



# Game Change

## DGS Energy Strategy

Reducing cost, carbon, and risk

Context: \$60M energy budget | 27M sqft | 400 Bldgs

### Traditional strategy

Retrofits w/ big capital investments

Monthly bills drive decision-making

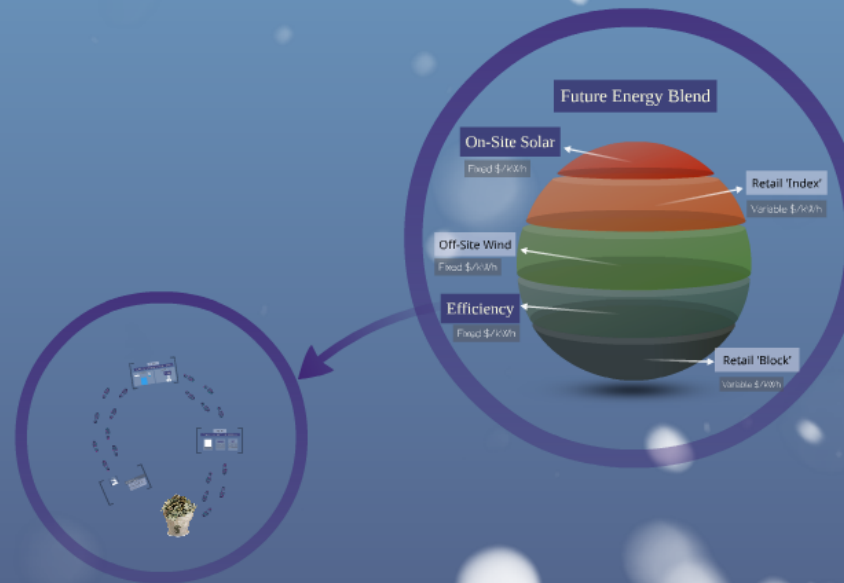
Supply: traditional retail w 1-3 year contracts

### Game Change strategy

Actionable data drives decision-making

Operational efficiency prioritized

Large-scale renewables reduce cost & risk





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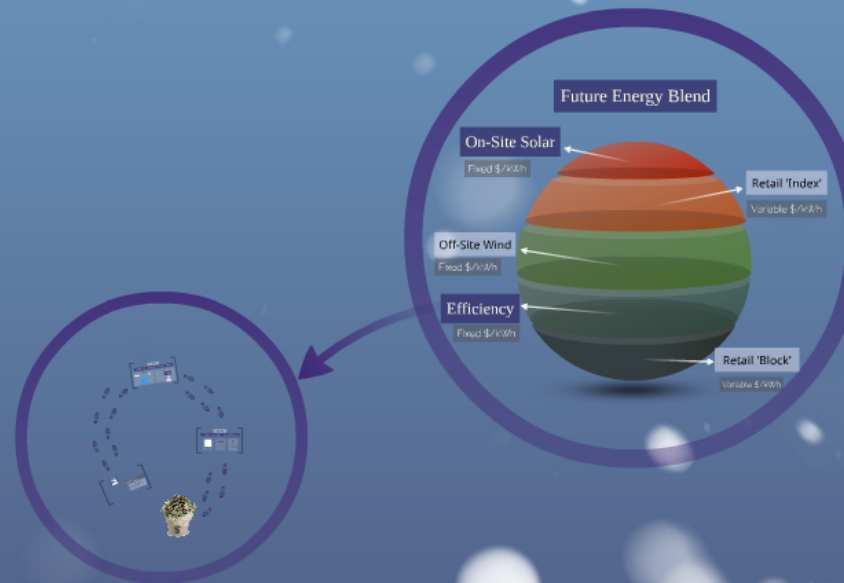
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# Future Energy Blend

