

Measurement and Meaningful Actions: Sustainable Business Performance Programs

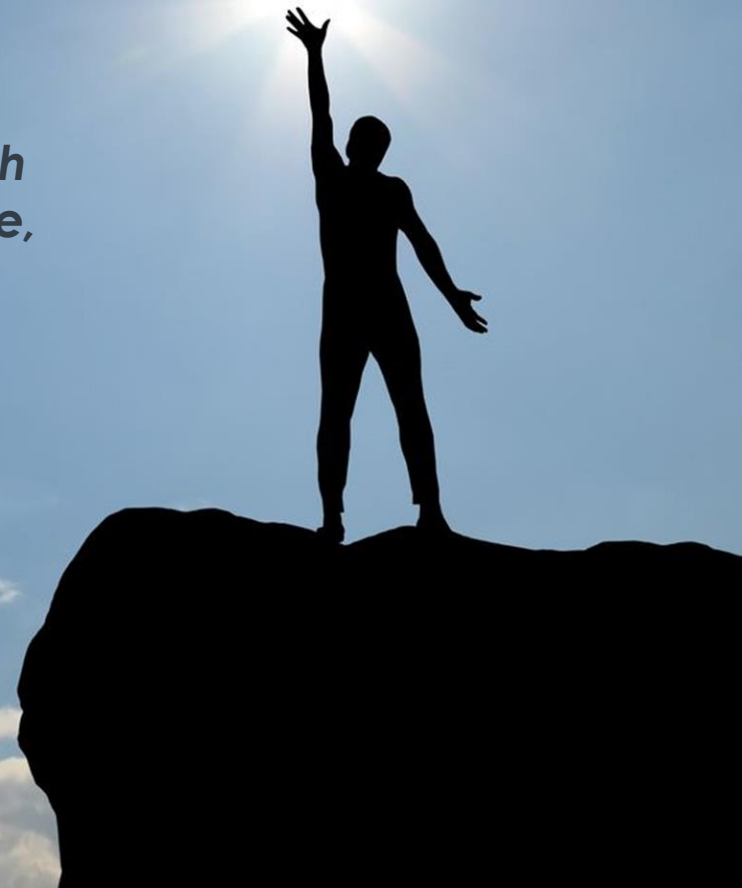
Matthew M. Mehalik, Ph.D.
*Program Manager, Sustainable Pittsburgh
Adjunct Assistant Professor, Heinz College,
Carnegie Mellon University*

National Academies

November 12, 2015



A PROGRAM OF
SUSTAINABLE PITTSBURGH







P I T T S B U R G H
**Green Workplace
Challenge**

Overview of the 2014 – 2015 Competition

Responding to Demand for Climate Action



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SUSTAINABLE PITTSBURGH



Businesses wanted:

