

December 2, 2019

The Honorable Phil Mendelson
Chairman
Council of the District of Columbia
1350 Pennsylvania Avenue NW, Suite 504
Washington, DC 20004

RE: Annual Report of the Sustainable Energy Utility Advisory Board

Dear Chairman Mendelson:

Pursuant to Section 204(g) of the Clean and Affordable Energy Act of 2008 (CAEA), D.C. Law 17-250, I hereby transmit the Sustainable Energy Utility Advisory Board's (Board) Annual Report (Report) on behalf of the Board. This Report provides the Board's assessment of the DC Sustainable Energy Utility's (DCSEU) performance in FY18, and offers recommendations to the Department of Energy & Environment (DOEE) and the Council of the District of Columbia (Council). This Report was approved by the Board. It is the Board's understanding that DOEE will make this Report available to the public on its website within 10 days of its submission to the Council, as required by the CAEA.

Please feel free to contact me at the telephone number or e-mail address below, or Dr. Taresa Lawrence at taresa.lawrence@dc.gov or 202-671-3313, if you have any questions regarding this report.

Sincerely,



Bicky Corman
Chair, SEU Advisory Board
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Enclosure

cc: Nyasha Smith, Secretary of the Council
Councilmember Mary Cheh, Chairperson, Committee on Transportation and the Environment.

Sustainable Energy Utility Advisory Board
Fiscal Year 2018 Annual Report
December 2, 2019

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I. Executive Summary

As we will discuss further in this Report of the District of Columbia Sustainable Energy Utility (“DCSEU”) Advisory Board (the “Board”) on the DCSEU’s Fiscal Year (“FY”) 2018 performance, in FY18, the DCSEU generally achieved or significantly exceeded its maximum benchmarks. This confirms that after a slow start in the beginning of its second five-year contract cycle, the DCSEU has more than hit its stride.

In FY18, the DCSEU needed to re-start activity that had slowed as the DCSEU faced the uncertainty that is inherent in the issuance of an RFP for a new contract term. Additionally, in FY18, the DCSEU was tasked with beginning to do business in a new way – facilitated by the conversion of its contract from one that imposed annual deliverables to one that sets cumulative, multi-year performance targets for four of its performance benchmarks¹. The resolution of both these challenges generally allowed the DCSEU the opportunity to begin obtaining some greater returns on its investments in the form of the DCSEU being able to do its program design and implementation over a longer period of time².

At the same time, for the second year in a row, the DCSEU narrowly missed the achievement of the maximum benchmark for savings in the low-income arena. The Board expects it will continue to focus its attention in FY19 on improving the DCSEU’s achievement of low-income energy savings.

FY18 did see early, significant successes in the DCSEU’s implementation of the District’s Solar for All (“SfA”) program. The DCSEU operates the SfA program separately from the benchmark framework that governs its implementation of the SETF-funded energy savings and renewable energy programs.

¹ The Low Income and Green Jobs benchmarks are still annual targets.

² Instead of having to achieve a savings target over one year, the DCSEU has to achieve a larger 5-year target over five years. So, the DCSEU can plan for a 5-year period instead of making annual program designs.

Table 1: DCSEU FY18 Performance Benchmarks Summary

Benchmark Type	Benchmark	Verified Results	Minimum Benchmark		Maximum Benchmark		
			Target	Achieved	Target	Achieved	
Annual Cumulative Target	1. Reduce Electricity Consumption (MWh)	227,414	121,756	✓	172,945	✓	
	2.Reduce Natural Gas Consumption (Therms)	4,235,994	2,250,770	✓	3,410,258	✓	
	3.Increase Renewable Energy Generating Capacity (kW)	4,080	1,380	✓	2,000	✓	
Annual Target	4. improve Energy Efficiency of Low-Income Properties	a. Expenditures	\$4,130,208	\$3,900,168	✓	n/a	n/a
		b. Savings (MMbtu)	44,916	23,278	✓	46,556	X
	5. Increase Green-collar Jobs	86.5	66	✓	88	X	
Five Year Cumulative Target	6. Leverage External Funds	\$ 707,992	\$ 2.5 M	28%	\$ 5.0 M	14%	

Source: Table 2: FY18 Performance Benchmarks Summary, NMR, p. 3.

The Clean Energy DC Omnibus Amendment Act of 2018 (“Act”) has clarified a role for the District’s electric and gas utilities in offering energy efficiency and demand reduction programs. The utilities’ programs should not be substantially similar to programs offered or in development by the DCSEU, unless the DCSEU supports such programs.

The utility programs will be discussed by the Public Service Commission of the District of Columbia (“PSC” or “Commission”). As required by the Act, the working group will comprise the electric company and gas companies, the DCSEU, and interested public stakeholders. The working group will recommend long-term and annual energy savings metrics, quantitative performance indicators, and cost-effective standards to be adopted by the Commission for electric and gas company energy efficiency and demand response programs. The utilities’ increased participation in this area will require an enhanced level of coordination of program delivery to achieve the landmark energy goals of the District.

In its Report on the DCSEU’s FY17 performance, the Board called for an examination into whether the DCSEU’s benchmarks were facilitating the DCSEU’s performance. The Board also asked whether the DCSEU’s incentive structure is sufficiently aligned with and furthers the implementation of the District’s overall clean energy agenda. For example, the Board questioned whether a clearer direction needed to be set for the DCSEU to achieve Green House Gas (“GHG”) reductions targets. The District’s Clean Energy DC Plan GHG targets were adopted years after the DCSEU’s energy efficiency savings targets were first established in the Clean and Affordable Energy Act of 2008.

At the same time, the Board was concerned that legislative changes or contractual modifications to the benchmarks in the middle of the five-year contract would interfere with the DCSEU’s ability to achieve its cumulative benchmarks. The Board has formed a subcommittee that is seeking to distinguish changes that might require legislation, changes that are material and might require a new contract, and changes that could be made mid-stream through modest contract

modifications. This sub-committee is likely to complete its work in November 2019. Upon completion, the Board will be pleased to provide the Council of the District of Columbia (“Council”) with a description of the nature and type of the subcommittee’s recommendations adopted by the Board, if any.

The Board’s subcommittee has also worked to help inform the Commission’s working group process, described above. The Board is hopeful that the work of the subcommittee, and the Board generally, will assist the Commission as it considers the recommendations of the working group. For example, the Board’s subcommittee is exploring whether the Board should recommend that the Commission consider the establishment of an express GHG reduction benchmark, and a peak reduction metric, which metrics may be outside the DCSEU’s current legislative and contract benchmarks.

II. Board's Activities this Year

The Board met nine times in FY18, including twice over the phone. In FY17, the Board had increased the numbers of times it meets from once every other month, i.e., six meetings a year, to once a month, i.e., twelve meetings a year. Hence, in FY17, the Board had met 12 times, including once over the phone. The Board believes that nine meetings a year, far exceeding the legally required four meetings, was sufficient for the Board to make sound contributions to the DCSEU's operations and strategic direction.

In addition to its regular activities, the Board did the following in FY18:

- Convened an EM&V subcommittee to discuss and improve the reports and metrics that are captured in the benchmarks and the broader evaluations. The Board made recommendations on areas for improvements in the EM&V contract and subsequent report.
- Advised that the DCSEU's implementation of the Emergency HVAC Program install higher energy efficiency boilers that cost more, but that would increase the level of efficiency of the system by 85-94%.
- Reviewed and advised on three proposed contract changes:
 - Modification 4: to incorporate funds that the DCSEU received from their work with PJM
 - Modification 5: an administrative modification to performance incentives
 - Modification 6: an increase in the DCSEU contract amount to account for the Solar for All program and the emergency HVAC program
- Requested information to review/advise on the following specific topics:
 - DCSEU programs and expenditures
 - Accounting for administrative vs. programmatic costs
 - DCSEU invoices processes
 - Comparison of costs pre and post contract modifications
 - Presentation on Solar for All, including the role of DCSEU
 - Relevant legislative initiatives
 - Process for calculating the low-income spend prior to the contract modifications.
 - Review of the SREC Support Program on the next meeting agenda
 - Review of proposed and executed DCSEU contract modifications

III. Changes to Contract

During FY18, the DCSEU contract was modified to provide additional resources to the DCSEU to design and prepare to launch the second phase³ of the District's Solar for All Program ("SfA").⁴ The SfA Program is not included in the performance benchmarks of the DCSEU's 5-year contract, and is not itself remunerated on a performance basis.

