

2008 Clean Energy Law Spurs Progress But District Can Do More To Cut Emissions

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A report by the Office of the District of Columbia Auditor

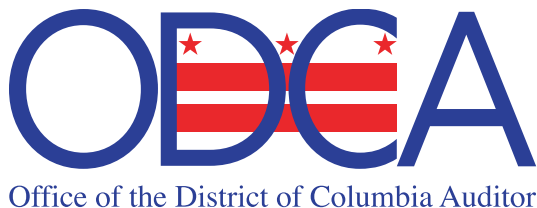


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Executive Summary



Why ODCA Did This Audit

Councilmember Mary Cheh asked ODCA to “review the overall effectiveness of the Clean and Affordable Energy Act (CAEA) in reducing the District’s contribution to climate change and potential to reduce it further.” She asked ODCA to identify any changes that would make the programs more effective.

What ODCA Found

Successive District of Columbia administrations have met the major requirements of the Clean and Affordable Energy Act of 2008. Significantly, the District’s greenhouse gas (GHG) emissions have declined 24% from 2006 to 2015, primarily due to a shift in electricity generation from coal to natural gas and renewable energy sources.

The DC Sustainable Energy Utility (DCSEU) has made progress in meeting its performance targets, but a comprehensive evaluation is complicated by the D.C. Council having amended the statutory goals and the Department of Energy and Environment (DOEE) allowing changes to DCSEU targets. DCSEU clients told ODCA that many energy efficiency projects likely would have proceeded without the DCSEU’s assistance and that the utility’s involvement did not add efficiencies beyond the original plans. As a result, it is difficult to determine whether the DCSEU’s performance targets are sufficiently ambitious, even though there have been annual third-party evaluations and other assessments the DCSEU has commissioned.

The District’s strategy to reduce carbon emissions from electricity generation, as amended and expanded by the CAEA, has some shortcomings.

Renewable Portfolio Standards (RPS) have not yet succeeded in inducing sufficient investment in local solar generation capacity to meet the requirements. Further, the RPS do not actually require that the electricity delivered to the District come from carbon-free sources. Nor do the RPS offer incentives for all carbon-free technologies that could generate around-the-clock carbon-free electricity.

DOEE has implemented the CAEA requirements that publicly- and privately-owned buildings in the District of a certain size submit data annually to DOEE on building attributes and energy performance.

The most significant area where the District falls short is in addressing GHG emissions from passenger and commercial vehicles—emissions that could grow unless the District addresses this gap in its climate policy.

What ODCA Recommends

- DOEE should modify the incentives for the DCSEU to reward interventions that lead to additional energy savings and GHG emissions reductions and limit spending on projects that would have occurred anyway.
- DOEE should align the DCSEU performance targets with the District’s climate change strategy by prioritizing GHG reductions (versus energy savings).
- The Mayor, Council and DOEE should consolidate the administration of energy efficiency services, potentially under the Green Finance Authority, to create a “one-stop-shop” for consumers.

- DOEE should determine which DCSEU functions are best accomplished under contract and which are best accomplished by an entity such as the Green Finance Authority and recommend to the D.C. Council how to distribute these functions accordingly.
- DOEE should recommend to the D.C. Council how to restructure the SEU Advisory Board to more effectively advise DOEE and the DCSEU.
- DOEE should examine the cost-effectiveness of the local solar requirement relative to other mechanisms for reducing carbon emissions from the District.
- To more effectively align District regulatory policy with its climate goals, the D.C. Council should consider establishing a zero-carbon electricity standard, which would provide a technology-neutral mechanism for encouraging new investments in carbon-free electricity generation.
- The Council should consider incentives for submetering of non-residential buildings and changes to District law to allow residential submetering.
- If DOEE determines that incentives green leases would materially advance the District's GHG emissions reduction goals, the agency should develop incentives to encourage such leases.
- To reduce GHG emissions from passenger and commercial vehicles the Mayor and Council should establish a congestion pricing program assuming DOEE and DDOT studies substantiate its value to meet District climate goals. DOEE should also study various options to require ride-hailing fleets to operate electric and hybrid-electric vehicles in the District.

Table of Contents

Background..... 1

Objectives, Scope, and Methodology 13

Audit Results 15

Conclusion53

Agency Comments..... 54

ODCA Response to Agency Comments..... 82

Summary of Report Recommendations..... 85

Appendix A: Clean Energy Legislation in the District by Effective Date91

Appendix B: Table of Implementation Status of CAEA Provisions.....93

Appendix C: Letter from Councilmember Mary Cheh Requesting Audit97

On the cover:

ODCA is grateful for the use of two photos for the cover of this report courtesy of the District of Columbia Sustainable Energy Utility (DCSEU): A worker upgrades lighting at the Shepherd Parkway Bus Garage and solar installations completed as part of the Capital Solar Challenge launched under President Obama.

Background

The District’s landmark Clean and Affordable Energy Act of 2008 (CAEA)¹ created new structures, programs, and incentives to improve the energy efficiency of the District’s building stock and authorized more aggressive requirements for the District’s electricity suppliers to purchase electricity generated from renewable sources of energy. At the time, the Council’s Committee on Public Services and Consumer Affairs, chaired by Councilmember Mary Cheh, characterized the purpose of the legislation as “to reduce the District’s dependence on fossil fuel-based energy, thereby reducing the emission of carbon dioxide and other pollutants, and at the same time saving District consumers money on their utility bills.”²

The imperative to address the primary cause of climate change—emissions of carbon dioxide from the burning of fossil fuels—has heightened in magnitude since the D.C. law took effect. In October 2018, the Intergovernmental Panel on Climate Change released an assessment indicating that limiting global temperature increase to 1.5°C is vital to minimizing severe and potentially irreversible impacts on human and natural systems. According to advocacy groups such as the Center for Climate and Energy Solutions, limiting emissions of carbon dioxide and other greenhouse gases (GHGs) will require concerted action at all levels of government. To assess whether the CAEA had achieved its intended purposes, Councilmember Cheh asked ODCA to “review the overall effectiveness of the [CAEA] in reducing the District’s contribution to climate change thus far and potential to reduce it further in the future.”³

Over the years, the suite of programs and funding sources available to the District government to address climate change has expanded and diversified. In recent years the District has negotiated commitments to invest in renewable energy from the merger of WGL Holdings and AltaGas, and from the merger of Pepco with Exelon. More recently, the District enacted the CleanEnergy DC Omnibus Amendment Act of 2018, which further expands the requirements for purchasing electricity from renewable energy sources, provides additional funding for energy efficiency programs targeting low-income households in the District, and authorizes new programs to reduce GHG emissions from buildings and transportation sources.⁴

Although the enactment of the CleanEnergy DC Omnibus Amendment Act of 2018 alters some elements of the District’s clean energy policies, this report focuses on the District’s implementation and the impact of the CAEA and identifies any gaps in current policies where the District can do more to cost-effectively reduce the District’s contribution to climate change.

Greenhouse Gas Emissions in the District

Analyzing the District’s strategies for reducing GHG emissions requires first understanding the sources

1 D.C. Law 17-250, Clean and Affordable Energy Act of 2008, effective October 22, 2008.

2 See Committee on Public Services and Consumer Affairs Committee Report on Bill 17-492, the “Clean and Affordable Energy Act of 2008” dated June 2, 2008.

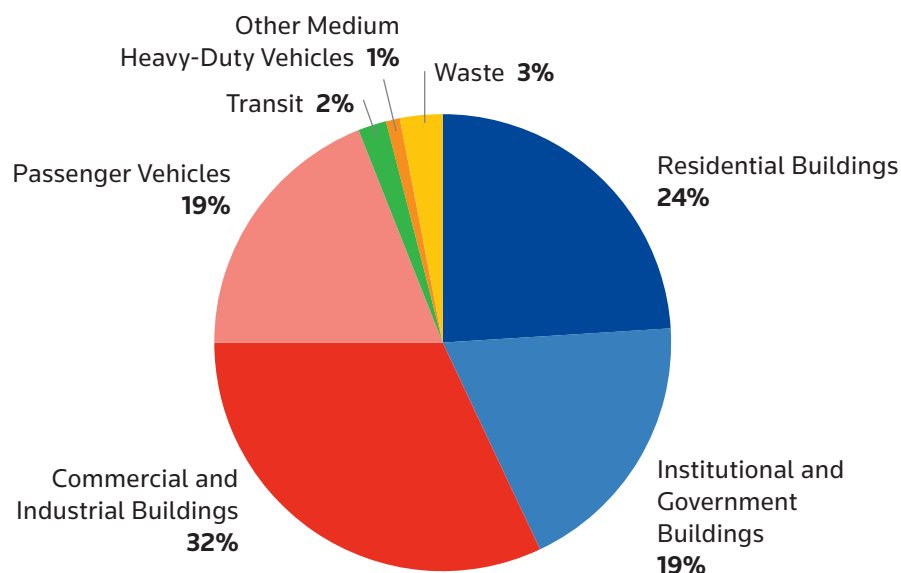
3 D.C. Councilmember Cheh’s letter requesting the audit is included as Appendix C.

4 D.C. Law 22-257, CleanEnergy DC Omnibus Amendment Act of 2018, effective March 22, 2019.

of emissions and the activities that produce GHGs. The District’s Department of Energy and Environment (DOEE) tracks GHG emissions associated with activities in the District and periodically produces a GHG inventory that pinpoints the sources of emissions and describes any changes or trends in the rate of emissions over time. In the context of total U.S. GHG emissions, the District’s direct contribution is very small. According to the Energy Information Administration, the District’s energy-related carbon dioxide emissions represented just 0.05% of the U.S. total in 2016, although this does not count emissions associated with electricity consumed in the District that is generated outside the District. That said, the District—along with other cities and states—is demonstrating that local governments can model different approaches to achieving GHG reductions. And collectively, state and local governments can have a measurable impact on reducing emissions.

As shown in the chart below, DOEE data from 2015 indicate that most greenhouse emissions in the District can be traced to buildings (75%), with the greatest share of emissions coming from commercial and industrial buildings (32%), followed by residential buildings (24%) and institutional and government buildings (19%). After buildings, transportation sources produced the next largest share (22%), with the vast majority of transportation GHG emissions coming from passenger vehicles (19%), and smaller shares tied to transit (2%) and other medium- and heavy-duty vehicles (1%).⁵

Figure 1: Modeled Proportion of Greenhouse Gas Emissions by Sector, 2015⁶



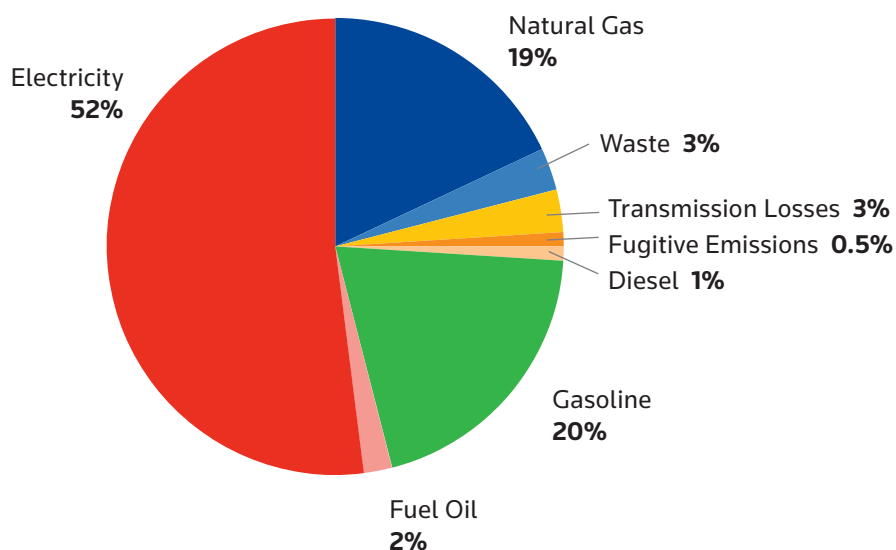
Source: Clean Energy DC Plan

⁵ Totals may not add up exactly due to rounding.

⁶ The consultant team responsible for the Clean Energy DC plan developed an Excel-based energy and greenhouse gas emissions model, which accounts for all energy and greenhouse gas emissions in the District and focuses on representing energy supply, buildings, and transportation. According to Appendix A1 of the Clean Energy DC plan, the consultant team discussed and vetted the structure, equations, and data inputs with DOEE staff.

In tracking the sources of the District’s GHG emissions by type of activity, DOEE’s data indicate that the consumption of electricity in the District was responsible for more than half of its GHG emissions in 2015, as shown in the chart below. The combustion of gasoline and diesel in the District was the second largest source of emissions in 2015 (21%) followed by the combustion of natural gas (19%).