- Ability to measure progress
- Business case for actions
- Employee engagement

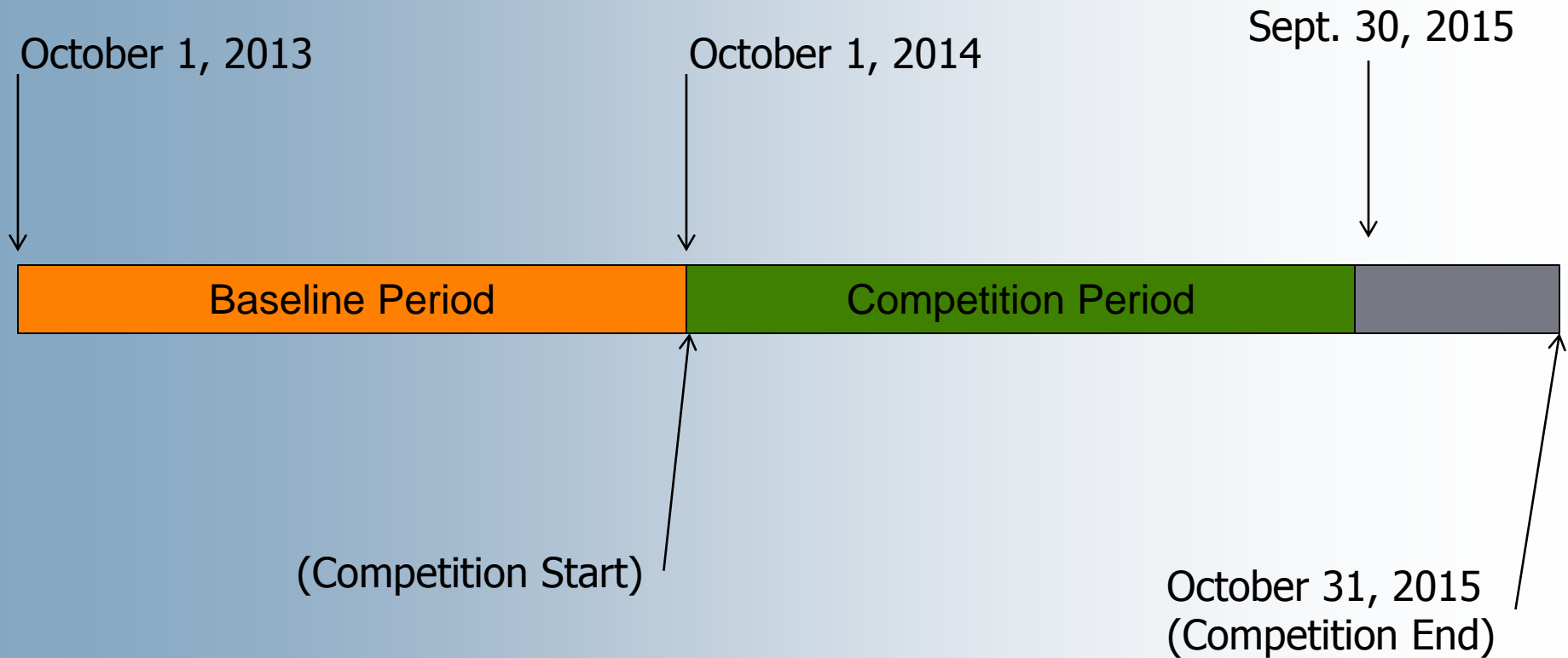


PITTSBURGH
**Green Workplace
Challenge**

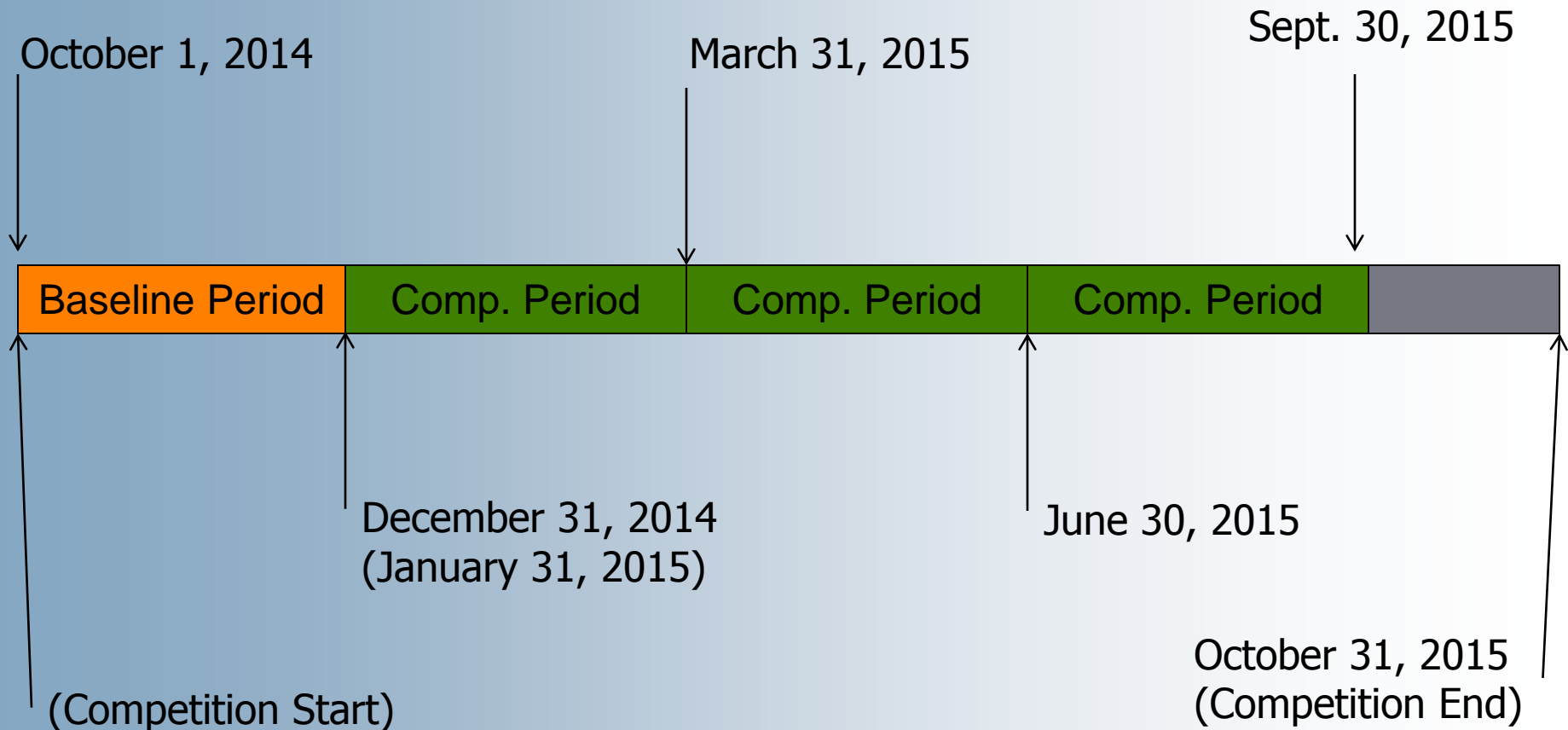


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Energy and Water Baselines



Waste and Commuter Baselines



2014-2015

Green Workplace Challenge Oversight Committee

Jamin Bogi

Policy and Outreach Coordinator
Group Against Smog and Pollution

Mario Leone

Borough Manager
Monaca Borough

Aurora Sharrard

VP of Innovation
Green Building Alliance

Teresa Bradley

Zero Waste Services Coordinator
Pennsylvania Resource Council

Joyce O'Connor

Principal
Cardinal Resources LLC

Sara Thompson

Landscape Architect
Pashek Associates

Aftyn Giles

Sustainability Coordinator
City of Pittsburgh

Lisa Kay Schweyer

Program Developer
CommuteInfo Program
Southwestern Pennsylvania
Commission

Mary Whitney

University Sustainability Coordinator
Chatham University

Kathy Hrabovsky

Sustainability Manager
Allegheny County

P I T T S B U R G H
**Green Workplace
Challenge**



Pittsburgh GWC
@pittsburghgwc

#gwcpgh





Pittsburgh GWC

@pittsburghgwc

The Green Workplace Challenge is a yearlong competition for organizations in SWPA hosted by @SustainablePGH which promotes leadership in sustainability
Pittsburgh, PA · gwcpgh.org

TWEETS	PHOTOS/VIDEOS	FOLLOWING	FOLLOWERS	FAVORITES
670	66	302	323	56

+ Follow

Tweets



Pittsburgh GWC @pittsburghgwc · 6h
We're getting excited for GWC Workshop #10! Stay tuned on social media tomorrow morning, because we have... pic.twitter.com/hEaX4POe7I





Who's Signed up?