The SfA program aims to expand low-income households' access to solar power, and to support the creation of new solar energy sources in the District. The modifications in the DCSU contract included requirements for the completion of a detailed SfA Program design, budget, implementation document, and public awareness plan; key program staff hired and trained; and an initial Request for Proposals for qualified Solar Installers/Developers.

The guidance provided in the modification for the program design and implementation document included the following:

- A description of the SfA Program initiatives that would target low-income households in the District;
- A detailed budget for each program or initiative included in the document;
- Annual numeric goals for the SfA Program initiatives fiscal years 2019 - 2021;
- Subcontractor procurement processes, and quality assurance protocols and processes;
- Number of program staff to be hired or assigned;
- Alternative approaches to ensure ongoing performance of the solar projects so that low-income households will benefit from the solar PV systems installed for at least 15 years; and
- An estimated timeline for full implementation of all programs or initiatives described in the document.

The modification specified that the SfA program design should include support for community renewable energy facilities (CREFs), as follows:

- The CREF projects supported through the SfA program should be structured such that during the first 15 years of the solar PV system's operation, 100% of the measured electric output from the portion of the system supported by the SfA program shall be obligated to DOEE designated low-income households to offset, at no cost to the households, at least 50% of each household's annual electricity costs based on the District's average residential electric bills for calendar year 2016; and

³ The first phase of the SfA involved DOEE awarding 10 grants to install solar & provide the benefits to LI DC residents for at least 15 years.

⁴ For additional information on the SfA program, see <https://doee.dc.gov/solarforall>.

- Projects that do not obligate 100% of the PV system’s measured output to DOEE designated low-income households or its designee may be eligible to participate. However, the SfA Program incentives shall only be available and awarded to the portion of the project’s solar capacity from which the measured output is totally assigned to low-income households for the 15-year period.

The modification also stated that the SfA program design would include support for installations on single family, income-qualified households, as follows:

- The program design and solicitation documents should specify eligibility and requirements for participating contractors and households; and
- 100% of the measured electric output for these net-metered systems would be made available to the participating single-family households for at least 15 years.

Other requirements for the SfA Program design and implementation document include analysis, discussion, and recommendations for:

- Ongoing operations and maintenance of the SfA-supported solar projects; and
- Minimum performance guarantees of the SfA-supported solar projects.

The DCSEU is required to conduct quality assurance and quality control inspections on all SfA-supported solar projects.

The modification specified that the DCSEU shall implement the SfA Program as a separate program, and all expenditures incurred under the SfA Program shall be accounted for separately from the Contractor’s expenditures for any other program under the DCSEU Contract. Further, the DCSEU’s performance and achievements under the SfA Program would not be included in the evaluation of the DCSEU’s achievement of the performance benchmarks or the Societal Benefit Test. Funding provided by DOEE for the DCSEU to implement the SfA Program would not cause an adjustment to the performance targets and incentives identified in the contract.

In 2019, the Board agreed to modest overlaps in the SfA Program’s budget with that of the core DCSEU contract, with respect to the time allocated to the SfA Program by the DCSEU’s executive staff.

As a result of this modification, the Board added SfA Program updates to its meeting agenda during regularly scheduled meetings, and offered guidance and advice to the DCSEU and DOEE regarding the implementation of the program, based on the information provided.

IV. Legislative or Other Changes that Impacted the DCSEU

In Fiscal Year 2018, the Council considered B22-0904, the Clean Energy DC Omnibus Amendment Act of 2018 (“CEDC Act”). One of the main objectives of this legislation was to address greenhouse gas emissions in the District.⁵

On January 18, 2019, the Mayor signed the CEDC Act, and the law became effective March 22, 2019⁶.

This omnibus legislation amended several energy-related laws of the District, including CAEA, the Green Building Act of 2006, and the Renewable Portfolio Standard Act of 2004. The CEDC Act makes the following changes⁷.

1. **Raises significant additional revenues** [approximately \$20-25 million in FY2020] for the Sustainable Energy Trust Fund (SETF) by increasing the SETF electric and gas rates, and also by imposing a new SETF assessment on fuel oil [CEDC Act Section 201(c)].

Section 201(c) of the CEDC Act uses the additional funding to authorize new energy programs and to capitalize the DC Green Bank:

a) Funds activities of DOEE or the DCSEU, using at least 30% of the increase in the SETF rates [estimated to be about \$6 million in FY20], to:

- i) Benefit low-income residents, including energy bill assistance, energy efficiency, and weatherization;
- ii) Establish workforce development initiatives for District residents in energy efficiency fields; and
- iii) Establish the Sustainable Energy Infrastructure Capacity Building and Pipeline Program [CEDC Act Section 401] to increase the participation and capacity of District-based Certified Business Enterprises (CBEs) and eligible businesses in the energy efficiency fields;

b) Funds the implementation of the Building Energy Performance Standard Program (BEPS). Section 301 of the CEDC Act creates a new Building Energy Performance Standard Program that requires buildings of a certain size or larger to comply with a building energy performance standard established by DOEE for each property type. The CEDC Act also requires DOEE to update the BEPS standard every 5 years.

c) Provides \$70 million in SETF funding to the DC Green Bank during FYs 2020-2025;

d) Provides at least \$3 million annually, starting in FY2022, for DOEE or the DCSEU to provide assistance to providers of affordable housing or rent-controlled buildings for energy efficiency upgrades of buildings subject to BEPS.

⁵ Transportation and the Environment Committee Report on the Clean Energy DC Omnibus Amendment Act of 2018, <http://lims.dccouncil.us/Download/40667/B22-0904-CommitteeReport1.pdf>, at 5-6

⁶ This was after FY18 had ended, and hence this change did not affect the SCSEU in FY18.

⁷ The CEDC Act did not amend the DCSEU Contract. DOEE will need to amend the DCSEU contract in the near future to comply with the repeal of the 75% minimum gas and electric spend provision in the CEDC Act.

2. Effective October 1, 2019 [beginning of Fiscal Year 2020], **repeals the DCSEU’s minimum spend requirement for each fuel type [electric and gas].** [CEDC Act Section 201(a)]

Currently, the DCSEU must spend at least 75% of gas ratepayer funds on gas programs and 75% of electric ratepayer funds on electric programs. Even without the minimum spend requirements, the DCSEU will still need to implement both gas and electric programs to achieve its multiyear gas and electric performance benchmarks.

3. **Authorizes the electric and gas utilities to apply to the PSC to offer energy efficiency and demand reduction programs** [CEDC Act Section 201(b)].

Utilities’ programs cannot be substantially similar to the programs offered or in development by the DCSEU, unless the DCSEU supports such programs. In addition, prior to submitting an application, the utilities must first consult and coordinate with DOEE, DCSEU, and the DCSEU Advisory Board.

4. The **CEDC Act directs the PSC to create a working group of stakeholders and the utilities** to recommend long term and annual energy savings metrics, quantitative performance indicators, and cost-effective standards to be adopted by the PSC for the utilities’ energy efficiency and demand response programs.

5. **The CEDC Act amends the District’s Renewable Energy Portfolio Standard Act of 2004** (DC Code § 34–1431 *et seq.*) and raises the District’s renewable energy portfolio targets to:

- 100% of tier one renewable resources, 0% from tier two renewable sources, and not less than 5.5% from solar energy by 2032.
- 100% of tier one renewable resources, 0% from tier two renewable sources, and not less than 10% from solar energy by 2041.

6. **Title V of the CEDC Act has provisions for transportation emission reduction.**

a) Section 501 revises the District’s vehicle excise tax such that it is based on the fuel efficiency of the vehicle, with more fuel-efficient vehicles paying a lower excise tax. Section 501 requires DMV to issue rules for the new excise tax and ensure that the new tax is revenue neutral.

b) Section 502 requires Mayor to establish a transportation electrification program for public buses, passenger- and light-duty vehicles associated with privately-owned fleets or light-duty vehicles licensed to operate by the District of Columbia, commercial motor carriers, limousine-service vehicles, and taxis. The program’s goal is for 100% of such vehicles to be only zero-emission vehicles by year 2045.

