

# Policy Discussions: Commercial



## Benchmarking

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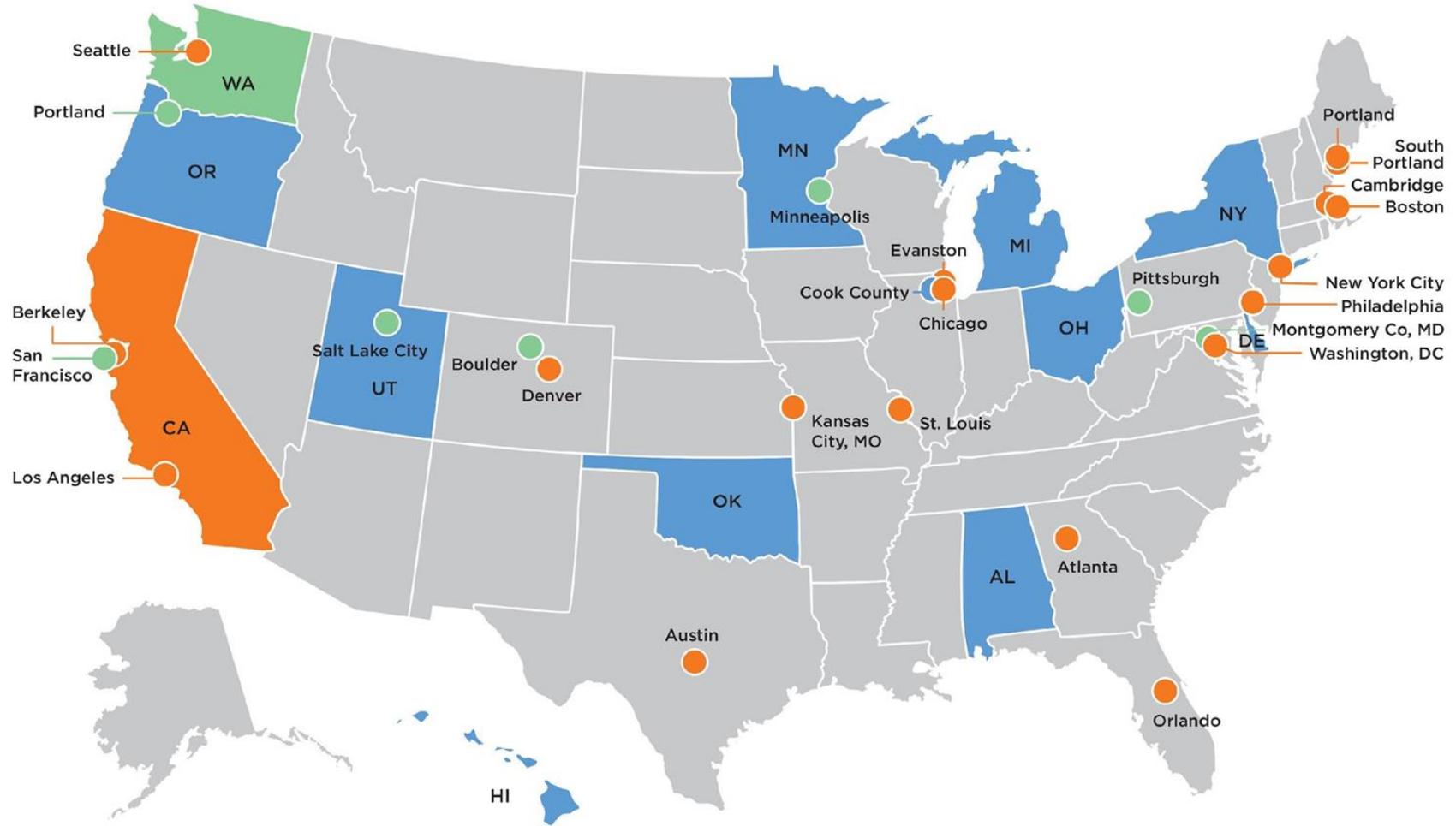
# COMMERCIAL BENCHMARKING



## Building Energy Use Benchmarking or Energy Performance Reporting

- ❑ Benchmarking is the practice of comparing the measured performance of a device, process, facility, or organization to itself, its peers, or established norms, with the goal of informing and motivating performance improvement.
- ❑ Serves as a mechanism to measure energy performance of a single building over time, relative to other similar buildings,.
- ❑ It facilitates energy accounting, comparing a facility's energy use to similar facilities to assess opportunities for improvement, and quantifying/verifying energy savings.