**On-Site Solar**

Fixed \$/kWh

**Retail 'Index'**

Variable \$/kWh

**Off-Site Wind**

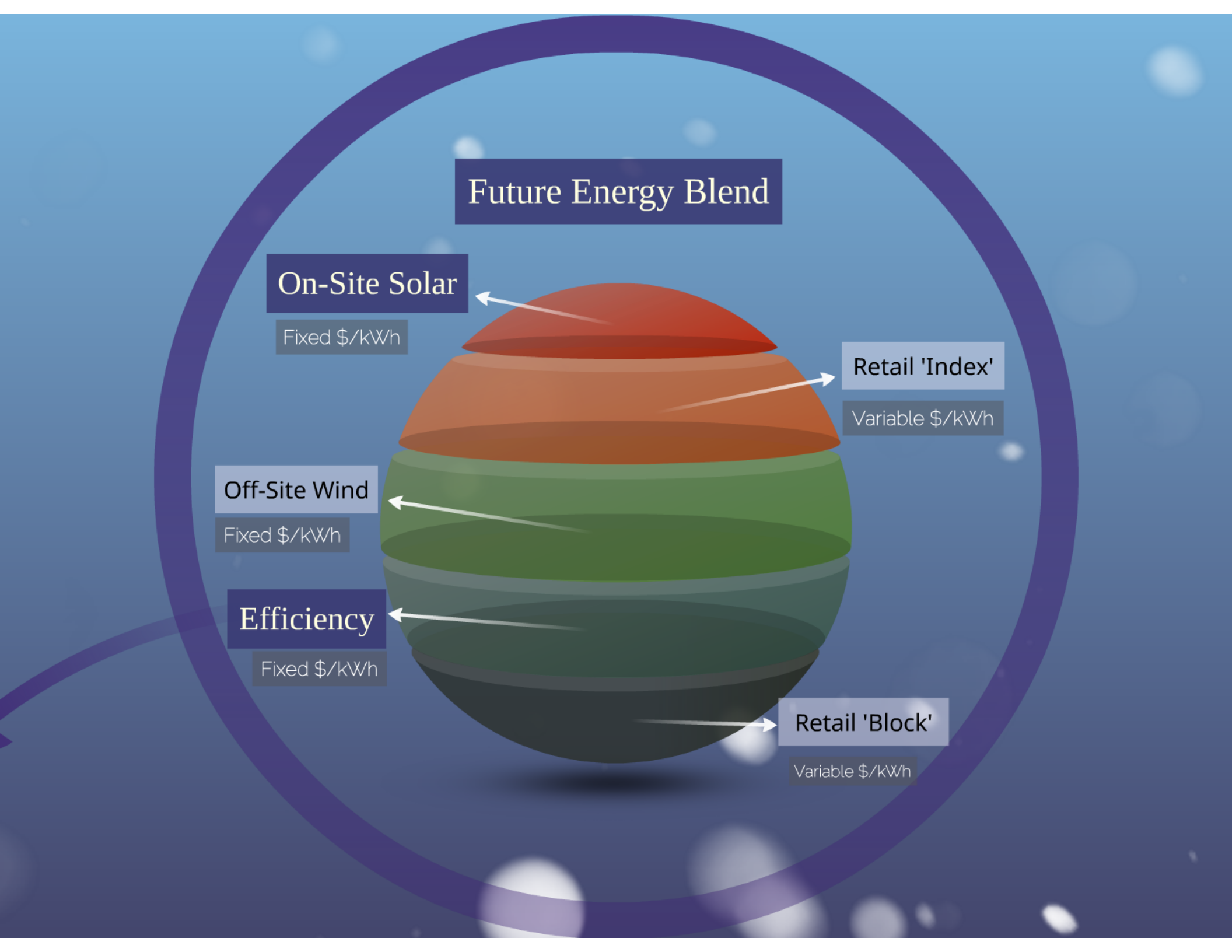
Fixed \$/kWh

**Efficiency**

Fixed \$/kWh

**Retail 'Block'**

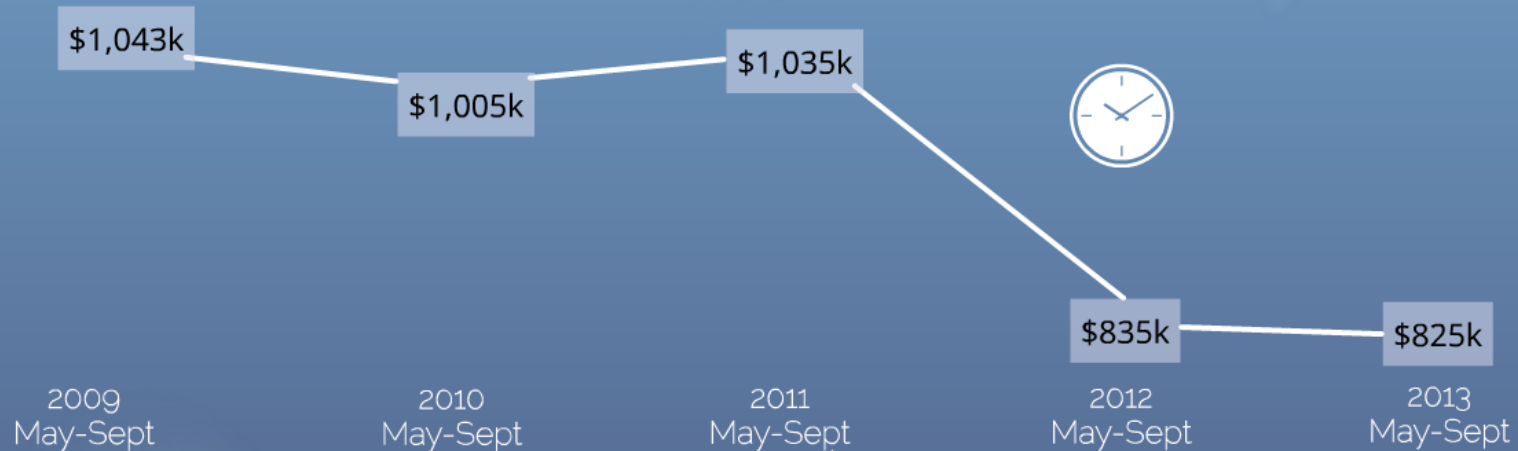
Variable \$/kWh



# One Judiciary Square Retrofit: Eliminates Mountain of Energy Waste

New Heating & Cooling Controls

HVAC scheduling began in March 2012



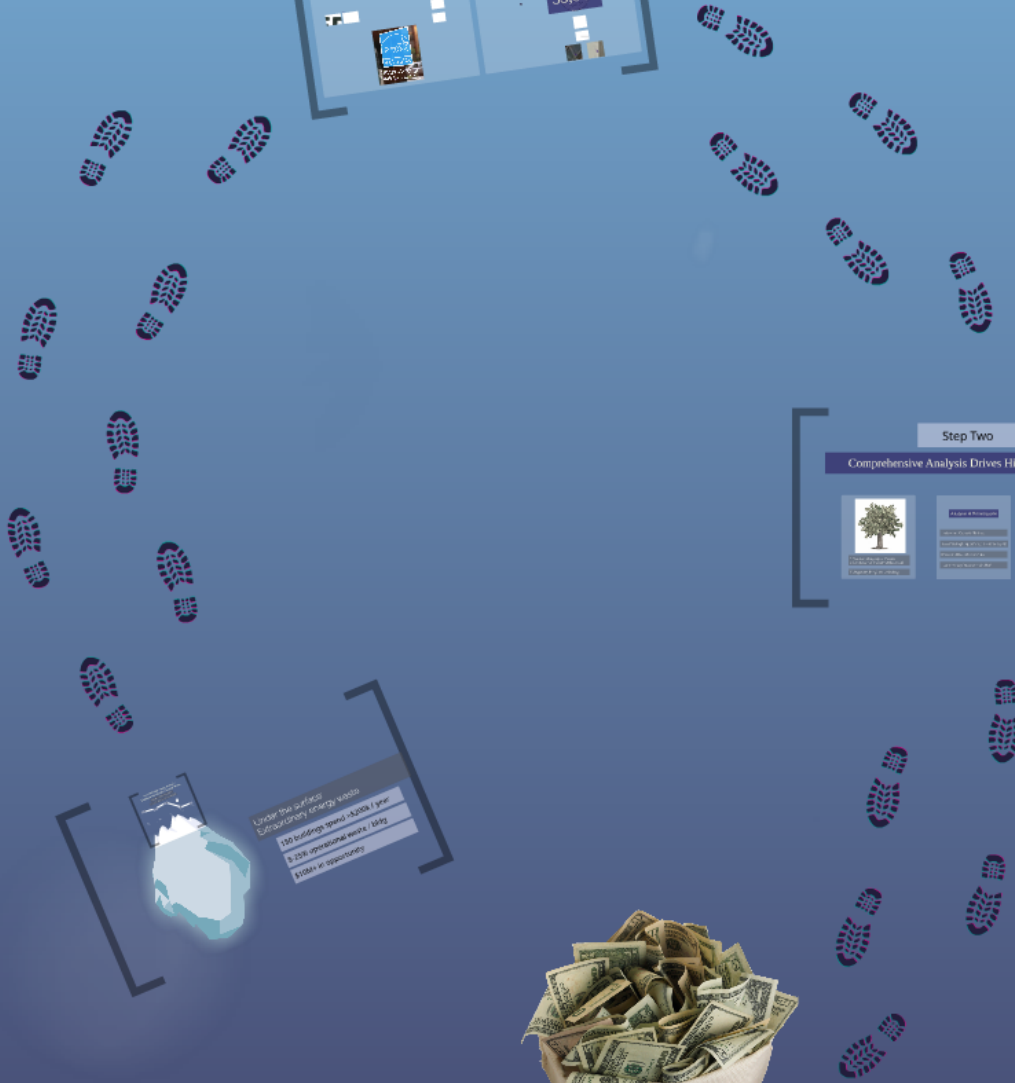
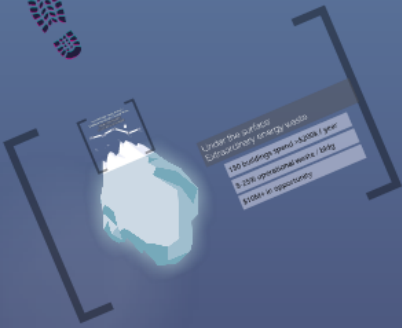
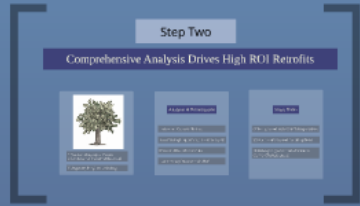


## Under the surface: Extraordinary energy waste

150 buildings spend >\$200k / year

5-25% operational waste / bldg

\$10M+ in opportunity





# Step One

## Actionable & Transparent Data Drives Operational Efficiency

Traditional Best Practice



The DGS Approach





A PHI Company

DEPT OF RECREATION - HA  
ENERGY MGMT DIV  
441 4TH ST NW #1100S  
WASHINGTON DC 20001-2714

Account No: 0113 5282 02  
Bill Issue Date: Aug 7, 2012

Page 1 of 3

Service Address: 300 VAN BUREN ST NW

**Pepco Telephone Contacts:**

Customer Care - 7am-8pm 202-833-7500  
Power Outages - Available Anytime 1-877-737-2662  
Life Threatening Emergencies - Available Anytime 202-872-3432  
Hearing Impaired (TTY) - 7am-8pm 202-872-2369  
Habla Español - 7am-8pm 202-872-4641  
Toll-Free Number (within our service territory) - 7am-8pm 1-800-424-8028  
Miss Utility (call before you dig) - Available Anytime 202-265-7177

**THIS BILL CONTAINS YOUR CHARGES FROM BOTH PEPCO AND YOUR ELECTRIC ENERGY SUPPLIER.**

**Meter Summary**

Meter Reading Information					
Meter No.	Description	Previous Reading	Present Reading	Multi-pilar	KWH Used
KZD341208091	Kilowatt Hour Meter	9043	11139	160	335360
OFF PK KWH D 11	Off Peak	4652	5770	160	178880
INT PK KWH D 08	Interm Peak	2123	2596	160	75680
ON PEAK KWH D 05	On Peak	2267	2771	160	80640

Total KWH Billed: 335200 Non-Residential MPS-GT

The present reading is an actual reading.