7. Finally, Sections 102 and 103 of the **CEDC Act amends the mandate of OPC and PSC.** Under Section 102, while advocating on matters pertaining to the operation of public utility or energy companies, OPC shall consider the “effects of global climate change and the District’s public climate commitments.”

Section 103 has a similar provision for the PSC, i.e., in supervising and regulating utility or energy companies, the PSC shall consider the “effects of global climate change and the District’s public climate commitments.”

V. Natural Gas Consumption

In 2018, the DCSEU exceeded both the minimum and maximum targets for the reduction in natural gas consumption. With verified results of 4,235,994 therms, the DCSEU exceeded the maximum two year cumulative target of 3,410,258 therms by 24%.⁸ The FY18 savings of 2,237,961 therms continue the progress in gas savings resulting in the DCSEU being ahead of pace on the minimum and maximum benchmarks at 50% and 41%, respectively, compared to a 40% second year goal.⁹ The significant increase in savings was partially the result of the move to a multi-year contract, through which THE DCSEU can fund a wider array of projects.

Further investment, through utility administered energy efficiency programs should serve to complement the DCSEU’s and achieve additional reductions in greenhouse gas emissions, thereby assisting the District in reaching its stated goal of Carbon Neutrality by 2050.

Though many variables can affect the cost for gross savings, commendably, the DCSEU’s cost for savings of \$2.30 per therm was significantly lower than the Philadelphia Gas Works cost of \$6.25 per therm.¹⁰ Modified Gross natural gas savings, which exclude cross-fuel effects, were even more impressive at \$1.75 per therm. Moreover, costs per therm were reduced by approximately 23% from Fiscal Year 2017. This demonstrates that the DCSEU’s investments in natural gas programs are becoming more cost-effective in delivering reductions in greenhouse gas emissions.

Natural gas savings for FY18 achieved a 97% realization rate, a 2% increase over FY17. The 97% realization rate was traced to “the evaluation of the smart thermostat seasonal savings initiative.”¹¹ According to NMR, the DCSEU’s savings estimate was incorrectly calculated by 3%, largely due to factors of seasonality in demand for gas (i.e., the time period during which the initiative was deployed, specifically, a summer deployment rather than a winter deployment when demand for heating with gas is at its greatest).¹²

However, as noted earlier, the DCSEU’s investment in gas related energy efficiency programs continues to yield results that exceed its Year Two and Five-year cumulative targets – even when taking into account NMR’s corrected savings figures.

Table 2: DCSEU Gas Consumption Benchmarks

Modified Gross Annual Gas Savings	Minimum Target (Therms)	Maximum Target (Therms)	Evaluated Savings	Percent of Minimum Target	Percent of Maximum Target
Year Two Cumulative Target	2,250,770	3,410,258	4,235,994	188%	124%
Five-year Cumulative Progress	8,525,645	10,230,774	4,235,994	50%	41%

Source: DCSEU FY18 Performance Benchmarks Report, NMR Table 10, p. 12

⁸ NMR Group, Inc Performance Benchmark Assessment of FY2018 DC Sustainable Energy Utility Programs, p. 3.

⁹ Id., p. 5.

¹⁰ Id., p. 6

¹¹ DCSEU FY2018 Performance Benchmarks Report, NMR p.11

¹² Id, p.11, 12

Of the verified results (4,235,994 therms), 93% of the savings came from three Commercial & Institutional (“C&I”) Services Programs: Custom Retrofit, Custom Market Opportunity, and Custom New Construction. Program descriptions, as included in the 2018 EM&V Report are:

Retrofit - Custom

The Custom Retrofit program is a component of the C&I Custom Services (“Non-prescriptive”) initiative, which provides incentives to owners of large buildings who replace equipment prior to the end of its useful life. The program offers incentives for a variety of equipment types, including lighting, chillers, boilers, heat pumps, steam systems, insulation, refrigeration, and various building and equipment controls. Through this program, the DCSEU provides technical assistance to help decision makers design, scope, and fund their projects. Funding is available through a traditional rebate structure, in which participants are paid per unit of energy saved, but also through partnerships with lenders in the District who may provide up to 100% of a project’s cost.

Market Opportunities - Custom

The Market Opportunities program is a component of the Non-prescriptive initiative. The Market Opportunities program focuses on major renovation projects and retrofit projects where equipment is at the end of its life. The key features of the program offset the incremental costs of adding more energy efficient equipment compared to the current energy code and provide comprehensive technical services.

New Construction - Custom

The New Construction program is a component of the Non-prescriptive initiative. The New Construction program focuses on new construction buildings. Typically projects in this program are reviewed and analyzed with energy models from the customer. The key features of the program offset the incremental costs of adding more energy efficient equipment than the current code requires and provide comprehensive technical services during the design stage. This program accounted for nearly a quarter of the modified gross natural gas savings in FY18.

Table 3: DCSEU Modified Gross Natural Gas Savings

DCSEU Program	Therms Saved		Percentage of Modified Gross gas Savings
	Tracked	Modified Gross	
Sg. Fm LI Emer. Equip. Repl.	600	600	0.0%
C&I RX Equip. Repl.	6,830	6,830	0.3%
Retrofit - Custom	1,511,820	1,544,310	69.0%
Market Opportunities - Custom	52,570	53,040	2.4%
New Construction - Custom	505,480	516,510	23.1%
MF Direct Install	7,180	7,180	0.3%
MF Inc. Qualified Eff. Fund	4,180	4,180	0.2%
LI Custom	500	540	0.1%
LI MF	48,920	53,020	0.2%
Retail Appliances	1,170	1,170	0.1%
Retail Heating and Cooling	5,050	5,050	0.2%
Retail Smart Thermostats	155,710	45,130	2.0%
Retail Lighting Food Bank	100	100	0%
Home Energy Kit - LI	300	300	0%
TOTAL	2,300,390	2,237,960	100%

Source: DCSEU FY2018 EMV Program Report – Final, September 28, 2018. Page 6, “Table 5: DCSEU Modified Gross Generator-level Program Savings.” NMR Group, Inc. (Table values converted from MMBTU to Therms).

The Board, consistent with its FY17 report, continues to recommend the DCSEU focus on increasing participation in residential programs to balance the portfolio of gas savings. If one or two C&I custom gas projects are delayed or canceled, higher participation in other programs will ensure the DCSEU does not miss its goals.

The Board supports the NMR EM&V consultants’ recommendation to improve its methodology for calculating the savings attributed to the Seasonal Savings Initiative. While there are inherent difficulties in aligning the accounting, the seasonal usage variance, and the Fiscal Year, a new methodology that more accurately reflects usage and savings achieved is necessary to evaluate the program properly.

Additionally, the Board supports the NMR recommendations to increase communication regarding the projected incentives for the New Construction program and to provide more transparency surrounding staff roles. Providing potential participants with additional information regarding the benefits of the program and direct access to the staff with the technical expertise to respond to questions should increase participation and satisfaction with the program.

VI. Electricity Consumption

Electricity Consumption

In 2018, a stark warning regarding climate change was issued by the United Nations Intergovernmental Panel on Climate Change (“IPCC”). The IPCC said that governments around the world must take “rapid, far-reaching and unprecedented changes in all aspects of society to avoid disastrous levels of global warming.” Based on its report, bold action is required. In 2018, the Council approved the CEDC Act, which can be characterized as one of the boldest laws in the country to address climate change. It is important to note that this landmark bill was already under consideration prior to the IPCC warning.

In 2018, the District of Columbia publicly committed to achieve a 50% reduction from 2012 levels in energy usage by 2032; a 50% reduction from 2006 levels in greenhouse gas emissions by 2032; and a 100% reduction in greenhouse gas emissions by 2050.

The participation of the utility in implementing programs to reduce energy consumption is critical to reducing overall greenhouse gas emissions through the use of energy efficiency and other means. To achieve the District’s goals, as outlined in several District energy plans including the DC Clean Energy Plan, expanded programs and collaboration are required to achieve the stated goals.

