Baseload Basics

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Honeywell

Session Outline

- What is Baseload?
- How do you calculate it?
- Why is it useful to your customer?
- Common Baseload problems & solutions.
- Example Customer Interview.
- Questions.

What is Baseload?

Baseload Electrical Use:

- The amount of electricity that is consumed by a building to meet the minimum demands of occupying that building.

- This does not account for seasonal heating and cooling related needs.

There is a difference between Electrical Baseload and Gas Baseload

Examples of Baseload contributors

- Lighting
- Refrigeration
- Medical equipment
- Entertainment equipment
- Domestic hot water
- Cooking
- Laundry
- Aquariums
- Waterbeds
- Well pumps, etc.

Examples of what is **NOT** Baseload

- Air conditioning
- Space heat
- Seasonal Lighting
- Heat tape

How do you calculate Baseload?

- Need the customer's usage data
- Take an average of the lowest three months of electrical use
- This will show how much energy is used regardless of external climate factors
- It is also a good indicator of client lifestyle

Calculating Baseload

- **Example 1: My Place**

Baseload Months:
378
395
399

nationalgrid

BILLING PERIOD
Dec 23, 2009 to Jan 25, 2010

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ACCOUNT NUMBER [redacted]

PLEASE PAY BY
Feb 20, 2010

AMOUNT DUE
$ 196.08

Enrollment Information

To enroll with a supplier or change to another supplier, you will need the following information about your account:

Loadzone Central

Acct No: [redacted] Cycle: 19, YEHL

Electric Usage		Gas Usage	
Month	kWh	Month	Therms
Feb 09	378	Feb 09	92
Mar 09	395	Mar 09	87
Apr 09	399	Apr 09	52
May 09	431	May 09	16
Jun 09	429	Jun 09	11
Jul 09	592	Jul 09	10
Aug 09	754	Aug 09	11
Sep 09	524	Sep 09	10
Oct 09	521	Oct 09	23
Nov 09	424	Nov 09	32
Dec 09	413	Dec 09	67
Jan 10	509	Jan 10	99

Choosing an Energy Supplier You can choose who supplies your energy. No matter which energy supplier you choose, National Grid will continue to deliver energy to you safely, efficiently and reliably. We will also continue to

CHARGES

Delivery Services

Electricity Delivery

Service Period	No. of days	Current Reading	-	Previous Reading	=	Total Usage
Dec 23 - Jan 25	33	58428 *Actual*		57919 *Actual*		509 kWh

METER NUMBER 26499624 NEXT SCHEDULED READ DATE Feb 25

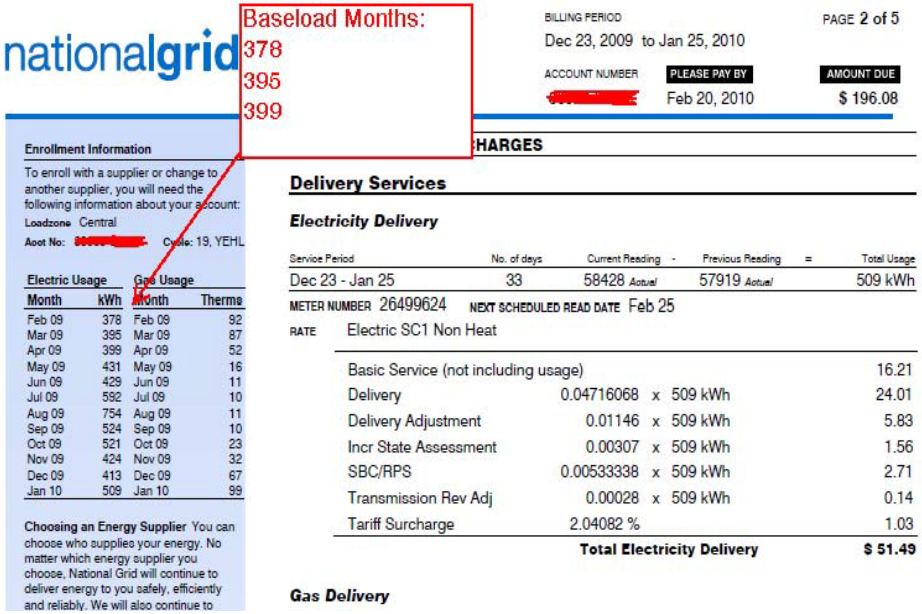
RATE Electric SC1 Non Heat

Basic Service (not including usage)				16.21
Delivery	0.04716068	x	509 kWh	24.01
Delivery Adjustment	0.01146	x	509 kWh	5.83
Incr State Assessment	0.00307	x	509 kWh	1.56
SBC/RPS	0.00533338	x	509 kWh	2.71
Transmission Rev Adj	0.00028	x	509 kWh	0.14
Tariff Surcharge	2.04082 %			1.03
			Total Electricity Delivery	**$ 51.49**

Gas Delivery

Calculating Baseload

- Using the 3 month of lowest electrical use we can determine the Baseload of the building.
  - 378, 395, 399 monthly kWh.
  - 390 monthly kWh average.