Your next scheduled meter reading is August 28, 2012.

**Account Summary**

Prior Balance Pepco \$11,394.25  
Payments Received Pepco \$0.00  
Balance Forward Pepco \$11,394.25  
Current Charges This Period Pepco \$12,119.18  
**Total Pepco \$23,513.43**  
Prior Balance WGES \$65,540.26  
Payments Received WGES \$35,057.56 CR  
Balance Forward WGES \$30,482.70  
Current Charges WGES \$34,018.87  
Total WGES \$64,501.57  
**TOTAL AMOUNT DUE \$88,015.00**



Home Contact Us Preferences Admin Log Out

Search for Acct, Bldg, Meter by code or name

**Home**

- Dashboard
  - Usage Trend
  - Bill Problems
  - Bill Processing
  - Top 10 Meters by Cost
  - Top 10 Buildings by Cost
  - Outing Started
  - Unit Cost Summary
  - Latest News
- Help
  - Buildings & Meters
  - Groups & Benchmarking
  - Accounts
  - Vendors & Rates
  - Bill Processing
  - Reports
  - Administration
  - Search Help

**ENERGY STAR**

Buildings Submitted: 1

Excellent (75 and higher): 1

Above Average (51-74): 0

Below Average (50 and lower): 0

Useful Links:

- Become an ENERGY STAR Partner
- ENERGY STAR Resources for Buildings
- List of all ENERGY STAR Labeled Buildings
- EPA Greenhouse Gas Equivalencies
- Portfolio Management

**Carbon Footprint**

Data from: All Buildings

MTON

- Nitrous Oxide
- Methane
- Carbon Dioxide

**Cost Trend**

Data from: All Buildings

2010 2011 2012

**Cost Summary**

Data from: All Buildings

- Electric 77%
- Natural Gas 11.3%
- Water 7.8%
- Propane 2%
- Oil 2.1%

# Traditional Best Practice





## Set up a Property: Let's Get Started!

Properties come in all shapes and sizes, from a leased space in a large office building, to a K-12 school with a pool, to a large medical complex with lots of buildings. Since there are so many choices, Portfolio Manager can walk you through getting your property up and running. When you're done, you'll be ready to start monitoring your energy usage and pursue recognition!



### Your Property's Primary Function

We'll get into the details later. For now, overall, what main purpose does your property serve?

Office

[Learn more about primary functions/property types.](#)



#### Tip

To set up a property, you'll need information such as [gross floor area](#) and [operating hours](#).



### Your Property's Buildings

How many physical buildings do you consider part of your property?

- None:** My property is part of a building
- One:** My property is a single building
- More than One:** My property includes multiple buildings

How many?



#### Tip

Not sure what kind of property you are? Because we focus on whole building benchmarking, you want to select the property type that best reflects the activity in the majority of your building. Don't worry if you have other tenants with different business types, just select the main activity.



### Your Property's Construction Status

Is your property already built or are you entering this property as a construction project that has not yet been completed?

- Existing:** My property is built, occupied and/or being used. I will be using Portfolio Manager to track energy/water consumption and, perhaps, pursue recognition.
- Design Project:** My property is in the conceptual design phase (pre-construction); I will be using Portfolio Manager to evaluate the energy efficiency of the design project.



**Your Building's Score**

**94**

**Average Score For Your District**

**64**

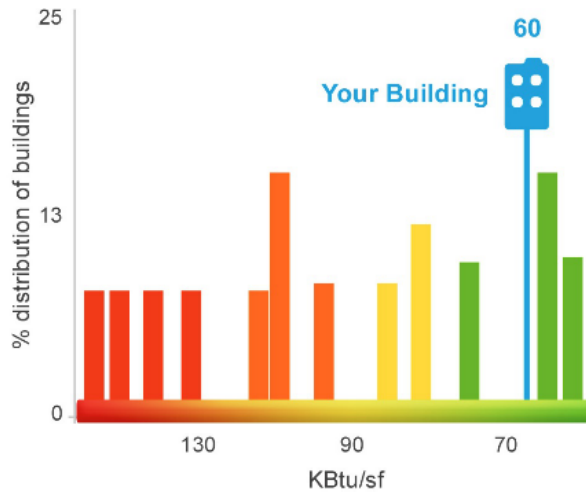
**Total Carbon Footprint:**

**27,109,373 lbs/year**

The total building energy is converted to one consistent unit (Btus) to allow for comparison with other buildings. Display of carbon emissions accounts for the environmental impact of the site energy used and considers the source fuel for electricity.

