

BUILDING ENERGY PERFORMANCE STANDARD

Energy Service Provider Education Session

OCTOBER 23, 2019



@DOEE_DC
#BEPSCD

*** DEPARTMENT
OF ENERGY &
ENVIRONMENT
GOVERNMENT OF THE DISTRICT OF COLUMBIA

WE ARE
WASHINGTON
DC GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

AGENDA



BEPS & Benchmarking Overview

DCSEU

DCRA

Key Takeaways from Working Groups

Collaboration & Discussion

SUSTAINABLE DC VISION



Make DC the healthiest, greenest, most livable city in the country for all District residents.

GOALS: 2032



ADAPT TO CLIMATE CHANGE

CLIMATE READY BUILDINGS

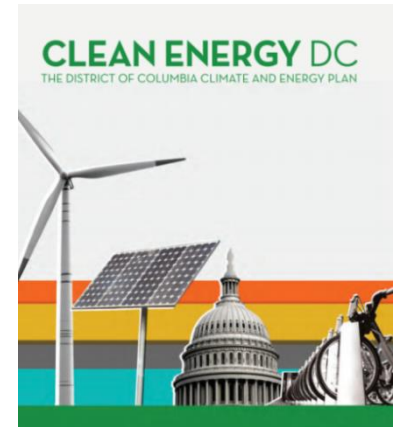
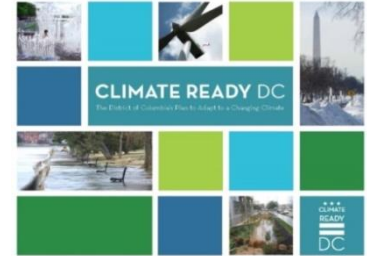
CUT ENERGY USE 50%

50% RENEWABLE ENERGY

NET ZERO NEW BUILDINGS

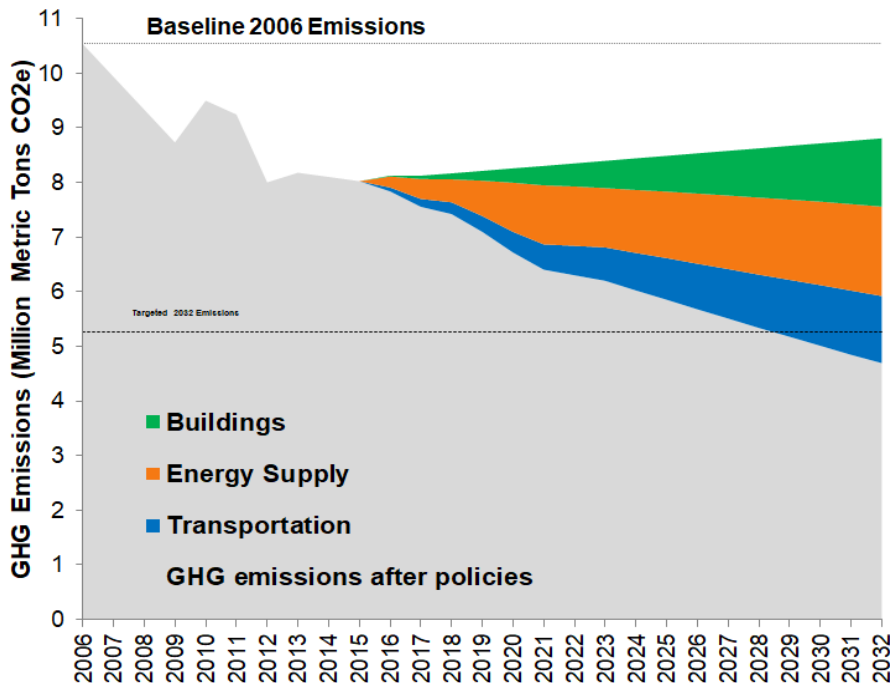
NET ZERO RETROFITS

CUT GHG EMISSIONS 50%

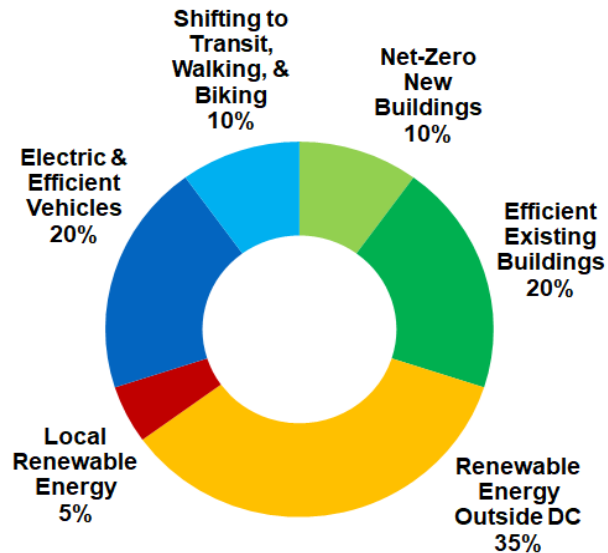


Mayor Bowser Commitment to ZERO Carbon by 2050

ESTIMATED GHG SAVINGS: 56%

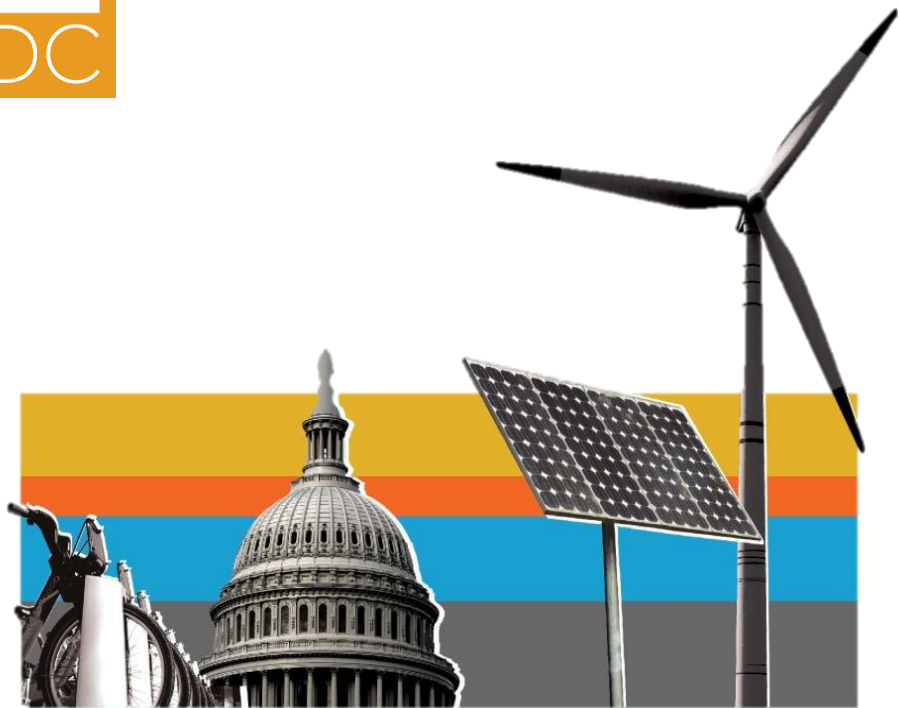


RELATIVE IMPACT OF ACTION AREAS





CLEAN ENERGY DC MEANS....



