



# Occupant Impact on Building Performance: LEED's Pilot Credit

May 23, 2012

Lauren Riggs and Lonny Blumenthal



# THE PRESENTERS



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Manager



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Associate



# LEED's KEY METRICS

TRANSPORTATION

WATER

ENERGY

WASTE

EXPERIENCE





## PILOT CREDIT 59 OCCUPANT ENGAGEMENT

# GOALS

Develop a framework for the dynamic and sustained collection of data on actual human experience within the built environment

Analyze data, in combination with energy, water and other key performance indicators

# MEASURING THE IMPACT OF OCCUPANT EXPERIENCE ON BUILDING PERFORMANCE



```
graph TD; A[MEASURING THE IMPACT OF  
OCCUPANT EXPERIENCE ON BUILDING  
PERFORMANCE] --> B[Occupant  
Satisfaction]; A --> C[Occupant  
Behavior]
```

Occupant  
Satisfaction

Occupant  
Behavior



## PILOT CREDIT 59: OCCUPANT ENGAGEMENT OCCUPANT BEHAVIOR

### FOCUS

Enable occupants to exhibit and perform efficient behavior in buildings in order to improve overall performance

Determine metrics to use when measuring the influence of occupant behavior on building performance (e.g., kWh/FTE, therms/FTE, gallons/FTE)

### APPROACH

LEED Pilot Credit 59: Occupant Engagement



**INTENT:** improve the performance of the building by enabling energy efficient behavior in building occupants



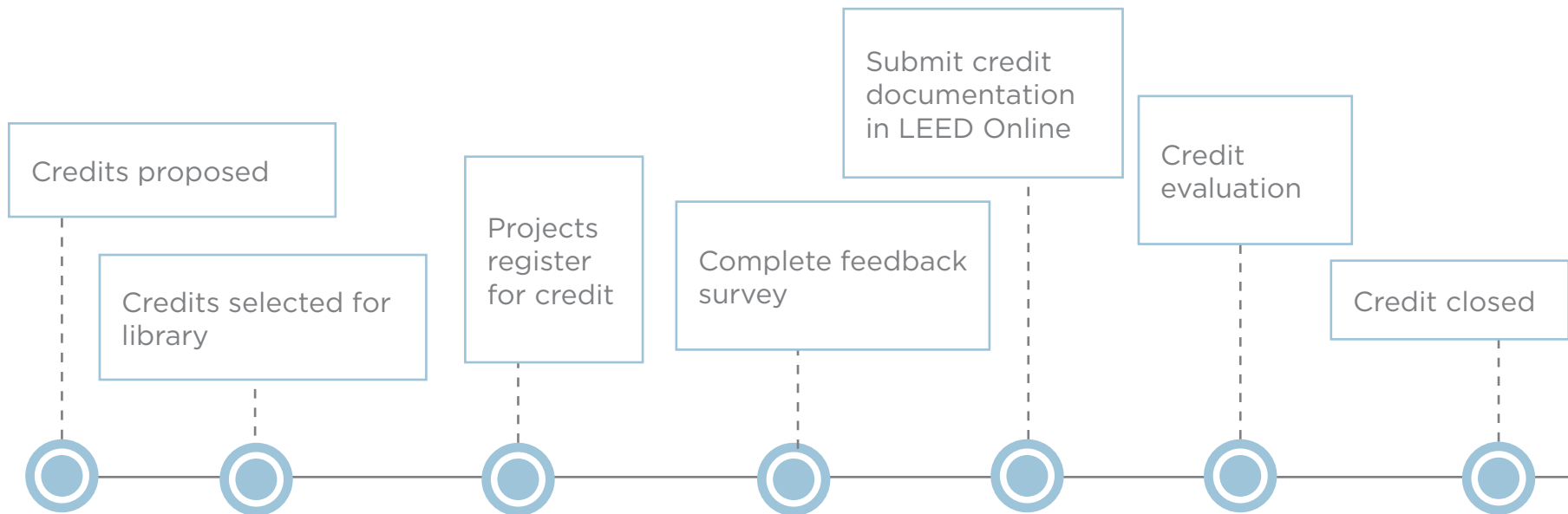


The background features a repeating grid of circular icons. Each icon contains a white symbol on a light gray background. The symbols include: a bus, a recycling symbol, a seedling, a water drop, a wind turbine, two speech bubbles, a sun, and a leaf. These icons are arranged in a regular, offset pattern across the entire page.