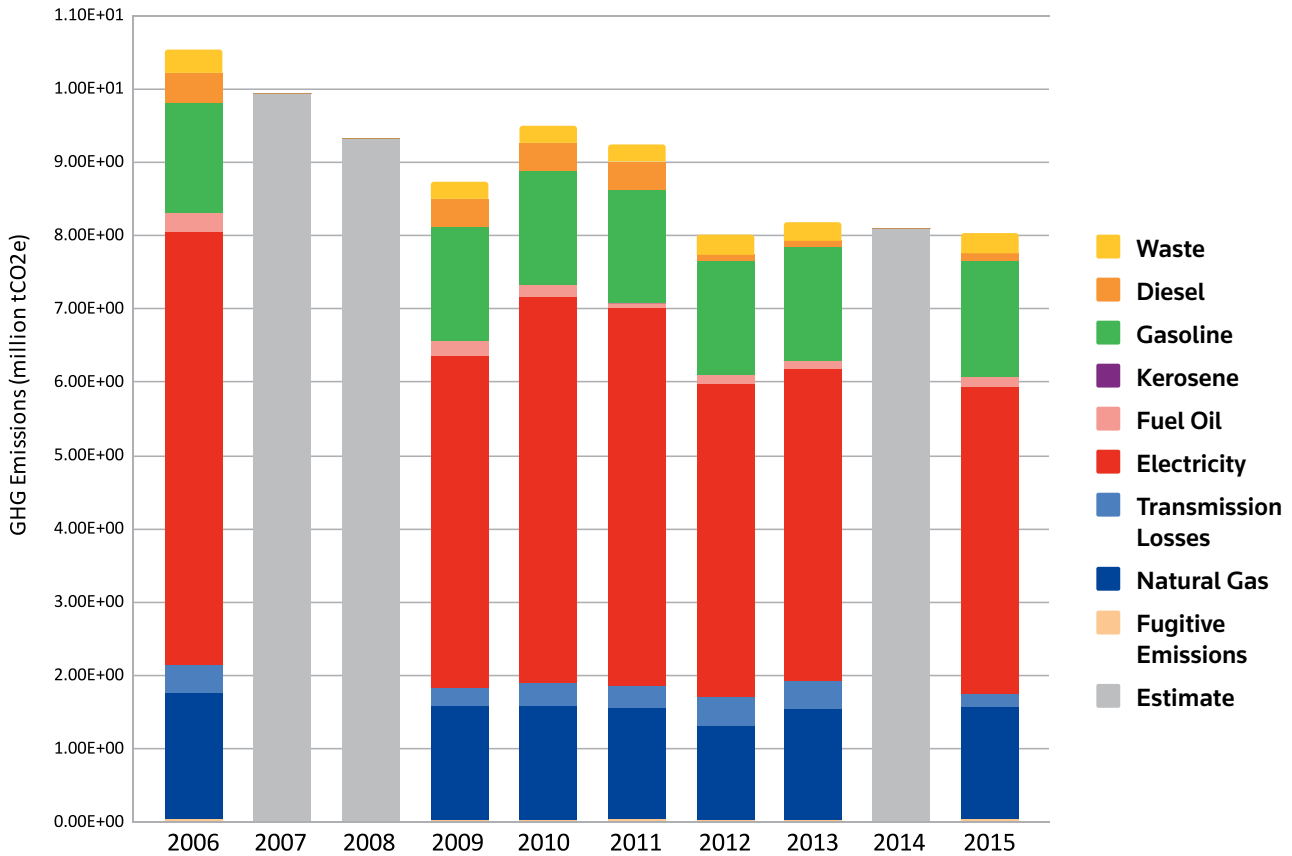
Figure 2: Proportion of Greenhouse Gas Emissions by Source, 2015



Source: Clean Energy DC Plan

Over time, GHG emissions from the District’s power use have declined. Between 2006 and 2015, the District’s emissions from electricity consumption decreased 30%, contributing to a 24% decline in the District’s total GHG emission from all sources, according to the Clean Energy DC plan. DOEE attributes most of this decline to the decreasing carbon intensity of the electric grid, as coal power plants are retired and replaced with more efficient natural gas plants and renewable energy sources. DOEE also attributes a small portion of the decline to an adjustment in the calculation of diesel consumption, which resulted in a significant decline in the total estimated diesel consumption between 2011 and 2012. GHG emissions from natural gas have remained relatively constant, with annual variations driven by weather and fluctuations in temperatures. These trends are shown in the Figure 3 on the following page.

Figure 3: GHG Emissions by Source, 2006–2015



Source: DOE

Context and Motivation for Passing CAEA

On November 6, 2007, a majority of D.C. Councilmembers joined Councilmember Cheh in introducing the bill that would become the Clean and Affordable Energy Act of 2008 (CAEA).⁷ The Committee report cited the desire to reduce the District’s dependence on fossil fuels as the energy sources for electricity and heating, which would insulate the District from increases in the cost of fossil fuels⁸ as well as reduce the District’s contribution to GHG emissions.⁹

⁷ The original legislation was introduced on November 6, 2007, as Bill 17-492.

⁸ By 2007 annual average crude oil prices had steadily risen from about \$30/barrel in 2000 to about \$72/barrel in 2007 (Cushing, OK WTI spot price FOB). Likewise, annual average natural gas prices had risen from about \$4.30 per million BTU in 2000 to about \$6.97 per million BTU in 2007 (Henry Hub natural gas spot price). In 2018, the average prices of these energy commodities were \$65/barrel and \$3.15 per million BTU, respectively.

⁹ See Committee on Public Services and Consumer Affairs Committee Report on Bill 17-492, the “Clean and Affordable Energy Act of 2008” dated June 2, 2008.

When crafting the legislation, the D.C. Council was faced with an electricity and natural gas regulatory regime that had rapidly evolved over the previous five to 10 years. Prior to passage of the Retail Electric Competition and Consumer Protection Act of 1999,¹⁰ Pepco operated as a vertically-integrated utility that owned both electricity generation and distribution assets. As an entity regulated by the District of Columbia Public Service Commission (PSC), Pepco was required to submit plans for how the utility would meet future demand for electricity. This planning process, known as Least Cost Resource Planning or Integrated Resource Planning, placed the responsibility on Pepco to find the cheapest way to meet or reduce future demand for electricity, and the costs for these investments in generation capacity and energy efficiency would be built into the utility's rate structure. With the passage of the Retail Electric Competition and Consumer Protection Act of 1999, the Council required Pepco, as the distributor of electricity to the District, to divest itself of electricity generation assets. The legislation also eliminated any requirements for Pepco to invest in energy efficiency as part of the Least Cost Resource Planning process.

The District was not alone in grappling with how best to administer energy efficiency programs during the new era of electricity deregulation. While some states had chosen to administer energy efficiency programs through a state agency (New York), others had chosen to require the utilities to administer energy efficiency services (Maryland), and others had chosen a mix of state-run and utility-run programs (California). In some states, legislators and regulators had opted to contract out these services to a private sector organization (Vermont, Delaware). The D.C. Council, after holding a hearing to solicit input from stakeholders and experts, chose to follow the Vermont and Delaware examples and wrote the legislation to authorize the District Department of the Environment (now DOEE) to contract for a Sustainable Energy Utility (SEU) that would administer energy efficiency services with funds collected by the District from District ratepayers via an assessment on the electric and natural gas companies.

The D.C. Council's rationale for following the SEU model (as demonstrated in Vermont and Delaware) was based on the following three factors, as described in the Committee Report:

- In the seven years prior to the introduction of the bill, the District's Energy Office had tried to administer energy efficiency programs in-house but failed to win PSC approval for its proposals.
- The Committee believed that relying on the utilities to administer energy efficiency programs would also result in a slow and cumbersome approval process by the PSC.
- The Vermont and Delaware SEU examples offered evidence that a third party operating under a performance-based contract could function as a single source for sustainable energy services at a reasonable cost to District ratepayers.

The second main thrust of the CAEA was to expand the requirement that electricity distributors in the District procure a specific percentage of electricity from renewable sources of energy. As established in the Renewable Energy Portfolio Standard Act of 2004, "renewable" sources were defined as either "tier one" sources, which included wind, solar, some sources of biomass, geothermal, some sources of methane, and ocean power; or "tier two" sources, which included combustion of solid waste and hydropower. The Committee's rationale for increasing this percentage requirement, as described in the

¹⁰ D.C. Law 13-107, Retail Electric Competition and Consumer Protection Act of 1999, effective May 9, 2000.

Committee Report, was to further the goal of reducing the District’s reliance on fossil fuels as sources of energy for electricity generation, thereby reducing GHG emissions and partially shielding District residents and businesses from any future increases in fossil fuel prices.

The CAEA also initiated a requirement for property owners to begin “benchmarking” the energy efficiency of their buildings in the District. Using the Energy Star Portfolio Manager tool, which was created by the federal Environmental Protection Agency, owners of property with a square footage greater than a certain threshold size would input data for the tool to use to generate a ranking of that building’s relative energy efficiency. Although the Committee Report does not state this explicitly, according to the DOEE including this requirement in the bill was designed to encourage property owners and managers to pay attention to their buildings’ energy consumption.

For a timeline of major legislation and program activity see Appendix A.

Description of CAEA Provisions

The following section describes the major provisions of the CAEA. For a complete description of all of the bill’s provisions see Appendix B.

1. The Sustainable Energy Utility

The provisions establishing the SEU contract required that the Department of Energy and Environment lay out specific “performance benchmarks” related to energy efficiency and renewable energy that the contractor would need to meet on an annual basis. If the contractor exceeded the performance benchmarks the contract would allow for financial payments, and if the contractor failed to achieve the benchmarks the contract would allow for financial penalties. As enacted, the CAEA required that the SEU contract address the following annual performance targets:

- Reduce per capita electricity and natural gas consumption in the District;
- Increase renewable energy generating capacity in the District;
- Reduce the growth of peak electricity demand in the District;
- Improve the energy efficiency of low-income housing in the District;
- Reduce the growth of the energy demand of District’s largest energy users; and
- Increase the number of green collar jobs in the District.

In FY 2011 the Department of the Energy and the Environment awarded the SEU contract to Vermont Energy Investment Corporation (VEIC), the same organization that had been awarded the SEU contract in Vermont. The initial contract consisted of a base year ending September 30, 2011, which DOEE could renew annually for up to six option years. The contract laid out annual benchmarks that the DCSEU would have to meet each year and included compensation that was based on reimbursement of actual costs,

as well as “at-risk”¹¹ and “non-at-risk compensation.”¹² DOEE awarded VEIC a total price contract of \$7.5 million to begin operations in FY 2011, and \$15 million in FY 2012 (funding table is shown below). These amounts include the “at-risk” compensation.

Figure 4: DCSEU Contract Funding FYs 2011–2018

| FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 | FY 2017 | FY 2018 |
|---------|---------|---------|---------|---------|---------|---------|---------|
| \$7.5M | \$15M | \$17.5M | \$20M | \$20M | \$20M | \$20M | \$20M |

To make it easier for the DCSEU to engage in multi-year programming, the Council amended the CAEA to require that subsequent DCSEU contracts be structured as multi-year contracts,¹³ instead of a single-year contract that DOEE could renew annually. And in 2015 BDA Global produced a report for DOEE that reviewed the DCSEU benchmarks and recommended changes based on the assumption that the next contract would span multiple years.

In April 2017, DOEE signed a new multi-year contract with VEIC to run the DCSEU, with a five-year base period (FY17-FY21) and a five-year option period (FY22-FY26). The contract stipulated that VEIC would be paid \$15 million in FY17, and \$20 million per year for FY18-FY21, with \$5 million of the five-year total defined as at-risk compensation. The contract makes it possible for the DCSEU to earn all \$5 million at the end of the five-year contract period of performance, even if in any one year the DCSEU falls short of its targets. At the same time, in any given year between FY18-FY21 the DCSEU would only be paid \$20 million if it earned the maximum amount of at-risk compensation available for that year. Among the major changes introduced in the new contract were to:

- Change the timeline for achieving certain maximum benchmark targets from one year to multiple years, as long as the DCSEU achieves the minimum targets in any given year (with the exception of the green jobs and low-income spending benchmarks, which remained annual benchmarks).
- Modify the benchmark for renewable energy generation from a measure of cost reduction to a measure of capacity increase.
- Modify the low-income benchmark to specify that not only must the DCSEU spend a certain amount of funds (the minimum target is 20%) on low-income projects but that these projects must now achieve a minimum of 5% of the total energy consumption savings attributable to DCSEU projects for that year.
- Include a \$5 million “leveraging” goal that encourages the DCSEU to raise additional funds from federal grants, private grants, the PJM Capacity Market, or other funding opportunities to support and expand the DCSEU’s programs under the contract.
- Require that the DCSEU submit a five-year strategic plan to DOEE laying out how the DCSEU will

11 “At-risk compensation” refers to the amount of the contract payment that is determined by whether the DCSEU meets, exceeds, or falls short of the minimum and maximum targets for each of the benchmarks.

12 “Non-at-risk compensation” is comprised of a fixed “operations fee” equal to 4% of reimbursed costs.

13 DC Law 20-155, FY 2015 Budget Support Act of 2014

meet its performance goals over the contract base period.

DCSEU Core Focus Areas

Commercial and Institutional. The DCSEU offers a range of programs and incentives for commercial and institutional projects, which accounted for the majority of the DCSEU's energy savings in FY 2018. Among the program offerings for commercial and institutional customers, the DCSEU offers the following:

- rebates for specific types of equipment replacements, such as lighting, HVAC, refrigeration, and food service equipment;
- custom retrofit services to provide technical assistance and rebates to large buildings installing new equipment, such as lighting, chillers, boilers, insulation, and other HVAC systems;
- new construction services to provide technical assistance and rebates for a range of HVAC, lighting, and other equipment to new facilities that intend to exceed energy code standards; and
- reducing the cost of LED lighting in the District to customers by subsidizing the suppliers, distributors, and retailers of energy efficient lighting.

Low-Income. To meet its performance benchmark for spending and energy savings associated with projects that benefit low-income households in the District, the DCSEU offers several pathways for assistance, including:

- Direct installation of energy-efficiency equipment in eligible low-income multi-family buildings, with the DCSEU paying 100% of the cost.
- Customized rebates and incentives for energy efficiency measures that are designed in consultation with the DCSEU for new or redeveloped low-income multi-family housing.
- Rebates for lighting replacement projects in low-income multi-family establishments.
- Emergency home energy equipment replacement for low-income homeowners referred to the DCSEU by the DOE Low-Income Home Energy Assistance Program (LIHEAP).

Renewable Energy. To meet its performance benchmark for increasing electricity generation from renewable energy, the DCSEU provides incentives to commercial customers to install solar panels on facilities located in the District.

Residential. Under the current five-year contract the DCSEU is rebalancing its portfolio of incentive programs to shift resources toward higher-yielding projects with commercial and institutional customers and away from single-family residential customers. One result of this shift is that the DCSEU has phased out the Home Performance with Energy Star program, which subsidized single-family residence energy audits and air sealing and insulation work. Instead, the DCSEU's residential offerings are focused on rebates for qualifying appliances and smart thermostats, and reducing the cost of LED lighting in the District to customers by subsidizing the suppliers, distributors, and retailers of energy efficient lighting.