CLEAN ENERGY DC OMNIBUS ACT OF 2018

New Buildings

Adopt a **Net Zero Energy** building code by 2026

Existing Buildings

Improve the performance of existing buildings by implementing a **Building Energy Performance Standard**

100% Renewable Electricity

Require **100% renewable electricity** by 2032, and **10% from local solar** by 2041

BENCHMARKING 101

- ❑ Clean and Affordable Energy Act of 2008 requires all private buildings >50,000 square feet to report their annual energy and water use for public disclosure
- ❑ Requires all District-owned buildings >10,000 square feet to report their annual energy and water use
- ❑ Annual reporting deadline is April 1 of each year
- ❑ Failure to meet the reporting requirements results in a fine of up to \$100/day for every day that buildings are not in compliance

BENCHMARKING CHANGES

Third Party Verification Now
Required Every Three Years.
Starts with 2019 submission.

2009

Benchmarking
DC-owned
> 10K sf

2013

Benchmarking
private-owned
> 50K sf

2018

Clean Energy DC
Omnibus Bill
Passed

2021

Benchmarking
private-owned
drops to 25K sf

2024

Benchmarking
private-owned
drops to 10K sf

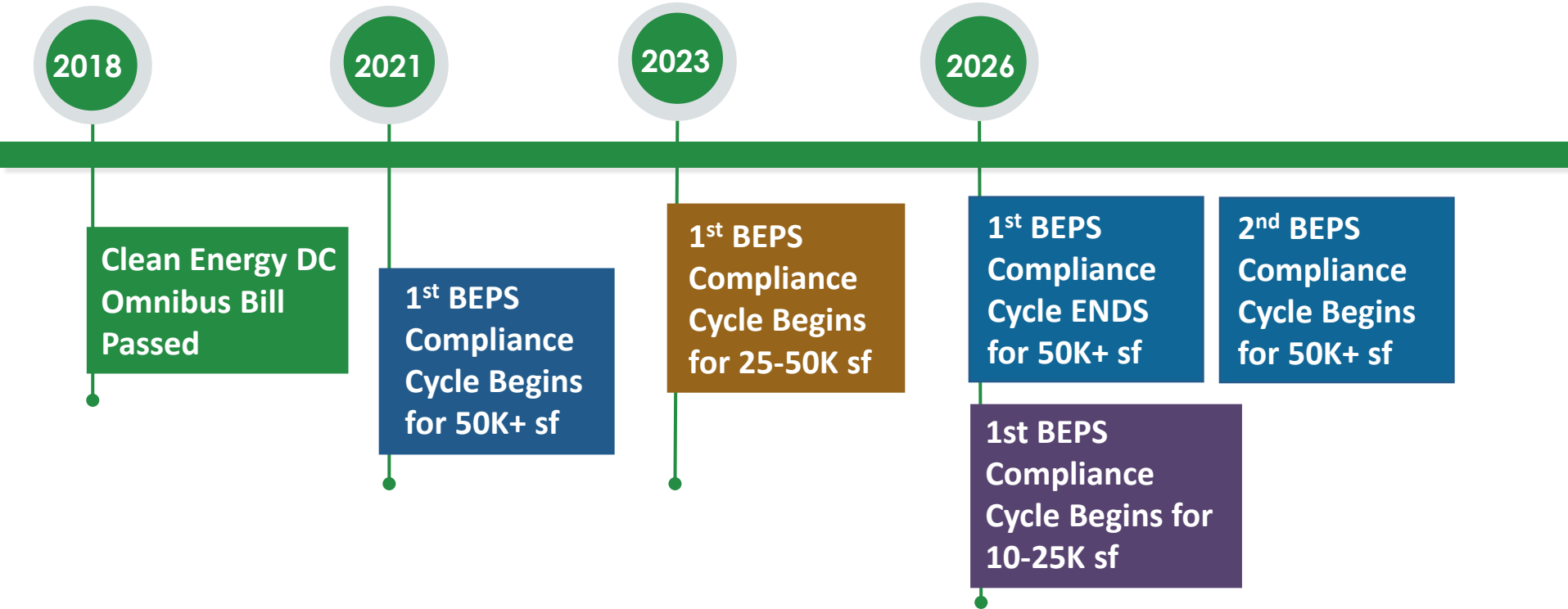


BUILDING ENERGY PERFORMANCE STANDARD

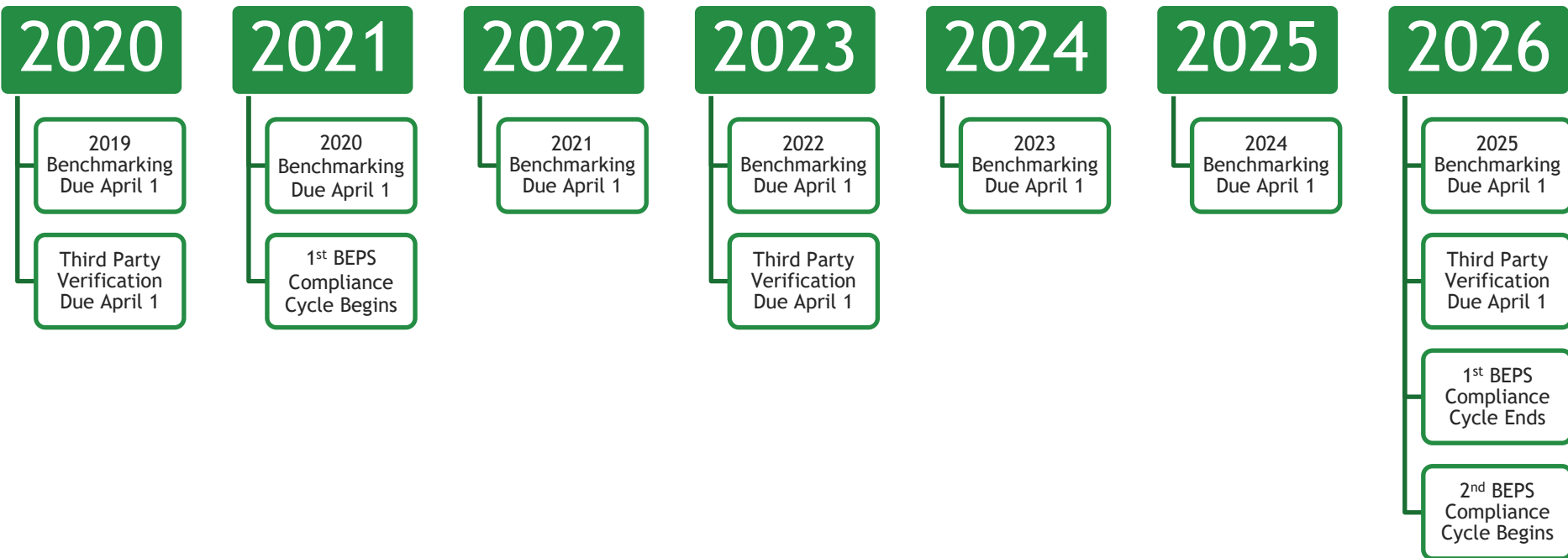
- ❑ DOEE must establish a minimum threshold for energy performance – will be “at least” the local median ENERGY STAR score by property type (or equivalent)
- ❑ Benchmarking data will need third-party verification every 3 years
- ❑ DOEE determines enforcement rules for compliance
- ❑ 5-year compliance cycles - 1st cycle begins Jan. 2021
- ❑ Compliance paths for bldgs. below minimum:
 - ❑ Performance: Reduce energy usage 20%
 - ❑ Prescriptive: Implement cost-effective energy efficiency measures
 - ❑ Other as determined by DOEE