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		Total Electricity Delivery	**$ 51.49**

Gas Delivery

The Baseload of this building is 390 kWh's a month.

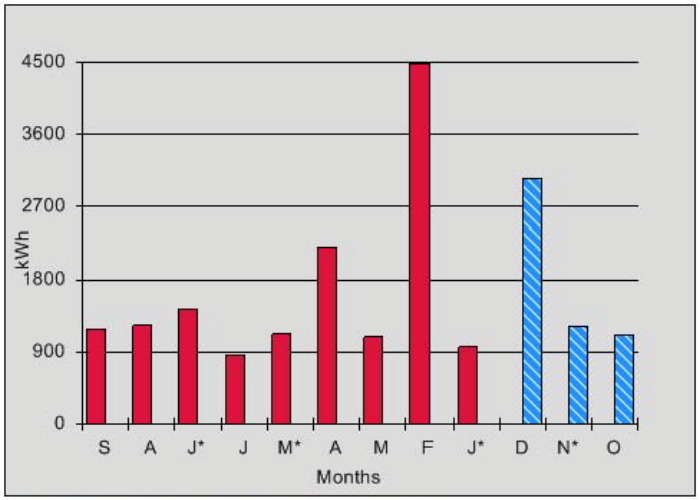
Calculating Baseload

- **Example 2: Empower NY Customer**

This customer has very high electrical usage, but many estimated readings.

Electric Usage History

Month	Year	kWh	Meter Type	Read Date	Number of Read Days	A/E
September	2009	1,190.00	Straight	09/24/2009	30.0	A
August	2009	1,233.00	Straight	08/25/2009	29.0	A
July	2009	1,433.00	Straight	07/27/2009	33.0	E
June	2009	861.00	Straight	06/24/2009	29.0	A
May	2009	1,121.00	Straight	05/26/2009	32.0	E
April	2009	2,211.00	Straight	04/24/2009	30.0	A
March	2009	1,088.00	Straight	03/25/2009	28.0	A
February	2009	4,486.00	Straight	02/25/2009	29.0	A
January	2009	963.00	Straight	01/27/2009	32.0	E
December	2008	3,049.00	Straight	12/26/2008	31.0	A
November	2008	1,227.00	Straight	11/25/2008	32.0	E
October	2008	1,112.00	Straight	10/24/2008	30.0	A