Figure 5: DCSEU Initiatives as of March 31, 2019

| Core area | Initiative name | Description | Customer |
|-------------------------------------|--------------------------------------|---|---|
| Residential | Efficient Products | Deep discounts on LEDs with partnering retailers in DC; mail-in rebates for qualifying energy-efficient appliances | DC residents |
| Low-Income Multifamily | Low-Income Multifamily Comprehensive | Custom technical and financial assistance for energy efficiency improvements for multi-family properties | Property owners of multi-family buildings, shelters, and clinics serving incomequalified D.C. residents |
| Renewable Energy | Commercial Solar | Incentives and financing to install solar PV systems | Commercial business owners |
| | Business Energy Rebates | Rebates for energy-efficient lighting, heating, refrigeration, cooking, and other qualifying equipment | Business owners |
| | Commercial Direct Services | Direct installation of energy efficiency measures at primarily small and medium-sized commercial businesses | Business owners |
| Commercial and Institutional | Instant Business Rebates | Discounted energy-efficient lighting through CBE distributors | Business owners |
| | Commercial and Institutional Custom | Technical assistance, account management, and financial incentives for energy efficiency projects | Large commercial and institutional customers |
| | Pay for Performance | Technical assistance, and incentives for energy efficiency projects. Measures energy savings using pre- and post-project metered data rather than calculated estimates. Allows incentives for behavioral, operational, and complex mixed-measure projects | Large commercial and institutional energy users; qualified vendors |

2. Renewable Energy Portfolio Standards

As initially authorized by the Renewable Energy Portfolio Standard Act of 2004, the RPS is a set of regulatory requirements that apply to electricity suppliers in the District. These requirements specify the amount of Renewable Energy Credits (RECs)¹⁴ that electricity suppliers need to generate or purchase over the course of the compliance year. The purpose of these requirements was to promote the generation of electricity from renewable sources of energy—such as wind, solar, and landfill gas—by creating an incentive for businesses to invest in new renewable energy generation to satisfy the demand for renewable energy mandated by the regulations.

The CAEA significantly expanded the RPS requirements for electricity suppliers—both for renewable energy and for solar energy specifically derived from solar panels located within the District. The Renewable Energy Portfolio Standard Act of 2004 required that electricity suppliers purchase tier one RECs equal to 11% of the District’s annual electricity consumption by 2022 (and 0.386% from solar energy generated in the District by 2022); the CAEA required that electricity suppliers purchase RECs equal to 20% of the District’s annual electricity consumption by 2020 (and 0.4% from solar energy generated in the District by 2020).

3. Sustainable Energy Trust Fund (SETF) and Energy Assistance Trust Fund (EATF)

The CAEA established the SETF and the EATF to support the SEU contract, DOEE’s oversight of the SEU contract, the SEU Advisory Board, and the District’s energy assistance program. The SETF and EATF receive revenue from assessments on the natural gas and electric distribution companies in the District. The CAEA authorizes the electric and natural gas companies to recover the costs of the assessment through the imposition of a surcharge on customers’ bills.

Figure 6: SETF and EATF Purposes

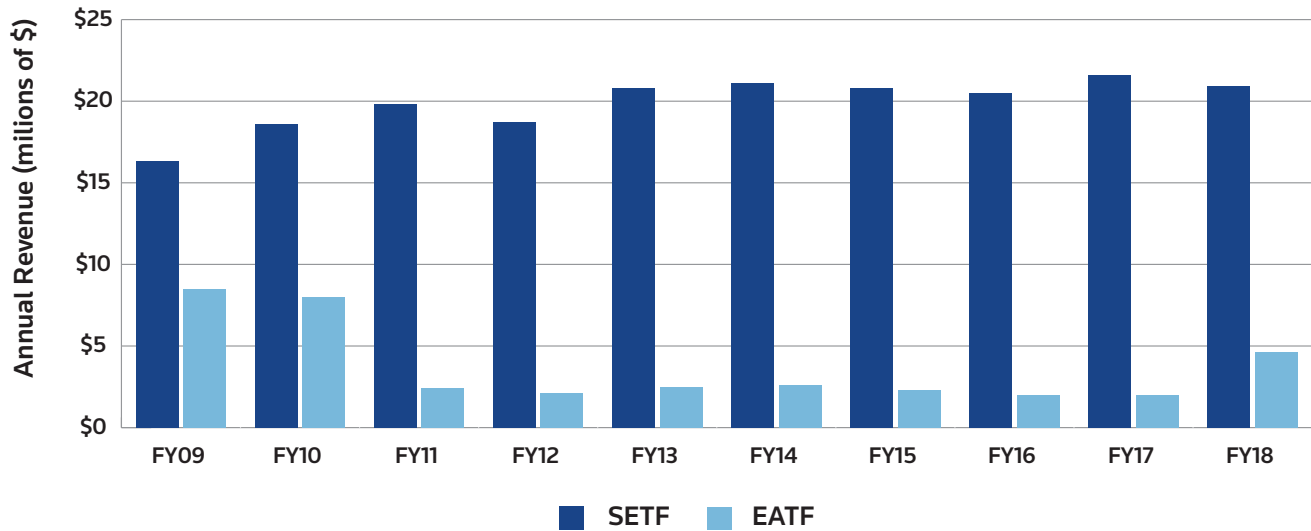
| Fund | Purpose (under current law) ¹⁵ |
|--------------------------------------|---|
| Sustainable Energy Trust Fund (SETF) | To fund the SEU contract, DOEE’s administration of the contract, and the activities of the SEU Advisory Board |
| Energy Assistance Trust Fund (EATF) | To fund the District’s Low-Income Home Energy Assistance Program (LIHEAP) |

14 The Renewable Energy Portfolio Standard Act of 2004 defined “renewable energy credit” as representing one megawatt-hour of electricity consumed within the PJM Interconnection region that is derived from a tier one renewable source or a tier two renewable source. Tier one renewable sources include but are not limited to solar energy, wind, qualifying biomass, and methane from the anaerobic decomposition of organic materials in a landfill or wastewater treatment plan. Tier two renewable sources are limited to hydroelectric power (other than pumped storage generation), waste-to-energy, and some forms of biomass. [D.C. Code § 34-1431. Definitions](#)

15 <https://code.dccouncil.us/dc/council/code/titles/8/chapters/17N>

The CAEA established the SETF and EATF as non-lapsing funds, meaning that any unspent balance remaining in the funds would carry over into subsequent fiscal years, unless the Council and the Mayor changed the law.

Figure 7: SETF and EATF Annual Revenue FY09–FY18



| | FY09 | FY10 | FY11 | FY12 | FY13 | FY14 | FY15 | FY16 | FY17 | FY18 |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| SETF | \$16.3M | \$18.6M | \$19.8M | \$18.7M | \$20.8M | \$21.1M | \$20.8M | \$20.5M | \$21.6M | \$20.9M |
| EATF | \$8.5M | \$8.0M | \$2.4M | \$2.1M | \$2.5M | \$2.6M | \$2.3M | \$2.0M | \$2.0M | \$4.6M |

Source: CAEA Q4 Reports: FY 2009 – FY 2018

4. Energy Benchmarking Requirements

The fourth major provision of the CAEA requires publicly and privately-owned buildings in the District of a certain size to submit data to DOEE on building attributes and energy performance on an annual basis. These provisions, known as building energy performance benchmarking requirements, mandate that owners of buildings 50,000 ft² or larger submit data. Building owners submit the energy performance data to DOEE using the Energy Star Portfolio Manager tool, which generates a ranking of that building’s energy efficiency relative to national averages.¹⁶ According to DOEE, the goals of the program are to help building owners understand their energy usage, assist DOEE and the DCSEU in better managing energy

¹⁶ The Energy Star Portfolio Manager tool is a software program managed by the Environmental Protection Agency and Department of Energy that allows building owners to input data on building attributes and energy consumption and generates a ranking of that building’s energy efficiency relative to national averages. <https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager>

efficiency programs, and encourage buildings to compete for tenants on the basis of energy efficiency.

The law mandated that owners of buildings 50,000 ft² or greater submit benchmarking data beginning in 2013. DOEE began enforcing compliance with the 2013 and 2014 benchmarking requirements in 2015.

5. SEU Advisory Board

To assist DOEE and the Council in its oversight of the SEU contract,¹⁷ the CAEA also established the SEU Advisory Board with a mandate to:

- Provide advice, comments, and recommendations to the DOEE and Council regarding the procurement and administration of the SEU contract.
- Advise DOEE on the performance of the SEU under the SEU contract.
- Monitor the performance of the SEU under the SEU contract.

The law stipulated that members of the SEU Advisory Board were to be appointed by either the Mayor or the Council and should represent specific industry sectors or have certain areas of expertise.¹⁸ Members are unpaid, but the law authorizes Board members to charge for expenses associated with carrying out their duties, up to \$2,000 per Board member per year.

17 DOEE subsequently created the District of Columbia Sustainable Energy Utility (DCSEU) brand for the Sustainable Energy Utility contract.

18 The law also appoints the chair of the Public Service Commission and the People's Counsel to the SEU Advisory Board.
[..\legislation\CAEA D.C. Law 17-250 AMENDED.docx](#) Sec. 204

Objectives, Scope, and Methodology

Objectives

ODCA's objectives were to:

- Assess the District's implementation of the Clean and Affordable Energy Act of 2008 (CAEA), with particular focus on six major provisions: (i) implementing the Sustainable Energy Utility contract; (ii) establishing the Sustainable Energy Trust Fund; (iii) establishing the Energy Assistance Trust Fund; (iv) expanding the Renewable Energy Portfolio Standards; (v) implementing the building energy performance benchmarking requirements; and (vi) establishing the Sustainable Energy Utility Advisory Board.
- Examine the impact of the CAEA in achieving the District's climate change goals.
- Identify changes in law, policy, or administration that could close gaps between intended outcomes of the CAEA and actual outcomes to date.

Scope

The audit scope covers the implementation of the Clean and Affordable Energy Act from its effective date (October 22, 2008) to May 3, 2018.¹⁹ Although the enactment of the CleanEnergy DC Omnibus Amendment Act of 2018 alters some elements of the District's clean energy policies, the ODCA report focuses on the District's implementation and impact of the CAEA, while identifying any gaps in current policies where the District can do more to cost-effectively reduce its contribution to climate change. ODCA concentrated its analysis of the CAEA on these six sections of the law:

- The SEU contract.
- The Sustainable Energy Trust Fund.
- The Energy Assistance Trust Fund.
- Renewable energy portfolio standards.
- Energy benchmarking requirements.
- The SEU Advisory Board.

Other provisions of the law cover the duties of the Public Service Commission and Office of the People's Counsel; net metering and interconnection rules; sub-metering; electric company incentives to save energy; the renewable energy incentive program; electric and gas company provision of energy use data; and a large-scale wind energy study. See Appendix C for a description and implementation status of each of the law's provisions.

¹⁹ ODCA held its entrance conference with DOEE on May 3, 2018.

Methodology

To complete this audit, ODCA interviewed managers and staff at the Department of Energy and Environment (DOEE) and District of Columbia Sustainable Energy Utility (DCSEU); reviewed legislation, documentation, and reports available to the public on the websites of various government agencies and academic and non-profit organizations; and conducted phone interviews and e-mail correspondence with DCSEU clients, environmental and clean energy advocacy groups, members of the Sustainable Energy Utility Advisory Board (SEUAB), and with other stakeholders such as the Office of People’s Counsel, Pepco, and the District of Columbia Public Service Commission.

This report was drafted, reviewed, and approved in accordance with the standards outlined in ODCA’s Audit Policies and Procedures.

Audit Results

Finding

The Executive Branch has complied with almost all requirements of the Clean and Affordable Energy Act of 2008.

We found that implementation of the Clean and Affordable Energy Act of 2008 (CAEA) is substantially complete. As shown in the table below, the executive branch has fulfilled the provisions of the law, with the exception of one requirement related to data collection from electric suppliers.

Figure 8: Executive Branch Compliance with Specific Requirements of D.C. Law 17–250

| Requirement | Status | Comments |
|--|------------|--|
| Major Provisions of the CAEA | | |
| Establish Sustainable Energy Utility contract | Met | The Department of Energy and Environment (DOEE) and the District of Columbia Sustainable Energy Utility (DCSEU) have met their obligations under the law, including commissioning an independent review of the annual performance and expenditures of the DCSEU. |
| Expand requirements of Renewable Energy Portfolio Standard (RPS) | Partly Met | The Public Service Commission (PSC) and DOEE have implemented the provisions related to the RPS requirements with one exception: DOEE has never collected data from electricity suppliers on the average cost of electricity by source of generation because DOEE says this information is not available to suppliers. |
| Establish Sustainable Energy Trust Fund (SETF) and Energy Assistance Trust Fund (EATF) | Met | DOEE has established the SETF and EATF as special purpose revenue funds and budgeted the requisite level of SETF and EATF funding for programs as required under the CAEA, as amended. |
| Implement requirements for Building Energy Performance Benchmarking | Met | DOEE has implemented rules requiring building owners to report energy efficiency data and engaged in compliance enforcement. |
| Establish SEU Advisory Board | Met | DOEE and the SEU Advisory Board have met their obligations under the law. |

Other Provisions of the CAEA

| | | |
|---|-----|--|
| Expand duties of Public Service Commission (PSC) and Office of the People’s Counsel (OPC) | Met | The revised definition authorized the PSC and OPC to consider “environmental quality” in making decisions. |
|---|-----|--|

| Requirement | Status | Comments |
|--|--------|--|
| Revise Net Metering and Interconnection Rules | Met | The PSC adopted changes to its rules incorporating the revision to the definition of “customer-generator.” |
| Promulgate rules for submetering of nonresidential buildings | Met | The PSC adopted the changes to rules related to submetering of nonresidential buildings. |
| Authorize Pepco to administer energy efficiency programs prior to SEU contract | Met | The PSC approved Pepco’s plan for administering energy efficiency programs with SETF funds in the period FY 2009 - FY 2010. |
| Authorize DOEE to administer incentives for installing renewable energy systems | Met | DOEE administered a program to offer incentive payments to residents and businesses installing renewable energy systems through FY 2012. |
| Require Pepco and Washington Gas to provide aggregate energy use data for every rate class for customers in the District | Met | DOEE, Pepco, and Washington Gas have fulfilled their obligations under the law. |
| Commission a feasibility study of District involvement in a large-scale wind energy project | Met | DOEE commissioned the study, which was submitted by the vendor in April 2011. |

| Requirement | Status | Comments |
|---|--------|--|
| Require the Public Service Commission (PSC) to review options for longterm financing of renewable energy and energy efficiency projects | Met | The PSC submitted the report to the Council in September 2009. |

Finding

The DCSEU has made progress in meeting its contractual performance targets, but DOEE rewards the DCSEU for energy efficiency projects that would have happened without the DCSEU’s assistance.

