



Small Building Electrical Metering

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Sense Confidential



Who is Sense?



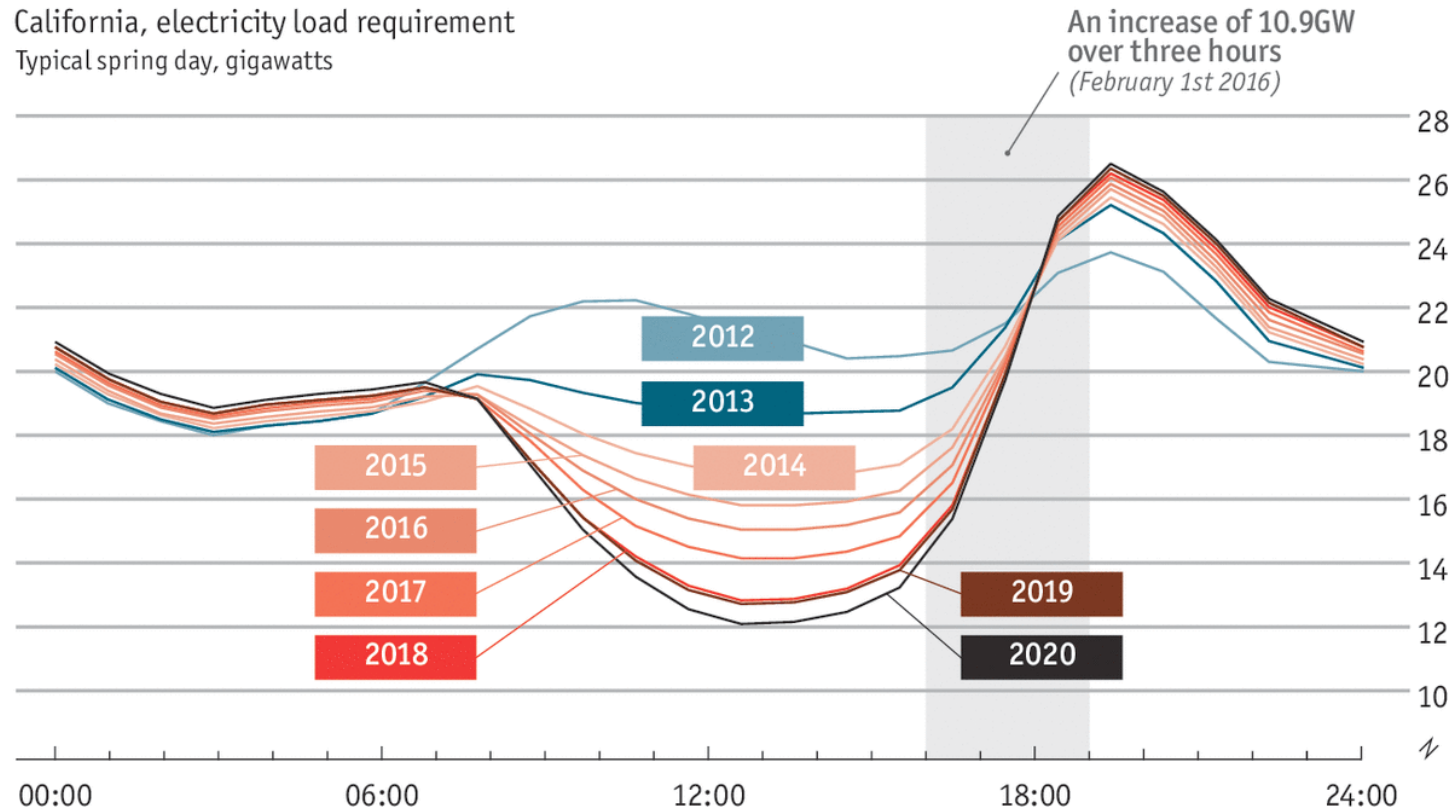
Energy use in small buildings is evolving...



And utilities are adjusting...

Who gets the bill?