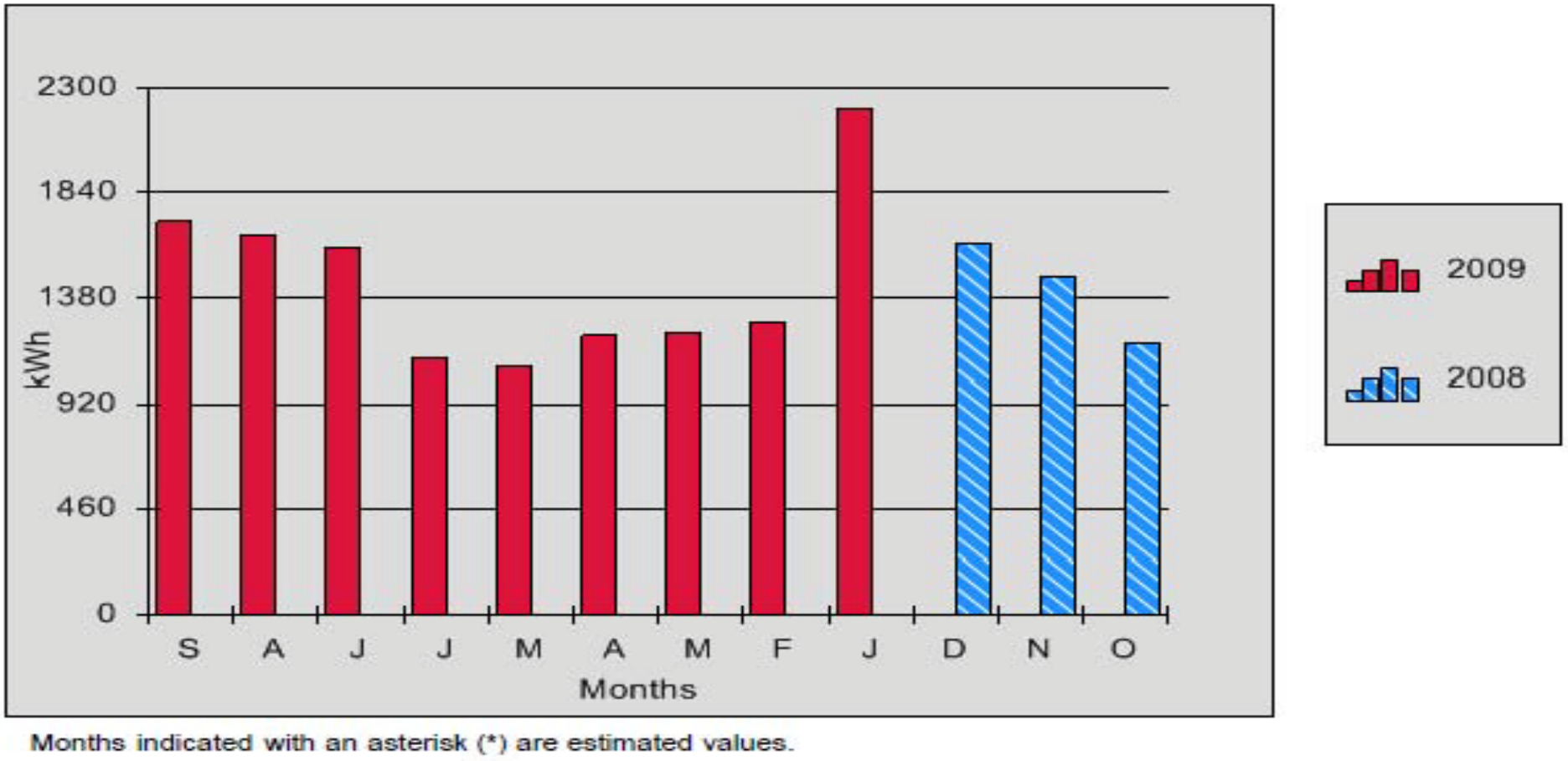
Months indicated with an asterisk (*) are estimated values.

*In this instance October, March, and June are Baseload Months.

1112, 1088, 861 average for a Baseload of 1020 monthly kWh.