The CAEA requires the Department of Energy and Environment (DOEE) to establish a contract mechanism for providing energy efficiency services to District residents and businesses. Under the law, the contractor needs to meet certain performance targets to maximize its revenue and avoid penalties for underperformance. The CAEA originally established six performance goals for the contractor to achieve (which the Council subsequently modified via amendments to the law²⁰), and DOEE defines minimum and maximum targets for performance in the contract that serve as the boundaries for penalties and bonus payments.

DOEE awarded the Sustainable Energy Utility contract to the Vermont Energy Investment Corporation²¹ in FY 2011. The company branded its new operation the District of Columbia Sustainable Energy Utility (DCSEU), which began operations in the District that year.

The DCSEU has made progress toward meeting the goals and targets laid out by the statute and DOEE. In FY 2012, the DCSEU’s first full-year year of operation, the DCSEU achieved two of the seven minimum performance targets. In FY 2016, under the last full-year of performance under the original contract with DOEE, the DCSEU achieved five out of five minimum performance targets and one of the five maximum performance targets.²²

20 The FY16 Budget Support Act included a provision to eliminate the requirement that the DCSEU meet minimum performance targets for reducing the growth in peak electricity demand and for reducing the growth of energy demand from the District’s largest users. Instead, the DCSEU would merely have to report this data to DOEE on an annual basis.

21 The Vermont Energy Investment Corporation (VEIC) operates nine organizations across North America, including energy efficiency utilities, information resource centers, and related subsidiaries. In 2000, the State of Vermont awarded VEIC a contract to operate Efficiency Vermont, an energy efficiency utility that provides energy efficiency services to Vermont residents and businesses. <https://www.veic.org/company/brands>, <https://www.encyvermont.com/about/history>

22 As described in footnote 19, the FY16 Budget Support Act the Council amended the CAEA to convert two of the original seven targets into “tracking” benchmarks that the DCSEU was no longer contractually required to meet.

Figure 9: FY12 DCSEU Performance Benchmarks - Results (Original Contract)

| Item | Benchmark | Metric | Minimum Performance Target Achieved | Maximum Performance Target Achieved |
|------|--|--|-------------------------------------|-------------------------------------|
| 1a | Reduce per-capita energy consumption - electricity | Megawatt-hr (MWh) | No | No |
| 1b | Reduce per-capita energy consumption - natural gas | Mcf ²³ | No | No |
| 2 | Increase renewable energy generating capacity | SCT > 1 ²⁴ | No | N/A ²⁵ |
| 3 | Reduce growth in peak demand | Kilowatt (kW) | Yes | No |
| 4 | Improve energy efficiency in low-income housing | Percent of annual DCSEU spending from the SETF ²⁶ | Yes | No |
| 5 | Reduce growth in energy demand of largest users | # of projects with >200,000 sq.ft. | N/A ²⁷ | N/A |
| 6 | Increase number of green-collar jobs | Green job FTEs (DC residents) ^{28, 29} | No | No |

23 The abbreviation Mcf stands for one thousand cubic feet of volume (of natural gas).

24 For FY 2012 the minimum performance target for the renewable energy program required the DCSEU to demonstrate that its program was cost effective, based on the Societal Cost Test (SCT). For the benefits of the renewable energy program to outweigh the costs using the SCT, the program's SCT score must be greater than 1.

25 DOEE did not establish a maximum performance target for this benchmark in FY12.

26 The contract stipulated that DCSEU must dedicate a minimum percentage of its annual spending to "improving the energy efficiency and renewable energy generating capacity of low-income housing, shelters, clinics, or other buildings serving low-income residents of low-income housing in all eight wards of the District."

27 DOEE did not establish a minimum performance target for this benchmark in FY12.

28 A 2014 contract modification allowed the DCSEU to count \$200,000 of direct cash incentives as the equivalent of 1 FTE for this benchmark (in addition to counting actual FTEs).

29 The contract stipulated that DCSEU must dedicate a minimum percentage of its annual spending to "improving the energy efficiency and renewable energy generating capacity of low-income housing, shelters, clinics, or other buildings serving low-income residents of low-income housing in all eight wards of the District."

Figure 10: FY16 DCSEU Performance Benchmarks - Results (Original Contract)

| Item | Benchmark | Metric | Minimum Performance Target Achieved | Maximum Performance Target Achieved |
|---|--|--|-------------------------------------|-------------------------------------|
| 1a | Reduce per-capita energy consumption - electricity | MWh | Yes | No |
| 1b | Reduce per-capita energy consumption - natural gas | Mcf | Yes | No |
| 2 | Increase renewable energy generating capacity | \$/kWh | Yes | No |
| 4 | Improve energy efficiency in low-income housing | Percent of annual DCSEU spending from the SETF ²⁸ | Yes | No |
| 6 | Increase number of green-collar jobs | Green job FTEs (DC residents) | Yes | Yes |
| Additional Tracking Performance Benchmarks | | | | |
| 3 | Reduce growth in peak demand | kW | N/A | N/A |
| 5 | Reduce growth in energy demand of largest users | # of projects with >200,000 sq.ft. | N/A | N/A |

In FY 2017, DOEE awarded the Vermont Energy Investment Corporation a new contract to operate the DCSEU with a base period of performance spanning five fiscal years. The contract updated the baseline used to track changes in energy consumption in the District to use 2014 rather than 2009 consumer data, which means that it is not possible to directly compare the DCSEU's performance under the new contract with its performance under the original contract on the basis of how many minimum and maximum targets the DCSEU achieved. For FY 2018, the most recent year for which verified data is available, the DCSEU achieved six out of six targets for minimum performance (and three out of five targets for maximum performance).

Figure 11: FY18 DCSEU Performance Benchmarks - Results (Current Contract)

| Item | Benchmark | Metric | Minimum Performance Target Achieved | Maximum Performance Target Achieved |
|---|---|--|-------------------------------------|-------------------------------------|
| 1a | Reduce energy consumption - electricity | MWh | Yes | Yes |
| 1b | Reduce energy consumption - natural gas | Therms | Yes | Yes |
| 2 | Increase renewable energy generating capacity | kW ³⁰ | Yes | Yes |
| 4 | Improve energy efficiency in low-income housing | Percent of annual DCSEU spending from the SETF ³¹ | Yes | N/A |
| | | MMBTU | Yes | No |
| 6 | Increase number of green-collar jobs | Green job FTEs (DC residents) | Yes | No |
| Five-Year Cumulative Target | | | | |
| | Leverage External Funds | \$ | N/A | N/A |
| Additional Tracking Performance Benchmarks | | | | |
| Item | Benchmark | Metric | Peak Demand Savings | Number of Completed Projects |
| 3 | Reduce growth in peak demand | kW | N/A | N/A |
| 5 | Reduce growth in energy demand of largest users | # of projects with >200,000 sq.ft. | N/A | N/A |

30 The current contract allows the DCSEU to measure the increase in capacity in terms of kilowatts (kW) or kilowatt-equivalents (kWe).

31 The contract stipulated that DCSEU must dedicate a minimum percentage of its annual spending to “improving the energy efficiency and renewable energy generating capacity of low-income housing, shelters, clinics, or other buildings serving low-income residents of low-income housing in all eight wards of the District.”

The preceding figures indicate that the DCSEU has shown improvement over the period FY 2012-FY 2018 in its ability to meet the minimum and maximum targets. But evaluating the DCSEU’s performance trajectory over its almost eight years of operation is complicated by the fact that the DC Council made changes to the statutory goals and DOEE allowed changes to the maximum and minimum targets that the DCSEU had to meet. Thus, shifting goalposts means that the DCSEU’s performance is not accurately captured purely on the basis of how many minimum and maximum targets met. The DC Council amended the CAEA in FY 2016 to convert two of the original statutory goals into “tracking” benchmarks, meaning that DOEE would not use the DCSEU’s performance on these goals to determine the DCSEU’s total compensation.³² DOEE also allowed for changes to the targets associated with specific statutory goals.³³ Although the original contract specified a goal for the DCSEU to reduce electricity consumption each year of the contract by 1% of 2009 weather-normalized total electricity consumption in the District, in practice the DCSEU never had to meet this target, because DOEE reduced the maximum target to an annual reduction of 0.75% in FY 2012, and to 0.85% in FY 2013–FY 2016.³⁴

DOEE officials pointed to several extenuating circumstances to explain its rationale for granting these and other changes to the DCSEU’s performance criteria. First, in the case of converting two of the original goals to tracking benchmarks, the Council enacted legislation as part of the FY 2016 Budget Support Act to effect this change, with the stated goal of “giving DOEE more flexibility in setting the performance benchmarks of the SEU contract to facilitate the most efficient use of SEU funds.” Second, in considering whether to hold the DCSEU to the 1% annual reduction target specified in the original contract, DOEE determined that the performance target was not feasible given DCSEU’s funding level. According to Lance Loncke, Associate Director for DOEE’s Energy Administration, the 1% target would have been appropriate if the budget were at least \$20 million per year, but the contract did not provide that level of funding until FY 2014. However, even when the DCSEU’s funding level rose to \$20 million in FY 2014 and subsequent years under the original contract, DOEE chose to keep the target for the annual percentage reduction in energy consumption at 0.85%.

Figure 12: DCSEU Contract Funding FY 2011–FY 2018

| FY 2011 | FY 2012 | FY 2013 | FY 2014 | FY 2015 | FY 2016 | FY 2017 | FY 2018 |
|---------|---------|---------|---------|---------|---------|---------|---------|
| \$7.5M | \$15M | \$17.5M | \$20M | \$20M | \$20M | \$20M | \$20M |

32 The FY16 Budget Support Act included a provision to eliminate the requirement that the DCSEU meet minimum performance targets for reducing the growth in peak electricity demand and for reducing the growth of energy demand from the District’s largest users. Instead, the DCSEU would merely have to report this data to DOEE on an annual basis.

33 DOEE stated that when the agency makes changes to the DCSEU’s performance targets, “they are often initiated by VEIC, who must explain why the existing targets are too aggressive. Ultimately, DOEE makes the decision to change targets.”

34 DOEE set the minimum targets for this benchmark even lower. Instead of meeting a 1% target, the DCSEU could say they met their minimum target if they achieved a 0.375% reduction in electricity consumption in FY12, and a 0.425% reduction for FY13-FY16.

Uncertainty Regarding Attribution of Energy Savings

Understanding the impact of the DCSEU's programs is further complicated by evidence from interviews with DCSEU clients that many projects receiving DCSEU rebates would have happened anyway as planned even without the rebates and assistance from the DCSEU. Many of the DCSEU clients that the audit team spoke with appreciated the rebates because they helped to offset a portion of the cost of the energy efficiency upgrades. However, these clients stated that a majority of the projects would have proceeded without the DCSEU's assistance and that the involvement of the DCSEU did not lead to additional energy efficiency improvements beyond the clients' original plans.

To put this issue in context, all energy efficiency incentive programs face the challenge of assessing how much of the program's work actually results in an outcome different than what would have occurred in the absence of the incentive. In the world of energy efficiency, a "free rider" is a participant who accepts an incentive but who was planning to make the same level of energy efficiency improvement anyway. Evaluating the level of free-ridership is a complex task, often involving the use of participant surveys to quantify the likelihood that the incentive altered the energy efficiency outcome.

In examining the free ridership associated with the DCSEU, the audit team sought to understand several relevant factors:

- The significance of the testimonial evidence from program participants.
- The mechanisms by which the DCSEU and its evaluators measure free ridership.
- DOEE's use of free ridership data in managing and evaluating the DCSEU's performance.
- Other states' approaches to managing free ridership that DOEE or DCSEU could adopt that would result in more effective use of program funds.

The audit team interviewed current and former DCSEU commercial clients to determine how many indicated that they would have moved ahead with the energy efficiency project even in the absence of DCSEU rebates and other support. DCSEU commercial clients are generally landlords and building owners who are considering making improvements to the energy efficiency of their buildings.³⁵ Of the 12 DCSEU clients that the audit team spoke with, eight indicated that they would have undertaken much of the energy efficiency work without DCSEU rebates, and four indicated that the rebates contributed to the decision to commit to the work. As one example, the audit team spoke with energy efficiency managers at JBG Smith,³⁶ who told the audit team that working with the DCSEU had not pushed the company to do more than they had planned to do in terms of energy efficiency measures. "For the most part the projects were planned capital projects, and the incentive made the project look better [financially]. That said, [JBG Smith] is focused on energy efficiency."

Assessing the significance of the testimonial evidence can be tricky, however, because in some cases clients may have an interest in enhancing their corporate or institutional reputation by indicating that

³⁵ See Background section for descriptions of DCSEU programs. The audit team identified DCSEU commercial clients by requesting interviews with representatives from major commercial property managers in the District. The audit team also identified DCSEU clients via referrals from the Apartment and Office Building Association of Metropolitan Washington (AOBA) and via referrals from the DCSEU.

³⁶ JBG Smith manages 155 buildings and 28.5 million square feet in the Washington region.

maximizing energy efficiency aligns with organizational policy. To balance this perspective, the audit team sought to understand how DOEE evaluates the level of free ridership in DCSEU programs and incorporates this information into its assessment of the DCSEU's performance. As part of the annual Evaluation, Monitoring, and Verification (EM&V) process, which is a requirement under the CAEA, DOEE pays a contractor to verify the accuracy of the DCSEU's performance data and to assess the overall cost-effectiveness of DCSEU programs. This cost-effectiveness assessment relies on the Societal Cost Test, which estimates whether the energy savings and environmental and health benefits of the DCSEU programs outweigh the program costs.³⁷ As part of its assessment the contractor incorporates estimates of free ridership and spillover effects into the Societal Cost Test calculations. The DCSEU's EM&V contractor last updated the estimates for free ridership and spillover effects in 2018.³⁸

Free ridership is the proportion of participants who would have implemented the program measure within a specified period, at the same efficiency level and scope, and in the absence of the program. The survey instrument for each of the evaluated programs estimated free-ridership based on two key components: the intention or the expected behavior in the absence of the program, and the influence of various program features on the decision to participate in the program. Spillover is defined as estimated energy efficiency improvements that are induced just by the existence of the program but are not captured by the program's tracking of energy savings.