California, electricity load requirement
Typical spring day, gigawatts



Source: California ISO

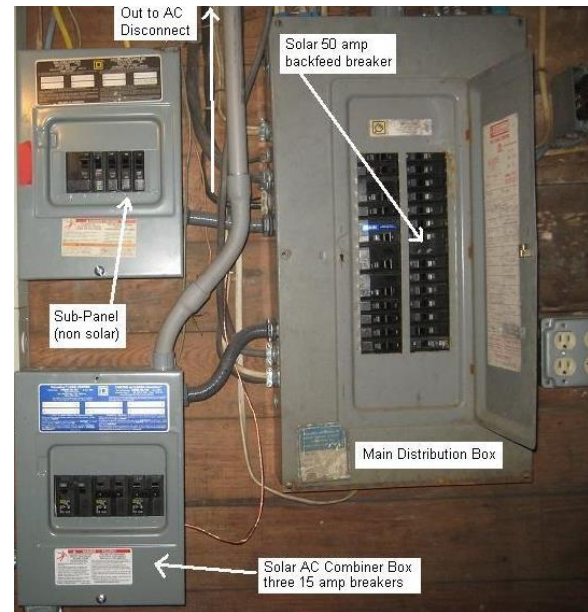
Economist.com

Time-of-use rates
Peak demand charges
Demand-response programs

...but our energy infrastructure has not kept up.

Utility meters are low resolution, high latency.

Commercial-grade metering can be expensive and time-consuming to install.



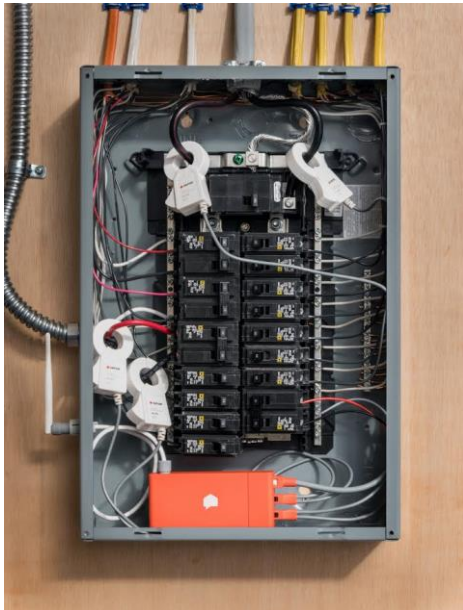
Demonstration



How does Sense work?

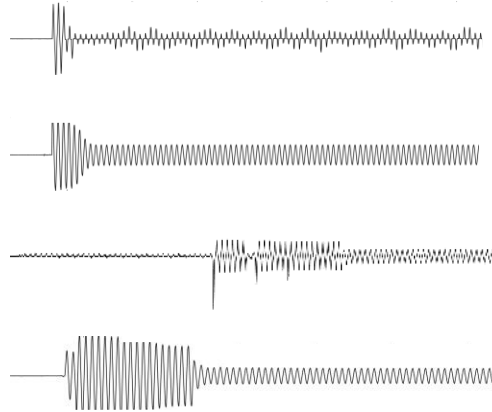
INSTALLATION

15 min installation in home's electric panel.
Sense recommends electrician install.
No need for sensors on each circuit breaker.
No need for smart plugs for each appliance.
No need for smart meter.



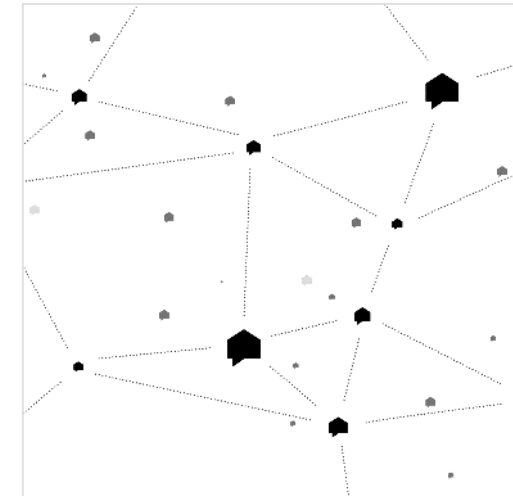
MACHINE LEARNING

Sense samples each home's power one million times per second.
Sense conducts machine learning to identify the unique signature of each electronic device, determine its state and energy usage.