# U.S. Building Benchmarking and Transparency Policies



- Public, commercial, and multifamily building benchmarking policy adopted
- Public and commercial building benchmarking policy adopted
- Public buildings benchmarked



### Comparison of U.S. Commercial Building Energy Benchmarking and Transparency Policies



Jurisdiction	Legislation	Public Data Available	Policy Impact			Buildings Included	Policy Schedule		Compliance		Additional Elements		
	Released	Number of Bldgs	Square Footage	Energy Savings	Types & Sizes	Reporting to Gov't	Transparency	By # of Buildings	By % of Sq. Ft.	Water Tracking	Other Requirements		
Cities/Countries	Atlanta	-	2,900	402 million	-	Comm & MF ≥ 50K Comm & MF ≥ 25K	Aug 1, 2015 Jun 1, 2017	(If Energy Star >55) Jan 2017 Sept 2017	-	-	✓	Audits every 10 years	
	Austin	-	2,800	113 million	-	Comm ≥ 10K MF ≥ 5 units	Jun 1, Annual	Time of transaction	-	-	-	Audits & mandatory upgrades for high energy use MF buildings	
	Berkeley	-	257	13.7 million	-	Comm & MF ≥ 50K Comm & MF ≥ 25K	July 1, 2018 July 1, 2019	TBD TBD	-	-	✓	Periodic/time of sale energy reports for all buildings (timing based on size)	
	Boston	Yes	1,600	250 million	-	Comm ≥ 50K MF ≥ 50K/50 units Comm ≥ 35K MF ≥ 35K/35 units	Sep 15, 2014 May 15, 2015 May 15, 2016 May 15, 2017	Oct 1, 2015 Oct 1, 2015 Oct 1, 2016 Oct 1, 2017	-	84% (2014)	✓	Periodic energy assessments and/or actions	
	Boulder	-	475	26 million	-	Comm ≥ 50K New Comm ≥ 10K Comm ≥ 30K Comm ≥ 20K	Aug 1, 2016 Jun 1, 2018 Jun 1, 2020	>Jun 1, 2019 >Jun 1, 2019 >Jun 1, 2021 >Jun 1, 2023	100% (2016)	100% (2016)	-	Lighting upgrade; audits & RCx every 10 yrs (must invest in RCx measures w/ ≤2yr payback)	
	Cambridge	Yes	1,100	78 million	-	Comm ≥ 50K MF ≥ 50 units Comm ≥ 25K	May 1, 2015 May 1, 2015 May 1, 2016	Sept 1, 2016 Sept 1, 2016 Sept 1, 2017	95% (2015)	93.5% (2014)	✓	-	
	Chicago	Yes	3,500	900 million	10% (2010-15)	Comm ≥ 250K MF ≥ 250K Comm ≥ 50K MF ≥ 50K	Jun 1, 2014 Jun 1, 2015 Jun 1, 2015 Jun 1, 2016	December 2015 Jun 1, 2016 Jun 1, 2016 Jun 1, 2017	84% (2014)	92% (2014)	-	Data verification by licensed professional 1 <sup>st</sup> year & every 3 years	
	Denver	-	3,000	360 million	-	Comm & MF ≥ 50K Comm & MF ≥ 25K	Jun 1, 2017 Jun 1, 2018	TBD	-	-	-	-	
	District of Columbia	Yes	2,000	357 million	9% (2010-13)	Comm ≥ 50K MF ≥ 50K	Apr 1, Annual	Annually >Apr 1	83% (2013)	-	✓	-	
	Evanston, IL	-	557	45.6 million	-	Comm & MF ≥ 100K Comm & MF ≥ 50K Comm & MF ≥ 20K	Jun 30, 2017 Jun 30, 2018 Jun 30, 2019	TBD	-	-	✓	Data verification by a certified professional 1 <sup>st</sup> year and every 3 years	