DOEE does not, however, require that the DCSEU or the EM&V analysis factor in free ridership and spillover effects in measuring the DCSEU's progress toward meeting its annual contractual performance targets. Instead, DOEE measures the DCSEU's performance on the basis of "gross" energy savings—meaning that DOEE does not attempt to discount the energy savings that would have happened anyway. This means that the contract's incentive structure makes no distinction between energy savings attributed to the DCSEU and energy savings that would have happened anyway. Tying the DCSEU's compensation to gross energy savings introduces uncertainty regarding the degree to which the DCSEU is actually responsible for those energy savings. Furthermore, the DCSEU acknowledges that there is no pressure to minimize free ridership under the contract.

The FY 2018 EM&V analysis indicates that free ridership is substantial in certain DCSEU programs. In fact, the table below indicates that free ridership is substantial in precisely the group of programs that are responsible for the bulk of the energy savings that the DCSEU counts toward its performance targets. For example, as shown below, the DCSEU's Retrofit – Custom program accounts for about 44% of the gross energy savings—i.e. before subtracting the savings from free riders—attributed to all of the DCSEU's activities for FY 2018. At the same time, the FY 2018 EM&V analysis estimates 56% free ridership in the Retrofit – Custom program and minimal spillover effects. At this level of free ridership, over half of the energy savings attributed to the Retrofit – Custom program are likely to have happened anyway, even in the absence of DCSEU's rebates and incentives. Under the contract, however, the DCSEU is allowed to

37 The CAEA uses the term "societal benefit test," the report uses the term "societal cost test" because it appears more broadly in the literature.

38 The contractor performing the evaluation, monitoring, and verification of the DCSEU's performance for FY 2018 included updated estimates of free ridership for use in calculating what is known as "net-to-gross" adjustments to the Societal Cost Test of the DCSEU's programs.

take credit for all of the gross energy savings toward meeting its energy savings targets, regardless of the free ridership estimates. The gross savings generated from DCSEU programs with high free ridership are substantial: Together, the Retrofit – Custom and New Construction – Custom³⁹ programs account for 61% of the total FY18 energy savings, and have free ridership estimates of 56% and 61%, respectively, as shown in the table below.

Figure 13: Free Ridership and Spillover Estimates for DCSEU Programs, Ranked by Energy Savings

| DCSEU Program | Percent of FY 2018 Gross Energy Savings (MMbtu) | Free Ridership | Spillover | Year Assessed |
|---|---|----------------|--------------|--------------------|
| Retrofit—Custom | 44.3% | 56% | 1% | FY 2018 |
| New Construction—Custom | 16.5% | 61% | 7% | FY 2018 |
| Commercial and Institutional (C&I Rx) Equipment Replacement Rebates | 13.2% | 35% | 1% | FY 2018 |
| Retail Lighting | 7.6% | 49% | Not Assessed | FY 2013 |
| Commercial Upstream Lighting ⁴⁰ | 4.2% | 15% | 0% | FY 2018 Lit Review |
| Retail Smart Thermostats | 3.5% | 33% | 2% | FY 2018 |
| Low-Income Multifamily Comprehensive | 2.4% | 18% | 0% | FY 2013 |
| Low-Income Prescriptive Rebate | 2.0% | 0% | 0% | Assumed |
| Solar PV Market Rate | 1.5% | 0% | 0% | FY 2018 |

Source: Third party evaluations of DCSEU performance

39 The Retrofit – Custom program provides incentives to owners of large buildings to replace equipment with more efficient equipment or make operational changes to the facility that would result in energy savings. The New Construction – Custom program provides incentives to building owners who build new facilities that exceed energy code standards.

40 The FY 2018 DCSEU EM&V Program Evaluation Report states on p. 109 that the evaluators performed a literature review to inform their net-to-gross estimate of 0.85 for the commercial upstream lighting program. Because $[\text{net-to-gross}] = 1 - [\text{free ridership}] + [\text{spillover}]$, the audit team is assuming that free ridership is approximately 15% and spillover is approximately zero.

The District is not alone in relying on gross energy savings as the basis for measuring the performance of energy efficiency incentive programs, but this is only practiced by a minority of states. A 2014 report by the American Council for an Energy-Efficient Economy found that more than half of all state energy efficiency programs use net energy savings “when quantifying and reporting energy efficiency program savings,” and that about a quarter of state energy efficiency programs rely only on gross energy savings for this purpose. DOE’s use of gross energy savings also differs from the practice of some comparable programs. Of the eight states listed in the Clean Energy DC Plan for the purpose of comparison with the DCSEU (see tables below), six rely on net energy savings to measure the performance of state energy efficiency programs: Massachusetts, Rhode Island, Vermont, Illinois, New York, and Michigan.

DCSEU Compares Well on the Basis of Acquisition Cost Effectiveness

Obtaining an accurate picture of the DCSEU’s performance also involves understanding how the program compares to its peers on the basis of cost effectiveness. Energy efficiency programs define cost effectiveness as the amount of energy savings achieved per dollar of program spending. Other states’ energy efficiency programs have achieved significantly greater annual energy savings as a percentage of state retail electricity sales than the DCSEU has achieved. However, these states also invested significantly more ratepayer funds than the District has, as a percentage of electric utility revenues.

The table below compares the DCSEU’s electricity and natural gas energy efficiency programs to peer states on the basis of acquisition cost-effectiveness using data taken from the Clean Energy DC Plan. Acquisition cost-effectiveness is a measure of the first-year costs of the energy efficiency measure compared to the resulting first-year gross energy savings. As the tables indicate, the DCSEU’s performance on the basis of acquisition cost effectiveness compares well in the sample of state energy efficiency programs reviewed in the Clean Energy DC Plan.

Figure 14: Spending and Savings on Energy Efficiency in Electricity in Selected States, 2016^a

| State | 2016 Spending on Energy Efficiency Programs (% of Electric Utility Revenues) | 2016 Savings From Electric Efficiency Programs (Net Incremental Savings as a % of Retail Sales) | Rank Among States—2016 Electricity Savings | Acquisition Costs (\$ Spent per MW-hr of Savings)^b |
|---------------|---|--|---|--|
| Massachusetts | 6.25% | 3.00% | 1 | \$343.32 |
| Rhode Island | 6.42% | 2.85% | 2 | \$365.79 |
| Vermont | 6.84% | 2.52% | 3 | \$390.40 |
| Illinois | 2.05% | 1.23% | 11 | \$153.07 |
| New York | 2.00% | 1.09% | 15 | \$265.77 |

| | | | | |
|----------------------|-------|-------|----|----------|
| Maryland | 2.49% | 0.91% | 17 | \$333.20 |
| District of Columbia | 0.96% | 0.65% | 23 | \$176.13 |

^a ACEEE 2017 State Energy Efficiency Scorecard

^b DOEE calculated this column. The levelized cost of saved energy would be a better comparison metric, but could not be calculated with the data available.

Source: Clean Energy DC Plan 2018

Figure 15: Spending and Savings on Energy Efficiency in Natural Gas in Selected States, 2016^c

| State | 2016 Spending on Energy Efficiency Programs (Dollars Per Residential Customer) | 2016 Savings from Natural Gas Efficiency Programs (Net Incremental Savings Achieved as a % of Retail Sales) | Rank Among States—2016 Natural Gas Savings | Acquisition Costs (\$ Spent Per Therm of Savings) ^d |
|----------------------|--|---|--|--|
| Minnesota | \$35.94 | 1.40% | 1 | \$1.76 |
| Rhode Island | \$104.09 | 1.26% | 2 | \$5.89 |
| Massachusetts | \$136.52 | 1.13% | 3 | \$7.39 |
| Michigan | \$24.95 | 1.05% | 4 | \$1.55 |
| Vermont | \$63.73 | 0.75% | 10 | \$3.68 |
| District of Columbia | \$36.95 | 0.33% | 22 | \$5.19 |
| Maryland | \$14.37 | 0.10% | 30 | \$9.88 |

^c ACEEE 2017 State Energy Efficiency Scorecard

^d DOEE calculated this column. The levelized cost of saved energy would be a better comparison metric, but could not be calculated with the data available.

Source: Clean Energy DC Plan 2018

Understanding what it means for the DCSEU to perform well relative to its peers on the basis of acquisition cost effectiveness requires putting this measure in context. Acquisition cost effectiveness allows for a simple comparison across states' energy efficiency programs—avoiding problems with differing assumptions about longer-term costs and energy savings. And most state energy efficiency programs measure performance on the basis of first-year energy savings, rather than attempting to sum the lifetime energy savings for each measure.

But acquisition cost is not the only measure of cost effectiveness; nor is it the most robust. The American Council for an Energy-Efficiency Economy (ACEEE) recommends comparing programs on the basis of levelized cost⁴¹ because it provides a better measure of the costs and benefits of the program's activities over the lifetime of the energy efficiency improvement. In contrast, acquisition cost, because it only accounts for first-year costs and benefits, would reward a program that emphasized energy efficiency measures with front-loaded savings (e.g. lighting replacements) at the expense of costlier measures with greater energy savings over time (e.g. boiler replacements). That the DCSEU compares well on the basis of cost effectiveness is laudable but does not indicate that the DCSEU is maximizing long-term energy savings per dollar spent.

It is also important to recognize that acquisition cost effectiveness does not account for free ridership and spillover. Because acquisition cost effectiveness is calculated using gross energy savings, a program with higher rates of free ridership will look better in terms of acquisition cost effectiveness than a peer with lower rates of free ridership. Judging how the DCSEU compares to its peers on the basis of free ridership is difficult, however, because the available data from other states includes a significant level of variability. Based on the free ridership and net-to-gross factors included in Table 93 of the FY 2018 EM&V report, we were not able to come to any conclusions regarding how the DCSEU compares to its peers on the basis of free ridership.

In weighing the available evidence, ODCA concludes that DOEE has an obligation to make better use of ratepayer funding by reducing the amount of DCSEU spending for projects that are likely to have happened anyway. Because the evidence indicates that free ridership is significant, DOEE should take steps to discourage or reduce the incentive for the DCSEU to pursue projects that are likely free riders. Even if the DCSEU's programs compare well on the basis of acquisition cost effectiveness, the fact remains that District ratepayers are not getting best value for their funding if the DCSEU is rewarded equally for energy savings that are likely to have occurred anyway. To the extent the DCSEU and DOEE can reduce free ridership via contract mechanisms and program design ODCA recommends that they do so.

41 According to ACEEE, the levelized cost of saved energy is a better measure than first-year acquisition cost for comparing energy efficiency to other energy resource options. Levelized means that upfront costs are amortized over the lifetime of a measure at an assumed real discount rate. Calculating the levelized utility cost of saved energy requires data on annual program costs, net energy savings, and measure lifetime.

Recommendation 1

DOEE should modify the incentives for the DCSEU to reward interventions that lead to additional energy savings and GHG emissions reductions and limit the amount of DCSEU spending on projects with energy savings that would have occurred even without the DCSEU's involvement.

Aligning the DCSEU's Performance Goals with the District's Climate Change Strategy

In June 2008, when the Committee on Public Services and Consumer Affairs recommended that the Council adopt the Clean and Affordable Energy Act (CAEA) of 2008, the Committee report said the goal was “to reduce the District’s dependence on fossil fuel-based energy, thereby reducing the emission of carbon dioxide and other pollutants, and at the same time saving District consumers money on their utility bills.” Since that time the District’s energy and environmental policy has gradually shifted to focus more intently on addressing the District’s contribution to climate change. Among other actions and statements of policy, DOEE created the Clean Energy DC Plan to fulfill Mayor Muriel Bowser’s December 2017 pledge to cut the District’s GHG emissions 50% by 2032.⁴² In evaluating the implementation of the CAEA, Councilmember Cheh asked ODCA to “review the overall effectiveness of the Act in reducing the District’s contribution to climate change thus far and potential to reduce it further in the future.”⁴³

Given the District’s priority on reducing the District’s contribution to climate change, the DCSEU’s performance goals and targets would ideally focus on maximizing reductions of GHG emissions from activities in the District. However, the CAEA directed DOEE to establish performance goals and targets on the basis of energy savings, rather than GHG reductions. In many situations these energy savings lead directly to GHG reductions.⁴⁴ Early replacement of a natural gas boiler for building heating with a high-efficiency model will result in energy savings—and a reduction in CO₂ emissions from the building—assuming all other factors remain constant (including the temperature set points in the building).

Maximizing energy savings may not always maximize GHG reductions, however. If the District’s strategy to reduce GHG emissions depends on a gradual shift toward utilizing electricity that is generated from power plants that produce no GHG emissions, it would make sense for the DCSEU to create incentives for District residents to replace natural gas appliances with electrical appliances. This would make sense even when the natural gas appliance uses less total energy compared to an electrical appliance. For example, in terms of the energy required to heat a home for a year, in some regions a natural gas appliance may actually be more efficient than an electric appliance, depending on how efficiently the electricity is generated and other factors. But if the electricity from the grid is derived from generation sources that do

42 <https://doee.dc.gov/service/climate-change> lists several of the documents that illustrate how the District is focusing more intently on climate change. In 2012, the District released the Sustainable DC plan, which includes a pledge to reduce greenhouse gas emissions by 50% below 2006 levels by 2032. In 2016, the District released Climate Ready DC, a plan to adapt to climate change. And in December 2017, Mayor Bowser pledged to make the District carbon neutral and climate resilient by 2050.

43 See Councilmember Cheh’s letter requesting the audit, which is included as Appendix C.

44 Any action to reduce the amount of fossil fuel that is combusted will result in a decrease in CO₂ emissions. https://www.energystar.gov/about/about_energy_efficiency

not produce CO₂, it is better from a climate change perspective to switch out the natural gas appliance for the electrical appliance.