Thomas Merton Center
Pittsburgh's Peace and Social Justice Center



BNY MELLON



Bayer





2242 Actions Completed V 1 -2

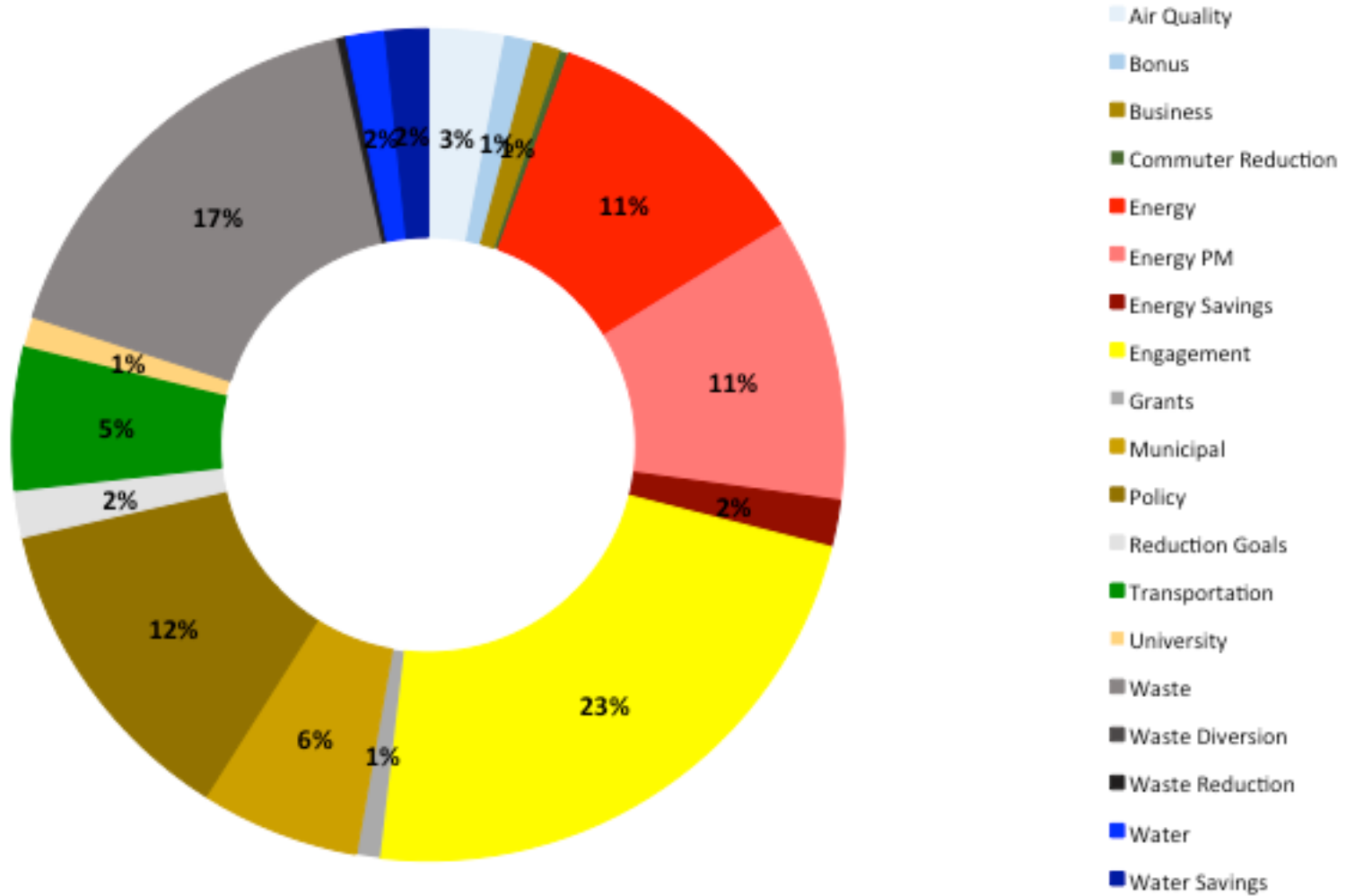




3900+ Actions Completed V 1 - 3



Total Actions by Category

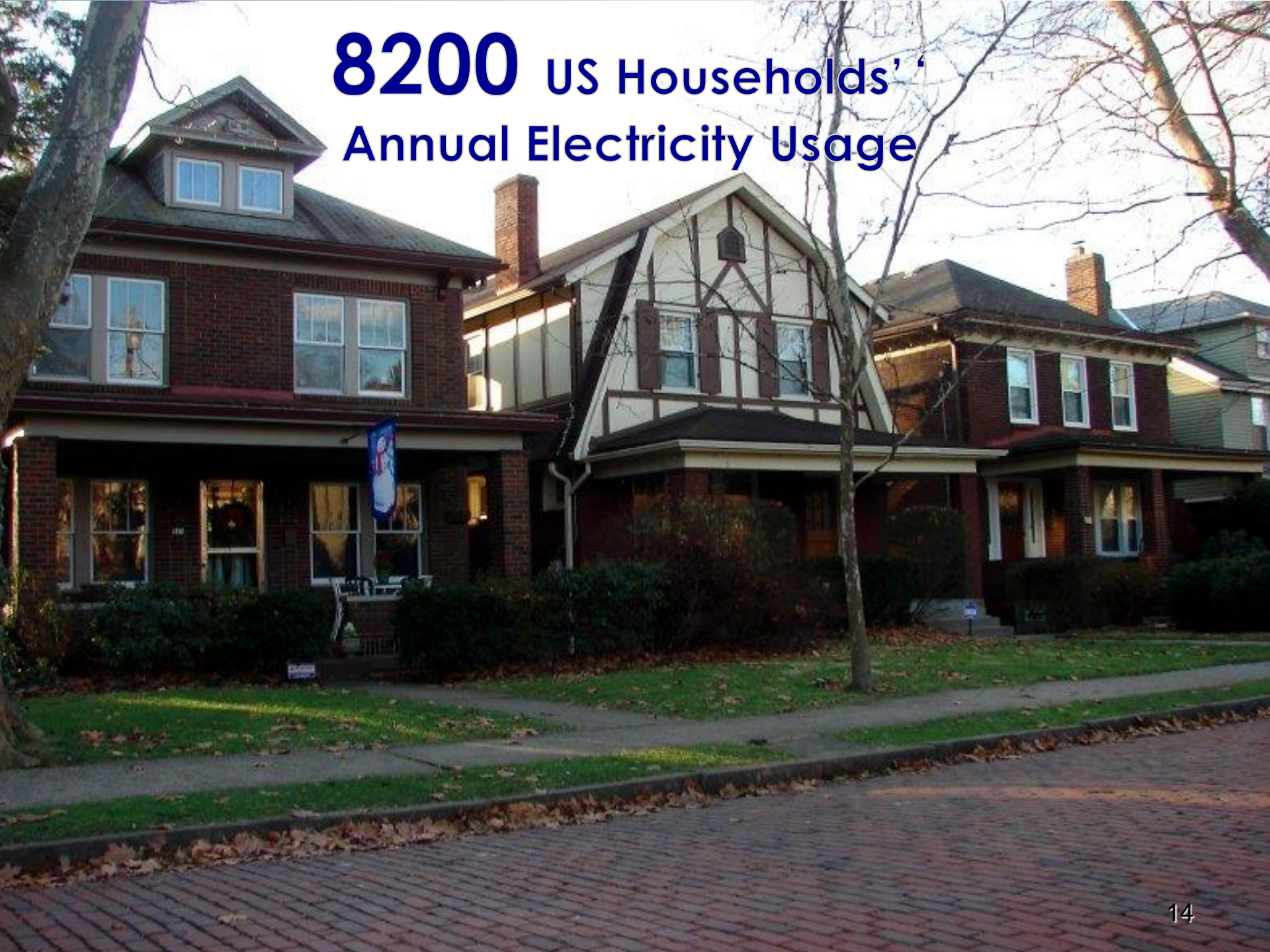


Total Energy Saved V 1 - 2

93,000,000+ kWh



8200 US Households' 'Annual Electricity Usage





Value of Energy Saved

\$7.4 Million

\$7.7 – 8.1 Million

**including the social
cost of carbon**

**22,800
MtCO₂e**

**Greenhouse
Gas
Emissions
Reduced**



578 Airline Flights Of 500 miles

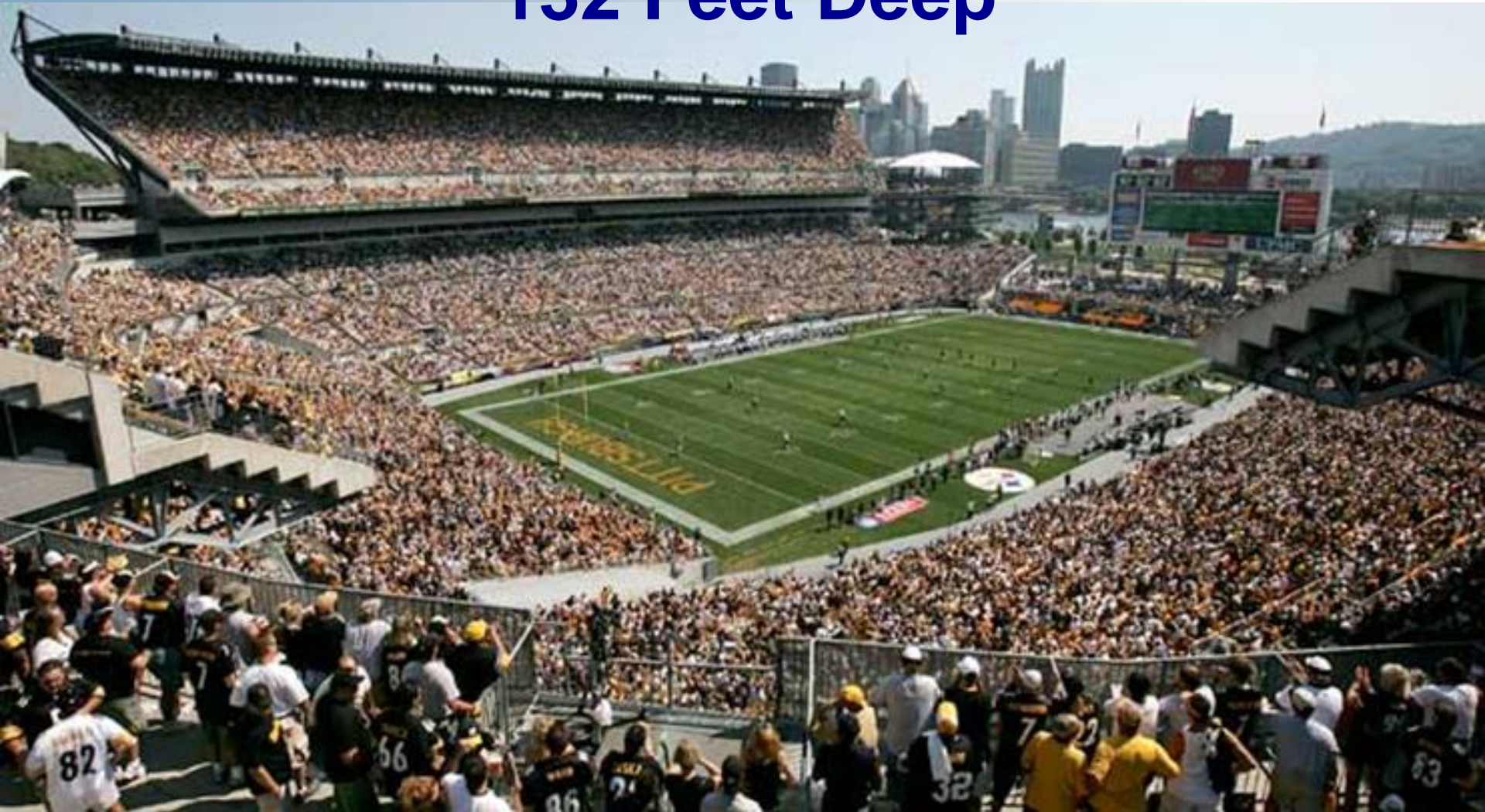


About 4 day's worth flights leaving
Pittsburgh Intl. on a typical day