Use of Baseload Analysis in the Home

- **What's going on in this home?**



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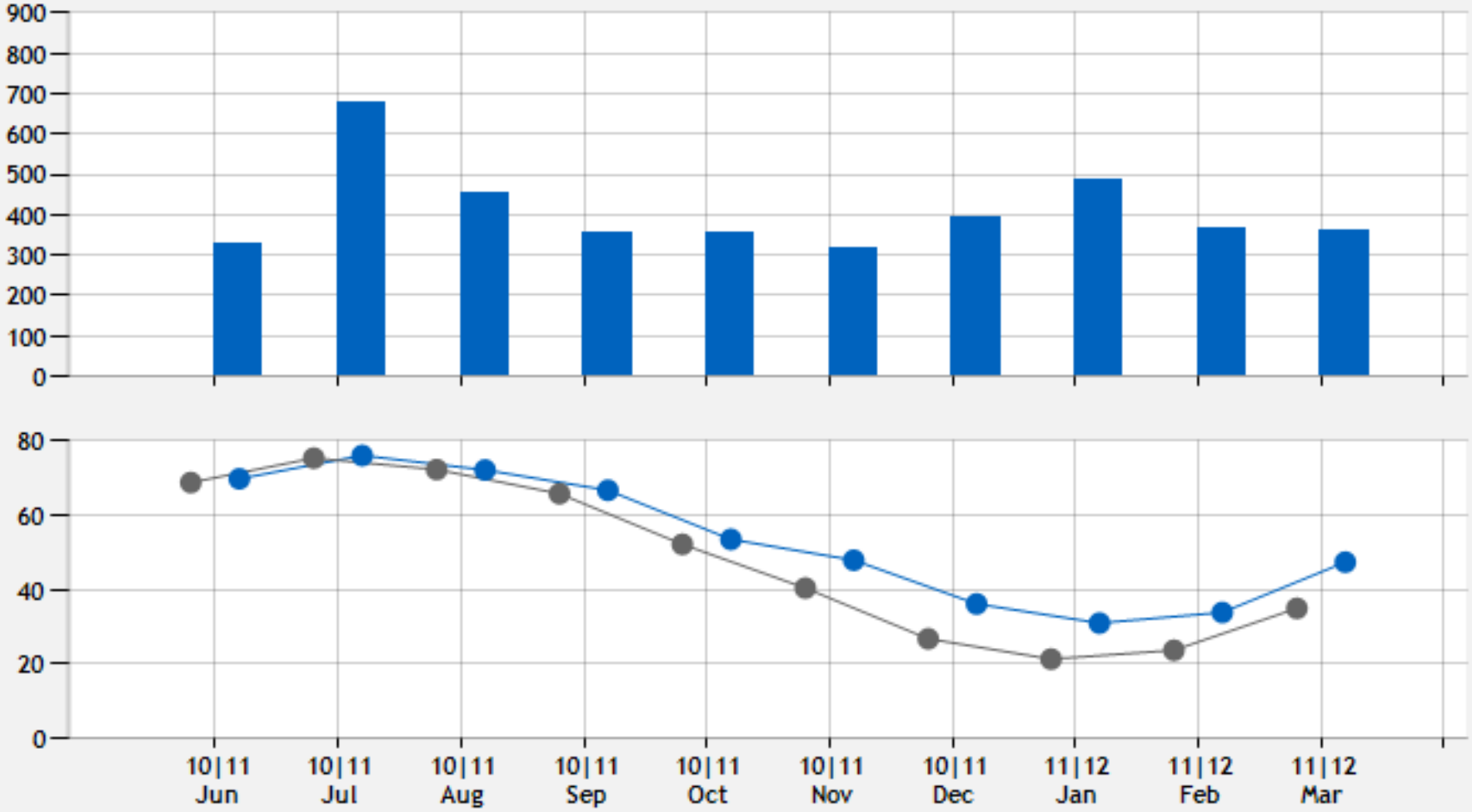

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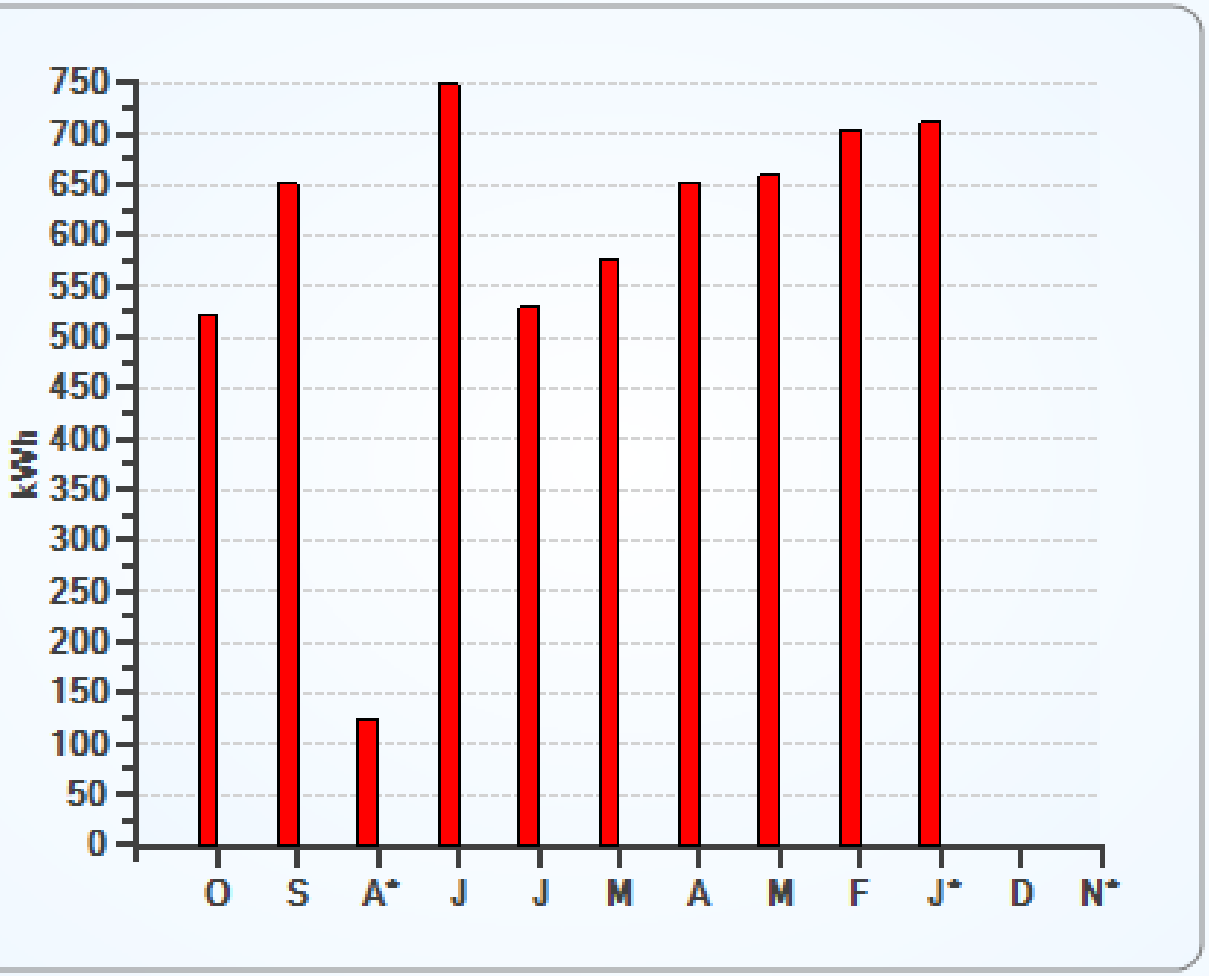