# PILOT CREDIT LIBRARY



# EVOLUTION OF A PILOT CREDIT



# LEED Pilot Credit Library

Active Pilot Credits: **36** | [New Ideas](#) | [Alternative Compliance](#) | [Commercial](#) | [Residential](#) | [Neighborhood](#)

[Register](#) | [Member-Generated Pilot Credits](#) | [Resources](#) | [Webinars](#)

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[New and revised pilot credits have been posted! See changes here.](#) Learn more about LEED 2012 and 3rd Public Comment at [www.usgbc.org/LEED2012](http://www.usgbc.org/LEED2012)

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## Pilot Alternative Compliance Path - New!

Can be used in place of an existing credit/prerequisite:

[Pilot Credit 67: Pilot Alternative Compliance Path: EBOM EAp2](#)  
- new!

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## New Ideas

These credits are unique to the Pilot Credit Library and available for current project use.

[Pilot Credit 3: Medical and Process Equipment Efficiency](#)  
[Pilot Credit 55: SS - Bird Collision Deterrence](#)  
[Pilot Credit 56: EA - Renewable Energy-Distributed Generation](#)  
[Pilot Credit 57: EQ - Exterior Noise Control](#)

REGISTER

## Residential Rating System Credits (Homes, Homes Mid-Rise)

Credits from the proposed LEED 2012 draft



## Commercial Rating System Credits (BD+C, ID+C & EB:O+M)

Credits from the proposed LEED 2012 draft



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### [Pilot Credit 14: LT - Walkable Project Site](#)

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[Pilot Credit 7: SS - Light Pollution Reduction](#)  
[Pilot Credit 16: SS - Rainwater Management](#)  
[Pilot Credit 45: SS - Site Assessment](#)  
[Pilot Credit 64: SS - Site Improvement Plan](#) - new!

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[Pilot Credit 10: WE - Sustainable Wastewater Management](#)  
[Pilot Credit 17: WE - Cooling Tower Makeup Water](#)  
[Pilot Credit 18: WE - Appliance and Process Water Use Reduction](#)

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[usgbc.org/pilotcreditlibrary](http://usgbc.org/pilotcreditlibrary)





## PILOT CREDIT 59 OCCUPANT ENGAGEMENT

### INTENT

To improve the performance of the building by enabling energy efficient behavior in building occupants

### REQUIREMENTS

Consumption feedback

Occupant empowerment



## PILOT CREDIT 59: OCCUPANT ENGAGEMENT OCCUPANT ENGAGEMENT PROGRAM

# COMPONENTS

Education

Empowerment

Feedback

Performance goals





PILOT CREDIT 59  
OCCUPANT ENGAGEMENT

## TECHNOLOGIES AND STRATEGIES

Software/devices to track and display energy performance information for engaging with occupants

Social network: Online forums, gaming structures, social norms

# LAUREN'S ACTION PLAN

## FOLLOW UP FROM 2011 CBB SYMPOSIUM

To demonstrate a positive impact on energy consumption at USGBC by instigating behavior change in our office space.