**Amount of
Water Saved V 1 -2
96,000,000 gal**



Enough Water to Fill the Playing Surface of Heinz Field 132 Feet Deep



A scanning electron micrograph (SEM) showing a dense field of fine, irregularly shaped particles, likely PM2.5. The particles vary in size and morphology, with some appearing as small, dark, spherical droplets and others as larger, more complex, and aggregated structures. The background is a light gray, textured surface.

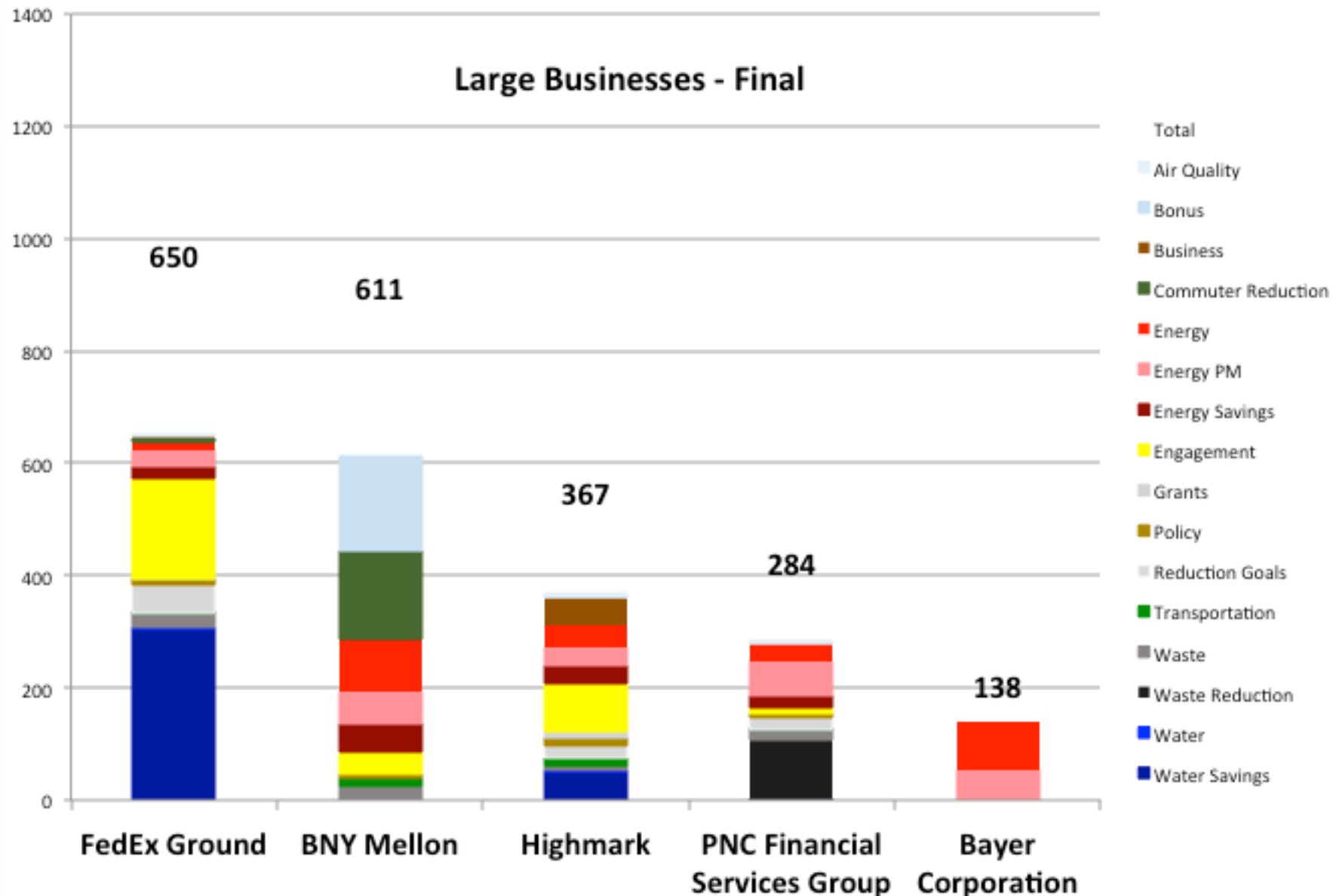
1.9 tons of PM 2.5 Reduced

5µm

Air Pollutants Reduced V 1 - 2

Pollutant	Amount		
NOx	102.7 tons		X 9
SO2	406 tons		X 1.3
N2O	2412 pounds		X 8
Mercury	4.2 pounds	0.1 mg/m ³ OSHA	 x 3459