In its 2018 annual report, the DCSEU highlighted that it had submitted its strongest performance ever. With the outlined goals, the measures to achieve will have to be maximized through collaborative and strategic actions. The DCSEU reported that 2018 resulted in electricity savings to power 15,000 homes in the District of Columbia for one year. In that same year, the DCSEU sold 270,000 efficient products through retail stores and online, and 44,000 residents participated in residential rebate opportunities. Of note, in 2018, the ENERGY STAR certification was expanded to smart thermostats, which allowed the DCSEU to begin offering rebates for smart thermostat technology. The DCSEU has partnered with Google/NEST since 2016.

The DCSEU continued its focus on energy justice in 2018, investing \$4.1 million in projects that benefit low-income communities. Home Energy Conservation Kits were distributed to residents that qualified based on income. The new Income Qualified Efficiency Fund for affordable multifamily programs supported a total of 24 efficiency projects, including, multifamily buildings, shelters or clinics. In 2018, the DCSEU helped to complete a comprehensive LED lighting upgrade at Christ House that, according to the DCSEU, will realize \$120,000 in lifetime energy savings. The DCSEU continued lighting efficiency initiatives throughout the District in 2018 assisting a diverse group of District residents and businesses. In addition, the DCSEU continued efforts to expand solar in the District of Columbia, with a focus on access to affordable solar energy. As a highlight, 1,836 kW of renewable energy generating capacity was installed under the DCSEU’s SETF-funded programs.

Performance Benchmarks

According to the DCSEU 2018 Annual Report, the DCSEU initiatives in 2018 exceeded the Performance Benchmark maximum annual target for electricity savings and consumption was reduced by 135,425 MWh.

Table 4. Annual Performance Benchmark (Electricity Savings and Spend)

	Goal Type	FY18 Actuals	FY 18 Maximum Target	Percentage of Maximum Target
Total electricity savings	Contractual	135,425 MWh	86,473	157%
Electricity spend	Tracking	\$15,799,846	\$15,644,111	101%

Source: Table 1. Annual Performance Benchmarks (DCSEU Annual Report)

Table 5. Cumulative Benchmarks Progress (Total Electricity Savings)

	Goal Type	Actuals October 2016-September 2018	Contract 5-Year Minimum Target	Percentage of Contract 5-Year Minimum	Contract 5-Year Maximum Target	Percentage of contract 5-Year maximum target
Total electricity savings	Contractual	227,414 MWh	461,188	49%	576,486	40%

Source: Table 2. Cumulative Benchmarks Progress (DCSEU Annual Report)

The Performance Benchmark Assessment of Fiscal Year 2018 conducted by NMR, Inc. found that the DCSEU achieved minimum targets for five benchmarks and achieved the maximum target for the three that have established maximum targets. One of the benchmarks with both a minimum and maximum target is to reduce electricity consumption. Comparing 2017 to 2018, the cost to achieve savings declined in FY18. FY18 was different than prior years in that the current DCSEU contract is a multi-year contract for five years.

The DCSEU exceeded the Year 2 cumulative maximum target for electric savings by 131% (see Table 7). When reviewed against the five-year cumulative performance benchmarks, the DCSEU is trending ahead of the minimum benchmarks for electricity and is meeting the maximum benchmarks.

The DCSEU also has specific tracking goals. They seek to reduce growth in peak demand and in the energy demand of the largest energy users. Based on the NMR Report, DCSEU programs in FY17 and FY18 are estimated to have saved a combined 94,677 metric tons of annual CO2 emissions. In relation to 2016 CO2 emissions as noted by NMR, this represents 0.7% reduction when comparing 2018 reductions to the District-wide reported emissions of 7,552,734 metric tons in 2016.

The DCSEU was evaluated on the cost-effectiveness of programs. NMR determined that the cost of gross and modified gross first-year electricity savings, excluding the DCSEU’s renewables programs, was \$123/per megawatt-hour (“MWh”) and \$114/MWh. Based on this review, the DCSEU’s cost for gross and modified gross electricity savings from renewables programs was \$240/MWh and \$193/MWh. NMR stated that the modified gross electricity savings exceeded gross electricity savings due to adjustments for line losses and renewable energy project spillover. The DCSEU (excluding renewables) cost per unit of saved electricity compared to other utilities did appear to be reasonable according to NMR FY18 report. However, the mix of program offerings and measure life of the installed energy efficiency measures can vary significantly, and no direct conclusions can be made without further analyzing the portfolios for consistency, relative to the type of savings they are providing.

While the DCSEU exceeded its maximum energy savings targets in FY18, there was a decline from FY17 of 23% in the DCSEU’s gross energy savings across the comprehensive portfolio. The gross savings for electricity programs also declined; however, the gross electricity savings from renewables slightly rose from FY17 savings levels.

Program Cost-Effectiveness

NMR’s evaluation concluded that the DCSEU program portfolio as a whole was cost-effective under each benefit-cost analysis scenario applied. In summary, the District realized between \$2.34 and \$1.83 as a return on each \$1.00 expended. An area that may require further review by the SEU Advisory Board, the DCSEU and DOEE is the evaluation of the cost-effectiveness of low-income programs.

NMR determined that the Low-Income Emergency Equipment Replacement program was not cost-effective. However, for reasons described below, this program was not subject to the cost-effectiveness test and separately funded.

It is important to note that limited income energy efficiency programs are confronted with additional costs that do not provide direct energy savings benefits. This makes cost-effectiveness screening challenging. Houses often require additional building modifications for health, safety, or home durability and programs must overcome additional barriers to participation. Industry best practice indicates that cost-effectiveness screening for limited income programs account for the additional benefits and challenges associated with these programs, and many jurisdictions exempt limited income programs from cost-effectiveness tests.¹³

States account for the additional costs and benefits of low-income programs in a variety of ways. Some states have quantified non-energy benefits associated with low-income programs and included these benefits in cost-effectiveness tests. Others have developed generic “adders” for low-income programs that effectively account for health and safety benefits. Many states have developed guidance that notes that low-income programs do not have to meet cost-effectiveness

¹³ “Supporting Low-Income Energy Efficiency: A Guide for Utility Regulators” American Council for an Energy-Efficient Economy.

tests, or that utilities must meet cost-effectiveness requirements only at the portfolio level, allowing them to balance more cost-effective programs with higher-cost low-income programs.¹⁴

Reduction in Electricity Consumption

Table 6. Gross Electricity Savings

Year	Tracked Modified Gross Savings	Realization Rate	Evaluated Modified Gross Savings (MWh)
FY18	135,898	99%	134,728
FY17	93,958	99%	92,686
Total	229,856	99%	227,414

Source: NMR Performance Benchmark Assessment of FY18 (Table 6, page 10) - Modified Gross Electric Savings Verification

Table 7. Electricity Savings and Targets

Modified Gross Annual Electric Savings (MWh)	Minimum Target (MWh)	Maximum Target (MWh)	Evaluated Savings (MWh)	Percent of Minimum Target	Percent of Maximum Target
Year Two Cumulative Target	121,756	172,945	227,414	187%	131%
Five-year Cumulative Progress	461,188	576,486	227,414	49%	39%

Source: NMR Performance Benchmark Assessment of FY18 (Table 7, Page 10) - Reduce Electricity Consumption Benchmark Performance

Table 8. Lifetime Modified Gross Electric Savings

Year	Tracked Lifetime Modified Gross Savings (MWh)	Realization Rate	Evaluated Modified Gross Savings (MWh)
FY18	1,507,610	99%	1,496,844
FY17	1,140,086	98%	1,121,053
Total	2,647,696	99%	2,617,897

Source: NMR Performance Benchmark Assessment of FY18 (Table 8, Page 10) – Lifetime Modified Gross Electric Savings

Electricity Sales

The District of Columbia experienced a 4.7% reduction in overall electricity sales from 2007 to 2018, unadjusted for the weather. Weather-adjusted sales fell by 5.7%, which shows the importance of temperature/humidity conditions in determining electricity use. This decline took place at a time when there was significant population and development growth. The increased energy consumption that would normally correspond with population and growth development

¹⁴ “Supporting Low-Income Energy Efficiency: A Guide for Utility Regulators” American Council for an Energy-Efficient Economy.