BEPS COMPLIANCE CYCLES



EXAMPLE TIMELINE: >50K sf Building



CLEAN ENERGY DC ACT: NEW PROGRAMS & FUNDING

Increased revenue & expanded uses for the **Sustainable Energy Trust Fund (SETF)**: \$20-22 million in Fiscal Years 2020-2022

- \$70 million over 6 years to **DC Green Bank**
- \$3 million beginning in FY2022 to support **affordable housing compliance with BEPS**
- 30% of the increase (~\$7million) in SETF to **benefit low-income residents**; support workforce development initiatives and the Sustainable Energy Infrastructure Capacity Building & Pipeline Program

Allows gas and electric utilities to apply to PSC to offer energy efficiency and demand reduction programs



DC GREEN BUILDINGS INCENTIVES ALIGNMENT



▶ SPECIAL TAX ASSESSMENT

▶ CASH-FLOW POSITIVE



▶ COMMUNITY SOLAR

▶ LMI BENEFITS



DC
SUSTAINABLE ENERGY
UTILITY

▶ REBATES AND INCENTIVES

▶ TECHNICAL ASSISTANCE



▶ CREDIT ENHANCEMENTS

▶ LOANS AND INVESTMENTS

DC PROPERTY ASSESSED CLEAN ENERGY (PACE)

- **Zero Dollars Out-of-Pocket:** PACE provides property owners with up to 100% financing for energy and water upgrades at long (15 - 20 year) terms
- **NOI Positive:** Owners realize savings immediately, and use those savings to pay back the cost of the measures through a special assessment that is placed on the property
- **Off-Balance Sheet:** Extend the capital budget and finance comprehensive projects with potentially off-balance sheet financing – PACE is not conventional debt



DC PACE PROJECT TYPES



Office



Institutional



Multifamily



Industrial

Properties

- Most commercial properties in the District of Columbia (many MD counties too)
- Both for profit and tax-exempt properties are eligible
- Stand alone/part of larger capital stack
- Must be current on taxes
- Not owned by govt. (but ground lease may be okay)

Measures

- Almost anything tied to an energy or water saving
- Large multi-measure retrofits
- Single-measure like solar panels, boiler replacements, etc.
- Clean energy improvements
- Energy efficiency upgrades (HVAC, lighting, envelope, controls, etc.)
- Water conservation measures
- Rehab or new construction

DC GREEN BANK

DC Green Bank will accelerate the deployment of clean energy, energy efficiency, and resilient design, while **leveraging private investment**.



Create jobs and
spur economic
growth



Meet the city's
sustainability and
resilience goals



Reduce carbon
emissions and
install clean energy
systems

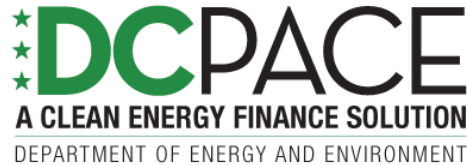


Reduce resident's
utility costs



Improve energy
infrastructure
resilience

DC GREEN BANK PLANNED FINANCIAL PRODUCTS



SINGLE-FAMILY LOAN

Quick to close, low-interest rate loans for single family home owners. Loans can be used to improve energy efficiency, lower utility costs, install solar, improve resilience.



COMMERCIAL/ MULTI-FAMILY LOAN

Reduced-interest loans for multi-family or commercial buildings for energy efficiency improvements, stormwater infrastructure, solar, and more!