	Kansas City	-	~1,500	~400 million	-	Comm & MF ≥ 100K Comm & MF ≥ 50K	May 1, 2017 May 1, 2018	Sept 1, 2018 Sept 1, 2019	-	-	✓	-	
	Los Angeles	-	14,000	900 million	-	Comm & MF ≥ 100K Comm & MF ≥ 50K Comm & MF ≥ 20K	Jul 1, 2017 Apr 1, 2018 Apr 1, 2019	TBD	-	-	✓	ASHRAE level II audit and RCx every 5 years	
	Minneapolis	Yes	625	110 million	-	Comm ≥ 100K Comm ≥ 50K	Jun 1, Annual	Aug 31, Annual	87% (2013)	-	✓	-	
	Montgomery Co., MD + Rockville, MD	-	~1,000	~110 million	-	Comm ≥ 250K Comm ≥ 50K	June 1, 2016 June 1, 2017	Oct 2017 Oct 2018	~75% (2015)	-	-	-	Data verification by licensed professional 1 <sup>st</sup> year & every 3 years
	New York City	Yes	33,417	2.8 billion	6-14% (2010-14)	Comm & MF ≥ 50K Comm & MF ≥ 25K	May 1, Annual May 1, 2018	Annually on Sept 1 Anticipated >2018	84% (2012)	84% (2012)	✓	Audits & RCx (LL 87), lighting upgrades & submetering (LL 88)	
	Orlando	-	826	125.6 million	-	Comm & MF ≥ 50K	May 1, 2018	Sep 1, 2019	-	-	-	Energy audit or RCx every five years if ENERGY STAR <50. Benchmarking by qualified benchmarker	
	Philadelphia	Yes	2,900	390 million	-	Comm ≥ 50K MF ≥ 50K	Jun 30, Annual Jun 30, 2016	Annually >Jun 30 >Jun 30, 2017	91% (2014)	91% (2014)	✓	-	
	Pittsburgh	-	861	164 million	-	Comm ≥ 50K	June 1, 2018	Annually >Jun 1	-	-	✓	-	
	Portland, ME	-	284	-	-	Comm ≥ 20K MF ≥ 50 units	May 1, 2018	Sept 1, 2019	-	-	✓	-	
	Portland, OR	-	1,024	87 million	-	Comm ≥ 50K Comm ≥ 20K	Apr 22, 2016 Apr 22, 2017	Oct 1, 2017 Oct 1, 2018	-	82% (2015)	-	-	
Salt Lake City	-	1,440	140 million	-	Comm ≥ 50K Comm ≥ 25K	May 1, 2019 May 1, 2020	(If Energy Star >50) Sep 1, 2019 Sep 1, 2020	-	-	✓	Tune-up evaluations every 5 years if ENERGY STAR < 50.		
San Francisco	Yes	2,312	203 million	7.9% (2010-14)	Comm ≥ 10K	Apr 1, Annual	Annually >Apr 1	-	82% (2013)	-	ASHRAE level I/II audits or RCx every 5 years		
Seattle	Yes	3,250	781 million	2.7% (2014-15)	Comm & MF ≥ 20K	Apr 1, Annual	Annually <Dec 31	99.2% (2013)	99.4% (2013)	-	Tune-ups every 5 years for Comm ≥50K		
South Portland, ME	-	-	-	-	Comm ≥ 5K MF ≥ 10 units	May 1, 2018 May 1, 2018	TBD	-	-	✓	Verification every 5 years by professional engineer		
St. Louis	-	900	143 million	-	Comm & MF ≥ 50K	Apr 1, 2018	Aug 1, 2018	-	-	✓	-		
States	California	-	20,573	2.4 billion	-	Comm & MF ≥ 50K	TBD	TBD	-	-	-	Mandatory upgrades TBD under AB 758	
	Washington State	-	4,600	247 million	-	Comm ≥ 10K	None	Time of transaction	-	-	-	Audits for public buildings with low ratings	

# COMMERCIAL BENCHMARKING



- Overview of the DC Benchmarking Program- Abby Johnson
- Status of benchmarking in Virginia- Susan Elliott
- Questions

