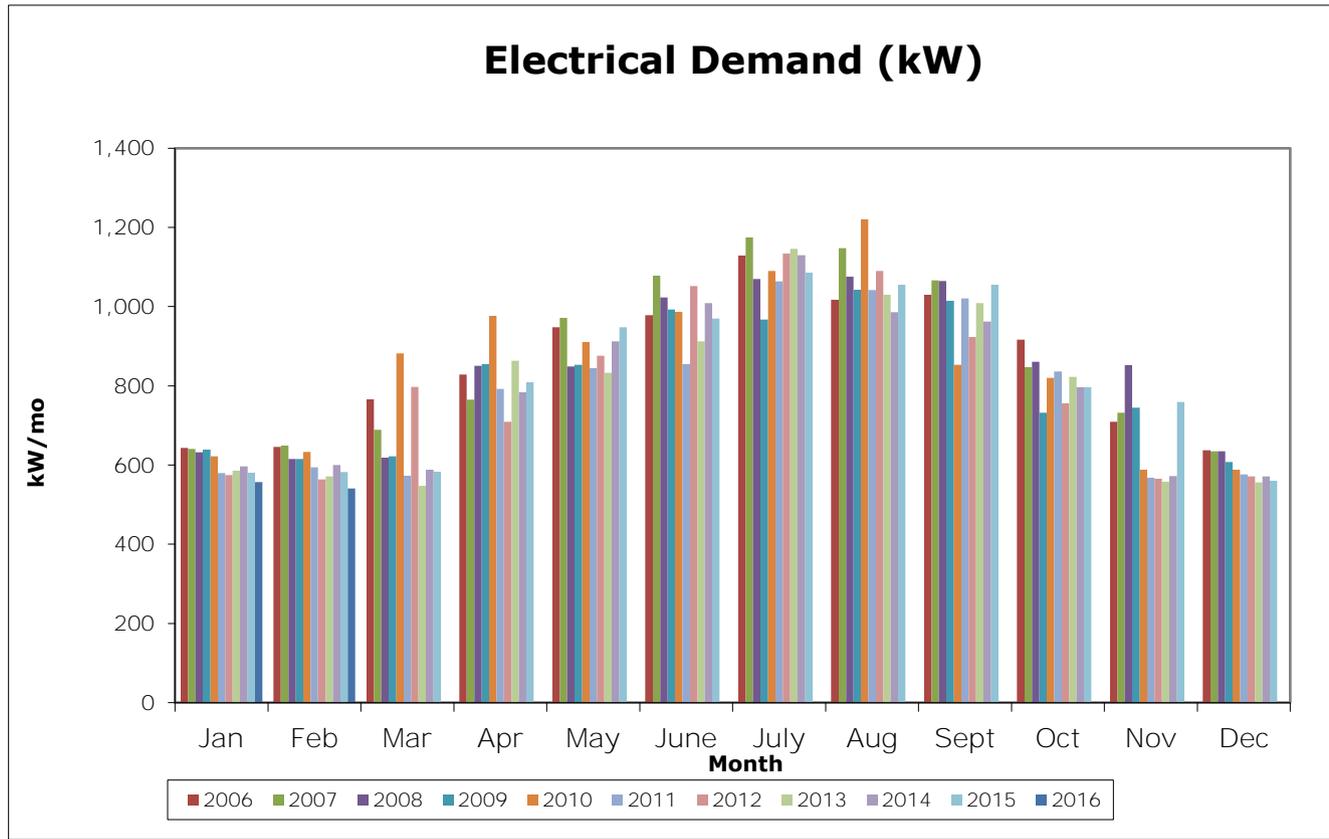
Possible ways to reduce demand?

- ▶ **Install a control strategy that won't allow all 4 stages to operate simultaneously:** look up Siemens Demand Flow program
- ▶ **Have the chillers tuned and cleaned**
- ▶ **Install a more efficient chiller system \$\$\$**
- ▶ **Install an ice storage system that uses off-peak power \$\$\$**
- ▶ **Install a solar array to generate some of the power during peak times \$\$\$**

Douglas County Government Center and Courthouse

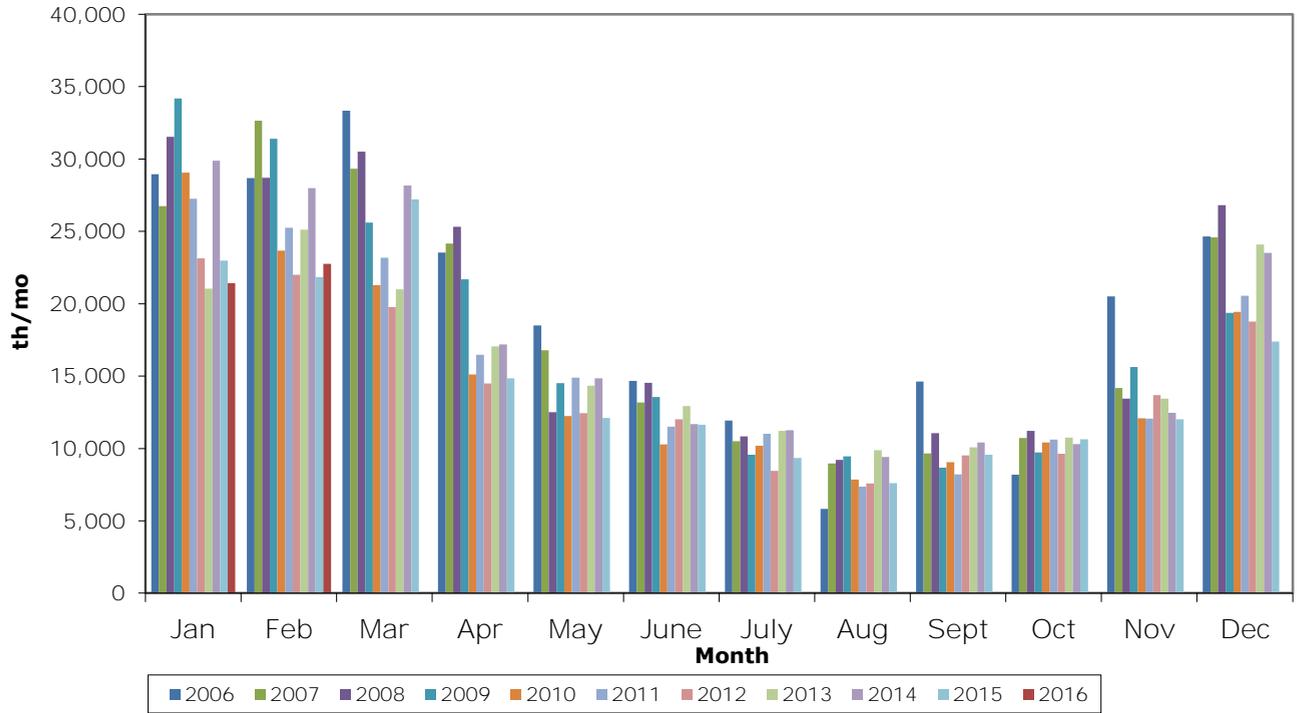


Douglas County Government Center and Courthouse



Douglas County Government Center and Courthouse Interruptible

Gas Energy (Therms)



Gas Cost (\$)