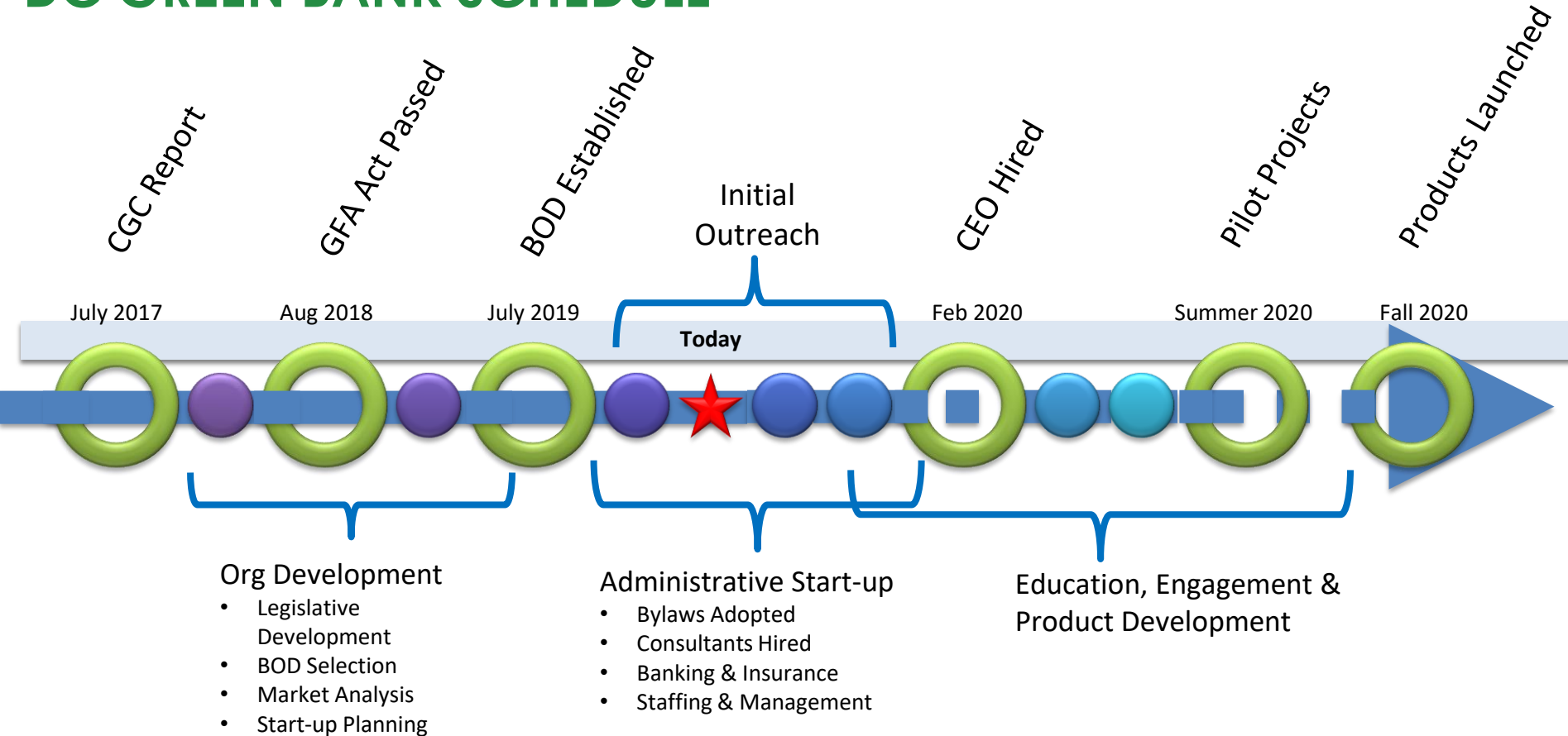


GAP-FINANCING FOR SOLAR

A short-term pre-development and construction loan for commercial solar and community solar project development.



DC GREEN BANK SCHEDULE



HIGH PERFORMANCE BUILDING HUB

DOEE is working with IMT and partners to design a hub to support YOU through this transition by creating a platform for collaboration, innovation, capacity building, training, and technical assistance.

**More than 2,700 buildings
impacted by BEPS!**

- **916 buildings over 50k sf**
- **561 buildings 25-50k sf**
- **1,269 buildings 10-25k sf**

In Consideration:

- Training in high-performance building design and construction techniques
- Support for high efficiency projects
- Direct technical assistance
- Targeted research and resource development
- Market support and development
- Opportunities for knowledge exchange and collaboration

Crystal McDonald and Patti Boyd

BEPS Vendor Education Session

October 23, 2019



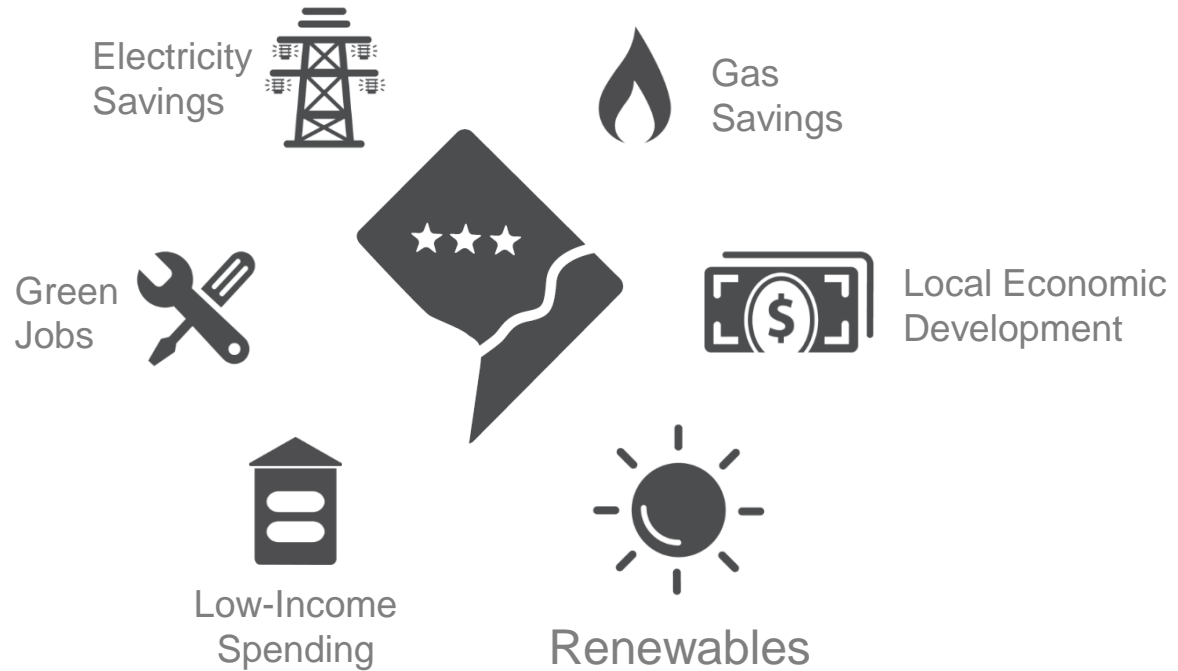
DC SUSTAINABLE ENERGY UTILITY
YOUR GUIDE TO GREEN

What Is the DC Sustainable Energy Utility (DCSEU)?

- ▶ Clean & Affordable Energy Act (2008)
- ▶ Ratepayer-funded, privately operated
- ▶ Performance-based contract administered by Department of Energy and Environment (DOEE)
- ▶ Designed to help District households, businesses, and institutions **save energy and money through energy efficiency and renewable energy programs**



DCSEU Goals



DCSEU's Commercial Offerings

- ▶ Prescriptive Rebates and Custom Incentives
 - *New Construction/Major Renovation*
 - *Market Opportunity* – end of life equipment replacement
 - *Retrofit* – before end of life equipment replacement
 - *Pay for Performance* - multi-measure, behavioral, and/or operational changes
- ▶ No-Cost Technical Assistance
- ▶ Workforce Development

Prescriptive Rebates and Custom Incentive Measures

	Product Category	Prescriptive Rebates	Custom Projects
Lighting	Interior LEDs	●	
	Exterior LEDs	●	
	Controls	●	
Heating and Ventilation	Boiler Projects		●
	Hot Water Heaters		●
	Steam Systems		●
	Steam Trap Replacement		●
	Variable Frequency Drives (VFDs)	●	●
	Demand Control Ventilation		●
	Chillers		●
Pay for Performance	Heat Pumps		●
	Recommissioning and Retro-commissioning		●
	Advanced Building Controls		●
Refrigeration and Food Service	Energy Management Information Systems		●
	Walk-in refrigerators and freezers	●	
	ECM Motors for Walk-in coolers and freezers		
Other	Food Service Equipment	●	●
	New Construction Projects		●
	Complex, Multi-measure projects		●
	Renewables		●
	Net Zero Building Projects		●