# COMMERCIAL BENCHMARKING



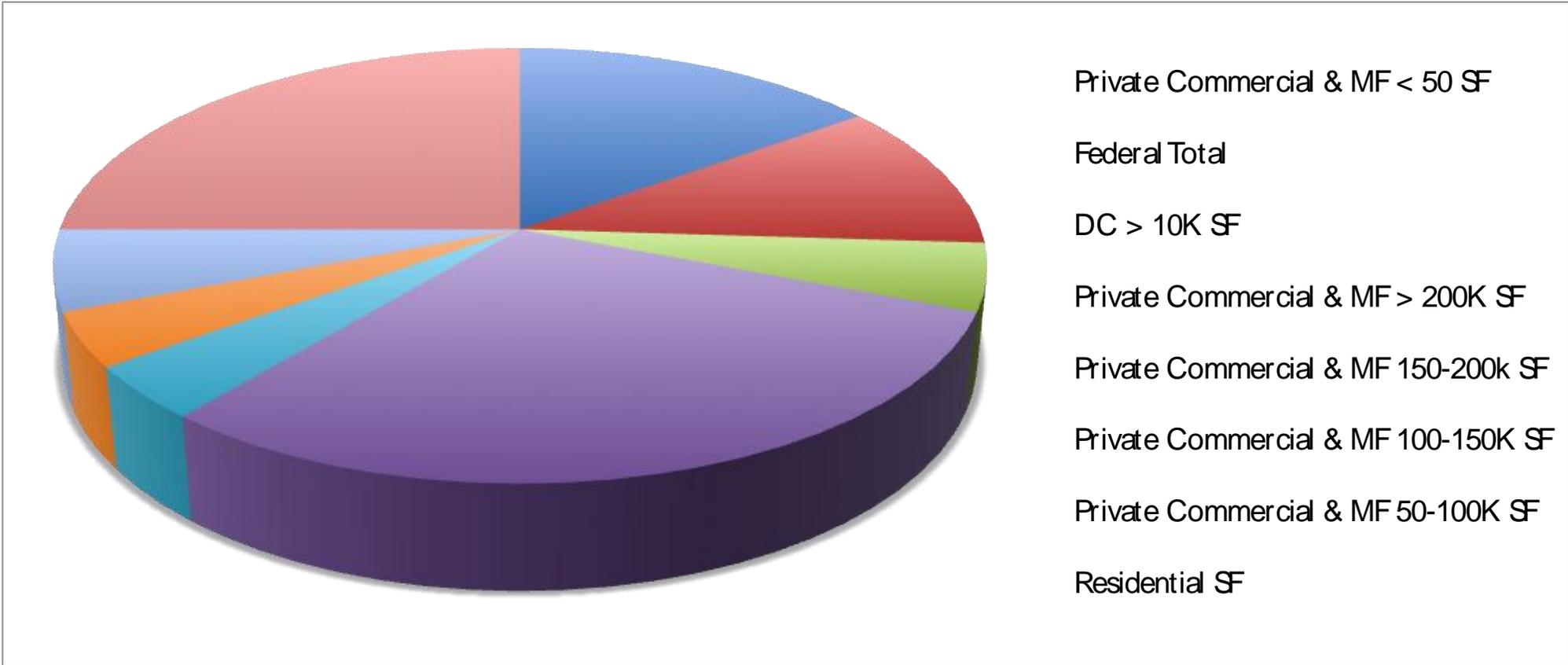
## DC Benchmarking Law

- **ENERGY STAR® Portfolio Manager®** benchmarking & public reporting
- DC Government Buildings >10,000 sq. ft.
- Private Buildings >50,000 sq. ft, **each April 1**
- **ENERGY STAR® Target Finder** modeling for new buildings >50,000 sq. P.