Large Businesses - Final



P I T T S B U R G H
**Green Workplace
Challenge**

Top Energy Saver



22% Reduction

P I T T S B U R G H
**Green Workplace
Challenge**

Top Water Saver



76% Reduction

P I T T S B U R G H
**Green Workplace
Challenge**



FedEx®
Ground

All-Stars Competing in EPA's Energy Star Team Battle of the Buildings



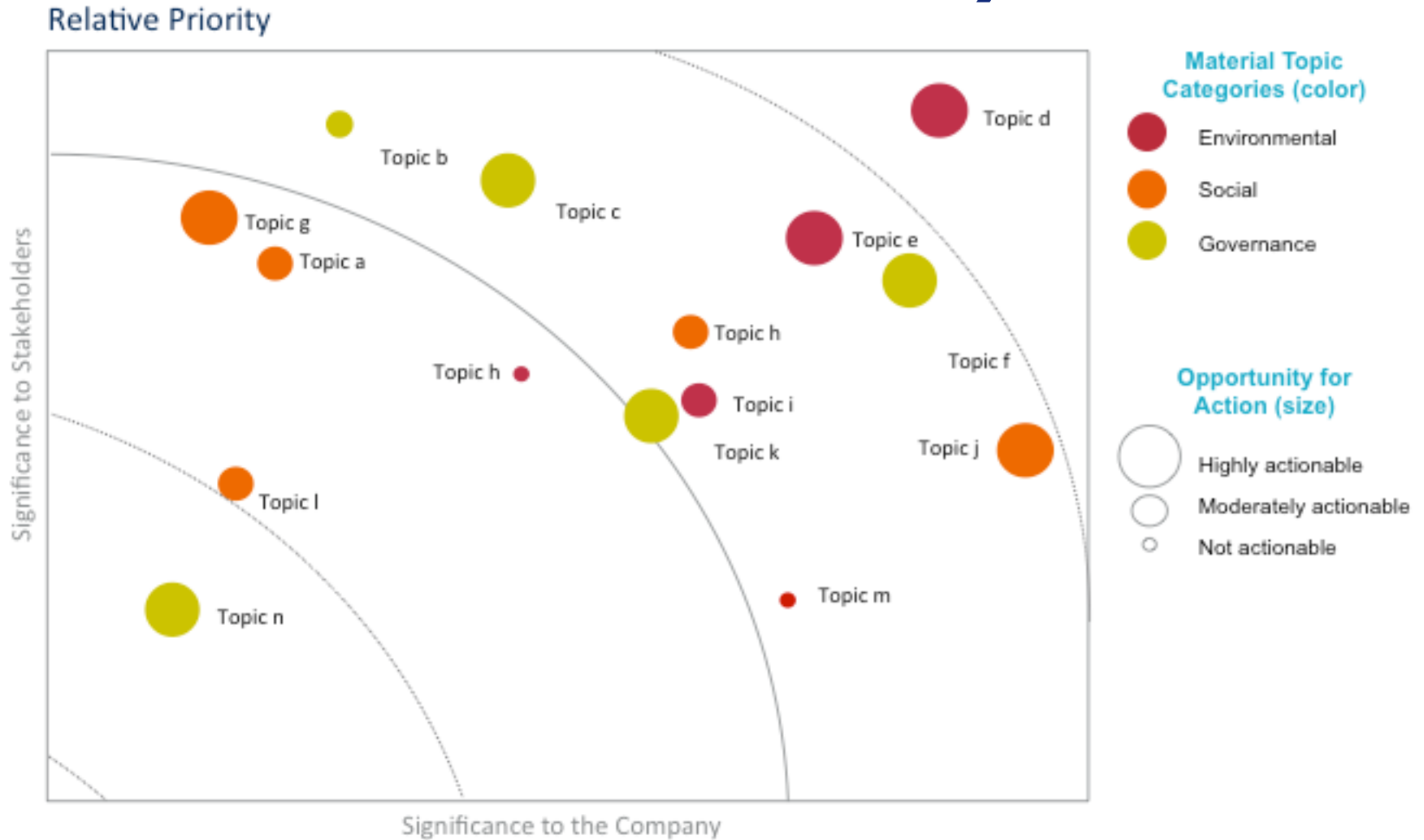
EMERGENT SUSTAINABILITY THROUGH ADDRESSING REGIONAL MATERIALITY CHALLENGES

What is Materiality?

Issues that:

- Reflect an organization's significant economic, environmental, and social impacts***
- Would substantively influence the assessments and decisions of stakeholders***

What is Materiality?



DELL US Equity **96) Settings** **97) Actions** **98) Output** **99) Feedback** **Relative Valuation**

Comp Source	Bloomberg	% Rev. by Industry FY2012	Region	Global	Currency	USD	
1) Whole Firm			Metric	DELL	Low	Comp Range	High
2) Computer Hardware			EV/EBITDA T12	3.89	3.56		12.8
3) Computer Peripherals			Rev 1 Yr Gr	0.94	-24.44		177.8
4) Information Technology (IT)			Gross Margin	22.25	8.12		46.8
5) Computer Storage			Op Margin	7.14	-1.35		31.2
			R&D % T12	1.38	0.00		5.8

0) Analyze Industry

● DELL US ♦ Median

21) Overview **22) Comp Sheets** **23) Markets** **24) EPS Preview** **25) Ownership** **26) Credit** **27) Custom**
31) Create Template **32) ms** **33) mmm** **34) Custom ...** **35) Valuation...** **36) msg**
Add Column **<Enter a field, e.g. P/E>** **93) Fields** **19) Save As ...**

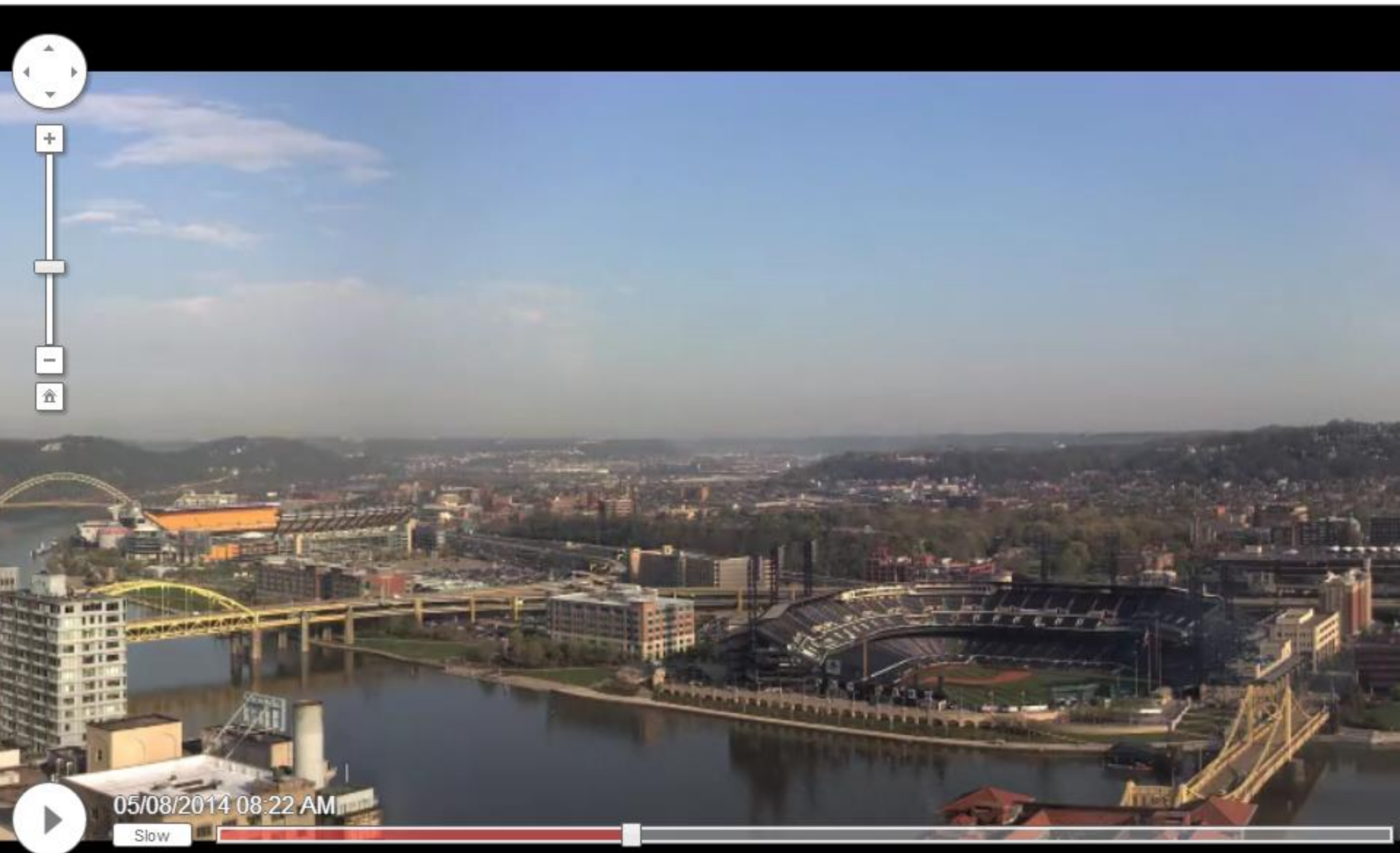
Name	Ticker	Mkt Cap (USD)	ESG Disc Score:Y	GHG Intens/Sts:Y	Total Waste:Y	% Women Emp:Y	% Women on Bd:Y
Average		55.58B	39.59	12.6	0.04	28.97	14.25%
100) DELL INC	DELL US	26.43B	47.11	5.99	0.04	33.00	8.00%
101) HEWLETT-PACKARD CO	HPQ US	43.50B	45.87	14.00	0.09	32.90	40.00%
102) INTL BUSINESS MACHINES COR	IBM US	229.72B	42.98	28.08	0.08	28.10	15.38%
103) APPLE INC	AAPL US	497.29B	35.95	2.00	0.00	N.A.	12.50%
104) LENOVO GROUP LTD	992 HK	8.80B	47.11	2.09	0.01	N.A.	9.09%
105) ACER INC	2353 TT	2.94B	21.90	N.A.	N.A.	N.A.	N.A.
106) ASUSTEK COMPUTER INC	2357 TT	7.78B	74.79	0.07	0.00	13.80	0.00%
107) COGNIZANT TECH SOLUTIONS-A	CTSH US	18.27B	36.36	38.01	N.A.	31.00	12.50%
108) ACCENTURE PLC-CL A	ACN US	41.30B	40.50	7.90	N.A.	35.00	25.00%
109) COMPUTER SCIENCES CORP	CSC US	4.01B	24.38	N.A.	N.A.	N.A.	10.00%
110) SYNTEL INC	SYNT US	2.41B	N.A.	N.A.	N.A.	N.A.	N.A.