To a limited degree the District is already making changes to the law that remove obstacles to the DCSEU's ability to prioritize GHG reduction in pursuing their existing performance targets. A provision in the CleanEnergy DC Omnibus Amendment Act of 2018 amends the CAEA to allow the DCSEU greater discretion in how it spends the combined revenue from the assessments on the gas and electricity suppliers to meet its performance goals and targets.⁴⁵ In theory, this change to the law would allow the DCSEU greater flexibility in creating incentives for District residents and businesses to switch out natural gas appliances for electrical appliances—if that action helped the DCSEU meet its performance targets. At this point, however, the DCSEU's performance goals and targets remain focused on energy savings; establishing performance goals and targets in terms of GHG emissions would more directly tie the DCSEU's actions to the District's climate change priorities.

Recommendation 2

DOEE should align the DCSEU performance benchmarks and targets with the District's climate change strategy by prioritizing GHG reductions versus energy savings.

Establishing a "One-Stop-Shop" for Energy Efficiency Services, Incentives, and Loans

There is a consensus among DCSEU stakeholders and other experts in the field of energy efficiency that it is a best practice to provide a single portal for residents and businesses to learn about and access energy efficiency services. It is also a best practice to closely coordinate the administration of these programs. However, currently in the District there is no customer-facing "one-stop-shop" because multiple entities offer energy efficiency services and DOEE faces challenges in coordinating their activities.

The authors of the CAEA appear to have envisioned that the DCSEU would serve as that one-stop-shop. Sec. 206 of the CAEA requires that DOEE determine a brand name "for the provision of energy efficiency and renewable energy services in the District..." and establish a web site for the brand that would "serve as a portal that will provide information about every energy efficiency and renewable energy program available to District residents and businesses," including programs offered by entities other than the sustainable energy utility, such as by the federal government or other contractors and non-profits. Currently, however, DOEE's website on "Energy in the District" provides links to the purveyors of energy efficiency and renewable energy services available to District residents and businesses. The DCSEU's website describes the services available through the DCSEU only.

Regardless of which entity maintains the single portal or website that serves as a clearinghouse for information, the concept of the one-stop-shop also includes providing customers with a framework for

⁴⁵ The CAEA included a requirement that the DCSEU must spend most (75%) of the funding derived from the assessment on gas bills toward natural gas energy efficiency programs, and most (75%) of the funding derived from the assessment on electric bills toward electric energy efficiency programs.

seamlessly navigating and interacting with the various entities offering energy efficiency and renewable energy services. On this point, we identified shortcomings in how the various components of the District's energy efficiency programs coordinate with one another. For example, the administration of energy efficiency programs and loans is split between the DCSEU and another contractor running the Property Assessed Clean Energy (DC PACE) program. In theory, DC PACE's ability to arrange low-cost financing for eligible properties and DCSEU's rebates should perfectly complement each other. For an eligible retrofit project, the DCSEU would offer rebates and other incentives to encourage the project owners to make energy efficiency improvements that exceed the requirements of the building code, and DC PACE would provide low-cost financing that the property owner repays through their property tax bill. In practice, the DCSEU does not have a strong incentive to recruit clients for DC PACE's low-cost financing because the additional financing does not count toward achieving the DCSEU's performance benchmark targets.

The audit team identified opportunities for improving coordination between the DCSEU and the District's other energy efficiency programs, as well as between the DCSEU and the various government agencies that interact on a regular basis with potential clients of the DCSEU. The Department of Housing and Community Development and the DC Housing Financing Agency provide funding and related assistance to developers of affordable housing projects; the DCSEU often pursues these same developers as potential clients in order to meet its performance targets related to improving energy efficiency in low-income housing. Likewise, the Department of Consumer and Regulatory Affairs administers a single portal for applying for construction permits, but developers and project managers do not learn about the District's energy efficiency programs through this process. Specifically, DCRA's building permit services are not integrated with offerings from the DCSEU and DC PACE and while DCRA's website links to a page for the DCRA Green Buildings Division that link does not mention energy services available through DOEE, DC PACE, or the DCSEU.

As the leading authority on energy and environmental issues for the District, DOEE's responsibilities include developing energy and environmental policies and working with other government agencies to promote environmentally-responsible behavior. However, in 2018 the Council passed the Green Finance Authority Establishment Act of 2018, which created a new, quasi-independent governmental entity to assume responsibility for offering low-cost (subsidized) loans to homeowners and building owners for the purpose of leveraging private investment in making energy efficiency and stormwater management improvements.

Under the Green Finance Authority Establishment Act the Green Bank was authorized to begin receiving start-up funding in FY 2018. Starting in FY 2020 the Green Bank is to be supported by ratepayer fees through the Sustainable Energy Trust Fund as authorized by the CleanEnergy DC Omnibus Amendment Act of 2018. As envisioned in the authorizing legislation, the Green Finance Authority, or Green Bank, will have a central role in facilitating financing for energy efficiency improvements in the District, essentially acting as a one-stop-shop for financing energy efficiency projects. Given these responsibilities, the Green Bank represents a possible vehicle for consolidating the customer interface and overall administration and coordination of loans, rebates, and related energy efficiency services offered by the District Government.

DOEE officials acknowledge that the Green Bank is well-positioned to provide a single customer interface for the District's energy efficiency programs and that the Green Bank has the potential in the long term

to serve as an effective administrator and coordinator of the District’s energy efficiency programs, including some portion of the DCSEU’s current functions. In fact, DOEE’s initial planning for the Green Bank incorporates DC PACE under the suite of programs offered by the Green Bank. Just as with DC PACE, the DCSEU’s rebates would complement the Green Bank’s planned financing offerings. However, DOEE officials noted that the Green Bank is designed to operate quasi-independently from DOEE—the DOEE Director is on the Green Finance Authority Board as a non-voting member—and therefore any DCSEU functions transferred to the Green Bank would no longer be under the direct control of the Mayor. DOEE is currently in a position to help shape the programs and responsibilities of the Green Bank in accordance with the law, having assigned two employees to facilitate the Green Bank’s launch.

Recommendation 3

The Mayor and the D.C. Council working with DOEE should consolidate the administration of energy efficiency services, potentially under the Green Finance Authority, to create a single portal, or “one-stop-shop” for consumers.

The DCSEU’s Value to Ratepayers Depends on Whether Program Goals are Ambitious

Evaluating the effectiveness of the DCSEU also involves considering whether there are any flaws in the framework of the performance contract or DOEE’s oversight of the contract. For example, DOEE has faced pressure to address the appearance of extravagant spending by the DCSEU on administrative costs and overhead. *The Washington City Paper* ran several articles in 2017 that described examples of spending by the DCSEU that were cited as evidence the DCSEU was wasteful of ratepayer funding—meals for staff, subcontracts with a lobbyist. Partly in response to these reports, the D.C. Council Committee on Transportation and the Environment requested that the DCSEU explain and justify these expenditures in Council agency performance and budget oversight hearings.

To address the Council’s concerns, DOEE introduced new provisions in the current five-year contract for FY 2017 – FY 2021 to define limits as to the level and types of expenditures that the DCSEU could categorize as administrative. The new contract places a cap on “general and administrative costs” of 20% of the cost reimbursement ceiling for each fiscal year and includes a policy for determining which costs can be categorized as “general and administrative.”⁴⁶ In the first contract there was neither a cap nor a strict definition of administrative costs.

But restricting spending on administrative costs, while positive, does not address the question of whether the contract has established ambitious performance targets for the given level of funding. As even the DCSEU has acknowledged, there is a gray area with respect to what should count as direct program costs versus administrative costs, and under the current contract the DCSEU would have the incentive to

⁴⁶ “General and administrative costs” are defined as supporting multiple programs or the overall operation of the DCSEU. In contrast, “direct costs” are relate to a specific program or activity. (Appendix J.15, p. 108-113).

maximize direct program costs to keep administrative costs under the 20% cap. Under the framework of a performance contract, administrative expenses should not register as problematic unless the contractor is having difficulty achieving its performance targets. Alternatively, the magnitude of these expenses could be a problem if the contractor was having no difficulty in meeting its performance targets. Either way, the performance contract is supposed to provide the contractor with a certain degree of latitude in how to implement the programs, with the agency overseeing a rigorous system of accountability based on the contractor's success in meeting sufficiently ambitious performance targets. If the performance targets are ambitious for the total level of contract funding, the DCSEU would have a built-in incentive to minimize unproductive administrative costs.

Establishing an effective system of performance management is a challenge for any government program; setting achievable yet ambitious performance targets is particularly important when the contractor's compensation depends on meeting them. In attempting to evaluate the impact of the DCSEU over the eight-years of the contract, the audit team looked at various metrics for measuring program performance, such as cost effectiveness relative to comparable programs in other states and progress towards meeting the performance targets established by DOEE in the contract. These metrics and the third-party annual performance evaluations offer different angles for gauging the DCSEU's performance but do not allow for a strict determination of whether the performance goals and targets are sufficiently ambitious.

DOEE officials argue that the performance targets are ambitious because the agency worked with independent contractors—Jerome Paige and Associates in 2010 and 2013 and BDA Global in 2015—to evaluate the targets and recommend adjustments, and because the DCSEU's programs are relatively cost effective. It is worth noting, however, that the 2010 review by Jerome Paige and Associates did not justify its recommendations for energy savings targets on the basis of whether they were sufficiently aggressive or ambitious. The report does not include any statement of what DOEE asked the contractor to accomplish via the report. In the discussion of the "reduce per capita energy consumption benchmark" the report states why the targets should be set in terms of total energy consumption rather than per capita consumption but does not justify its recommendation for energy savings targets on the basis of whether they are sufficiently aggressive or ambitious.⁴⁷

Likewise, the 2013 review by Jerome Paige and Associates did not recommend any significant changes to make the targets more aggressive; in fact the report's approach was to determine targets for all the benchmarks "so that the package as a whole is reasonable." While the report's authors acknowledged that Pepco believed that the target for reducing electricity consumption in the District was "too low," the report did recommend revising the target for this benchmark. Nor did the BDA Global report address the specific question of whether the benchmark targets were sufficiently ambitious. According to the authors, the BDA Global report "provides an evaluation of the effectiveness of the DCSEU's current performance benchmarks and contemplates their applicability to a future five-year contract." The BDA Global report also proposed "stretch goals" and "high stretch goals" for DOEE to consider in setting targets for the new contract. For the benchmark target to reduce electricity and natural gas consumption, the authors

47 "SEU Performance Benchmarks," report for the District of Columbia Department of the Environment, Jerome Paige & Associates, LLC, September 27, 2010.

proposed a “stretch goal” that was unchanged from the 1% annual reduction outlined in the original DCSEU contract.

Part of the challenge in establishing sufficiently ambitious performance goals and targets relates to shortcomings inherent to administering energy efficiency programs via a performance contract. To maximize the effectiveness of ratepayer-funded energy efficiency programs, DOEE should aim to maximize the long-term energy savings/GHG emissions reductions. The problem is that relying on a performance contract by its nature limits the ability to set and achieve long-term goals to the period of performance of the contract. In the context of setting long-term performance goals to encourage greater lifetime energy savings or GHG reductions, as the contract period of performance comes to a close the contractor is likely to prioritize quick-turnaround projects with near-term energy savings.

Modifying how DOEE administers certain energy efficiency programs could attenuate the challenge of establishing sufficiently ambitious performance goals and targets. DOEE may want to consider which aspects of the DCSEU’s current functions are best accomplished under a performance contract, versus being subsumed by a quasi-independent governmental entity such as the Green Bank. There may be certain program areas—rebates for installing high-efficiency equipment, for example—that are best administered under a performance contract because it is easier to ascertain what constitutes a sufficiently ambitious performance target. While in other programs areas with longer-term goals— providing energy advisory services, or serving low-income households, for example—managing program performance as a responsibility of the Green Bank (or other governmental entity) would allow the program to pursue longer-term objectives free from the constraints of a contract period of performance.

Recommendation 4

DOEE should determine which functions of the DCSEU are best accomplished under contract and which functions are best accomplished by an entity such as the Green Finance Authority and recommend to the Council how to distribute these functions accordingly.

The SEU Advisory Board Fulfills its Obligations but Stakeholders Indicate Its Role is Limited

To assist DOEE and the Council in its oversight of the Sustainable Energy Utility (SEU) contract,⁴⁸ the CAEA also established the SEU Advisory Board with a mandate to:

- Provide advice, comments, and recommendations to the DOEE and Council regarding the procurement and administration of the SEU contract.
- Advise DOEE on the performance of the SEU under the SEU contract.
- Monitor the performance of the SEU under the SEU contract.

48 DOEE subsequently created the District of Columbia Sustainable Energy Utility (DCSEU) brand for the Sustainable Energy Utility contract.

The law stipulated that members of the SEU Advisory Board were to be appointed by either the Mayor or the Council and should represent specific industry sectors or have certain areas of expertise.⁴⁹ Members are unpaid but the law authorizes Board members to charge for expenses associated with carrying out their duties, up to \$2,000 per Board member per year.

In reviewing the implementation of the provisions of the CAEA that relate to the SEU Advisory Board, the audit team determined that DOEE and the SEU Advisory Board have fulfilled their obligations under the law. The Board has held regular meetings—it currently meets on a monthly basis—and has produced an annual report every year that provides an overview of the DCSEU’s performance and provides suggestions to DOEE and the Council for how the DCSEU can improve its performance. According to DOEE, the agency routinely accepts advice and takes recommendations from the Board under advisement, and “determines the appropriate way and timing for implementation.”

In assessing the impact of the SEU Advisory Board, however, we heard from stakeholders who questioned whether the SEU Advisory Board had made any difference or added any value to DOEE’s decision-making and oversight of the DCSEU contract. DOEE officials and others told the audit team that some former Board members lacked knowledge of the DCSEU contract and required training in order to make informed recommendations. Stakeholders including DOEE staff and a former Board member told the audit team that some members have advocated for the interests of the business sector they represent. One observer also indicated that the Chair of the Board appeared reluctant to openly criticize DOEE’s management of the DCSEU contract.

These observations pose the question of whether the responsibilities of the SEU Advisory Board are tailored to making the best use of the members’ time and their subject matter expertise. For example, we heard from DOEE that some members required background information on the DCSEU contract in order to get up to speed and provide valuable advice. Rather than try to educate the Board members on how they can be useful to DOEE in overseeing the DCSEU contract, one stakeholder indicated that the members’ expertise might be more valuable to the DCSEU itself. This Board member said that the SEU Advisory Board would be more productive if they were tasked to advise the DCSEU, rather than DOEE: “We should be in the role of, ‘What can we do to further the mission of the DCSEU?’” The DCSEU, for their part, told ODCA that the Board provides a useful public forum for discussing the DCSEU’s performance, and would provide even greater value to the DCSEU if the Board were to facilitate deeper conversations about how to improve specific DCSEU programs.