# COMMERCIAL BENCHMARKING



## DC - Building Area Breakdown



# COMMERCIAL BENCHMARKING



## DC – Data Access

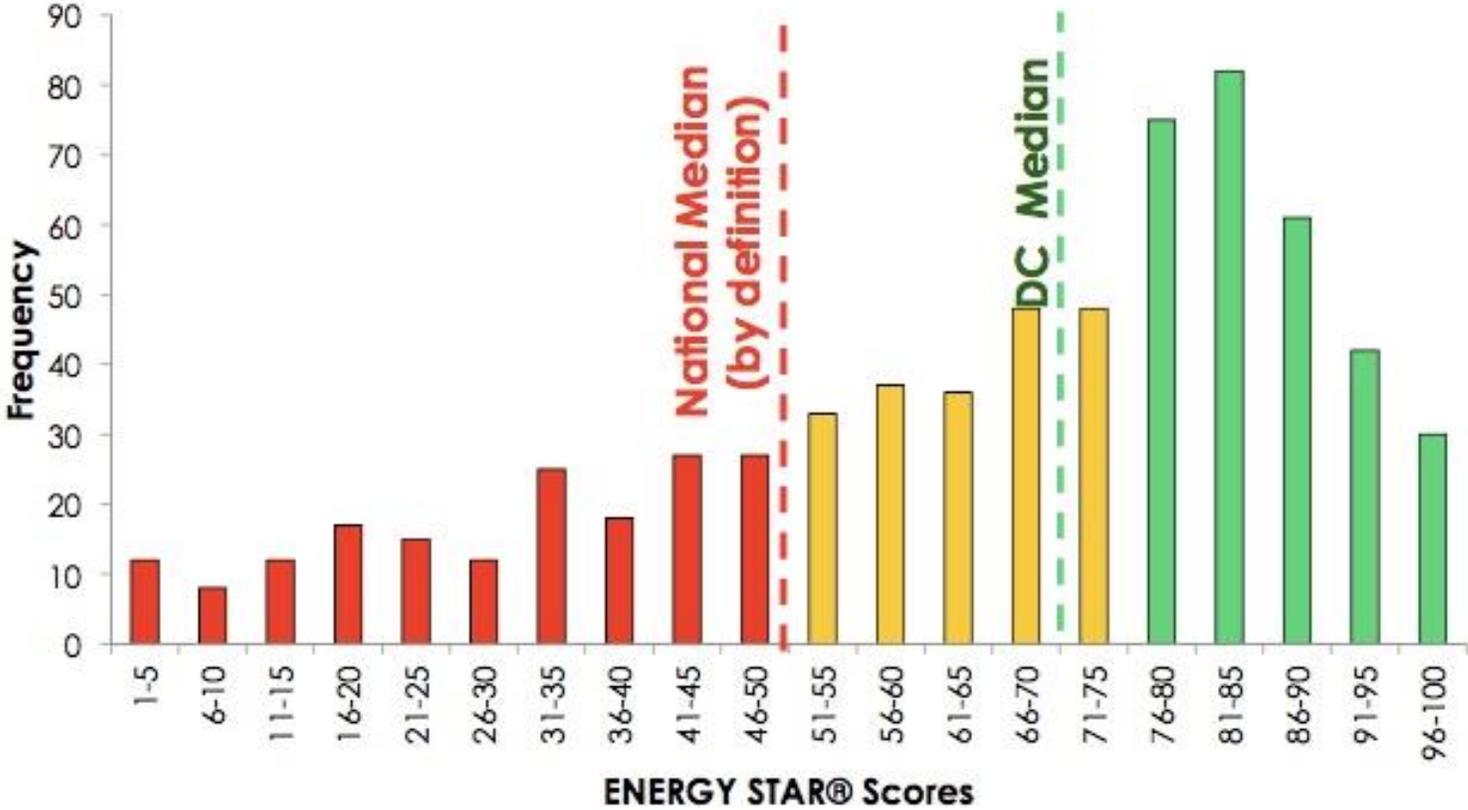
## Sustainable DC Act 2014

- Applies to Pepco and Washington Gas, Water to come soon
- Buildings with > 5 meters/accounts
- Aggregate, whole building monthly data based on meter or account numbers
  - No need to collect usage data from each individual tenant
- Automatic, electronic transfer of data (mandated by 2018)
  - Pepco: Resource Advisor offered thru Schneider Electric
  - Washington Gas: in progress, provides data manually

# COMMERCIAL BENCHMARKING



## ENERGY STAR® Scores, 2014



# COMMERCIAL BENCHMARKING



## Process

- Identify Buildings over 50,000 SF
- Identify Building ID on list
- Collect data required for benchmarking (address, year built, total size and occupancy rate)
- Benchmark by entering data into Portfolio Manager
  - Create Account
  - Create Properties
  - Enter data on property uses
  - Enter energy and water meter data
  - Run data quality checker
- Report Data to DOE Generate reports and assess