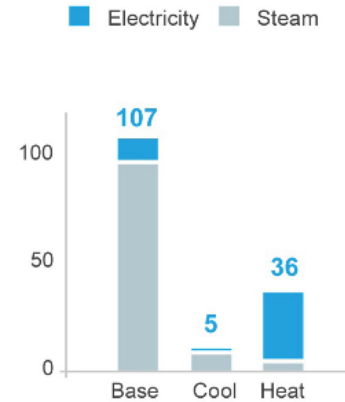
**Annual Site Energy Consumption**

**How You Compare to Your District**



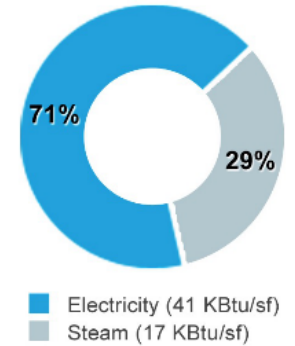
**Total Energy By Use**

measured in millions of KBtu



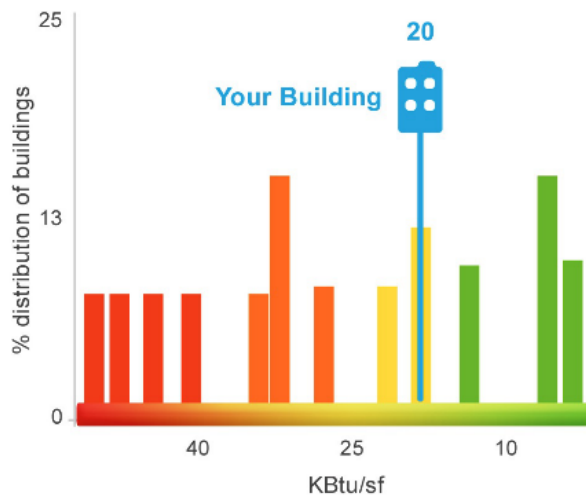
**Total Site Energy Consumption**

142,150,096 KBtu  
(58 KBtu/sf)



**Annual Carbon Emissions**

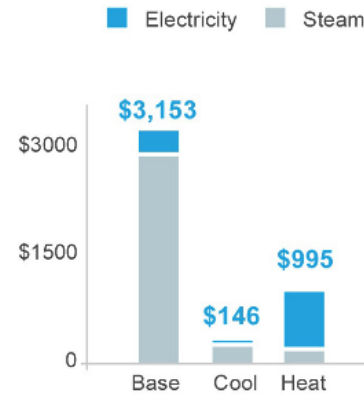
**How You Compare to Your District**



**Total Annual Energy Cost**

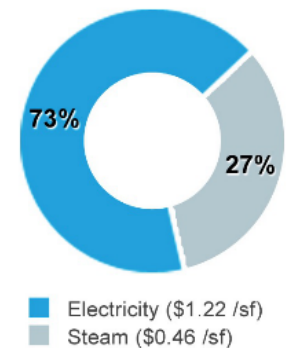
**Total Cost By Use**

measured in thousands of dollars



**Total Cost**


4,123,730.71 (\$1.68/sf)  
(\$868.34/occupant)



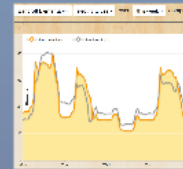
# Traditional Best Practice



# 12

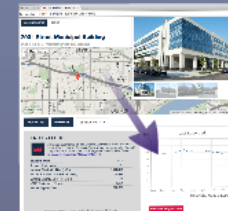
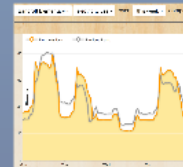
 <b>pepco</b> A F.H. Company	Account ID: 01136360 02	Page 1 of 2					
ENERGY MGMT DIV. 461 4TH ST NW #1005 WASHINGTON DC 20003-2714	Bill Issue Date: Aug 7, 2012						
	Service Address: 303 VAN BUREN ST NW						
<b>pepco Telephone Contacts:</b>							
Customer Care - Toll Free	202-833-7300						
Power Outages - Available Anytime	1-877-375-3062						
Life-Threatening Emergencies - Available Anytime	202-872-3432						
Blowing Inverted (TTY) - Toll Free	202-872-2569						
Reliable Electrical - Toll Free	202-872-8648						
Toll-Free Notifications and Service Requests - Toll-Free	1-800-424-8026						
Missed Readings (before 9:00 AM) - Available Anytime	202-263-7177						
<b>THIS BILL CONTAINS YOUR CHARGES FROM BOTH PEPCO AND YOUR ELECTRIC ENERGY SUPPLIER.</b>							
<b>Meter Summary</b>	<b>Account Summary</b>						
<b>Meter Reading Information</b>	Pre-Balance Pepco	\$11,296.25					
<b>Meter No.</b>	<b>Description</b>	<b>Previous Reading</b>	<b>Present Reading</b>	<b>Sub-Prev</b>	<b>Sub-Curr</b>	<b>Payments Received Pepco</b>	\$6.88
4231433000	Edison Meter Meter	8653	8139	500	51726	<b>Balance Forward Pepco</b>	\$11,296.25
OFF PG. kWh 0.11	Off Peak	4652	5736	590	17890	<b>Current Charges This Period Pepco</b>	\$22,318.18
OFF PG. kWh 0.126	Non-Peak	2123	2396	390	7098	<b>Total Pepco</b>	\$33,615.43
OFF PG. kWh 0.17	On Peak	2387	2775	390	8994	<b>Pre-Balance WGEN</b>	\$45,748.26
<b>Total kWh Billed</b>	<b>335500</b>	<b>Non-Residential MPD-GT</b>		<b>Payments Received WGEN</b>		<b>Balance Forward WGEN</b>	\$35,697.56 CR
The present reading is an actual reading.						<b>Current Charges WGEN</b>	\$39,482.79
Your next scheduled meter reading is August 25, 2012.						<b>Total WGEN</b>	\$34,018.87
						<b>Total WGEN</b>	\$64,961.57
						<b>TOTAL AMOUNT DUE</b>	\$88,915.90