No-Cost Technical Support

IDENTIFYING OPPORTUNITIES

- Site walkthroughs
- Capital planning assistance
- No-cost technical assistance
- Interval data analysis
- Peer-to-peer information exchange
- New technology seminars

FINDING SOLUTIONS

- Project planning & prioritization
- Unbiased review of vendor quotes
- Data logging baseline energy usage
- Guidance on operations and maintenance adjustments

PROJECT ANALYSIS

- Cash flow and ROI analysis
- Post-installation data logging
- Project savings regression analysis

CALCULATING IMPACT

- Demonstrating value to decision makers
- Analysis of reduced operations and maintenance costs
- Increased comfort and employee performance
- Guidance on PR and marketing opportunities

Typical Custom Incentive Process

1. Provide DCSEU with SOW, and project related documents (project dependent)
2. DCSEU engineer calculates or verifies estimated energy savings
3. DCSEU provides Incentive Agreement (customer signature required)
4. DCSEU conducts visual inspection
5. Check mailed within 4 – 6 weeks

DCSEU's Workforce Development Program

- Twice a year, the DCSEU connects District residents with **6 month green externships** working with local contractors and other organizations to discover new careers in energy efficiency and sustainability
- During the program Externs receive:
 - Competitive Hourly salary
 - Job skills development
 - On-the-job training
 - Nationally recognized certifications at no cost to the extern
 - Direct work experience with contractors
 - Weekly training on energy efficiency topics and soft skills training at DCSEU offices
 - Job placement assistance
- Host Sites/Mentors play a key role in the hiring, training, and graduation at little to no cost to their company



DC SUSTAINABLE ENERGY UTILITY
YOUR GUIDE TO GREEN

Crystal McDonald

Director of Account Management

Patti Boyd

Senior Technology Strategist

E info@dcseu.com

P

80 M Street SE, Suite 310

Washington, DC 20013

DCSEU.com

f facebook.com/dcseu

t twitter.com/dcseu





Kristian Hoffland
Green Building Plan Reviewer
Green Building Division
Department of Consumer and Regulatory Affairs

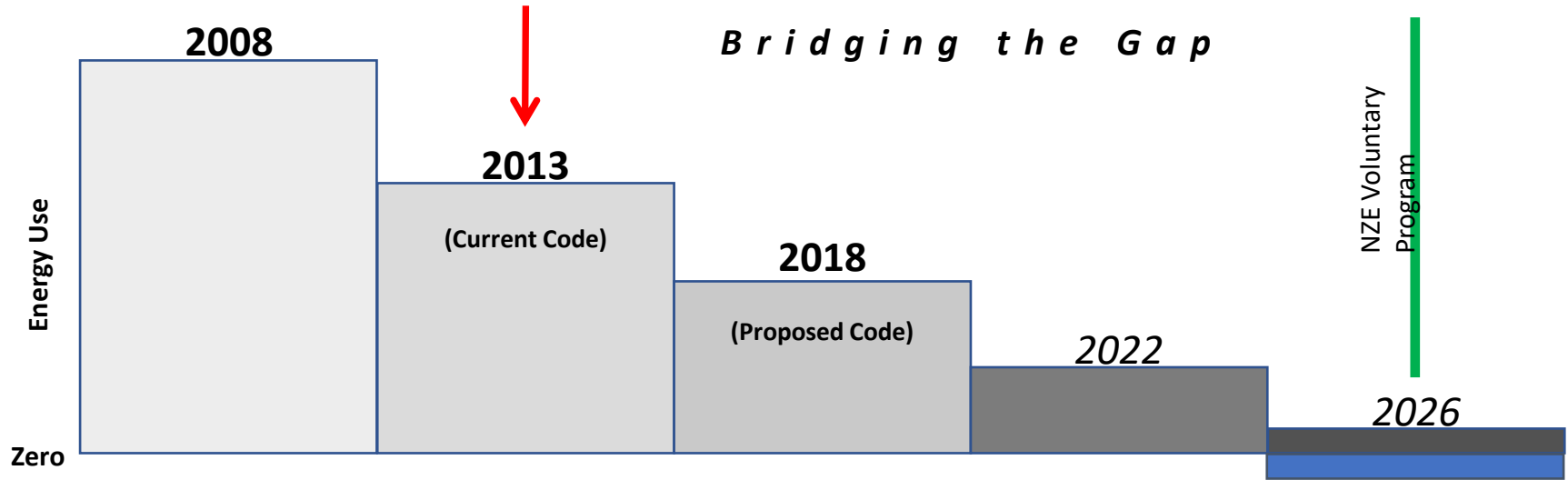
<https://www.buildgreendc.org/>



DCRA VISION 20/20 A DIGITAL TRANSFORMATION FOR THE DISTRICT OF COLUMBIA

“City services have a critical role in building sustainable communities and businesses. In an on-demand economy, customers are growing more accustomed to the delivery of efficient service at the touch of a button,” said Acting Director Ernest Chrappah. “Whether you are a resident, business or nonprofit organization, our primary goal is to deliver value for our customers and adapt to their needs.”

THE PATH TO NET-ZERO ENERGY BUILDINGS



Net-Zero Energy Code requirements per Clean Energy DC Plan & Sustainable DC 2.0

- **2026** Net-Zero Commercial Energy Code / **2022** Net-Zero Residential Energy Code

DCRA is working with project teams interested in being early NZE adopters

Work allowed without a Permit. (DCMR12A 105.2)

Building

1. Brick pointing
2. Caulking, patching and plaster repair of non-rated assemblies.
3. Installation of window screens and storm windows.
4. Repair in kind of existing fences.
5. Painting other than fire-retardant paint.
6. Papering, tiling, carpeting, floor covering, cabinets, countertops and similar finish work.
7. Replacement in kind of one of the items listed hereafter. For the purpose of this section, —replacement in kind||, means replacement with a feature of like material that replicates the existing feature in proportion, appearance, texture, design, detail and dimensions.
 - 7.1. Roofing and coping.
 - 7.2. Siding.
 - 7.3. Gutters and downspouts and fascia.
 - 7.4. Private sidewalks and driveways.
 - 7.5. Patios
 - 7.6. Non-rated suspended ceiling tile.
 - 7.7. Not more than 160 square feet (14.9 m2) of gypsum board excluding installation of fire-rated gypsum wall board or shaft liner.

Work allowed without a Permit. (DCMR12A 105.2)

Building (cont.)