NETWORK EFFECT

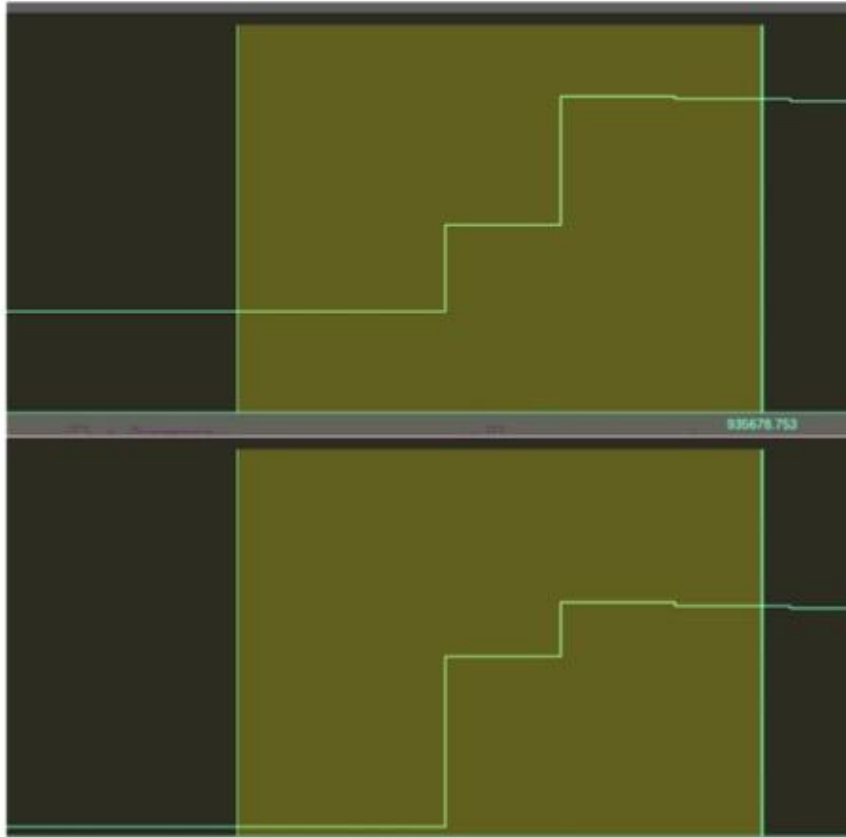
Sense is building up a library of signatures.
As Sense collects more data, is in more homes, and samples a diversity of appliances, the library is continually growing.



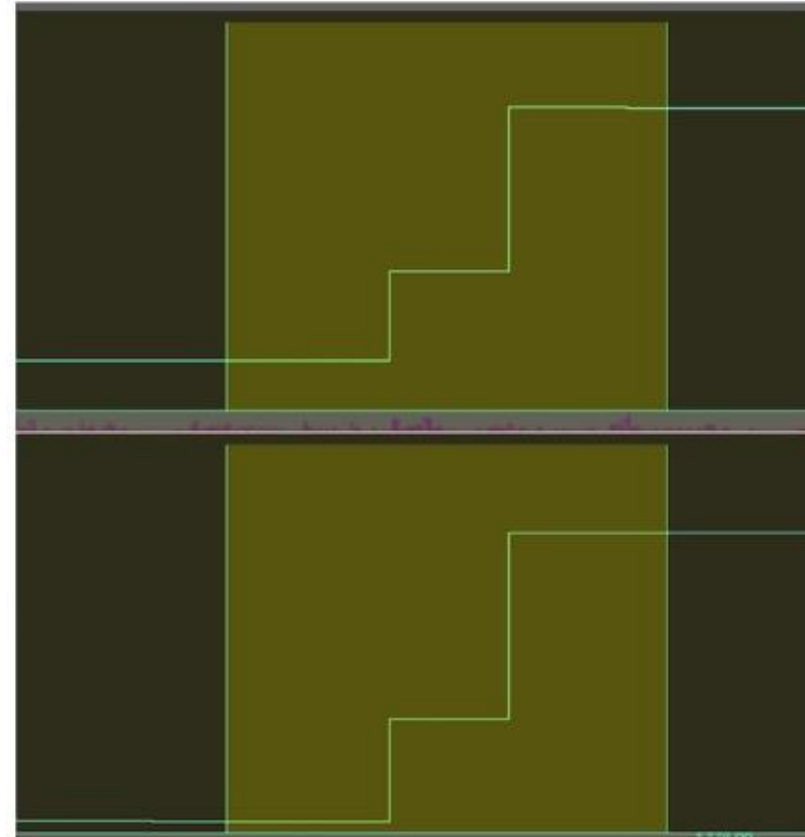
Benefits of high-resolution metering

These two high voltage appliances are indistinguishable at 1Hz.