# The DGS Approach





# The DGS Approach



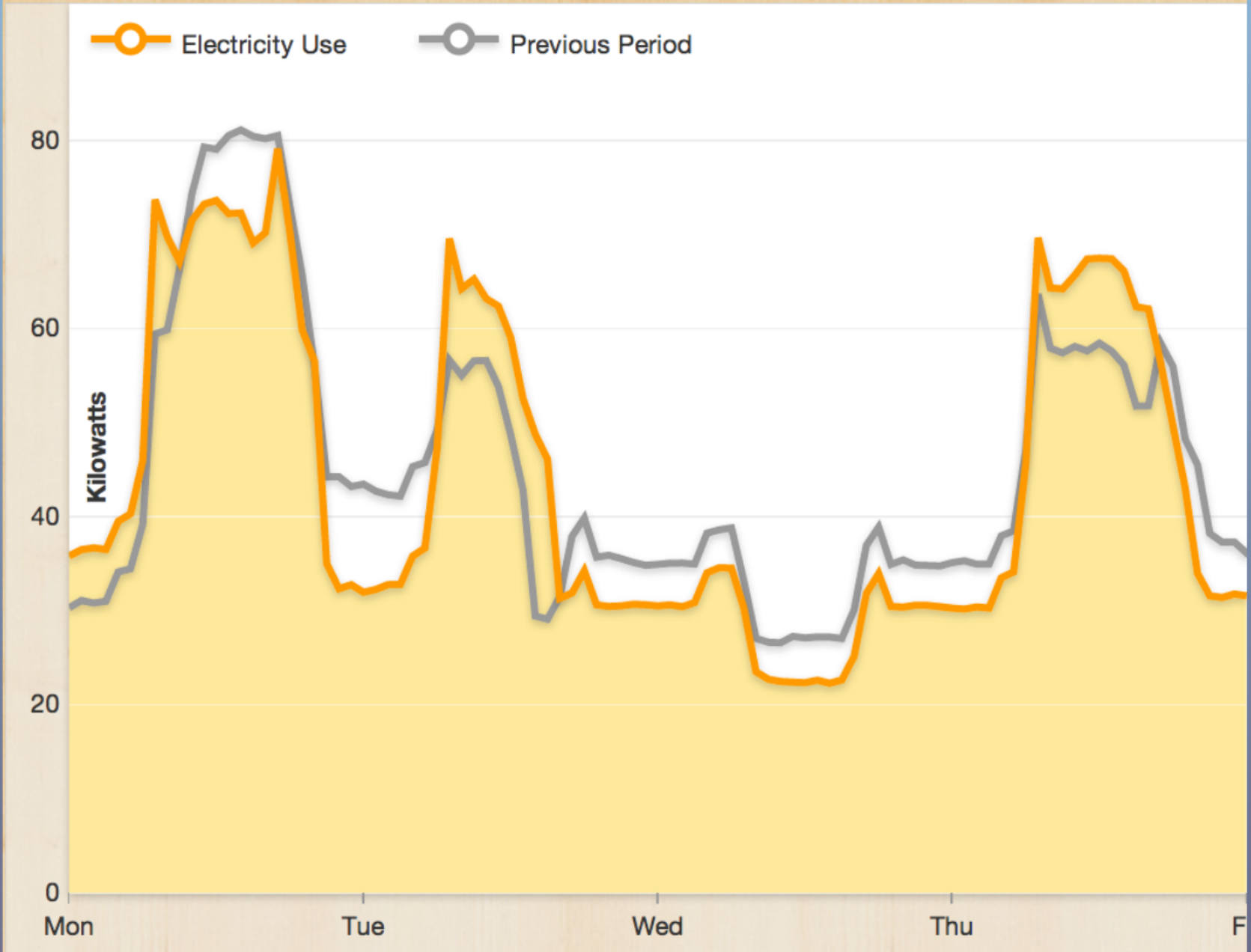
Bancroft Elementary ▾

electricity use ▾

over

this week ▾

compare



Summary

Whole Building Analysis

End Use Analysis

Recommendations

Comments

kBTU

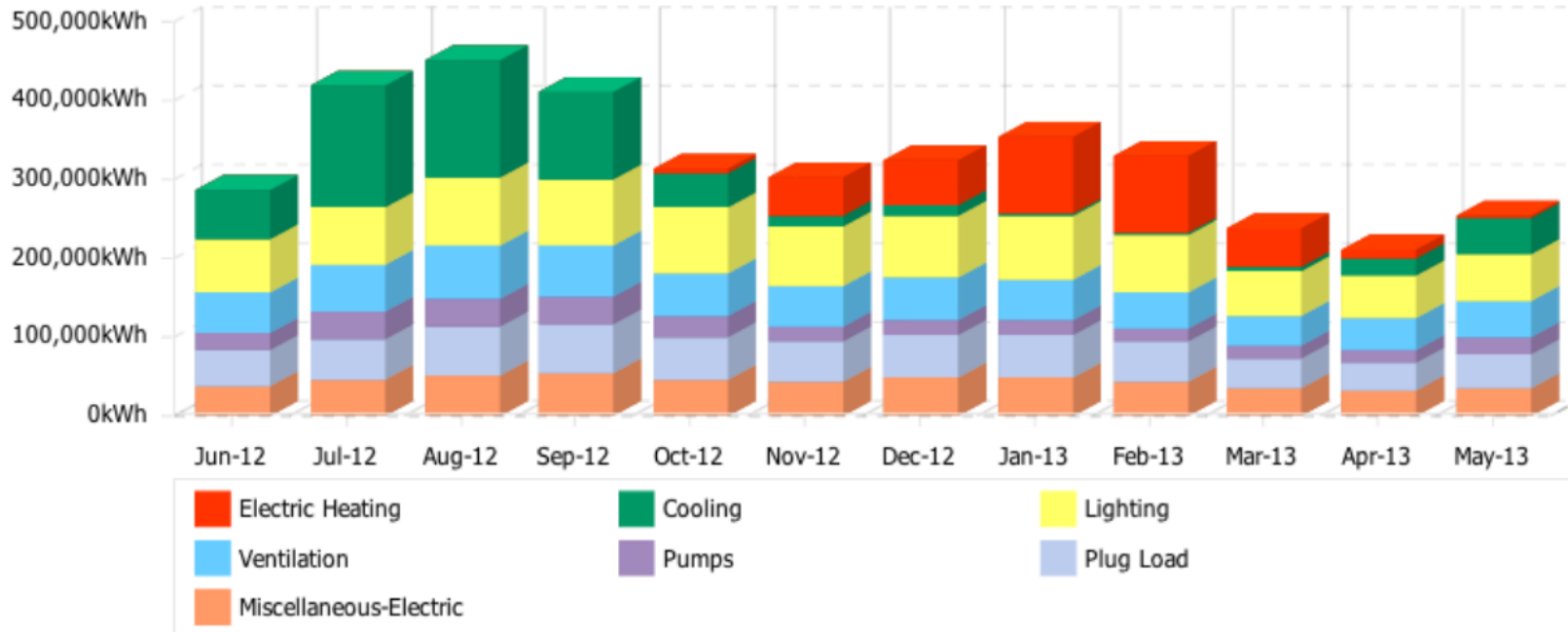
On

Off

End Use Consumption

Daily Electric Load Profile

### End Use Electric Consumption

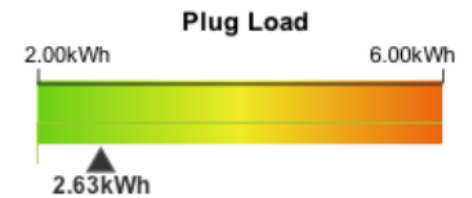
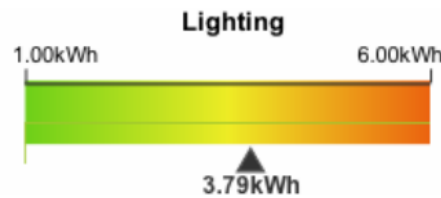
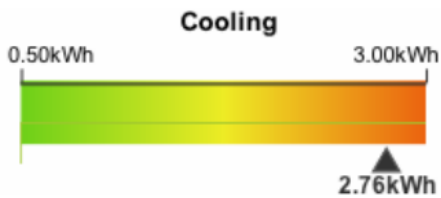


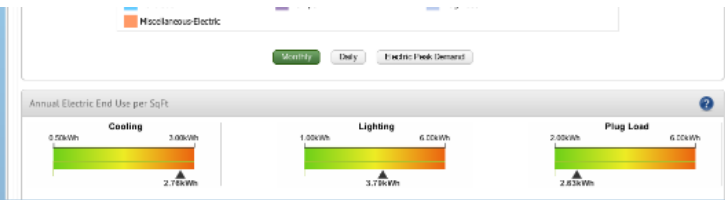
Monthly

Daily

Electric Peak Demand

### Annual Electric End Use per SqFt





Buildings | BUILD SM | View Buildings | BUILD SM | 342167/waterfront-municipal-center#&tab=energy

### BUILDING PROFILE OFFICE

## Waterfront Municipal Center

1100 4TH ST SW, Washington DC 20024

**ENERGY PROFILE**

For more information on the energy performance of this site, or to suggest an energy performance improvement, please contact the DC Department of General Service, Energy and Sustainability Division at [energyperformance@buildsmar.tdc.com](mailto:energyperformance@buildsmar.tdc.com)

Building Type	Office
EUI (kBtu/F2/Yr)	52
Energy Star Score	83
Annual Electricity Use (kWh)	5,210,537
Estimated Annual Energy Cost (\$)	612,759
Annual Energy Cost Per SqFt	1.80
GHG Emissions (Tons)	2,251
Gross Square Feet	340,000

**ENERGY PROFILE**

Last Recorded

Electricity Usage 1/2/14

[Learn About Energy Profiles](#)

Analytical graphics designed by New City Energy And BP Analytix

Buildings | BUILD SM | View Buildings | BUILD SM | 42450/200-I-street-municipal-building#&tab=energy