8. A single garden storage shed that does not exceed 50 square feet (4.65 m²) in area, is less than ten feet (3048 mm) in overall height, is an accessory structure to a building of Use Group R-3 or to a building under the jurisdiction of the Residential Code, and is erected on a lot with no other exempted storage shed.
9. Prefabricated pools, accessory to a Use Group R-3 occupancy, or accessory to buildings under the jurisdiction of the Residential Code, which are less than 24 inches (610 mm) deep, do not exceed 1000 gallons (3785.41L), are installed entirely above ground and are not designed or manufactured to be connected to a circulation system.
10. Retaining walls that are not over four feet (1219 mm) in height, measured from
11. Shade cloth structures constructed for nursery or agricultural purposes, not including service systems.
12. Swings and other playground equipment accessory to one- and two-family dwellings.
13. Movable fixtures, cases, racks, counters and partitions not over five feet nine inches (1753 mm) in height

Work allowed without a Permit. (DCMR12A 105.2)

Electrical

1. Repair portable electrical equipment.
2. Repair lighting fixtures.
3. Repair or replace ballasts, sockets, receptacles, or snap switches.
4. Minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles, and other minor repairs at existing outlets.
5. Electrical equipment used for radio and television transmissions; however, a permit is required for equipment and wiring for a power supply and the installations of towers and antennas.
6. Listed cord-and-plug connected temporary decorative lighting.
7. Reinstallation of plug receptacles but not the outlets thereof.
8. Replacement of branch circuit overcurrent devices of the required capacity in the same location.
9. Installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.

Work allowed without a Permit. (DCMR12A 105.2)

Gas

1. Portable heating, cooking or clothes drying appliances.
2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.
3. Portable-fuel-cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

Mechanical

1. Portable heating appliances.
2. Portable ventilation appliances.
3. Portable cooling units.
4. Steam, hot or chilled water piping within any heating or cooling equipment or appliances regulated by the Construction Codes.
5. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.
6. Portable evaporative coolers.
7. Self-contained refrigerating systems containing 10 pounds (5 kg) or less of refrigerant or that are actuated by motors of 1 horsepower (746 W) or less.
8. Portable-fuel-cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

Work allowed without a Permit. (DCMR12A 105.2)

Plumbing:

1. The stopping of leaks in drains, water, soil, waste or vent pipe, provided, however, that if any concealed trap, drainage, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspection made as provided in the Construction Codes.
2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures, and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.
3. Repair or replacement of water meters performed by DC Water.

Post Card & Trade Permits (DCRA website, DCMR 105.1.1)

Post Card Examples:

Electrical

- Replacement or repair of not more than 10 existing outlets and not more than 10 existing lighting fixtures for a residential, commercial or industrial project.

Mechanical

- Installation of not more than 1 new air conditioning unit, up to a maximum of 10-tons of equivalent refrigerating effect

Plumbing:

- Replacement of not more than 1 plumbing fixture, on a residential, commercial or industrial project.

Trade Permits:

Electrical

Gas

Mechanical

Plumbing

Elevators and conveying systems

Boilers.

LOOKING AHEAD

- You will NEED DCRA Permits for most any BEPS work
- Think ahead, plan time into schedule for permitting
- Do not purchase equipment or schedule GC start date until you have a permit
- Know what needs what kind of permit
- ALL Permits need inspections, even Post Card Permits
- 2018 DC Codes (2015 ICC): they are coming.....2020?
- Project with affected area over 50,000 sf will require DC-GCC CX.

We're **partners** in this endeavor, you have a question, reach out to us. DCRA, DOEE and DC Government are your **resources**!



GREEN BUILDING DIVISION

- **Plan review** and permitting
- Green/energy **inspections**
- Post-occupancy data & tracking
- Policy & **code** development
- **Solar** and other green tech
- Community **outreach** & **education**
- **Technical assistance** to building industry
- **Net-Zero energy** assistance

green.building@dc.gov



BEPS TIMELINE

To request scorecard data for multiple buildings, send an email to info.benchmark@dc.gov

- 2018 Scorecards just sent out
- BEPS Task Force – meetings will commence in December
- Draft Rules ready for public comment mid-2020
- A minimum of 1 round of public comment open for 30 days
- Final rules published in late 2020
- 2019 Scorecards sent out – September 2020
- BEP Standard announced around December 2020
- First compliance period starts January 1, 2021

Scorecard Version 1



[PROPERTY NAME]

[PROPERTY ADDRESS]

Gross Square Feet: [PROPERTY GFA]

Portfolio Manager ID: [PM ID]

[PROPERTY TYPE]

Thank you for benchmarking your building's energy use in 2018. Share this scorecard with your property's decision-makers to understand more about your building's past performance and comparison to similar [PROPERTY TYPE] buildings in Washington, DC. Program offerings from the DC Sustainable Energy Utility (DCSEU) are detailed below to help you improve your building's performance and decrease operating costs.



ENERGY STAR score is a normalized 1-100 scale of a building's energy performance against a national dataset of similar buildings, where higher scores signify better energy performance

When comparing your building's 2018 ENERGY STAR score with similar buildings in the District, your building is currently ranked [RNK] out of [TOT].

[RNK]/[TOT]

From 2017 to 2018, your building's Energy Use Intensity (energy usage per square foot) has decreased by [EUI]%

↓ [EUI]%

Save [\$SAVINGS] if you improve your building's performance by 20%

save [\$ SAVINGS]

Kudos! Your property is ranked in the upper half of [PROPERTY TYPE] buildings in the District, and your energy use intensity decreased from 2017 to 2018. Call DCSEU at the number below to get tips on continuous improvement and ensure that your property stays above the upcoming Building Energy Performance Standards (read more at doee.dc.gov/service/beps).

Scorecard Version 2



[PROPERTY NAME]

[PROPERTY ADDRESS]

Gross Square Feet: [PROPERTY GFA]

Portfolio Manager ID: [PM ID]

[PROPERTY TYPE]

Thank you for benchmarking your building's energy use in 2018. Share this scorecard with your property's decision-makers to understand more about your building's past performance and comparison to similar [PROPERTY TYPE] buildings in Washington, DC. Program offerings from the DC Sustainable Energy Utility (DCSEU) are detailed below to help you improve your building's performance and decrease operating costs.



ENERGY STAR score is a normalized 1-100 scale of a building's energy performance against a national dataset of similar buildings, where higher scores signify better energy performance

When comparing your building's 2018 ENERGY STAR score with similar buildings in the District, your building is currently ranked [RNK] out of [TOT].

[RNK]/[TOT]

From 2017 to 2018, your building's Energy Use Intensity (energy usage per square foot) has decreased by [EUI]%

↓ [EUI]%

Save [\$SAVINGS] if you improve your building's performance by 20%

save [\$ SAVINGS]

Keep Working! Your building saw some efficiency gains from 2017 to 2018, but your building ranks in the lower half of [PROPERTY TYPE] buildings in the District. Call the DCSEU at the number below to find out how to accelerate the good work you're already doing and get your property ready for the upcoming Building Energy Performance Standards (read more at doee.dc.gov/service/bepsdc).