Appliance A



Appliance B



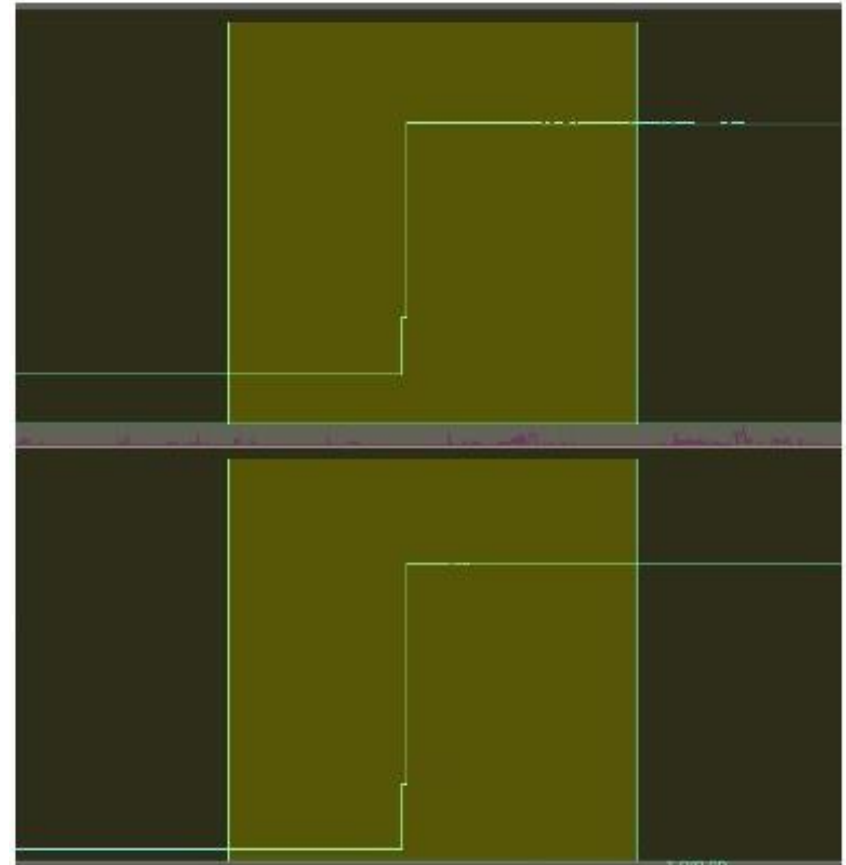
Benefits of high-resolution metering

The same two appliances but now at higher resolution.

Dryer



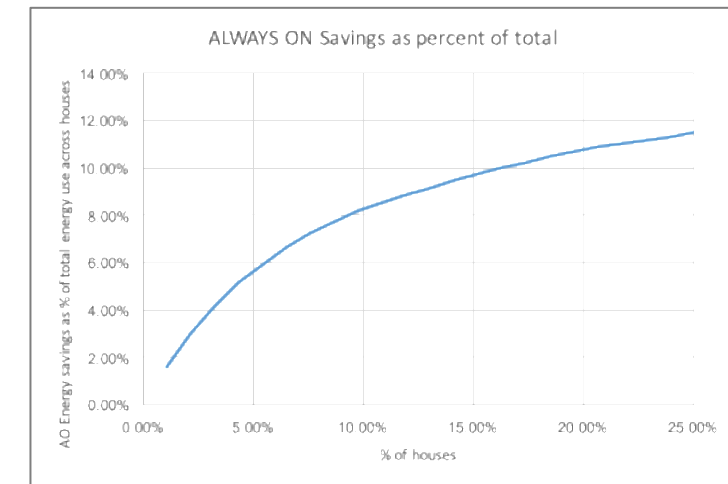
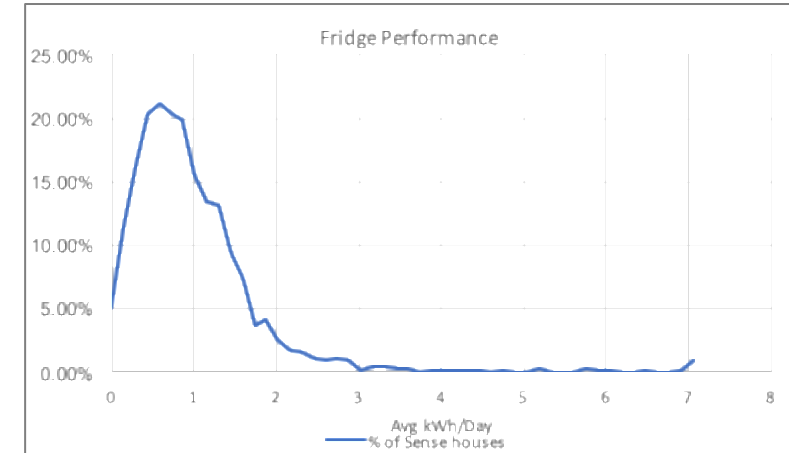
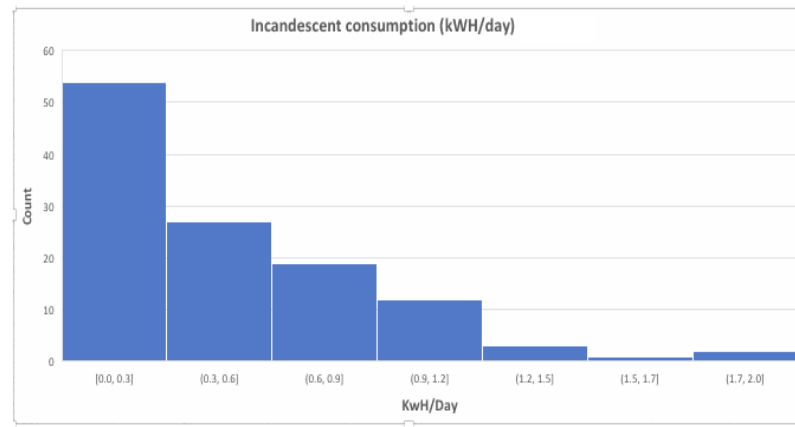
Oven