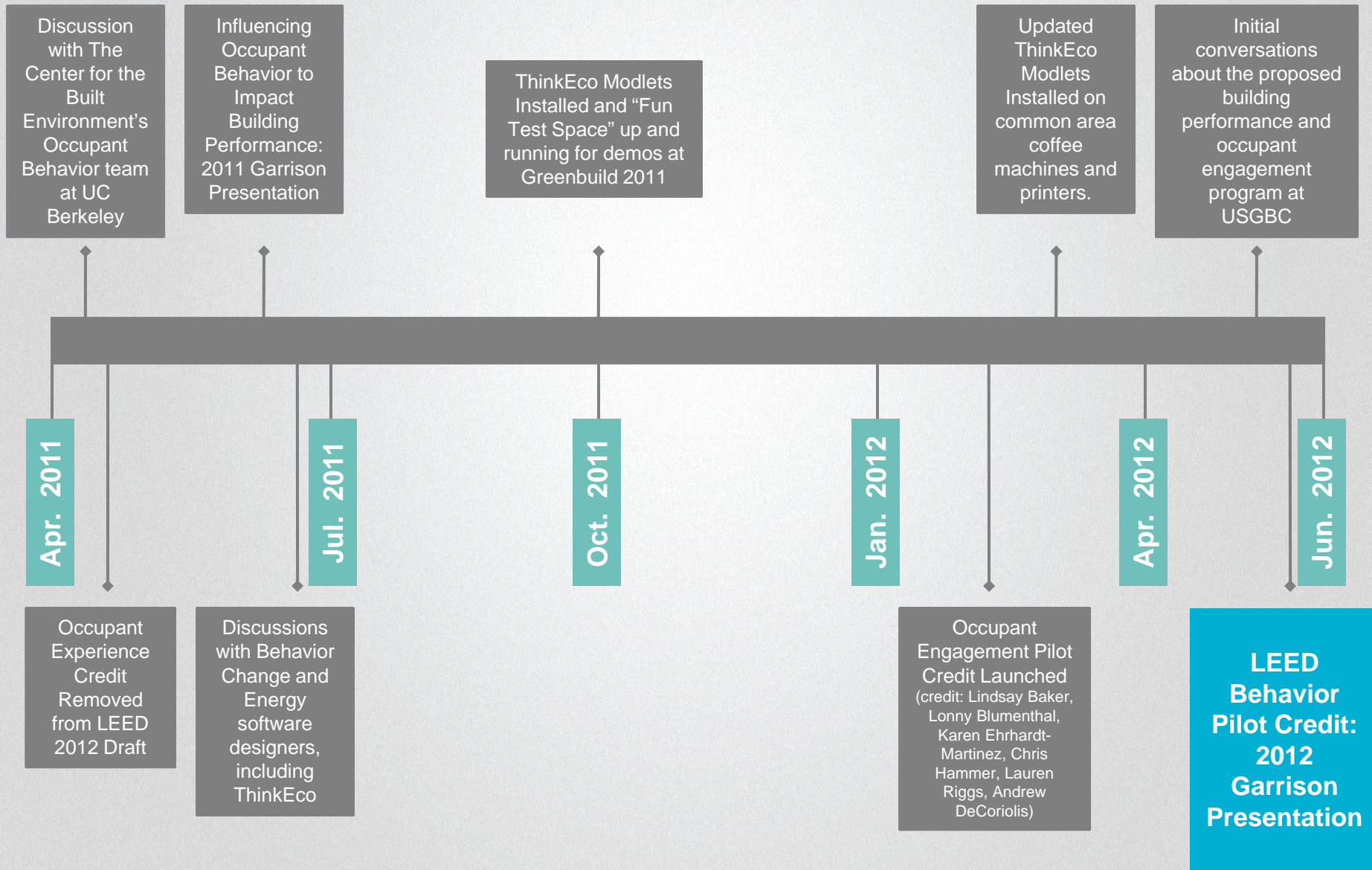
# LAUREN'S ACTION PLAN

## WHAT WE DID

- Created a Building Performance and Occupant Engagement Program for USGBC
- Our Goal: To obtain additional energy and cost savings in a LEED Platinum certified space through occupant engagement and the utilization of LEED performance platforms and tools



# TIMELINE OF ACTION PLAN





# LAUREN'S ACTION PLAN

## WHAT'S HAPPENING NOW

- USGBC measuring common area coffee machines and video games
- Completed baseline and have implemented coffee machine operating schedule
- Intend to expand measurement areas if we show energy savings
- Investigate whether this activity is appropriate for compliance with pilot credit