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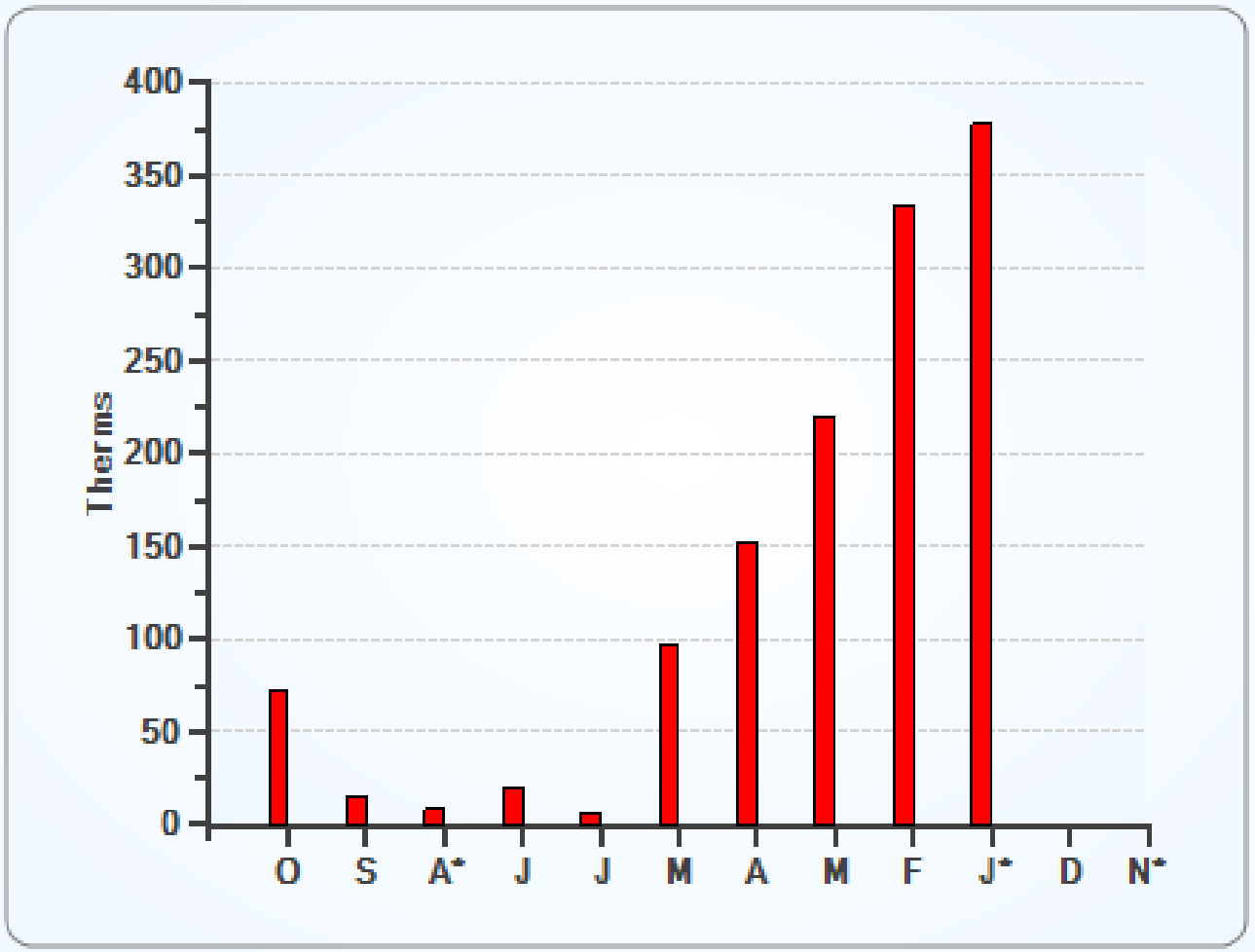