Scorecard Version 3



[PROPERTY NAME]

[PROPERTY ADDRESS]

Gross Square Feet: [PROPERTY GFA]

Portfolio Manager ID: [PM ID]

[PROPERTY TYPE]

Thank you for benchmarking your building's energy use in 2018. Share this scorecard with your property's decision-makers to understand more about your building's past performance and comparison to similar [PROPERTY TYPE] buildings in Washington, DC. Program offerings from the DC Sustainable Energy Utility (DCSEU) are detailed below to help you improve your building's performance and decrease operating costs.



ENERGY STAR score is a normalized 1-100 scale of a building's energy performance against a national dataset of similar buildings, where higher scores signify better energy performance

When comparing your building's 2018 ENERGY STAR score with similar buildings in the District, your building is currently ranked [RNK] out of [TOT].

[RNK]/[TOT]

From 2017 to 2018, your building's Energy Use Intensity (energy usage per square foot) has increased by [EUI]%

↑ [EUI]%

Save [\$SAVINGS] if you improve your building's performance by 20%

save [\$ SAVINGS]

Keep Working! Although your property is ranked in the upper half of [PROPERTY TYPE] buildings in the District, your energy use intensity increased from 2017 to 2018. Call the DCSEU at the number below to get tips on how to keep your property on the right track for the upcoming Building Energy Performance Standards (read more at doe.dc.gov/service/beps).

Scorecard Version 4



[PROPERTY NAME]

[PROPERTY ADDRESS]

Gross Square Feet: [PROPERTY GFA]

Portfolio Manager ID: [PM ID]

[PROPERTY TYPE]

Thank you for benchmarking your building's energy use in 2018. Share this scorecard with your property's decision-makers to understand more about your building's past performance and comparison to similar [PROPERTY TYPE] buildings in Washington, DC. Program offerings from the DC Sustainable Energy Utility (DCSEU) are detailed below to help you improve your building's performance and decrease operating costs.



ENERGY STAR score is a normalized 1-100 scale of a building's energy performance against a national dataset of similar buildings, where higher scores signify better energy performance

When comparing your building's 2018 ENERGY STAR score with similar buildings in the District, your building is currently ranked [RNK] out of [TOT].

[RNK]/[TOT]

From 2017 to 2018, your building's Energy Use Intensity (energy usage per square foot) has increased by [EUI]%

↑ [EUI]%

Save[\$SAVINGS]if you improve your building's performance by 20%

save [\$ SAVINGS]

Warning! Your property ranks in the lower half of [PROPERTY TYPE] buildings in the District, and your energy use intensity increased from 2017 to 2018. Starting in 2021, you will be required to meet specific Building Energy Performance Standards (read more at doee.dc.gov/service/beps), and you may not be on track to meet those standards. Call DCSEU today for assistance with getting your building on the right track.



WORKING GROUP KEY TAKEAWAYS

- Financing – more education is needed on financing options
- Incentives – owners need help identifying the right incentives
- Enforcement – preferred fines based on square footage and distance from median
- Auditing & Analysis – analysis should help assist with long-term planning; looking past the initial 5 years
- Training – need two tracks; (1) what is required and (2) how to comply; there is a need for a clearinghouse of options available
- Information – everyone wants peer-to-peer sharing and case studies of local success stories

PROPERTY TYPES

Section 301(b)(1)(A): No later than January 1, 2021, and every 5 years thereafter, DOEE shall establish property types and building energy performance standards for each property type, or an equivalent metric for buildings that do not receive an ENERGY STAR score.

<u>Scenario 1</u>	<u>Scenario 2</u>	<u>Scenario 3</u>
DOEE will establish standards for 4 major property types in the District: <ul style="list-style-type: none">• Office• K-12• Multifamily• Hotel All other buildings will be grouped into an "Other" category	DOEE will establish standards for all Energy Star Portfolio Manager building type definitions and define all standards for all building types available in Portfolio Manager where sufficient local District data is available.	DOEE will start by classifying buildings by EPA Portfolio Manager property types and then sub-divide buildings based on property use details (i.e. Multifamily will be broken into low-rise, mid-rise, and high-rise groupings; K-12 school will be broken into elementary/middle school and high school). Then DOEE will establish standards for each cohort.

EQUIVALENT METRIC

Section 301(b)(1)(A): No later than January 1, 2021, and every 5 years thereafter, DOE shall establish property types and building energy performance standards for each property type, or an equivalent metric for buildings that do not receive an ENERGY STAR score.

<u>Scenario 1</u>	<u>Scenario 2</u>	<u>Scenario 3</u>
DOEE will use Source EUI for buildings that cannot receive an ENERGY STAR Score.	DOEE will use Greenhouse Gas Emission Intensity for buildings that cannot receive an ENERGY STAR Score.	DOEE will use Site EUI for buildings that cannot receive an ENERGY STAR Score.

DATA VERIFICATION: PROCESS

No consensus in Working Groups

Section 301(b)(1)(B): DOE shall establish reporting and data verification requirements for each 5-year compliance cycle.

Section 302(a)(2)(F): Every 3 years the owner, or the owner's designee, shall perform a third-party verification of its benchmark and ENERGY STAR statements in accordance with requirements specified by DOE.

Scenario 1	Scenario 2	Scenario 3	Scenario 4
Reporters must submit the ENERGY STAR Portfolio Manager Data Verification Checklist , signed by a trained individual whose professional license or training program credential is recognized by the District. Data verifiers may be in-house building staff members or 3rd party professionals .	Reporters must complete the ENERGY STAR Portfolio Manager Data Verification Checklist , signed by a trained individual whose professional license or training program credential is recognized by the District. Data verifiers may be in-house building staff members or 3rd party professionals . The Data Verification Checklist will only need to be produced on request of the District; building owners must retain the most recent signed Data Verification Checklist for at least three years.	Reporters must submit the ENERGY STAR Portfolio Manager Data Verification Checklist , signed by a trained individual whose professional license or training program credential is recognized by the District. Data verifiers must 3rd party professionals not affiliated with the owner or the property .	Reporters must complete a Data Verification form of DOE's design , signed by a trained individual whose professional license or training program credential is recognized by the District. Data verifiers may be in-house building staff members or 3rd party professionals . The Data Verification form will only need to be produced on request of the District; building owners must retain the most recent signed Data Verification Form for at least three years.