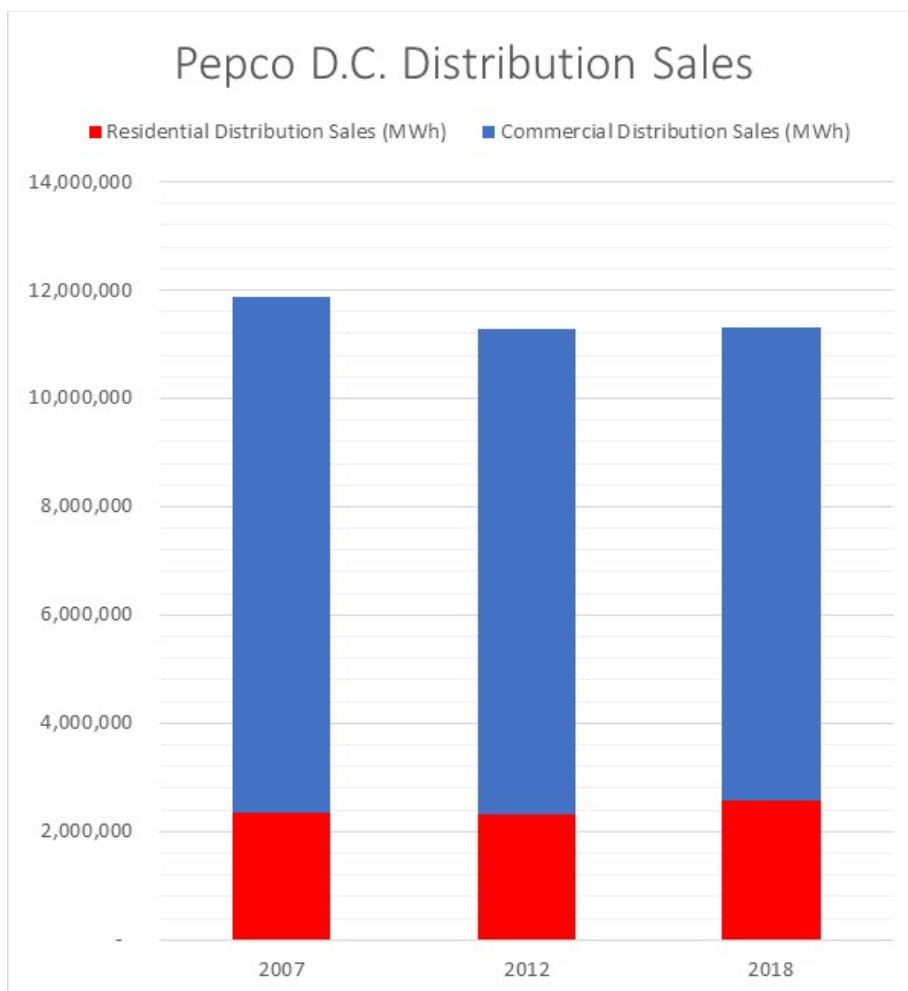
was partially offset by gains in energy efficiency and conservation delivered by the DCSEU, naturally occurring impact of increased local and federal efficiency codes and standards, residential housing types, and increased number of people per home. The net results have permitted the District as a whole to prosper and grow, while at the same time consuming less energy than otherwise would have been expected.

Residential sales have increased by approximately 11%, while the population has increased by 22%. Hence, per capita electricity sales have decreased by 9% over the same period.

There was a 4% increase in the number of residential accounts over the December 2017 to December 2018 period and an 8.4% increase in Residential sales. The exact driver of increased sales likely is due to the combination of an increase in the number of residential customers, an increases use of residential heating and cooling equipment, and changes in weather.

Commercial energy sales have been reduced by 9% over the past twelve years from 2007 to 2018 (separate weather-adjusted sales are not readily available for residential and non-residential classes), and there was a 2.5% increase in sales between 2017 and 2018.

Figure 1: Pepco Distribution Sales



Source: Pepco

The 2018 unadjusted for weather Total Distribution sales for Pepco in the District were 11,310,203 MWhs, while the weather-adjusted sales for the same period were 11,094,091 MWhs. In addition, the corresponding sales for 2007 baseline year and 2012 have also been provided below. The purpose of this information is to provide a reference point to compare the historical changes of Pepco electricity sales in the District over the baseline year of 2007, 2012 and most recently year of 2018, and to further provide insight as to the degree to which weather has had an impact, which it appears not to have had a material impact on sales.

Table 9: Pepco Historical Distribution Sales

Pepco Sales	2007	2012	2018
Residential Distribution Sales (MWh)	2,333,431	2,314,580	2,584,918
Commercial Distribution Sales (MWh)	9,535,788	8,957,241	8,725,286
Total Distribution Sales (MWh)	11,869,219	11,271,821	11,310,204
Total WN Distribution Sales* (MWh)	11,761,691	11,221,915	11,094,091

Source: Pepco

The reduction, unadjusted for weather sales, as a percent of the baseline year of 2007 was 4.7%, while weather-adjusted sales decreased by 5.7%. Weather typically has a larger impact on residential buildings than commercial buildings due to their inherent thermal mass and typical shell and insulation characteristics. The detail on residential and commercial classes are based on unadjusted for weather sales, and the commercial rate class saw a significant reduction of over ten percent. Table 2 shows that weather has a 1% of less impact on sales, while the actual sales of residential have increased over 10% from 2007 to 2018, while commercial has dropped 8.5%. This is important to note that while the population in the District has increased by 22% from 2007 to 2018, the energy sales to residential customers have increased only 10.8%. This could be for a host of reasons such as higher density residential living, more people per square foot of conditioned space, and at the same time, more efficient use of electricity in the housing stock within the District.

Table 10: Pepco Weather-Normalized and Non-Weather-Normalized Sales Variance

Sales Change	2007 to 2012	2007 to 2018
Weather Normalized Total	-4.6%	-5.7%
Non-Weatherized Total	-5.0%	-4.7%
Actual Residential	-0.8%	10.8%
Actual Commercial	-6.1%	-8.5%

Source: Pepco

Pepco recently completed a Residential Appliance Saturation Survey that indicates that from 2000 to 2015 there has been a general trend of increasing household size per-dwelling unit from 2.2 to 3.4 persons. Most notably, there has been an increase from 50% to 76% in homes with central air conditioning (including Heat Pumps), and an increase in the use of electronic plug loads. Yet, with a moderate two-percent increase unadjusted for weather, Pepco DC residential electricity sales, when compared to a corresponding 22% increase in population, had the net effect of a 9% reduction in *per capita* consumption. This is an important outcome, reflecting residential customers on a per capita basis are far more efficient on a kWh basis in 2018 compared to 2007.

Table 11: District of Columbia per Capita kWh Sales

Census Data	2007	2012	2018
Residential Population	574,404	635,630	702,455
Population Change	n/a	11%	22%
Residential kWh Per Capita	4,062	3,641	3,680
Per Capita decline from 2007	n/a	-10%	-9%

Source: Census Data from: <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>. Sales data from Pepco.

VII. Increasing Renewable Energy Generating Capacity

As of September 30, 2018, the total number of solar energy systems certified by the PSC for the District's Renewable Energy Portfolio Standard¹⁵ ("RPS") solar requirement included 3,996 systems, consisting of 3,881 solar photovoltaic systems, and 115 solar thermal systems¹⁶ in the District. In addition, another 2,471 solar energy systems located outside of the District in the PJM Interconnection region states and neighboring states were also certified by the PSC, as of September 30, 2018. The total reported generation capacity associated with these systems is about 81.1MW, of which about 57.3 MW is located within the District.

There were 715 solar energy systems located in the District with a total capacity of nearly 18 MW that were certified by the PSC between October 1, 2017 – September 30, 2018, an increase in the capacity of approximately 28.4% over the previous year.

For the DCSEU's renewable energy performance benchmark, which is funded by the SETF, the DCSEU completed 13 installations with a total installed capacity of 1,836 kW.