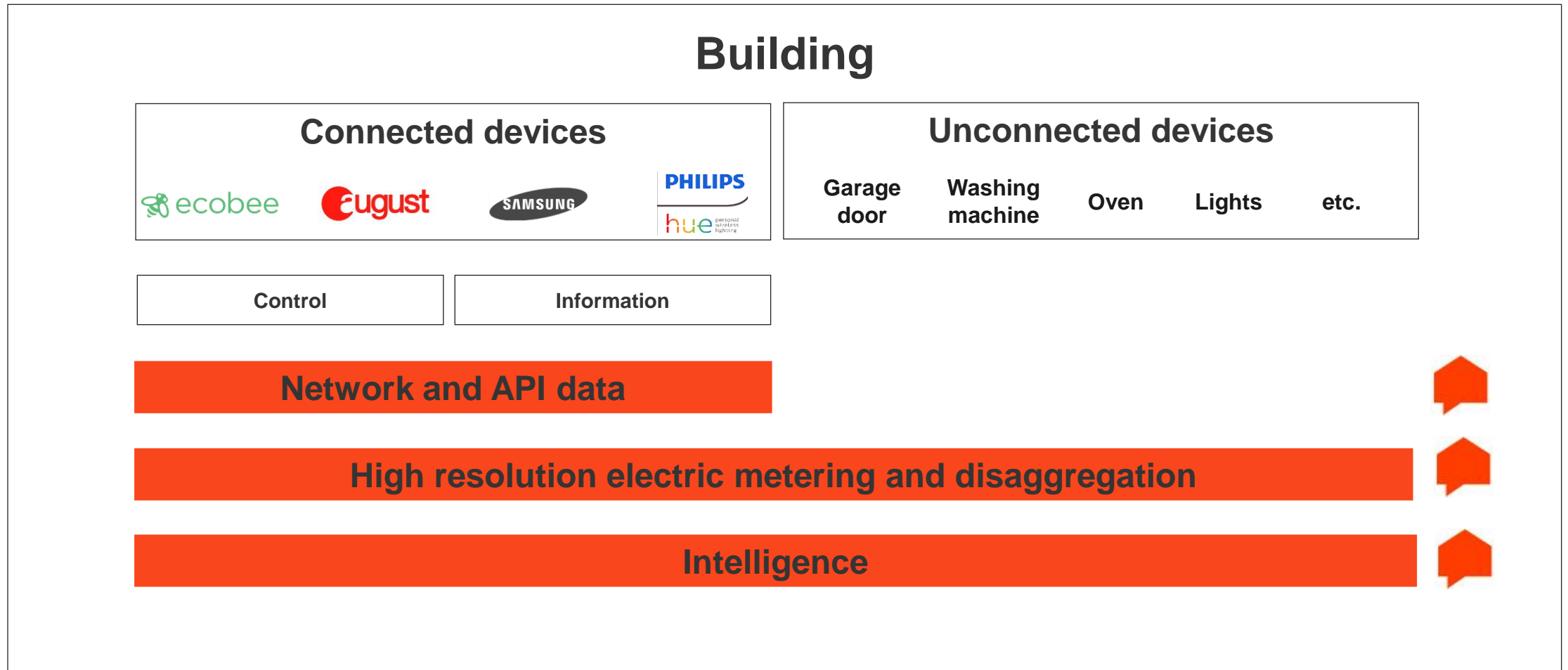
Analysis of real high-resolution data

Examples:

- Identifying homes with inefficient appliances
- Identifying incandescent lighting usage
- Identifying high-baseload
- Others (EV usage, peak demand analysis, etc.)



Integrating electric consumption with other data



Sense helps users find energy savings:

- **Realtime**: Sense shows your power usage changing every second...so you can see what happens when things come on and off
- **Specific**: Sense shows power consumption by each device it finds
- **Actionable**: Sense users are finding things they can change in their house that save energy and money



Questions?



