It's near real-time electricity usage recorded by your smart meter. Depending on the meter type your energy usage is broken down into 15-30 minute intervals. It's essential for a business to understand how to read this data because it's the foundation for calculating your energy costs.

## Advanced metering brings a wealth of energy data to building professionals. Soon "big data" will change the way you run your property.

This article is part of an ongoing series exploring concepts around interval data and energy management in commercial buildings.

Interval data is simply meter data collected at defined intervals, typically every 15 minutes or hourly. It used to be that you had to install submeters and manage an on-site database to capture interval data. Today, the advent time-of-use rates, smart meters, and real-time communication networks means that a large and growing number of buildings have access to interval data hosted on their utility web sites.
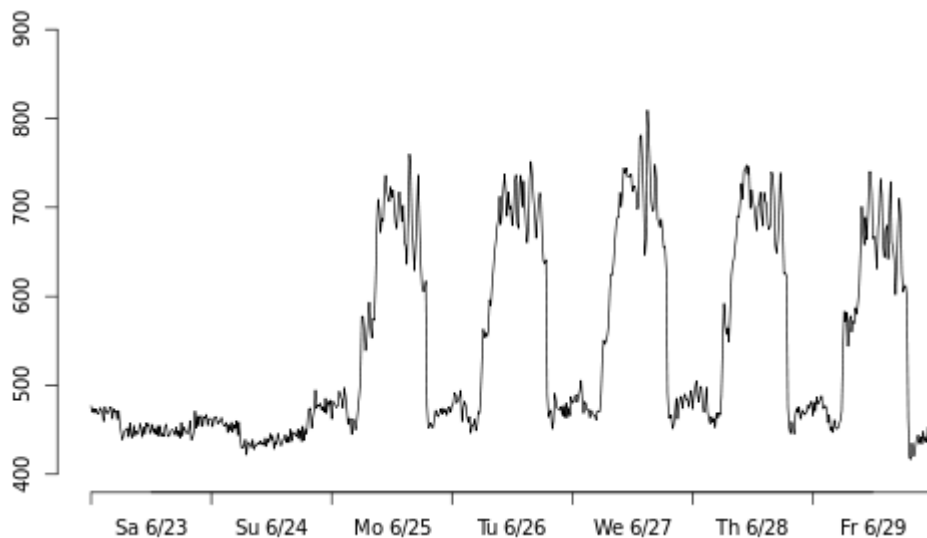


Interval data provides a detailed view of building operations.

Most buildings draw power through one or at most a few meters. We refer to the data from these meters as "whole building" interval data, because it represents the aggregated load from many different mechanical systems and end-use devices. Whole building interval data can measure either power (kW), energy use (kWh), or in some cases voltage and reactive power (kVAR).

The widespread deployment of smart meters and other advanced metering infrastructure (AMI) is driven in part by the increasing use of more complex rate structures to encourage energy efficiency. For example:

- Demand response programs offer cash payments to buildings that can shed load during periods of peak demand
- Critical peak pricing programs are similar to demand response, but offer a combination of discounts and surcharges to shape demand
- Time-of-use tariffs used tiered rates to encourage buildings to shift demand to non-peak periods

All of these programs use price signals to encourage behavior that should, in aggregate, increase energy efficiency, improve grid stability, and reduce system-wide energy costs. And all of these programs require interval data to support the more complex billing calculations.

In many commercial energy markets, advanced metering has been available for twenty years. However, these meters were typically available to only the biggest buildings (500kW and above), and the data wasn't always shared with end customers.

The smart grid has changed that. With over 40 million smart meters rolling out across the U.S., in many states every commercial building will soon be generating electricity interval data (and sometimes gas data as well).

Moreover, the ubiquity of high speed internet has changed people's expectations with respect to data access. Building operators now understand that interval data is their data, and they want to be able to see it in as close to real-time as possible. Voluntary programs such as th Green Button initiative are adding to the momentum around open data access, and in many states legislators are giving a further push. In California, for example, the big utilities will be required to provide full data access by 2013.

Coming soon: how to access your whole-building interval data and what to do with it.