### BUILDING PROFILE OFFICE

## 200 I Street Municipal Building

200 I ST NE, Washington DC 20002

**ENERGY PROFILE**

For more information on the energy performance of this site, or to suggest an energy performance improvement, please contact the DC Department of General Service, Energy and Sustainability Division at [energyperformance@buildsmar.tdc.com](mailto:energyperformance@buildsmar.tdc.com)

Building Type	Office
Energy Star Score	70
Annual Electricity Use (kWh)	7,623,074
Estimated Annual Energy Cost (\$)	886,474
Annual Energy Cost Per SqFt	2.56
GHG Emissions (Tons)	3,294
Gross Square Feet	350,000

**ENERGY PROFILE**

Last Recorded

Electricity Usage 1/2/14

[Learn About Energy Profiles](#)

Analytical graphics designed by New City Energy And BP Analytix

## Step Two

# Comprehensive Analysis Drives High ROI Retrofits



Finite available capital makes prioritization of investments critical.

'Doing everything' isn't a strategy

### Analysis & Prioritization

Leave no stone unturned

Invest in high-quality up-front analysis

Standardize data capture

Learn to say 'we can't do that'

### Smart Roofs

Often ignored assets with huge value

100s of roofs scored for all options

Massive progress made towards Game Change goals



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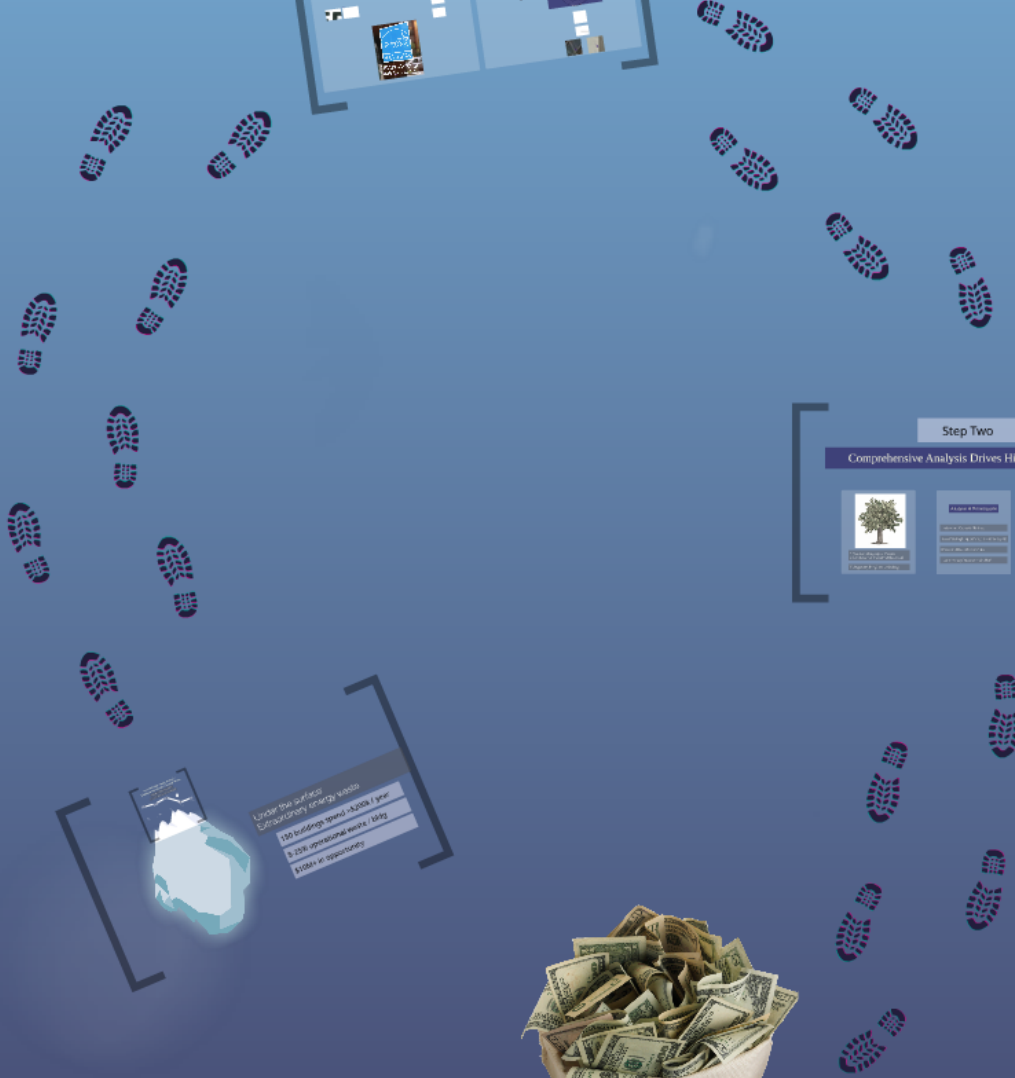
35,040

**Step Two**  
 Comprehensive Analysis Drives High ROI Retrofits

Value & Comments	Next Step
100% Energy Audit	100% Energy Audit
100% Energy Audit	100% Energy Audit
100% Energy Audit	100% Energy Audit

Under the surface  
 Uncovering energy waste

100 buildings spend \$200B / year
\$20B spent on energy / year
100% energy audit





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