¹⁵ For further information on the District's RPS Program, see the D.C. Public Service Commission's "Report on Renewable Energy Portfolio Standard for Compliance Year 2018" (May 1, 2019): <https://dcpSC.org/PSCDC/media/Images/Report-on-REPS-for-2019-043019-final.pdf>

¹⁶ For water heating.

VIII. Increasing Energy Efficiency of Low Income Properties

Introduction

The DCSEU nearly hit the energy savings goal. The Board commends the DCSEU for the significant improvement in evaluated savings above the FY17 program year. However, the Board believes there are still opportunities for further improvement that will allow the DCSEU to better serve the neediest segments of the D.C community into the future.

DCSEU Performance Benchmarks

The relevant DCSEU benchmarks related to low-income residents and the DCSEU's performance are:

- Spend 20 percent of Sustainable Energy Trust Fund (SETF) funds on low-income housing, shelters, clinics, or other buildings serving low-income residents in the District. *The DCSEU spent \$4,130,208 in FY18, which is 6% more than the target of \$3,900,168 (20 percent of SETF funds.)*
- Achieve 46,556 MMBtu in electricity and natural gas savings from low-income programs. *The DCSEU achieved evaluated savings of 44,916 MMBtu, which is 96% of the benchmark target.*

Qualifications for Participation

DCSEU low-income programs were originally designed to serve low-income households and low-income housing using the following definitions:

- Low-Income Households. These are households that have annual incomes equal to or below 80% of the Area Median Income ("AMI") or 60% of the State Median Income ("SMI"), whichever is higher. For a household of 4 persons, the area median income for a household of 4 persons in the Washington Metropolitan Statistical Area as set forth in the periodic calculation provided by the United States Department of Housing and Urban Development.¹⁷
- Low-Income Housing. The District's stock of affordable, low-income housing is defined one that meets at least one of these conditions:
 - a single home where the owner or occupant meets the definition of "low-income households" in the DCSEU Contract.
 - a multifamily building where at least 66% of the households meet the definition of "low-income households" in the DCSEU Contract
 - buildings owned by non-profit organizations or government that meet the definition of "low-income households" in the DCSEU Contract,

¹⁷ See Definition A.1.25 in the DCSEU Contract.

- buildings where there are contracts or other legal instruments in place that assure that at least 66% of the housing units in the building will be occupied by low-income households.¹⁸

Beginning in FY16, the qualification of buildings serving low-income District residents was expanded to include shelters, clinics, or other buildings serving low-income residents defined as:

Low-Income Clinics means clinics or other health facilities that are designated as Federally Qualified Health Center (FQHC) in the District of Columbia. Shelter means a building or organization that provides temporary residence for those suffering from homelessness or domestic violence.

Program redesign in FY18

DCSEUC was able to deliver only limited savings in FY17. In response, in FY18, DCSEU redesigned its approach by launching the Income Qualified Efficiency Fund (IQEF) program. The Board is concerned with this shift towards a focus on clinics and shelters, as opposed to a focus on residents' homes. Although there are benefits to making energy efficiency improvements to these structures because they serve low-to-moderate income residents, the importance of making direct improvements to the homes of low-income customers cannot be overstated. Investment in homes with deep energy efficiency measures allows residents to directly benefit from significant, long-lasting utility bills savings.

High dependence on lighting measures

A high percentage of evaluated savings in the low-income programs are related to lighting measures. All of the evaluated energy savings in the Low-Income Prescriptive program came from lighting measures, 86% in the IQEF program, and 31% in the Low-Income Multifamily Comprehensive program for a total of 66 percent of low-income electricity savings coming from lighting measures. As efficient LED lighting becomes the baseline standard, achieving energy savings from lighting measures will diminish. If the DCSEU continues to shift its focus to clinics and shelters, this issue will be compounded since 86 percent of the savings in the IQEF program are from lighting measures.

The Board encourages the DCSEU to explore the feasibility of deeper energy retrofits like attic, floor, and wall insulation, and air sealing. Further, the DCSEU should consider taking indoor air quality into account (use of low VOC materials, adequate ventilation) and market transformation opportunities. These improvements may not rank as high as lighting measures in terms of first year energy savings, but many of these measures tend to have longer lives so including the lifetime savings of these measures in program planning will make them more favorable.

¹⁸ See Definition A.1.26 in the DCSEU Contract.

IX. Green Jobs

The DCSEU's Green Jobs contract performance benchmark target calls for the DCSEU to ensure that it creates or funds 88 full-time equivalent (FTE) green jobs in each year of the contract.¹⁹

This benchmark's objective is to measure jobs directly created for District residents resulting from the DCSEU's activities. The jobs created include jobs held within the DCSEU and those resulting from others in the District performing work directly associated with the DCSEU portfolio, i.e. the DCSEU's subcontractors. The benchmark excludes indirect jobs, which are created in support of direct jobs, such as suppliers of energy efficiency equipment, and induced jobs, which are created due to the economic impact of hired workers spending incomes within the District.

The target and the metric for measuring the target are described in the contract modification applicable for FY18 as follows:

“The following criteria will be used in the calculations of what constitutes a green job for the purposes of this benchmark:

1. A green job or green-collar job is 1 FTE job held by a District resident who is paid at least a living wage²⁰ or a factor of \$200,000 of DCSEU's direct cash incentives to end-use customers and/or manufacturers to buy down the cost of energy efficiency measures. No distinction is required for new versus retained jobs;
2. 1 FTE = 1,950 work-hours and is applied to hours reported by the Contractor and its subcontractors. The Contractor shall report hours worked by submitting certified payrolls to DOEE; and
3. Only direct jobs are to be used in the green jobs calculation. Indirect (primarily suppliers to Contractor's subcontractors or its second tier subcontractors) and induced jobs (derived from a multiplier effect) shall not be counted.^{21,22}

“The Contractor shall receive 50% (or \$50,000) of the incentive available each fiscal year for achieving 75% (or 66 FTEs) of the number of green jobs specified in [the target]. . . . The Contractor shall receive pro-rated compensation per green job up to the maximum incentive available for this benchmark, for creating more than 75% . . . of the required number of green jobs for a given year”²³

The DCSEU worked with five teaming partners, thirteen implementation contractors, and two workforce development organizations to meet the Green jobs benchmark.

Table 12 summarizes the DCSEU's performance measured against the FY18 Green jobs benchmark. The value of the FY18 total number of green jobs created was calculated in this way:

¹⁹ Contract No. DDOE-2016-C-0002, p. 49, § C.40.8.4.1.

²⁰ The Living Wage Act of 2006 is Title I of the “Way to Work Amendment Act of 2006”, D.C. Law 16-118 (D.C. Official Code §2-220.01 to .11), which became effective June 8, 2006.

²¹ For a more complete definition of indirect and induced jobs, see Executive Office of the President, Council of Economic Advisors, Estimates of Job Creation from the American Recovery and Reinvestment Act of 2009, May 2009, p. 6.

²² Contract No. DDOE-2016-C-0002, p. 49, § C.40.8.4.2.1.

²³ Contract No. DDOE-2016-C-0002, p. 50, § C.40.8.4.4.1-2.

- Payroll jobs. DOEE provided a spreadsheet of payroll hours worked by DCSEU staff and subcontractors. These payroll hours were divided by 1,950 to calculate the number of FTEs. The results were 38.7 jobs for DCSEU staff and 13.7 jobs for subcontractors for a combined 52.5 (rounded) total of FTE jobs.
- Jobs created by incentives. There was an independent assessment to calculate the number of jobs created due to incentives: DCSEU distributed \$9,526,495 as incentives in FY18. Of this, \$2,716,807 flowed through subcontractors, and was therefore excluded as it had already been covered by the payroll calculation. The remaining \$6,809,688 was divided by \$200,000 as set forth in the contractual definition of green jobs. The result was 34 FTE green jobs created.
- Total jobs. Combining these components, the FY18 verified green jobs total is 86.5 FTE jobs. This exceeds the Minimum Performance Target of 66 jobs for this benchmark but represents 98% of the Maximum Performance Target. DCSEU's staff turnover led to the near miss of the maximum target, similar to FY17. The turnover was a result of staff taking other jobs with other organizations, or pursuing graduate degrees or additional certifications at Colleges/Universities.