DATA VERIFICATION: THIRD-PARTY VERIFIERS

Scenario A

- Building Operator Certification (BOC) - NEEC
- Building Energy Assessment Professional (BEAP) - ASHRAE
- Certified Energy Manager (CEM) - AEE
- Professional Engineer (PE) - National Society of Professional Engineers
- Licensed Architect - National Council of Architectural Registration Board

No consensus in Working Groups

Scenario B (in addition to those in Scenario A)

- Registered Architect (RA) - AIA
- Certified Energy Auditor (CEA) - AEE
- LEED-AP O+M – Operations + Maintenance specialty - USGBC
- LEED-Fellow - For outstanding APs - USGBC
- Building Energy Modeling Professional (BEMP) - ASHRAE
- Commissioning Process Management Professional (CPMP) - ASHRAE
- Operations and Performance Management Professional (OPMP) - ASHRAE
- Certified Commissioning Professional (CCP) - BCA
- Associate Commissioning Professional (ACP) - BCA
- Sustainability Facility Professional (SFP) - IFMA
- Certified Facility Manager (CFM) - IFMA
- Certified Building Commissioning Professional (CBCP) - AEE
- Certified Measurement and Verification Professional (CMVP) - AEE
- Existing Building Commissioning Professional (EBCP) - AEE
- RPA/FMA High Performance Designation (RPA/FMA-HP) - BOMI
- Systems Maintenance Technician (SMT) - BOMI
- Systems Maintenance Administrator (SMA) - BOMI
- Real Property Administrator (RPA) - BOMI
- Certified Property Manager (CPM) - IREM

SCENARIOS TO CONSIDER for PRESCRIPTIVE PATH

































Can't Afford Capital Improvements or Loans	Has Some O&M and Capital Funding	Planning a Major Renovation with Deep Energy Retrofits
Would choose mostly O&M strategies and some possible low/no cost projects with short paybacks	Mix of O&M and Project Strategies	Shooting for more than 20% improvement - DOE could consider offering "early compliance" credit for the 2 nd /3 rd cycle

PREScriptive PATHWAY WORKING PRINCIPLES

- Break-down List by:
 - Minimum Requirements (must-do's; Energy 101 strategies)
 - Operations & Maintenance Strategies
 - Project-based Strategies
- Create prescriptive paths by property type (4-5 high-level categories)
- Weighted values for each item based on energy savings potential
- Vet list by what is possible in DC
- Categorize items on list:
 - Easy – simple upgrades or process changes
 - Medium – moderate renovations
 - Hard – substantial improvements

Prescriptive Path savings
must be comparable to
Performance Path

PRESCRIPTIVE PATHWAY EXAMPLE

Measure	Property Type	Non-Energy Benefits	Cost Range	Savings*
Replace/Upgrade Packaged HVAC	Any	   	\$\$\$	5%
Increase Roof Insulation	Any	   	\$\$\$	3%
Upgrade Motors or Install VFDs**	Any	   	\$\$	4%
Replace Washing Machines & Dryers	Any	   	\$	1%
Upgrade Exhaust Fans	Any	  	\$	2%
Replace Toilets	Any	   	\$\$	10%
Replace Windows and Glazing	Any	   	\$\$\$\$	4%
Replace Refrigerators	Any	   	\$\$\$	2%
Replace Exterior Doors	Any	  	\$	1%
Install Heating System Sensors	Central Heat	   	\$	1%
Install Central Heating Controls	Central Heat	   	\$\$\$	6%
Upgrade or Repair Burner	Central Boiler Heat	   	\$\$	3%
Upgrade DHW Boiler	Central DHW	    	\$\$\$	3%
Install Thermostatic Radiator/Valves or Zones	Central Boiler Heat	   	\$\$\$	5%
Convert Heating System from Oil to Gas	Oil-Fired Heating	   	\$\$\$\$	10%
Install Submetering	Master-Metered	   	\$\$\$	15%
Install Irrigation Controls	Landscaped, Garden-Style	   	\$\$	13%

Community
Preservation
Corporation:
“Underwriting
Efficiency”

OPERATIONS & MAINTENANCE

*** Ideas for minimum requirements*

** Energy Efficiency Best Mgmt. Practices occupancy schedules, equipment run-times, set points for HVAC and lighting, minimum outside air requirements, preventative maintenance plan	** Staff Training Plan ongoing plan for training building staff on implementing an energy efficiency improvement program including equipment operation and energy policy
** Auditing Level I ASHRAE Audit	Advanced Energy Metering sub-meter major uses that represent 20% or more of total consumption
** Existing Building Retro-commissioning implement no/low cost operational improvements with a 5-year plan for tracking/verification	Weatherizing and air sealing windows, ductwork, whole-building insulation
Ongoing Commissioning develop plan for monitoring, testing, performance verification, corrective action, and ongoing measurement	Maintenance Schedules document and maintain records for regular mechanical systems maintenance

PROJECT-BASED

HVAC	Controls	Other
Enhanced Commissioning	Lighting	Lighting
Tune-up/Upgrade Chiller	Occupancy Controls	Hot water heating equipment
Tune-up/Upgrade Boiler	Central Plant	Upgrade to Energy Star appliances
Variable Speed/Frequency Drives	Air Handlers/Outside Air	Energy efficiency windows/doors
Energy Recovery Ventilation systems	Domestic Hot Water	Address air leakage
Install Exhaust Fan timers	Building Automation System	Roof or attic insulation
Combined Heat and Power plants		Wall Insulation
Repair/Insulate/Tune-up Heating System		Shading and window film
Repair/Replace Steam Traps		

PREScriptive PATHWAY KEY TAKEAWAYS

- Count projects completed in 2019-2020 for the 1st compliance cycle
- Minimum Requirements? – Audits and retro-commissioning at top of the list
- Need for DOEE support in training, off the shelf SOWs, and finding vendors
- Flexibility – to choose which pathway and change their mind during the cycle; to accept potentially delayed compliance for those who are pursuing deeper, more intensive strategies; to have the prescriptive path evolve each cycle.
- Certainty - for the first pathway, it is important to establish that before the first cycle and leave it static. Leave flexibility to adopt new things for 2nd cycle and beyond.
- Need coaches or some sort of navigator to help offer tailored help to building owners, to identify not only strategies, but financing and encourage thinking beyond one cycle.

- In order to be eligible for CBE certification, in addition to other requirements, your business must meet the following criteria:
 - The principal office of the business enterprise must be located in the District of Columbia
 - The chief executive officer and the highest level managerial employees of the business enterprise must perform their managerial functions in their principal office located in the District
- The business must demonstrate it meets one of the following:
 - More than 50% of the employees of the business enterprise are residents of the District; or
 - The owners of more than 50% of the business enterprise are residents of the District; or
 - More than 50% of the assets of the business enterprise, excluding bank accounts, are located in the District; or
 - More than 50% of the business enterprise's gross receipts are District gross receipts

Joint Venture info: <https://dslbd.dc.gov/service/certify-joint-venture>

STAY INVOLVED!

- Sign up for newsletter at <https://doee.dc.gov/service/BEPS>
- Read information from the [Working Groups](#)
- Attend a [Task Force](#) meeting
- Participate in a targeted focus group
- Attend a future education [session or webinar](#)
- Submit public comments on the rules
- Tell your friends/coworkers/clients about BEPS!