# PLUG LOAD MANAGEMENT



5<sup>th</sup> FLOOR COFFEE MACHINES

## Energy Usage

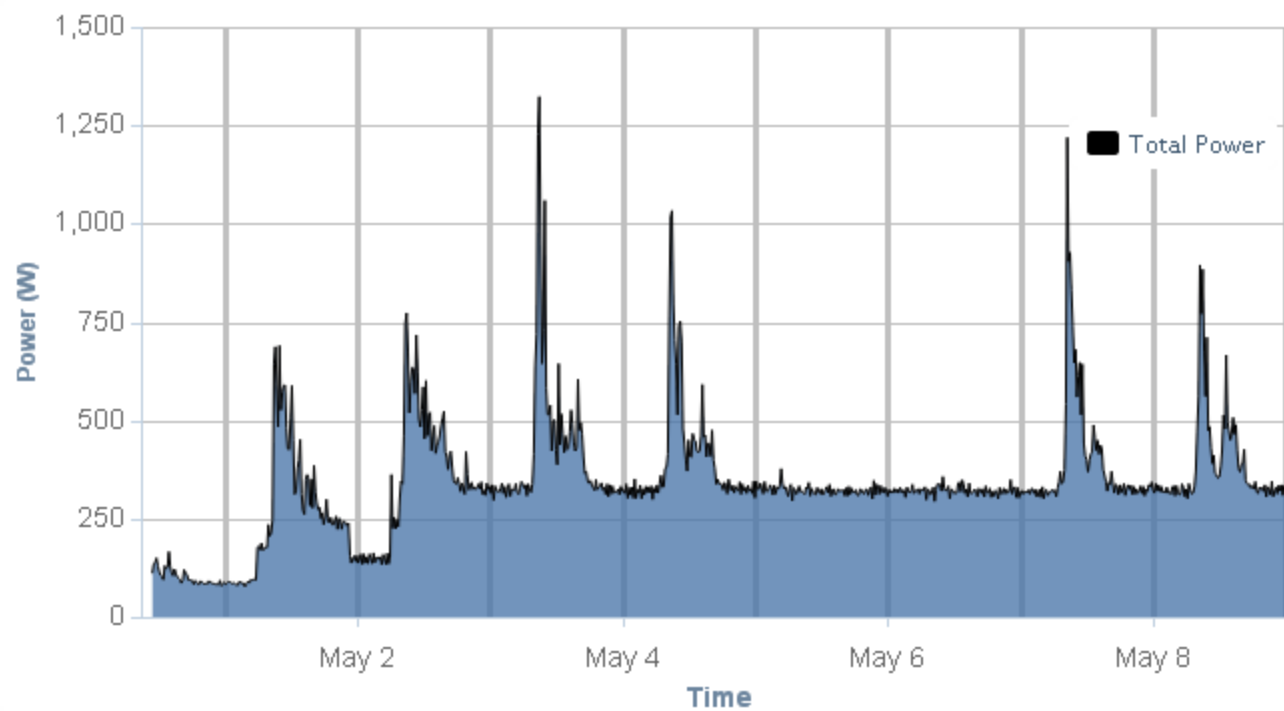
Total: 69.99 kWh

Last updated: 6 minutes ago

[REFRESH](#)