Table 12. Green Jobs Benchmark Summary – FY18

Benchmark Description	Benchmark Minimum	Benchmark Maximum	DOEE Evaluation of FTE Jobs Created	Minimum Benchmark Achieved	Maximum Benchmark Achieved
Number of FTE green-collar jobs created for District residents as a result of DCSEU's expenditures and activities	66	88	86.5	Yes (131%)	No (98%)

Source: Tables 18-19, FY18 Performance Benchmarks Report, NMR, p. 19

X. Leveraging External Funds

The DCSEU's current contract includes a goal of leveraging \$5 million in new funds to help meet the energy savings and increase the DCSEU's energy savings impacts. In FY17, the DCSEU monetized the energy savings of eligible projects in the PJM Reliability Pricing Model ("RPM") Capacity Market, securing approximately \$139,000 in net revenue.

In FY18, the DCSEU monetized the energy savings of eligible projects in the RPM Capacity Market, securing approximately \$230,478 in net revenue, an increase of nearly 66 percent.

The Board believes these efforts generate revenue that the DCSEU can plow back into more programs, thereby producing additional benefits for the District.

XI. Reducing Growth in Peak Demand [Tracking Goal]

Reducing growth in peak demand continued to be a “tracking goal²⁴” in FY18, Further context for the historical transition of District-wide peak demand reduction from benchmark to tracking goal comes from the DCSEU Advisory Report for FY17:

Effective October 2015, the DC Council amended the original requirement for the DCSEU to “Reduce the growth of peak electricity demand in the District of Columbia” (Oct. 22, 2008, D.C. Law 17-250, § 201, 55 DCR 9225) to the current requirement that the DCSEU “track and report to DOEE, at least semiannually, on the reduction of the growth in peak electricity demand [...] due to DCSEU programs” (Oct. 22, 2015, D.C. Law 21-36, § 6092(a), 62 DCR 10905). The change in law led to the conversion of peak demand reduction from a performance benchmark with a numeric target and financial reward to a tracking goal with no financial award, and was made in part to facilitate the most efficient use of DCSEU funds.²⁵

In FY17, the DCSEU reduced peak demand by 12,409 kW (equivalent to 0.2% of District-wide peak demand). The FY18 peak demand reduction was 73% higher than the evaluated performance for FY17 for a total of 21,406 kW peak reduction or 0.9% of estimated peak usage. The increase in performance occurred for two reasons: there were more projects in FY18 than in FY17, and the average project in FY18 was larger than in FY17.

The FY18 peak demand reduction performance was satisfactory, given the lack of a numerical target and an impressive year over year change from FY17, noting that the accounting is weighted heavily for peak reduction resulting from solar installations²⁶. Peak reduction continues to be an ancillary benefit of the successful completion of other DCSEU benchmarks.

In its 2017 Annual Report, the Board urged the Council to convert peak demand reduction into a performance benchmark to enable the DCSEU to take a leadership role in reducing District peak demand coincident with PJM peak demand. The recommendation was driven by the possibility of both financially benefiting ratepayers through reduced market charges and catalyzing positive environmental benefits consistent with District objectives. This would supplement Pepco’s robust peak demand reduction program “Energy Wise Rewards.” However, the required legislative change pertaining to the DCSEU has so far not been enacted or formally recommended by DOEE.

In an effort to continue to pursue the possibility of leveraging peak demand reduction as a pathway towards the objectives set out in the CEDC Act and the District’s clean energy goals, the DCSEU Advisory Board Benchmarks Subcommittee is discussing whether to recommend the establishment of a peak demand benchmark for the next DCSEU contracting period, beginning in 2022. The recommendation will be made to DOEE for consideration.

²⁴ A goal that is reported on but does not contribute towards a financially compensated benchmark.

²⁵ DCSEU Advisory Board Report FY 2017, page 21.

²⁶ Modified gross generator-level savings are calculated by increasing all gross meter-level peak demand savings by 6% to adjust for line losses and by further increasing savings from solar projects by 15% to reflect spillover.

XII. Reducing Growth in Largest Energy Users [Tracking Goal]

With the sweeping changes in the District of Columbia with the signing of the CEDC Act, the largest energy users will need to continue to reduce their energy usage and become more efficient. In Fiscal Year 2018 (FY18), the DCSEU continued to make great progress towards reducing the growth in energy demand amongst the District's largest energy users²⁷

In FY18, the DCSEU completed projects with 127 large energy users compared to 104 completed projects in FY17. This trend upward will likely continue as buildings are focused on becoming compliant with the new D.C. Building Energy Performance Standards provision in the CEDC Act.

The majority of the projects were Commercial Lighting projects (Commercial Upstream) and Custom Retrofit projects. While the number of commercial lighting projects outpaced other projects, the bulk of the electric savings comes from the Customer Retrofit Program related to HVAC and lighting energy conservation measures.

The DCSEU staff provides project support and makes the effort to disseminate best practices and technologies to large customers. Additionally, this year the DCSEU program formed cohorts with customers, which meet on a quarterly basis to discuss topics, measures and lessons learned, allowing customers to share and gain insight on energy efficiency technologies.²⁸

²⁷ The DCSEU defines large energy user as organizations, individuals, or government entities that own a building with more than 200,000 square feet of gross floor area or own a campus or building in a contiguous geographic area that share building systems or at least one common energy meter without separate metering or sub-metering, such that their energy use cannot be individually tracked. Gross area floor includes infrastructure that contain heated and unheated space that is connected to a qualifying building. Energy-efficiency or renewable energy measures must be installed in a qualified building or in an infrastructure connected to a qualified building in order to qualify as a large energy user project.

²⁸ Source: NMR Group, Inc., Performance Benchmark Assessment of FY18 DC Sustainable Energy Utility Programs, p. 45

Table 13. Fiscal Year 2018 Large Energy User Sites

Program	Number of Unique Sites
Solar PV Market Rate	2
Equipment Replacement	62
Market Transformation Value	4
Commercial Upstream	114
Retrofit - Custom	91
Market Opportunities - Custom	9
New Construction - Custom	26
Low-Income Multifamily Custom Projects	1
Low-Income Multifamily Comprehensive	4
Low-Income Prescriptive	33
Retail Lighting	3
Total	349

Source: NMR Group, Inc. Performance Benchmark Assessment of FY18 DC Sustainable Energy Utility Programs, p. 22, Table 24: F Y2018 Large Energy User Sites

XIII. Innovation

A primary goal of the DCSEU's innovation effort is to identify nascent or new energy savings strategies that cannot be readily implemented under existing DCSEU programs.

DCSEU spent FY17 mapping out how innovation would be approached for an FY18 rollout. This included brainstorming for ideas to be considered. In FY18 there were three ideas that were targeted for development after a "Shark Tank" like proposal from staff and others was completed.

- A multifamily tenant engagement and behavioral savings project, with installation of circuit level meters in a Low-Income Multifamily (LIMF) property.
- Toolkits or pre-construction support to help building owners in their effort to become NetZero²⁹ properties.
- Considering the additional benefits to customers including health benefits after implementing energy efficiency measures with possible increases or additions to the Non-energy benefit (NEB) Adders in DCSEU's Cost-Effectiveness testing.

The DCSEU looks forward to implementing these and additional innovation efforts in the following fiscal years.

²⁹ Producing enough energy on-site to offset any energy consumed.

XIV. Societal Cost Test

Pursuant to the Board's Fiscal Year 2017 recommendation, the DCSEU is exploring strengthening its societal impact by focusing a portion of its portfolio on programs that (i) address carbon pollution in neighborhoods in the District most affected by poor air quality, and (ii) bring tangible improvements in public health, health equity and safety to targeted, at-risk communities.

In this regard, the DCSEU staff is considering two improvements to their cost-effectiveness tests for possible future adoption: where the only low income adder under current methodology is for solar measures, staff is now seeking to adopt low income adders for all energy efficiency measures in addition; staff is also discussing adopting an increased health adder.