How do I use this with my customers?

- Make sure you have access to their usage, and show them areas where they are using more energy than usual.
- This shows the real costs of their actions.
- Analysis of their Baseload could identify real key areas for you to target to help lower their energy costs.

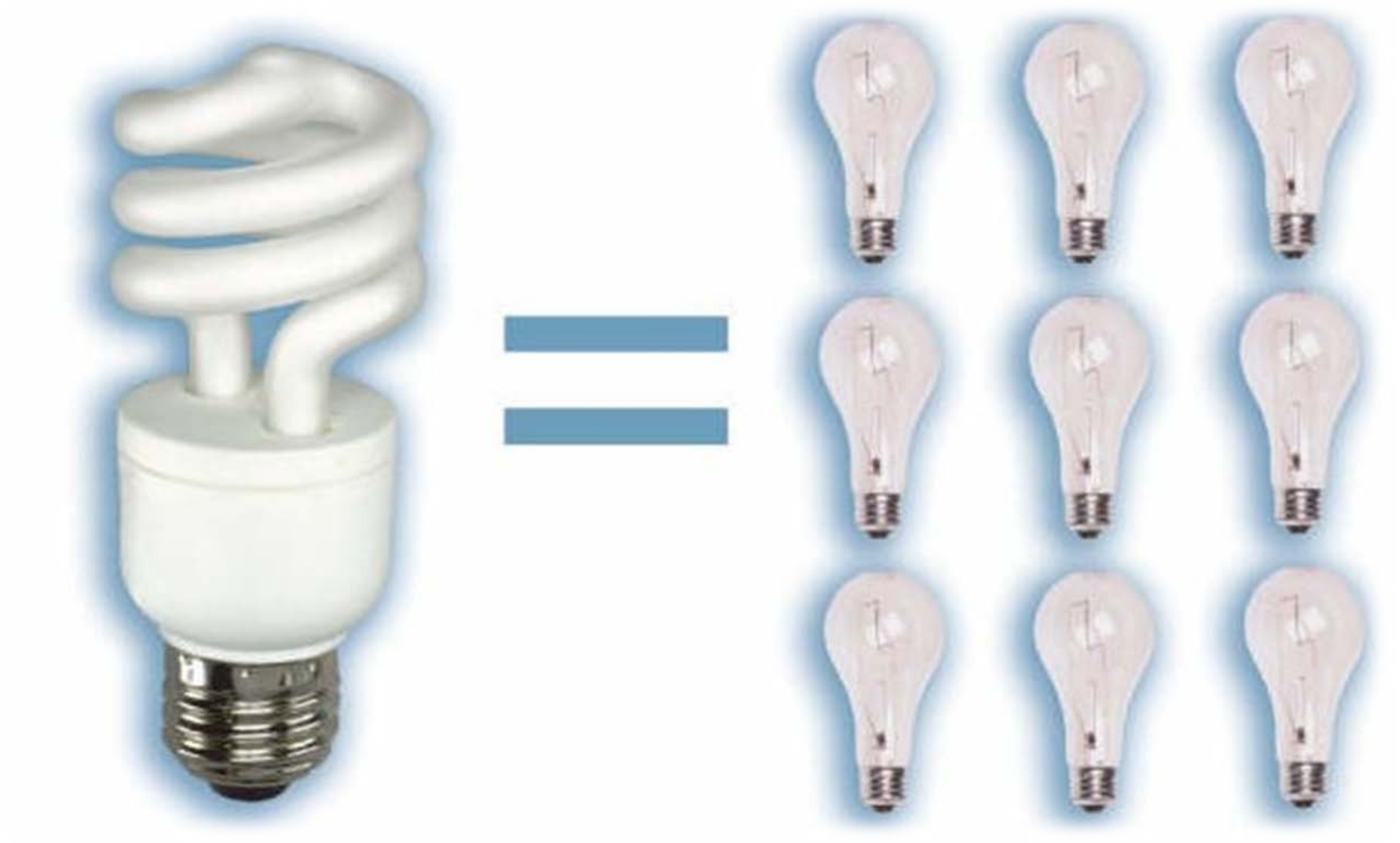
How can this help me close more jobs?