Monday, Apr 30, 2012 - Tuesday, May 8, 2012

Time resolution: 15 mins



## Energy Usage

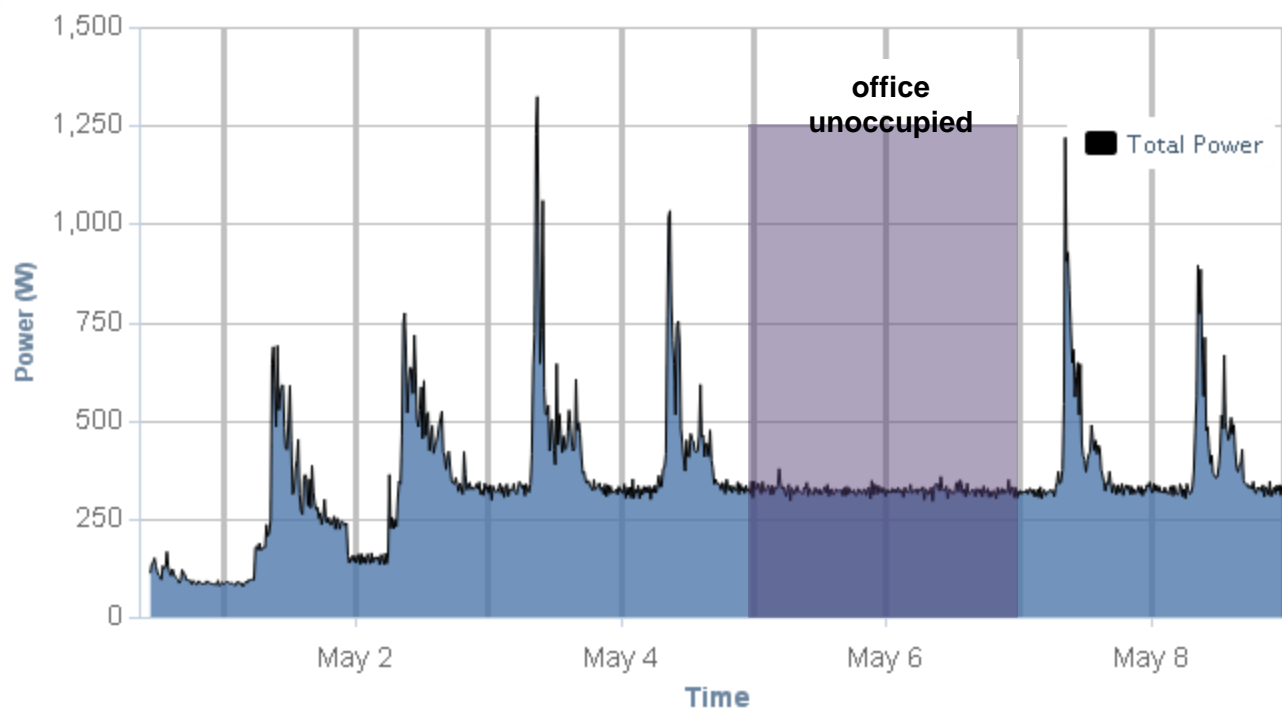
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## Energy Usage