The Board notes that new program opportunities may exist for the DCSEU to address, within its contract purview, some of the District's key carbon polluters – of ground pollution as well as atmospheric.³⁰

Other District-wide or District agency initiatives such as the Sustainable DC 2.0 Plan, Clean Energy DC, DDOT's MoveDC, already include pollution mitigation plans, and the DCSEU might achieve cost/benefit synergies by collaborating with them. Also, financing opportunities and technical assistance (e.g., from the Federal Dept. of Energy) might be available for piloting such projects. The DCSEU may consider the use of pilots to further such programming.

The Board recommends that the DCSEU staff, working with other partners, consider pursuit of actions such as the following:

- Develop a proposal to the Board for the use of low income adders for all energy efficiency measures and for the adoption of an increased health adder.
- Explore new clean energy technologies on the market that reduce ground source pollution that observably affects public well-being, while saving energy and curbing emissions.³¹
- Continue to explore new ways to strengthen its societal cost-effectiveness tests in furtherance of District Clean Energy goals and roadmaps.

³⁰ District neighborhoods most severely impacted by poor air quality and determine major air pollution sources that might be addressed in DCSEU programming. In this respect, up-to-date geo-spatial mapping that overlays air quality (significant exposure day or night) and asthma (pediatric and adult) metrics in the District may be readily available.

³¹ The results of such exploration could help inform the development of parameters for the next SEU contract that might target emissions reduction under the District's Clean Energy DC goals for 2032 and 20150 in more effective ways.

XV. CBE Requirements

In FY18, DCSEU had a CBE spend requirement of \$2,425,000. DCSEU exceeded this goal by nearly 20 percent, with a total CBE spend of \$2,894,737.³²

³² In December 2016, the DSLBD approved a request by DOEE to modify the requirement related to CBE spending as it relates to the DCSEU Contract. The revised provision states that the 35% threshold should be based on “contractable” expenditures, meaning the Contract amount remaining after the incentives paid to third parties, performance incentive, and direct labor cost of DCSEU employees.

XVI. Engagement/Outreach

In FY18, the DCSEU sought to continue the success it had in FY17 in support of program lead generation, elevating the DCSEU brand in the District, and as an energy efficiency leader in the country.

The DCSEU used the national Energy Efficiency Day, October 5, 2018, as an opportunity to highlight its work and position in the District. Ted Trabue, the DCSEU's Managing Director, gave an interview on Great Day Washington on WUSA9, and published an Op-Ed in The Hill. The DCSEU also published a press release with Energy Tips, wrote a special sponsored blog post on <https://www.popville.com/> with tips for residents on how to save energy, and heavily promoted the benefits of energy efficiency on social media in celebration of the event.

In May 2018, the DCSEU launched a new campaign to raise the DCSEU's brand profile. The campaign was designed to "humanize" energy efficiency (and renewables), and demonstrate the impact the DCSEU is having on people in the community beyond energy rebates and energy savings. The ads were featured on bus shelters throughout the city, on Metro platforms (digital), in the Washington Business Journal (online and print), in the Washington Informer (print) and the Hill Rag, and through Google Adwords. The DCSEU also pitched to media outlets for earned media stories, and used stories from the campaign on the DCSEU Blog and social media.

In order to highlight innovative technologies and inform the DCSEU customers to their potential, the Marketing and Communications Team, in collaboration with the Leveraging and Funding Team, organized an event *Focus on Green Technology: Building the Sustainable Cities of the Future*. This event took place on January 24, 2018, at PNC Place. The event explored and discussed emerging technologies that will help District businesses, institutions, and residents save energy. The event attracted a capacity crowd where the DCSEU had to turn away potential attendees before the event. The DCSEU will continue this series of events in FY19.

As part of its Workforce Development Program, the DCSEU has externs embedded with local companies and organizations. These include Howard University, DC Water, WMATA, Metropolitan Washington Council of Governments (MWCOG), University of the District of Columbia (UDC), and Greenscape Environmental Services. Externs take the knowledge they gain about the DCSEU and apply it to their experience with DCSEU program partners.

The DCSEU launched a blog in early FY18. The DCSEU uses it to highlight its work, provide a platform for partners, and drive social media users to the DCSEU website. The biweekly blog posts focus on a range of topics, from residential energy tips to commercial success stories. The team continues to seek out guest bloggers and interesting topics to highlight the innovative and important work that's happening in energy efficiency and renewable energy in DC and around the world.

The DCSEU focused on outreach activities in partnership with agencies and utilities, including the Public Service Commission's Winter Ready DC event, Pepco Utility Discussion, Washington Gas Open House series of events, and a meeting with DC Council Constituent Service Directors.

As in FY17, the DCSEU continued to focus on partnering with District agencies on existing outreach activities that support hard to reach populations, such as seniors and low-income residents. The DCSEU partnered with the DC Office on Aging, providing seniors with materials and information on things they can do to save energy, and how the DCSEU can assist them.

The DCSEU supported educational efforts around energy efficiency and sustainability at three District schools. At Democracy Prep Elementary School, the DCSEU collaborated with Broccoli City, Martha's Kitchen, and the Joyful Food market to participate in their Food Bank after-school program. The event's purpose event was to provide healthy and fresh food and vegetables to vulnerable families. The DCSEU distributed energy efficiency kits to families. As part of the DCSEU's extensive partnership with Burroughs Elementary, the DCSEU staff volunteered to judge the school's annual science fair. Further, the DCSEU supported H.D. Woodson's STEM Program throughout the year, conducting mock interviews with students as part of their career services and participating in the first STEM Awards, celebrating the inaugural class of the STEM program and the students' academic achievements.

Finally, in FY18, the DCSEU focused heavily on raising the DCSEU's profile through earned media. The DCSEU's earned media hits increased at least threefold over FY17, with articles featuring or mentioning the DCSEU in The Hill, EcoWatch, NextCity, GreenBiz, DC Eater, Washington Business Journal, and many more.

One particular highlight was a joint op-ed co-authored by DOEE Director Tommy Wells and the DCSEU Managing Director Ted Trabue that appeared on GreenBiz entitled "The role of energy efficiency in creating just and inclusive communities." The DCSEU's public relations work also included seeking out speaking opportunities and awards opportunities for the DCSEU and its customers, including securing a panel with DOEE and IMT at the October ACEEE BECC Conference, and nominating the French Embassy for a USGBC-NCR award, which they won.

In FY19, the DCSEU looks to build on its FY18 work with a focus on raising leveraged dollars to support program efforts for low-income residents and workforce development.

XVII. Going Forward

This Annual Report focuses on the DCSEU's FY18 performance, though this report is written at the beginning of FY20. During the next fiscal year, DCSEU programming will change as a result of the implementation of the CEDC Act and the District's climate objectives during FY19.

The CEDC Act will launch similar energy efficiency programs implemented by the gas and electric utilities and parallel programs run by the DC Green Bank. In advance of the legislatively mandated working groups to determine utility programming, DOEE, the gas and electric utilities, and the DCSEU Advisory Board have preemptively created a Working Group to determine how any programming overlap can be prevented and coordinated moving forward. The goal of the Working Group is to ensure that funding is used effectively and not competitively across programs.

The District's renewed climate objectives, launched by the Sustainable DC Plan, prioritize GHG reduction, with a specific target to reduce GHG emissions to at least 50% below 2006 levels by 2032. While GHG reduction is an ancillary effect of many of the DCSEU's existing benchmarks, the Advisory Board is keenly aware of the need to adapt the DCSEU's ongoing contract to directly respond to the focus of the District's public climate goals and new legislation.

In response, the Board has convened a subcommittee, tasked with recommending small midstream contractual changes where possible (e.g., eliminate restrictions on gas to electric fuel switching projects) and also recommending more substantial changes to the financially-rewarded benchmarks that will launch with the new contract term in FY22. Ultimately, the Board advises that relevant changes be made that will not disrupt the multi-year accounting already in place with a 5-year contracting period, and more substantive changes be incorporated for the new contract commencing in FY22.

The use of a multi-year contract has brought many programming benefits, but also presents new challenges to ensure targets remain relevant with new climate commitments and legislative changes. The Board anticipates the greatest focus of the next fiscal year will be adapting targets to remain directly responsive to District objectives, continuing to support the DCSEU in achieving and exceeding its targets, and coordinating programming with the emergence of utility and Green Bank funding and programs.