- You differentiate yourself from other contractors as a “Better Expert”.
- People are willing to pay for a higher quality service.
- A home with a high Baseload may benefit more from electrical reduction measures than typical shell measures.

Common Baseload problems & solutions.

Lighting

Lighting



Lighting

Lighting

- Install Compact Fluorescent or LED Lights where ever possible.
- Make use of sensors, timers, and other occupancy based devices.
- Talk about changing their behaviors and adopting task lighting rather than whole room lighting.

Refrigeration

Keeping food cold is, on average, the single biggest contributor to Baseload usage.

Refrigeration

- How can you tell if it's using too much energy?

- Get a watt meter!

Refrigeration

Refrigeration

- Replace with Energy Star appliances.
- Unplug ‘unused’ fridges or freezers.
- Consolidate into as few appliances as possible.

Electric Water Heat

Electric Water Heat

Electric Water Heat

Electric Water Heat

Electric Water Heat

- Turn the temperature down!
- Water control measures; Aerators, Showerheads.
- Hot water pipe & tank insulation.
- Fuel conversion if natural gas is available.
- Hybrid water heater if applicable

Laundry

Laundry

- Wash in cold water.
- Wash full loads.
- Use an extra spin cycle.
- Hang wet clothes on a line to dry.
- Consider a front loading washer.
- Consider a dryer with a moisture sensor.
- Consider a dryer fuel conversion if the appliance is electric and there is natural gas available.

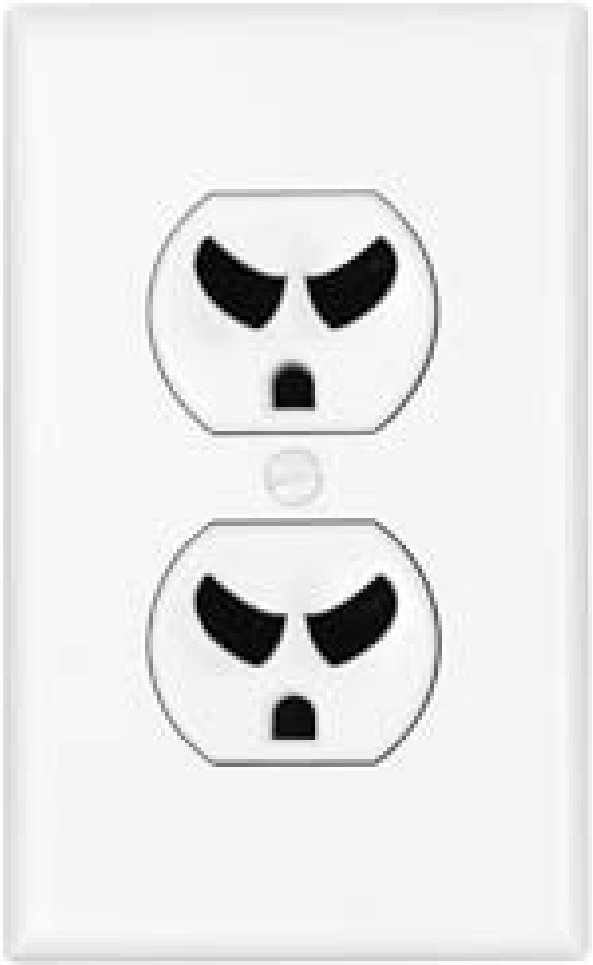
Phantom Load (Plug load, Ghost load)

Phantom Load

- The electricity that is consumed by standby losses from electrical devices while they are not in use.
- Accounts for about 6-8% of all electrical use.

Examples of Phantom Load

- Microwave
- Coffee maker
- Kitchen Aid mixer
- Aquariums
- Waterbeds/ Hot Tubs
- Toaster Oven
- Cell phone chargers
- Computer equipment
- TVs (when off)
- Stereo systems
- Gaming Consoles
- Battery packs
- Charging stations



Waterbed Mattresses

Average monthly electrical cost of $19.54 (or $240 a year…to sleep.)