# COMMERCIAL BENCHMARKING



## Benchmarking Screenshot

MyPortfolio | Sharing | Reporting | Recognition

[Not eligible to apply for ENERGY STAR Certification](#)

**ENERGY STAR Score (1-100)**  
Current Score: 76  
Baseline Score: 99

[Edit](#)

Summary | Details | Energy | Water | Waste & Materials | Goals | Design

**Property Profile** [\(Future enhancements\)](#)  
This section will be deleted in 2018, except for the property photos which will remain. [More information.](#)  
[+ Create Profile](#)

[Change Metrics](#)  
[Change Time Periods](#)

**Source EUI Trend (kBtu/ft<sup>2</sup>)**

Metric	Dec 2013 (Energy Baseline)	Dec 2016 (Energy Current)	Change
ENERGY STAR Score (1-100)	99	76	-23.00 (-23.20%)
Source EUI (kBtu/ft <sup>2</sup> )	76.4	122.2	45.80 (59.90%)
Site EUI (kBtu/ft <sup>2</sup> )	24.3	66.0	41.70 (171.60%)
Energy Cost (\$)	<a href="#">Not Available</a>	<a href="#">Not Available</a>	N/A
Total GHG Emissions Intensity (kgCO <sub>2</sub> e/ft <sup>2</sup> )	2.7	5.0	2.30 (85.20%)
Water Use (All Water Sources) (kga)	12,861.6	14,271.2	1409.60 (11.00%)
Total Waste (Disposed and Diverted) (Tons)	<a href="#">Not Available</a>	<a href="#">Not Available</a>	N/A

# Benchmarking in Virginia

# BENCHMARKING IN VIRGINIA



## DMME Data Access and Privacy Work Group

- **Goal**
- **Meetings & Background**
  - 2016 Conference
  - 3 Meetings: presentations and discussions
- **Participants**
- **Timelines**

# BENCHMARKING IN VIRGINIA



## Discussion and Considerations – What Topics Come Up?

- Benefits (mandatory and voluntary action after benchmarking)
- Other Resources/Programs across the Country
- Commercial-only
- 50,000 sqft or more
- Privacy Threshold
  - Meters vs Utility Accounts vs Customers vs Occupants
- Multi-Family, too?
- Owner-occupied or mostly occupied buildings
- Requirement for Local Gov't Benchmarking
- Who does the reporting?
- What data does the utility provide, to whom, & in what format? How does that process work?
- Ample time for set up & compliance
- Report into ... Portfolio Manager?
  - Portfolio Manager includes some additional information for the score vs own history within a building
- Consistency across locality programs

# BENCHMARKING IN VIRGINIA



## Upcoming & Possible Future Steps

- **DMME Draft Recommendation**
- **Familiarity/Context Needed**
  - For policymakers, program design, & implementation
  - Reporting Tool & Support
  - Diagrams, perhaps?

# BENCHMARKING IN VIRGINIA



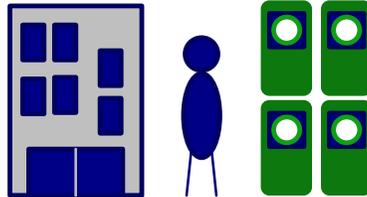
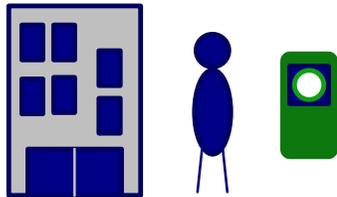
## Example

≥ 50,00 square feet

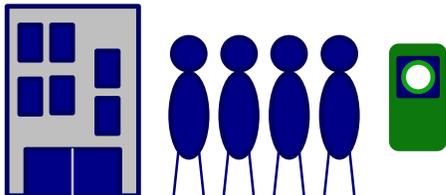
< 50,00 square feet



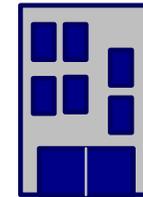
NO



YES



NO



(Voluntary Only)

# Questions?



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