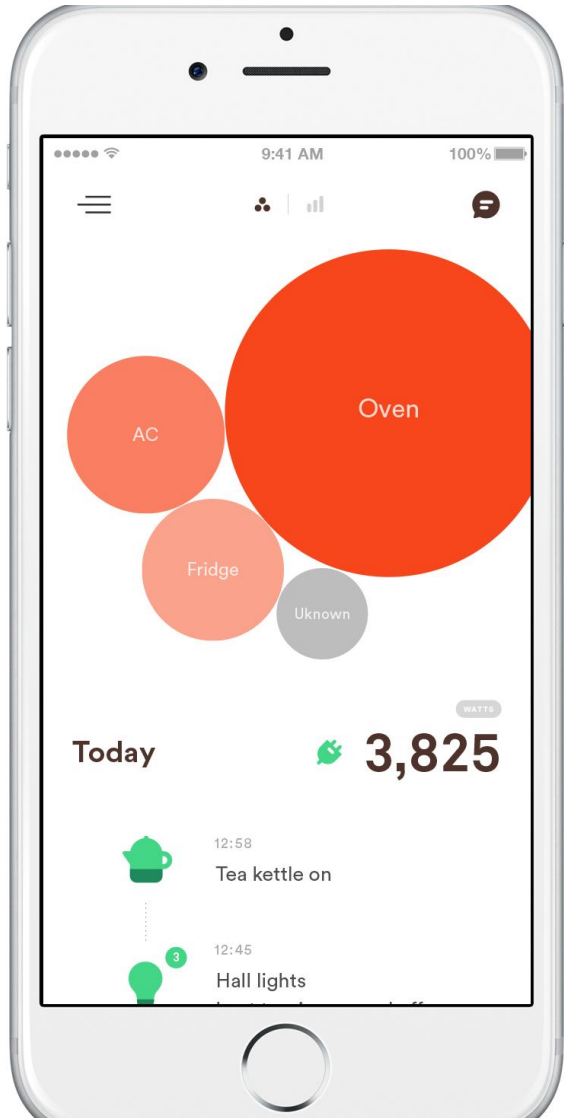


Thank you

www.sense.com

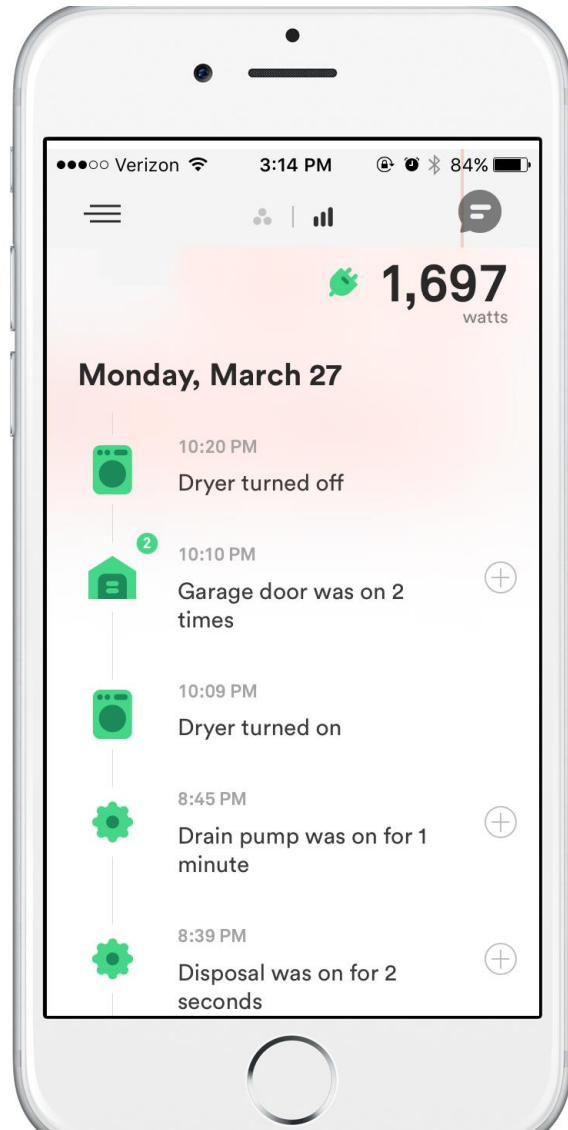