11) Edit Comparables **16) Select Stats** **17) Group by** **Zoom** **100%**

 Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7337 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 0000 Copyright 2012 Bloomberg Finance L.P.
 SN 106.81 6737-10-11 May-12 12:38:40 EDT



CREATE Lab Breathecam



CREATE Lab Breathecam



Black Carbon

BC ($\mu\text{g}/\text{m}^3$)

- 0.76 - 1
- 1.01 - 1.25
- 1.26 - 1.5
- 1.51 - 2
- 2.01 - 3.36

Kilometers

0 4 8 16

The map displays the Pittsburgh metropolitan area and surrounding regions, with Black Carbon concentrations indicated by a color scale from yellow (lowest) to red (highest). The highest concentrations (red/orange) are concentrated in the urban core, particularly around the city of Pittsburgh and the Allegheny River valley. The map includes labels for various towns and cities, such as Pittsburgh, Allegheny, and West Virginia. A legend in the bottom left corner defines the concentration ranges, and a scale bar and north arrow are provided in the bottom right corner.

0.76 - 1

 1.01 - 1.25

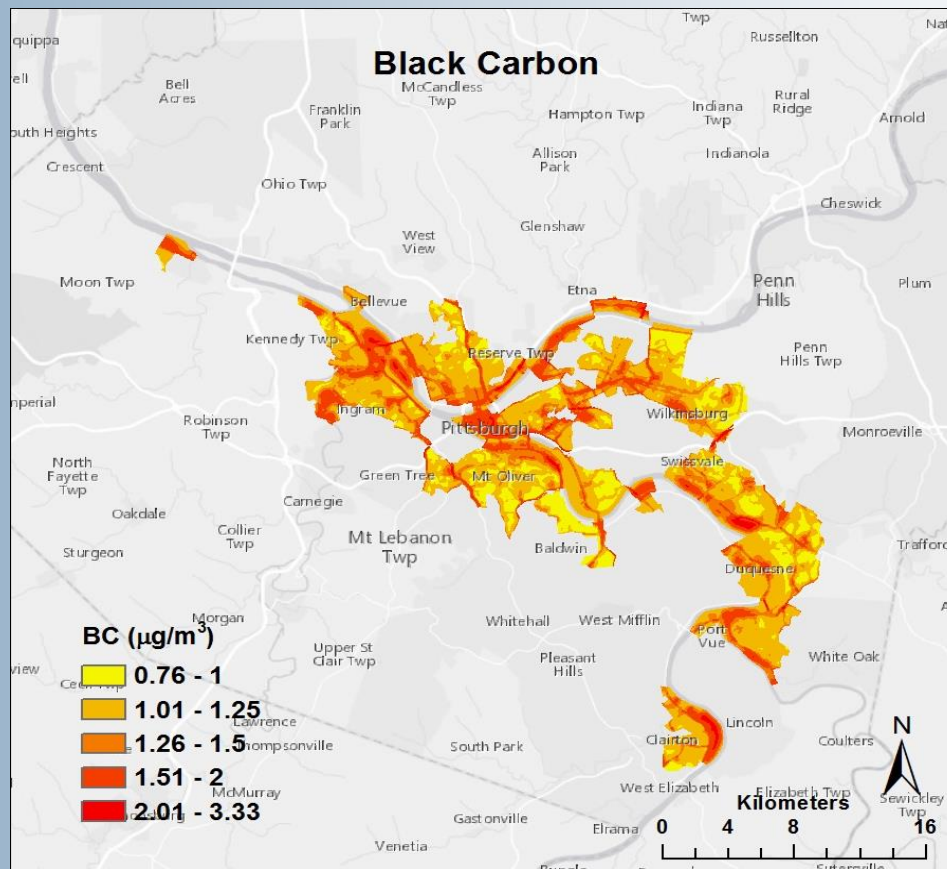
 1.26 - 1.5

1.51 - 2

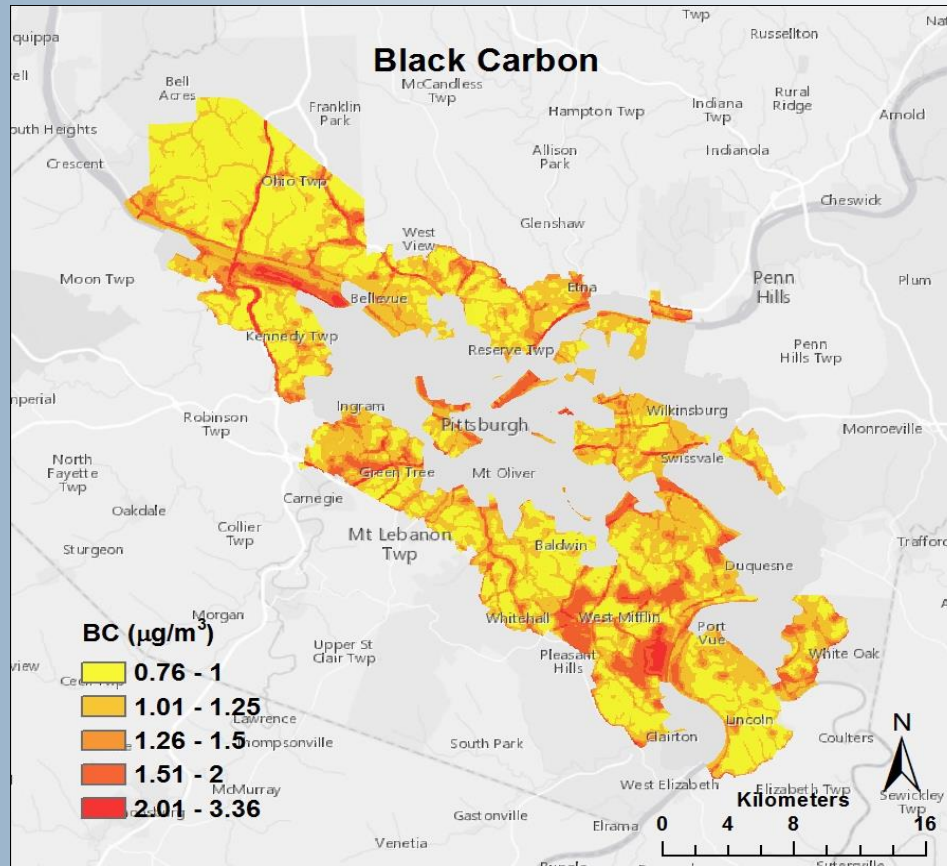
2.01 - 3.36

Kilometers

Environmental justice communities



Non-EJ communities



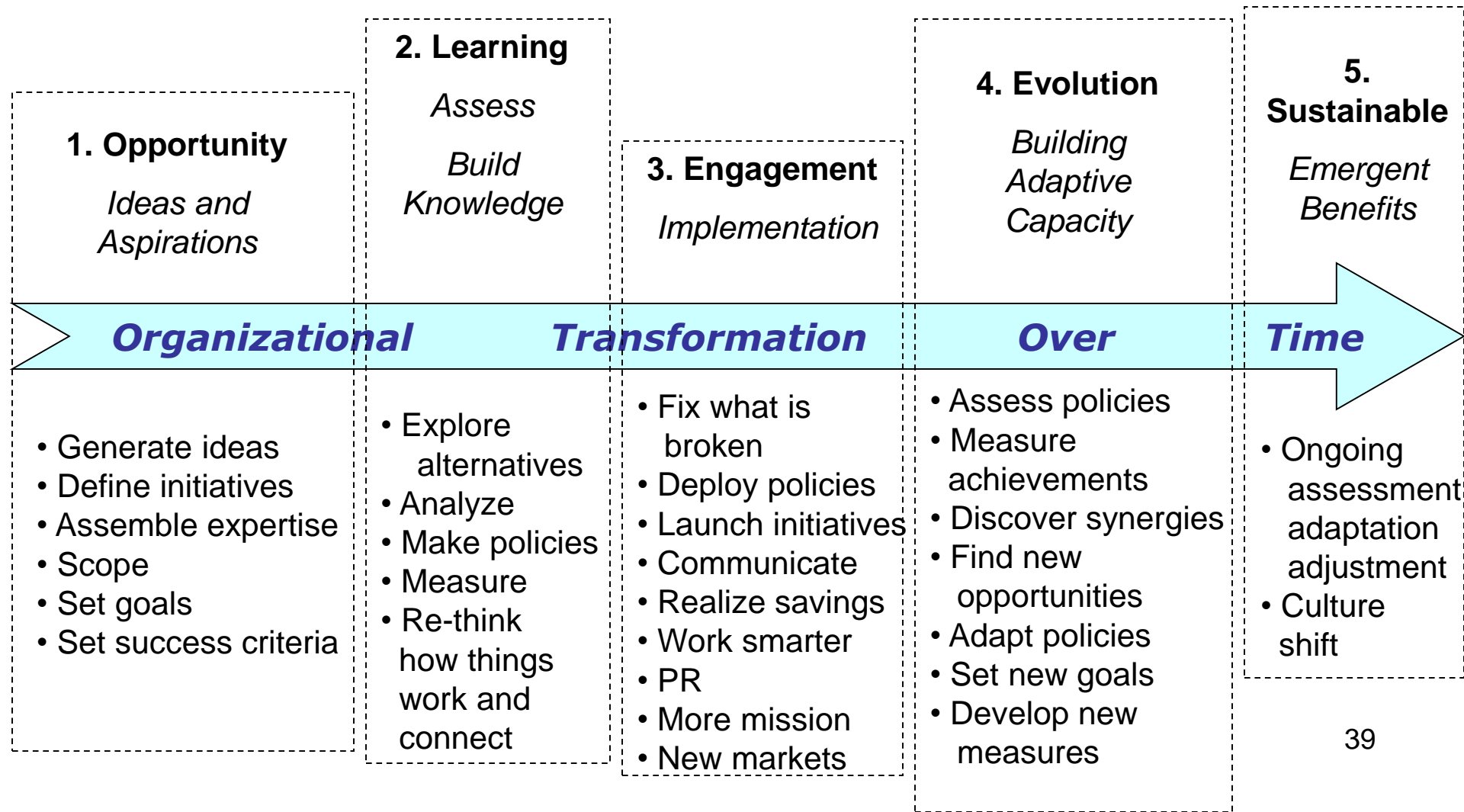




SOUTHWESTERN PENNSYLVANIA SUSTAINABLE BUSINESS COMPACT



Pathway for Capacities for Emergent Sustainability





SOUTHWESTERN PENNSYLVANIA SUSTAINABLE BUSINESS COMPACT

Diversity, Equity & Inclusion

Water Quality & Stewardship

Energy Efficiency & Conservation

Transportation

Sustainable Materials Management

Citizen Civic Engagement

**Smart Growth, Sustainable
Communities, and Green Buildings**

Health & Wellness

Workforce Development

Air Quality Improvements

Economic Prosperity

Governance and Management



Baseline



4.b1. The business avoids placing new production sites near environmentally sensitive or protected areas and/or uses precautionary principle, highest level of safeguarded operational techniques for operating near such environments.

4.b2. The business practices and/or contributes to historic preservation programs in the region.

4.b3. The business has chosen to occupy existing space rather than new construction for a majority of its facilities.



4.e1. The business has constructed or resides in a SWPA LEED certified building, space, or neighborhood.

4.e2. The business has rehabilitated an existing space or structure using LEED-EB guidelines or equivalent.

4.e3. The business has transformed and occupies a formerly blighted or abandoned property.

4.e4. The business occupies a historic or civically significant space.

4.e5. The business examines the neighborhood walk score, transportation score, and the housing and transit affordability index in its decisions about where to locate its facilities.