Aquariums

Aquariums

Aquariums

- Nate's Guilty Pleasure = 139 watts an Hour
- Hours in a year (24x356) = 8760 Hours
- Watts x Hours (8760x139) = 1217640 Wh
- Converted into kWh (/1000) = 1217.64 kWh
- Annual Cost @ $0.15 per kWh = $182.64
- Monthly Cost = $15.22

- What?!

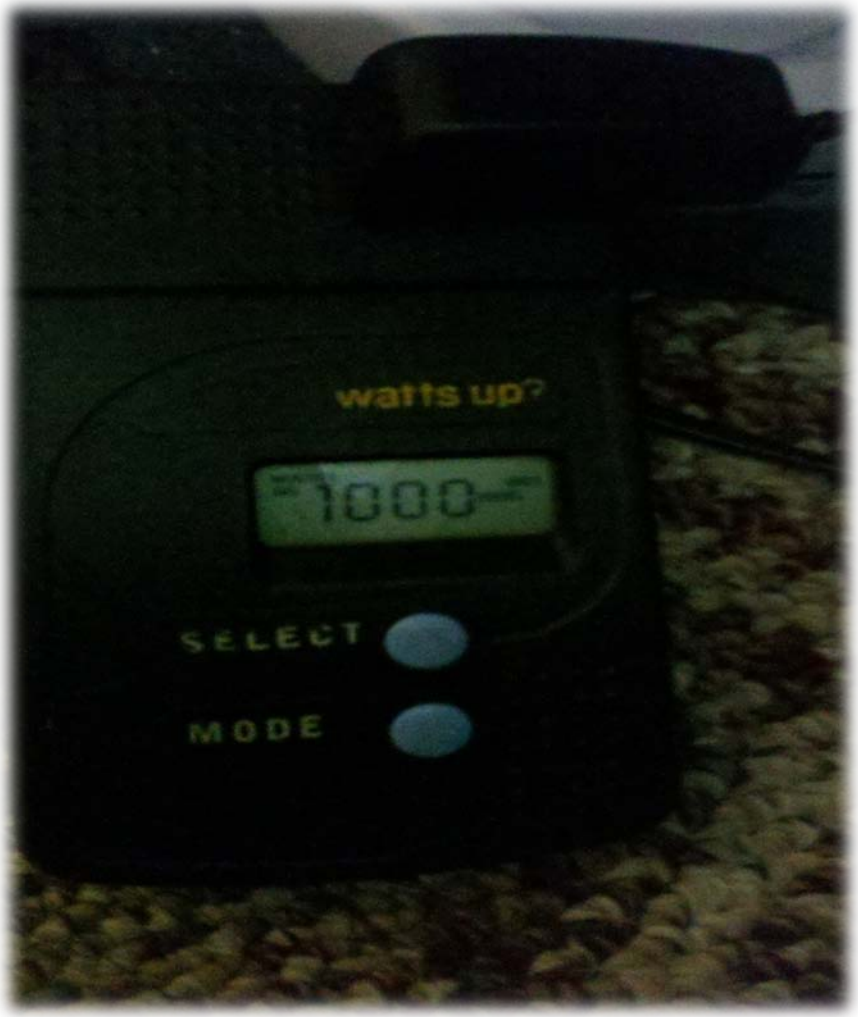
Aquariums

Other Appliances

Other Appliances

Other Appliances

Other Appliances



Gaming Systems

Gaming Systems

Gaming Systems

- Playstation 3 uses on average 197 watts while in use, 181 watts while idle.
- Xbox 360 uses on average 176 watts while in use, 150 watts in system idle
- Both systems draw 17 watts *while off.*

Smart Strips!

Gaming Consoles

- 18 watts max
- In all modes

Example Customer Interview

- Ask lots of Questions
- Try to have the customer paint a picture of the typical day
- Do a walk through of the home
- Ask about lifestyle patterns
- Offer real solutions they can do on their own or as part of a larger workscope.

Assist your customer in taking action

- Encourage simple lifestyle changes that will make a difference.
- Lower the energy burden and put more money in their pockets.
- Partner with the home to achieve your goals.
- Be their guide, not their savior.

Myth: Baseload isn't important or profitable.

- It is absolutely profitable in the right applications.
- It's not comprehensive ***unless*** you talk about Baseload.
- A third of a home's energy use is typically related to appliances.
- Indirect benefits from word of mouth referrals.

It’s about more than just money.

85% of the electricity in the US is produced by burning coal, which is most often procured by mountaintop removal.

It’s about more than just money.

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Questions?