Although the SEU Advisory Board can point to recommendations for changes to the contract and management of the DCSEU that DOEE has agreed to adopt, our conversations with current and former Board members and unaffiliated observers indicated that the Board could be more effective with a revised mission and reporting structure.

49 The law also appoints the chair of the Public Service Commission and the People’s Counsel to the SEU Advisory Board.

Recommendation 5

DOEE should recommend to the Council how to restructure the SEU Advisory Board to more effectively advise DOEE and the DCSEU.

Finding

The District’s regulatory strategy for reducing carbon emissions from electricity generation does not represent a technology-neutral or least-cost approach to achieving climate change goals.

A second major focus of the CAEA was to increase the proportion of the District’s electricity consumption generated from renewable energy by amending and bolstering the Renewable Energy Portfolio Standard (RPS). Over time the RPS program has come to serve as the District’s primary mechanism for demonstrating that the District is reducing GHG emissions associated with electricity consumption. While the RPS is a popular program among states—there are 29 states plus the District with some version of these programs⁵⁰—as a strategy the RPS may not offer the least-cost approach to reducing GHG emissions. The RPS is inherently technology-specific because only certain technologies will qualify as “renewable.” As a result, the RPS may not offer electricity suppliers the ability to choose the cheapest way of supplying carbon-free electricity to customers.

As initially authorized by the Renewable Energy Portfolio Standard Act of 2004, the RPS is a set of regulatory requirements that apply to electricity suppliers in the District. These requirements specify the amount of Renewable Energy Credits (RECs)⁵¹ that electricity suppliers need to generate or purchase over the course of the compliance year. The purpose of these requirements is to create an incentive for businesses to invest in new renewable energy generation—primarily wind and photovoltaic solar panel farms—to satisfy the demand for renewable energy mandated by the regulations.

The CAEA significantly expanded the RPS requirements for electricity suppliers—both for renewable energy and for solar energy specifically derived from solar panels located within the District. The Renewable Energy Portfolio Standard Act of 2004 had required that electricity suppliers purchase tier one RECs equal to 11% of the District’s annual electricity consumption by 2022 (and 0.386% from solar energy generated in the District by 2022). In an effort to align the District’s RPS requirements with those of other states in the region, the CAEA required that electricity suppliers purchase tier one RECs equal to 20% of the District’s annual electricity consumption by 2020 (and 0.4% from solar energy generated in the District by 2020).

⁵⁰ <http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx>

⁵¹ The Renewable Energy Portfolio Standard Act of 2004 defined “renewable energy credit” as representing one megawatt-hour of electricity consumed within the PJM Interconnection region that is derived from a tier one renewable source or a tier two renewable source. Tier one renewable sources include but are not limited to solar energy, wind, qualifying biomass, and methane from the anaerobic decomposition of organic materials in a landfill or wastewater treatment plan. Tier two renewable sources are limited to hydroelectric power (other than pumped storage generation), waste-to-energy, and some forms of biomass. [D.C. Code § 34-1431. Definitions](#)

CAEA Requirement for Energy Suppliers to Submit Energy Portfolio Reports is Unenforceable, Says DOEE

The audit team found evidence that the District of Columbia Public Service Commission implemented the changes to the RPS included in the CAEA, and that DOEE implemented the provisions under this section of the CAEA, with one exception: DOEE has not enforced the CAEA requirement for energy suppliers to submit energy portfolio reports to the agency.⁵² According to DOEE the original intent of the requirement was to provide the agency with information about the electricity suppliers' actual cost of complying with the RPS requirements (and by extension the cost to ratepayers assuming the suppliers passed along 100% of the compliance cost). This information would assist DOEE in its recommendations to the Council for future modifications to the RPS requirements and the penalties for non-compliance.

Both DOEE and Pepco officials claim that the requirement under D.C. Code §34-1434(d) is not feasible because the data on average cost per kilowatt hour by source of generation is neither known nor accessible by energy supply companies. Specifically, DOEE stated that, "Energy suppliers have informed DOEE that they are not provided this information from electricity generators, and DOEE does not have authority to compel generation entities located in various jurisdictions to derive this detailed cost information by generation source, and provide this in-depth, confidential information to energy suppliers, assuming it could be extracted and/or retrieved in a reliable, consistent manner." DOEE officials told the audit team they had not requested that the Council repeal this provision of the law because of some confusion about whether the request would need to originate from DOEE or the Public Service Commission.

Recommendation 6

The D.C. Council should amend §34-1434(d) to create a clearly enforceable requirement and monitor its enforcement or repeal this provision of the law.

RPS Requirements Have Failed to Spur Sufficient Investment in Solar Generation in the District

The RPS requirements are designed to force electricity suppliers in the District to purchase electricity generated from renewable energy sources. At the end of the compliance year, electricity suppliers must produce the requisite number of Renewable Energy Credits (RECs) to demonstrate that they have fulfilled their requirements. If the electricity suppliers fail to purchase sufficient RECs to satisfy the requirements, the electricity supplier is responsible for the "alternative compliance payment," which is levied on each REC for which the electricity supplier falls short. The alternative compliance payment functions as a penalty for non-compliance and as a ceiling on the price of RECs. In this way, the magnitude of the

⁵² The requirement in Sec. 301 (c)(3) of the CAEA states that "energy companies that sell electricity in the District of Columbia shall file an energy portfolio report for the preceding calendar year with DDOE, which shall include a breakdown of the average cost per kilowatt hour of electricity that the company sold in the District of Columbia by source of generation, to include coal, gas, oil, nuclear, solar, land-based wind, off-shore wind, and other renewable sources. The breakdown of cost should also include the average capital cost per kilowatt, as well as the average fixed and variable costs associated with operations and maintenance per megawatt."

alternative compliance payment—set by the Council in law—acts as an upper limit on the overall program cost if there are insufficient RECs in any given year.

Figure 16: Renewable Energy Credits Submitted for 2018 Compliance

| | # of RECs | Share of Tier |
|--------------------------------------|------------------|---------------|
| Tier One | | |
| Methane from landfill gas/wastewater | 248,220 | 14.2% |
| Wind | 1,009,013 | 57.6% |
| Waste heat | 9,957 | 0.6% |
| Wood waste | 137,158 | 7.8% |
| Non-solar Tier I | 280,449 | 16.0% |
| Solar carve-out | 67,892 | 3.9% |
| Total Tier One and Solar | 1,752,689 | 100.0% |
| Tier Two | | |
| Hydroelectric | 52,945 | 47.1% |
| Black liquor | 58,594 | 52.1% |
| Wood waste | 945 | 0.8% |
| Total Tier Two | 112,484 | 100.0% |

Source: DC Public Service Commission

Electricity suppliers can purchase tier one and tier two RECs from renewable energy facilities located across the PJM Interconnection region, which spans Delaware, the District of Columbia, Maryland, New Jersey, Pennsylvania, Virginia, West Virginia, and parts of seven neighboring states.⁵³ According to reports from the DC Public Service Commission (PSC), electricity suppliers have thus far found sufficient supply of wind and other tier one and tier two renewable resources to avoid having to make significant alternative compliance payments to meet the tier one and tier two requirements. As a result, the supply of tier one and tier two RECs has kept the price of these RECs significantly below the level of the alternative compliance payment. However, this has not been the case for the RPS requirements to purchase electricity

53 The [PJM Interconnection](#) is a regional electricity transmission organization serving Delaware, the District of Columbia, Maryland, New Jersey, Pennsylvania, Virginia, West Virginia, and parts of seven neighboring states.

generated by solar panels located in the District—known as Solar Renewable Energy Credits (SRECs). Electricity suppliers have not been able to meet the local solar “carve out” requirement without making significant alternative compliance payments, as shown in the table below.

Figure 17: Local Solar Compliance Costs Under the Renewable Energy Portfolio Standard (RPS)

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---------|---------|---------|---------|---------|---------|
| Local Solar (SREC) costs | \$13.9M | \$18.8m | \$16.6m | \$29.7M | \$12.0M | \$26.9M |
| Local Solar Alternative Compliance Payments | \$0.7M | \$6.3M | \$19.9M | \$15.2M | \$26.6M | \$18.7M |
| Solar subtotal | \$14.6M | \$25.1M | \$36.5M | \$44.9M | \$38.6M | \$45.7M |

Total RPS Compliance Costs (including Local Solar)

| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---------|---------|---------|---------|---------|---------|
| Total RPS (Tier 1 and Tier II REC + SREC) costs | \$16.3M | \$21.1M | \$18.6M | \$31.9M | \$16.1M | \$31.9M |
| Total RPS Alternative Compliance Payments | \$0.7M | \$6.3M | \$19.9M | \$15.2M | \$26.6M | \$18.7M |
| TOTAL (including solar) | \$17.0M | \$27.4M | \$38.5M | \$47.2M | \$42.7M | \$50.6M |
| Local Solar As % of Total RPS Cost | 85.9% | 91.9% | 94.7% | 95.2% | 90.3% | 90.2% |

Source: District of Columbia Public Service Commission⁵⁴

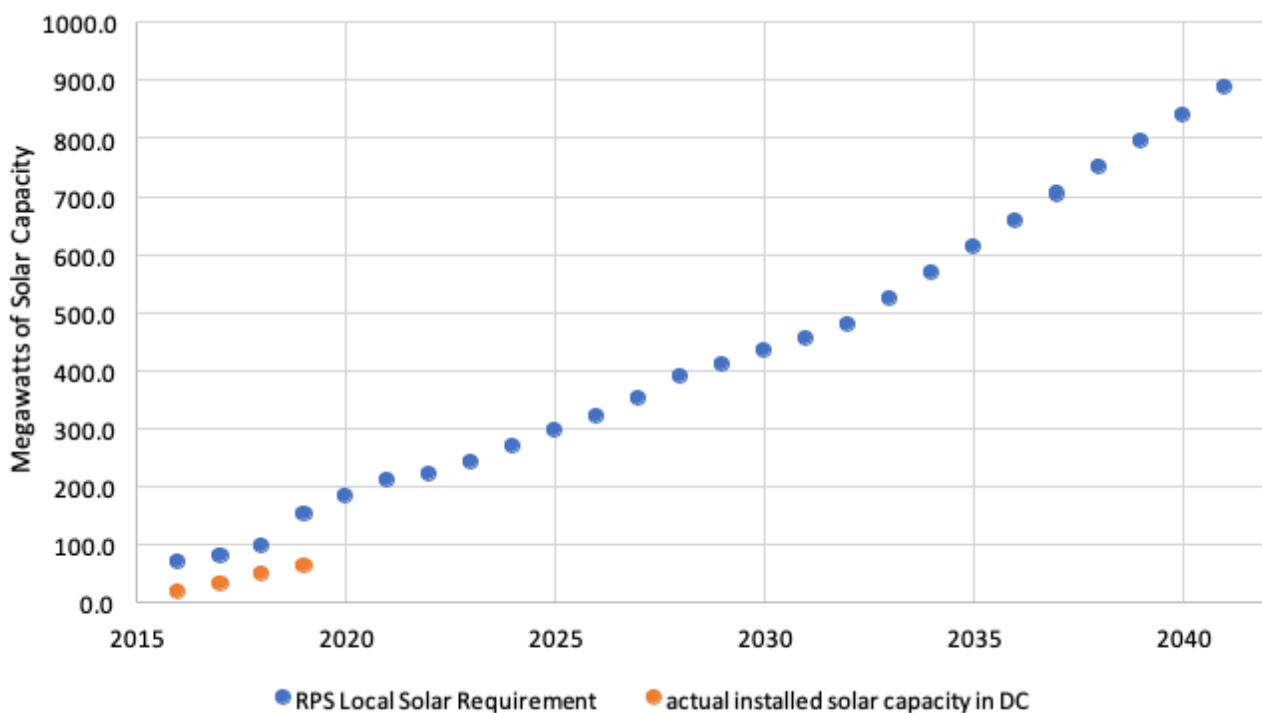
The table above indicates that the RPS requirements have not succeeded in inducing sufficient investment in local solar generation capacity to meet the requirements of the regulation. The level of alternative compliance payments between 2013-2018 is associated almost exclusively with the local solar requirement, and the payments jumped from approximately \$700,000 in 2013 to \$6.3 million in 2014 and \$26.6 million in 2017, before declining to \$18.7 million in 2018. According to the PSC, the available capacity from solar energy systems certified for the District’s RPS program remains well below the required capacity, which has resulted in a shortage of qualifying SRECs. Specifically, the PSC said, “This shortage of solar capacity may potentially increase as the growth in installed units may not keep pace with an ambitious increase in the solar requirement over time.”

On its face, the shortage of local solar energy generation means that the District is not achieving

54 Totals may not sum exactly due to rounding.

the intent of the local solar carve out: Thus far, the requirements for electricity suppliers to purchase electricity from local solar generation facilities have failed to convince residents and businesses to invest in solar panels at a rate sufficient to meet the RPS objectives. And the lack of investment indicates that many residents and businesses face significant obstacles—both financial and logistical⁵⁵—to installing solar panels, despite the fact that the RPS makes the District relatively attractive for investments in solar panel compared to other jurisdictions.⁵⁶ As a result of investment in solar capacity not keeping pace with the RPS requirements, the cost for electricity suppliers to comply is rising without a commensurate increase in the District’s solar capacity. As shown below, the rate of new solar panel installations to date has not kept up with increasingly aggressive SREC requirements, with much of the cost of compliance going toward alternative compliance payments.