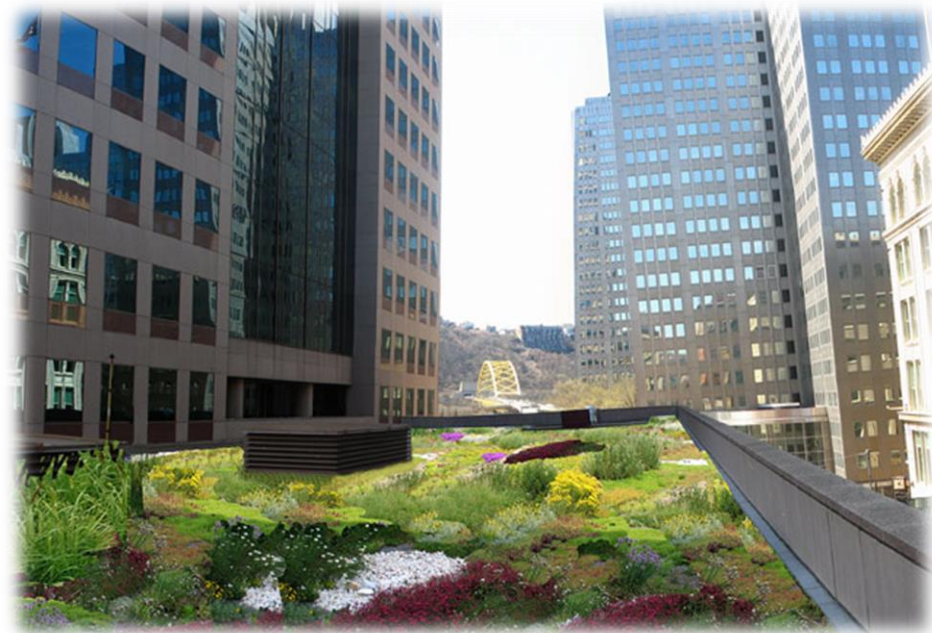
Transformative

4.t1. The business resides in a facility with a green roof.

4.t2. The business supports the adoption of smart growth strategies for SWPA's sustainable development.

4.t3. The business promotes to the community a LEED-based approach to building design, responsible construction methods, and the renovation of existing structures.

4.t4. The business has received regional recognition for its adoption and promotion of smart growth, sustainable community, and green building practices.





4.t5. The business supports initiatives to ensure our region's residents have access to quality and affordable housing.

4.t6. The business has received regional recognition for its initiatives to ensure our region's residents have access to quality and affordable housing.



4.t7. The business has received regional recognition for its regional conservation activities.



SOUTHWESTERN PENNSYLVANIA SUSTAINABLE BUSINESS COMPACT





SOUTHWESTERN PENNSYLVANIA SUSTAINABLE BUSINESS COMPACT

Baseline: 43 "Yes" out of 50
Adjusted: 50 "Yes" out of 50

Engaged: 76 "Yes" out of 81
Adjusted: 81 "Yes" out of 81

Transformative: 35 "Yes" out of 39
Adjusted: 23 "Yes" out of 39

Total Score: 281



Answers Verified: 79%



CONGRATULATIONS!! You are eligible for Leader Status.*To be eligible for Champion Status:
You need to verify at least 80% your "Yes" answers.

☒ I am authorized to submit information on behalf of my organization.

Confirm This Status



**SOUTHWESTERN PENNSYLVANIA
SUSTAINABLE BUSINESS COMPACT**

- **21 Businesses Participating**
 - **804 Actions Completed**
 - **273 Actions Qualified with Transparent Information**
- Top 10 Actions (of 170) in:**
- **Diversity, inclusion (4/10)**
 - **Energy Efficiency (2/10)**
 - **Financial Performance**
 - **Water Efficiency**
 - **Waste Reduction**



SOUTHWESTERN PENNSYLVANIA
SUSTAINABLE BUSINESS COMPACT



2013 - 2015



Solutions & Technologies





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SUSTAINABLE BUSINESS COMPACT



2013 - 2015





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SUSTAINABLE BUSINESS COMPACT



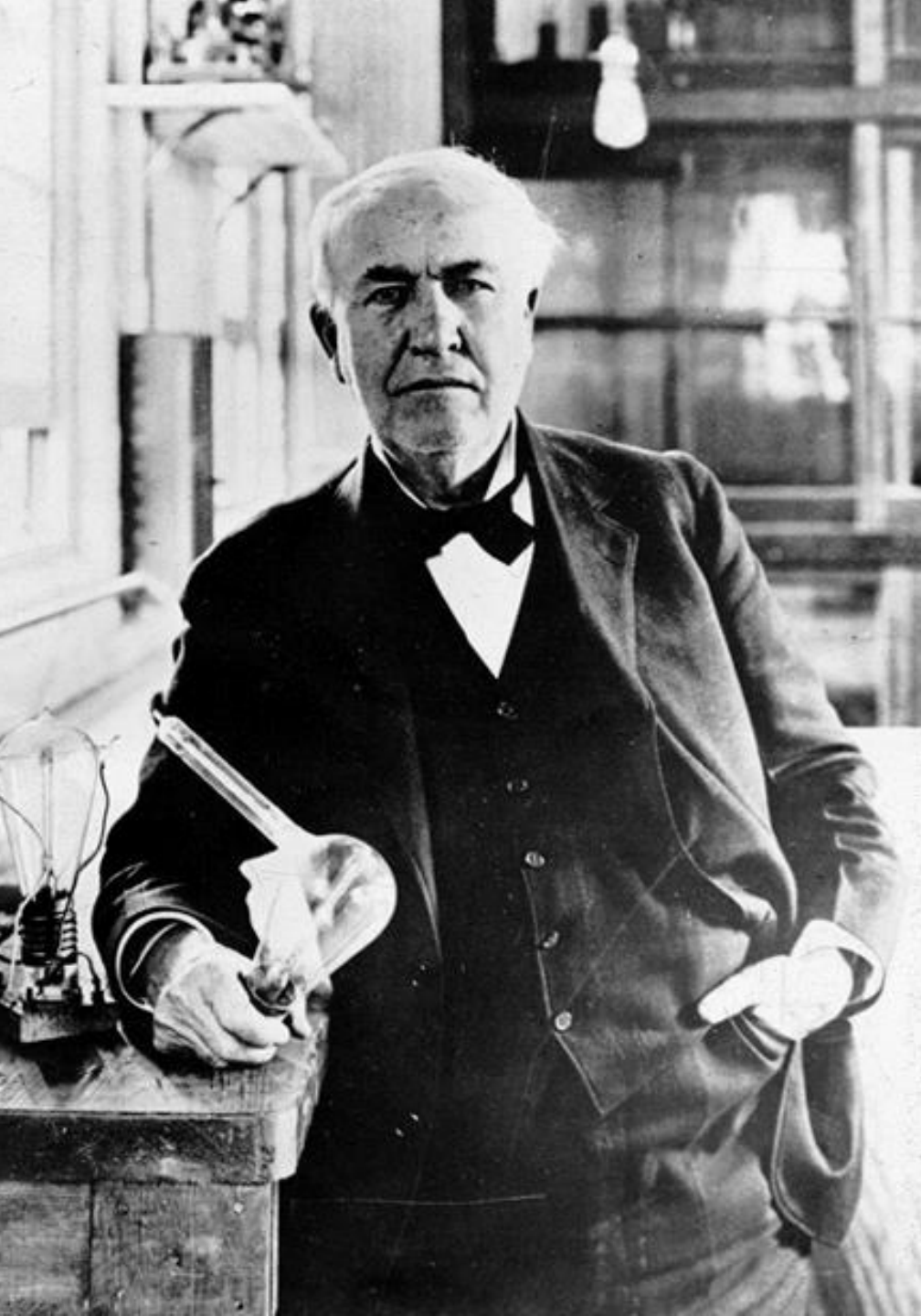
2014 - 2016

UPMC **LIFE
CHANGING
MEDICINE**



SOUTHWESTERN PENNSYLVANIA SUSTAINABLE BUSINESS COMPACT





**CAN WE
CREATE THE
GREATEST
INVENTION OF
THE 21ST
CENTURY?**

COMPETE. SAVE. WIN.

Thank You!

mmehalik@sustainablepittsburgh.org