App Slides





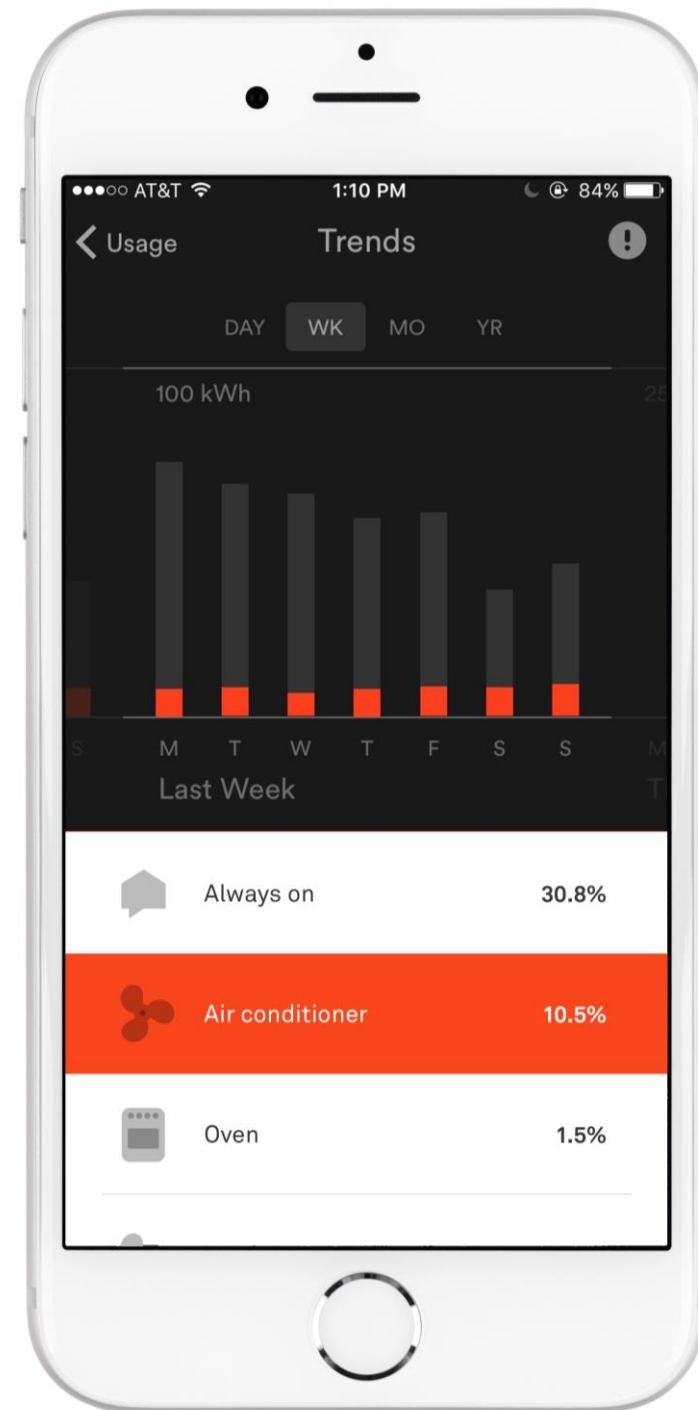
Home Screen

Real-time view



Timeline

Reports



Power Meter