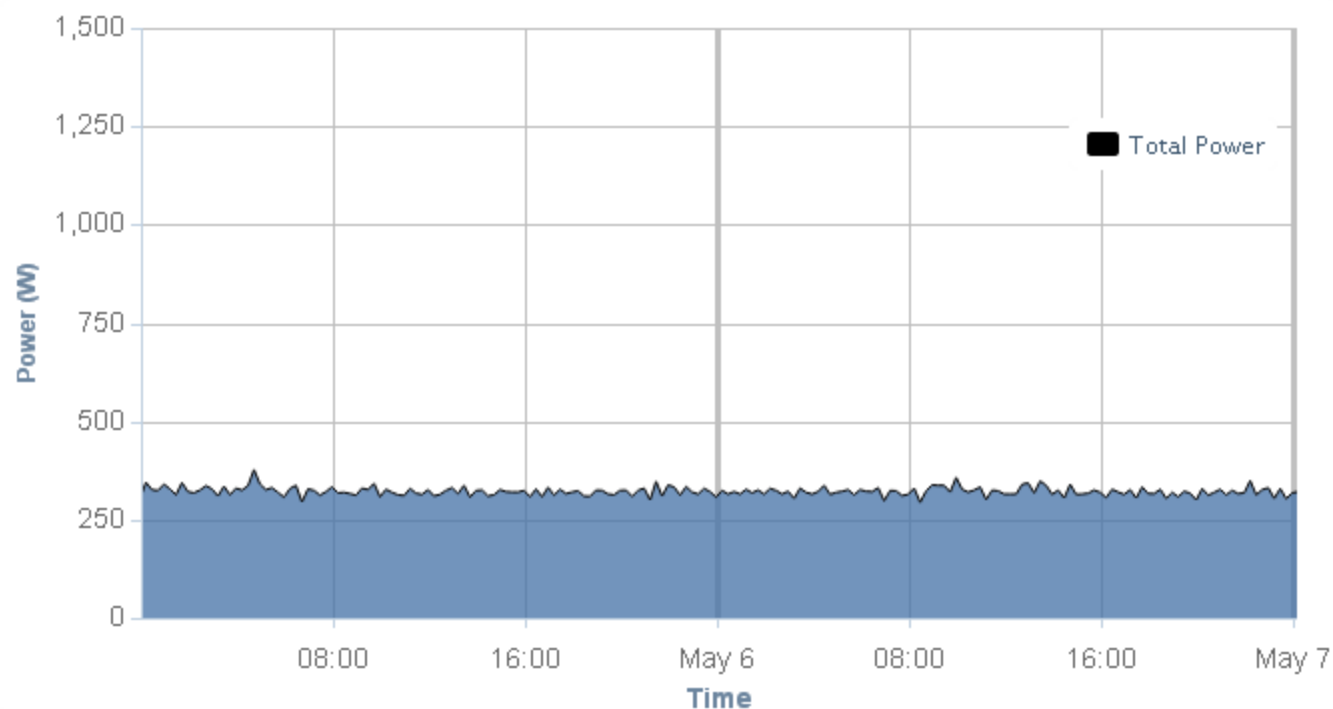
Total: 25.02 kWh

Last updated: < 1 minute ago

**REFRESH**

Saturday, May 5, 2012 - Monday, May 7, 2012

Time resolution: 15 mins



## Energy Usage

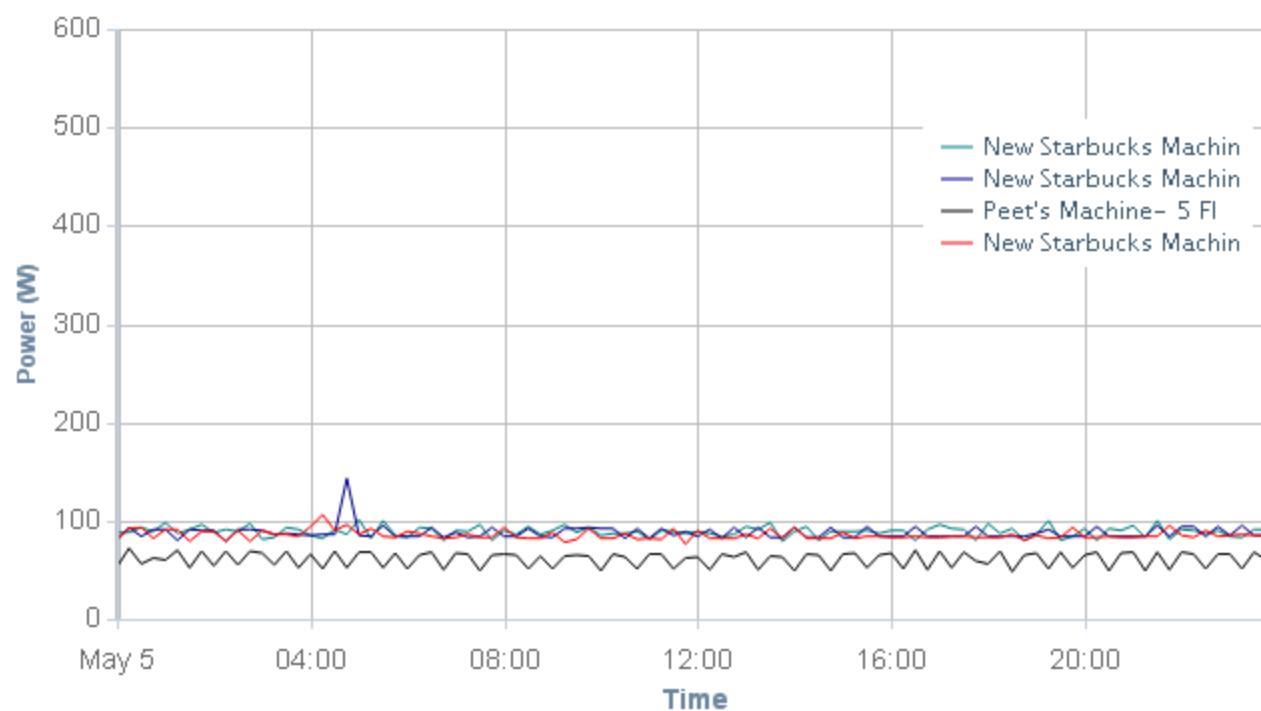
Total: 25.02 kWh

Last updated: < 1 minute ago

[REFRESH](#)

Saturday, May 5, 2012 - Monday, May 7, 2012

Time resolution: 15 mins



# Q&A

Ask a question



THANK<sub>you</sub>

for your attention



# CONTACT



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