**Figure 18: RPS Local Solar Requirements 2016-2041:
Actual Installed Solar Capacity Vs. Estimated Needed**



Source: RPS requirements (D.C. Code §34-1432), PJM Load Forecast Report (<https://pjm.com//media/library/reports-notice/load-forecast/2019-load-report.ashx?la=en>), and DC Public Service Commission (estimated output per unit of solar panel capacity)

The alternative compliance payments are dedicated to a program called Solar for All, a program authorized by the Renewable Portfolio Standard Expansion Amendment Act of 2016 that is designed to pay for solar installations benefiting low-income households. The statutory goal for the Solar for All

55 A discussion of the barriers to solar installations in the District is beyond the scope of the audit, but a thorough discussion can be found here: <http://www.opc-dc.gov/images/pdf/solar/Synapse-DC-Solar-Report-April1217.pdf>

56 <https://www.kiplinger.com/slideshow/real-estate/T029-S003-solar-power-home-residential-incentives/index.html>

program is to provide payments or utility bill savings to at least 100,000 low-income households in the District by 2032.⁵⁷ To accomplish its statutory goal by 2032, DOEE has estimated that Solar for All will need to install 240-300 MW of solar energy capacity to assist low-income households in the District, which would require a surface area for solar panels roughly equivalent to more than three National Malls. According to DOEE, installing 240-300 MW of solar capacity would require the Solar for All program to spend between \$640 million and \$1.05 billion, with funding currently derived from alternative compliance payments that are collected in the Renewable Energy Development Fund.

The cost implications for ratepayers could be significant. The PSC reported that the cost of complying with the RPS currently adds about 10% to the generation cost of electricity supplied to District ratepayers through the Standard Offer Service. According to DOEE, electricity suppliers have not yet passed on the full cost of compliance to ratepayers, but the requirements are slated to increase dramatically in the coming years. The CleanEnergy DC Omnibus Amendment Act of 2018, which became effective March 22, 2019, mandates that the local solar requirement increase to 5% of electricity supply by 2030 (up from the 2019 requirement of 1.85%) and to 10% by 2041.⁵⁸ According to the PSC and other analysts, SREC prices are likely to remain high as the local solar requirement increases,⁵⁹ and this will eventually translate into higher monthly utility bills for District ratepayers, although this may still be several years off in the future.

Cost is one side of the equation; the energy efficiency and GHG reduction benefits of pursuing local solar energy generation in the District are the other. Subsidizing the installation of solar panels is attractive for several reasons: (1) it represents a concrete step that the District can take within its borders to increase the supply of carbon-free electricity (on days with sufficient sun); (2) the electricity can directly offset energy costs for homeowners; and (3) community solar projects can offset the energy the costs of low-income residents who do not necessarily own property (although this is complicated by the fact that some low-income renters have the cost of utilities included in the rent).

The question is whether the RPS program—specifically the local solar requirement—is helping to achieve the District’s climate goals at a reasonable cost. A cost-effectiveness analysis is not currently required by law—and DOEE officials indicated that they had not produced an analysis examining how the cost effectiveness of installing solar panels compares with other strategies for reducing GHG emissions in the District.⁶⁰ There is no requirement for a cost-effectiveness analysis related to the RPS program although the PCS [[§ 34-1439. Rules, duties, and powers of the Commission](#)] is required to report to the Council on the amount of compliance fees paid by electricity suppliers. In the absence of such analysis the Council

57 The original goal of the program was modified in the FY 2018 Budget Support Act of 2017 to state that “The program shall provide the long-term financial benefits of solar energy production to at least 100,000 District low-income households in an amount equivalent to at least 50% of the District’s average residential electric bills for calendar year 2016 by December 31, 2032. [DOEE] shall, to the extent feasible, meet this goal by reducing low-income households’ electric or gas bills by 50%.”

58 D.C. Code § 34-1432 (d) states that an electricity supplier “shall meet the standard by obtaining the equivalent amount of renewable energy credits that equal the percentage required under this section for each electricity product sold at retail by the electricity supplier.”

59 Given supply constraints, the price for SRECs remains closely tied to the alternative compliance payment, which is set by the Council in law at \$500 per MW-hr through 2023, \$400 per MW-hr from 2024-2028, \$300 per MW-hr from 2029-2041, and \$100 per MW-hr in 2042 and thereafter.

60 In an interview with DOEE managers and staff, DOEE said that they are primarily concerned with the cost of building solar energy capacity, rather than the cost of compliance with the RPS, which they said had not yet been passed on to ratepayers.

and DOEE are making decisions about how to spend ratepayer funds without research undertaken on the cost-effectiveness of their decisions. To make better use of ratepayer funds, the Council and DOEE should determine the most cost-effective approaches to reducing GHG emissions from the electricity sector.

Recommendation 7

DOEE should examine the cost-effectiveness of the local solar requirement relative to other mechanisms for reducing carbon emissions from the District.

RPS is Not a Technology-Neutral or Least-Cost Approach to Reducing Greenhouse Gas Emissions

In terms of its effectiveness as a policy for addressing climate change, the RPS poses several challenges. One of these relates to the complicated (and potentially misleading) relationship between the RPS requirements and actual GHG emissions from the electricity sector. At first glance it may seem as though a 100% tier one RPS requirement, for example, would require electricity suppliers to provide 100% of the District's electricity on any given day from tier one renewable energy facilities that produce no GHG emissions, such as wind or solar farms connected to the PJM Interconnection region.⁶¹ However, the RPS does not require that electricity suppliers match the supply of electricity from renewables with the actual real-time demand for electricity in the District.⁶² Therefore, complying with the 100% tier one RPS requirement does not mean that all electricity consumed in the District over the course of the compliance year will be generated from carbon-free, renewable sources of energy. At any given point in time, there may not be enough wind and sunshine across the PJM grid to satisfy 100% of electricity demand. During these periods the District would receive electricity from whichever generating facilities are producing power to the PJM grid.

61 Note that tier one renewables include solar, wind, geothermal, among others, but does not include hydroelectric power. See D.C. Code § 34-1431. [Definitions](#).

62 D.C. Code § 34-1434. Reporting requirements and compliance fee. states that electricity suppliers must report to the PSC whether they have submitted sufficient RECs to satisfy the RPS requirement for that compliance year. If not, this section of the D.C. Code requires that suppliers pay the Alternative Compliance Fee for each kilowatt-hr the supplier fell short of the requirement.

Figure 19: PJM System Fuel Mix

| PJM System Fuel Source | Share |
|------------------------|-------------|
| Coal | 28.7% |
| Nuclear | 34.5% |
| Natural gas | 31.1% |
| Oil | 0.2% |
| Total Renewables | 5.4% |
| TOTAL | 100% |

Source: PSC Bi-Annual Report on the Fuel Mix, July 1, 2019

The intermittent nature of wind and solar energy makes it difficult to match the supply of electricity from these tier one renewable sources with real-time demand for electricity. During peak summer months, when demand for electricity can spike on particularly hot days, District ratepayers are likely to receive their electricity from generation sources that can rapidly increase supply in response to demand, such as natural gas, coal, or hydroelectric facilities.

In practice, electricity suppliers can comply with the RPS—even the 100% tier one RPS—yet still purchase electricity in real-time from fossil-fuel-powered generating facilities. This is because electricity suppliers have the option of complying with the RPS by purchasing “unbundled RECs,” which are RECs that are sold separately from the electricity produced from the renewable energy. If electricity suppliers choose to purchase unbundled RECs, they are essentially paying to comply with the RPS without directly acquiring the electricity. At the end of the compliance year, all electricity suppliers in the District have to show that they purchased RECs equal to the required percentage of electricity that is supposed to come from renewable sources of energy, or pay a penalty for any shortfall.⁶³ But the RPS only requires that suppliers purchase sufficient RECs, not actual electricity, and some or all of these RECs may be unbundled. In this way, in 2032, when the CleanEnergy DC Omnibus Amendment Act of 2018 mandates a 100% tier one RPS standard, electricity suppliers can show that they purchased tier one RECs equal to 100% of all electricity they delivered to the District—even if some or all of the electricity actually delivered to District ratepayers was generated at facilities that produce GHG emissions.

DOEE stated that the RPS is an effective mechanism for reducing GHG emissions from electricity consumption associated with the District, because the RPS standard functions as a subsidy for renewable energy generators and therefore creates an incentive for investors to build new wind and solar farms

⁶³ D.C. Code § 34–1434. [Reporting requirements and compliance fee](#). states that electricity suppliers must report to the PSC whether they have submitted sufficient RECs to satisfy the RPS requirement for that compliance year. If not, this section of the D.C. Code requires that suppliers pay the Alternative Compliance Fee for each kilowatt-hr the supplier fell short of the requirement.

in the PJM region. DOEE's current policy is to measure the District's progress toward reducing carbon emissions from electricity consumption by multiplying annual electricity consumption by the average carbon intensity of the subregion of the PJM grid that includes the District.⁶⁴ According to DOEE, focusing the District's electricity decarbonization policy on renewables leads to more rapid investment in new carbon-free electricity generation capacity, simply because other carbon-free technologies—namely nuclear and grid-scale battery storage of electricity from renewables—require greater investment and take much longer to bring on line. DOEE also stated that the nuclear power plants serving the District are currently financially viable and do not need subsidies to extend their useful life.

There are several shortcomings with the RPS approach, however. First, the power of the District to stimulate investment in new renewable generating facilities is limited by the rather small percentage of the PJM's electricity that the District consumes. In 2018 power plants connected to the PJM grid generated 806,546,000 MW-hours of electricity. According to the PSC, in 2018 the District consumed 11,280,000 MW-hours of electricity, just 1.4% of the electricity consumed that year across the PJM grid. Of course, limited market power does not mean the District should do nothing to address GHG emissions from electricity consumption. Rather, it points to setting the best example possible for other states with greater market power to follow as a strategy to maximize the District's influence in climate policy.

The District could set such an example for other states by taking a technology-neutral or least-cost approach to reducing GHG emissions from the District's consumption of electricity. The RPS in its current form does not represent such an approach, because it constrains the path for achieving emissions reductions to only certain technologies that qualify as renewable. If mitigating climate change is the District's primary energy policy goal, the District's policies should target GHG reductions by incentivizing all technologies that contribute to developing a zero-carbon electricity grid. Instead, the RPS creates incentives for certain renewables but not other technologies for generating around-the-clock carbon-free electricity, such as grid-scale or localized battery storage of energy produced from renewables, nuclear energy, and natural gas with carbon capture.⁶⁵ And while it may be true that developing new nuclear energy facilities is more expensive per megawatt than new renewable energy facilities, a least-cost approach would calibrate the incentives based on the desired outcome (zero-carbon electricity grid) and allow the electricity sector to determine the most efficient, least-cost approach to achieving the policy goal.

64 If more electricity generated on the PJM grid is derived from renewable energy, and less electricity generated from fossil fuels, the average carbon intensity of the grid will decrease. DOEE uses EPA's eGrid emission factor for the RFC-East region of PJM to calculate GHG emissions from electricity consumption.

65 For background information on the concept of a technology-neutral clean energy standard that would create incentives for developing a zero-carbon electricity grid, please see Resources for the Future, Issue Brief 19-01, "Clean Energy Standards," January 2019 <https://www.rff.org/publications/issue-briefs/clean-energy-standards>

Some environmental advocates oppose incentives for nuclear energy^{66,67} on the grounds that nuclear energy poses safety risks and that renewables such as solar and wind are cheaper to bring on line.⁶⁸ If the District intends to prioritize climate change mitigation as a matter of policy then the District should be encouraging investments in both intermittent and “firm” sources of carbon-free power to reduce GHG emissions associated with the District’s actual electricity consumption and set a sound policy example for other states.⁶⁹ Furthermore, by putting in place a requirement for electricity suppliers to demonstrate that they purchased sufficient zero-carbon electricity to match each hour of electricity demand in the District—24/7, 365 days a year—the District could better demonstrate leadership by more closely aligning policies with goals. DOEE would not need to measure progress in reducing GHG emissions by accounting for the average carbon intensity of the PJM grid since by design the policy would require that electricity come from zero-carbon sources.

A zero-carbon electricity standard would have a greater impact on reducing GHG emissions if the policy encouraged new investments in carbon-free power by limiting the number of credits that suppliers could purchase from existing zero-carbon (e.g. nuclear) power plants. For that matter, the District’s current RPS policy places no limit on the number of RECs that qualify from older wind and solar farms with excess capacity. Limiting the number of RECs that qualify from older renewable or other zero-carbon facilities would help to focus the District’s policy on encouraging new sources of zero-carbon energy, serving as a model for other states’ climate policies.

And the District would not be alone in pursuing a zero-carbon electricity standard. In fact, six states have already enacted laws requiring that electricity suppliers demonstrate compliance with zero-carbon electricity standards by specific dates. These six states collectively represent 14.8% of national electricity sales and 6.9% of national utility carbon emissions.⁷⁰ While 29 states plus the District have some form of renewable energy standard, currently just Hawaii, the District, and Puerto Rico have enacted 100% renewable electricity standards.⁷¹

Recommendation 8

To more effectively align District regulatory policy with its climate goals, the Mayor and Council should consider establishing a zero-carbon electricity standard which would provide a technology neutral mechanism for encouraging new investments in carbon-free electricity generation.

66 <https://www.sierraclub.org/nuclear-free#>

67 Although traditionally environmental advocates have shied away from promoting nuclear energy, given the urgency of quickly reducing GHG emissions from the electricity sector many environmental groups—including the Union of Concerned Scientists and the Center for Climate and Energy Solutions, among others—are actively pushing for nuclear energy to be recognized as a “firm” source of electricity that produces zero carbon emissions. <https://www.ucsusa.org/nuclear-power/cost-nuclear-power/retirements>

68 <https://content.sierraclub.org/grassrootsnetwork/team-news/2019/06/7-reasons-nuclear-power-and-climatechange>

69 For background on this idea, please see: <https://www.citylab.com/environment/2015/07/the-environmentalist-case-against-100-renewable-energy-plans/398906/>

70 The six states are California, Colorado, New Mexico, Nevada, New York, and Washington. <https://www.catf.us/wp-content/uploads/2019/05/CES-June-30-2019.pdf>

71 <https://www.catf.us/wp-content/uploads/2019/05/CES-June-30-2019.pdf>

Finding

The Sustainable Energy Trust Fund and Energy Assistance Trust Fund have funded the SEU contract, SEU Advisory Board, and Energy Assistance Program at the levels prescribed by the D.C. Council.

The CAEA established the Sustainable Energy Trust Fund (SETF) and the Energy Assistance Trust Fund (EATF) to support the SEU contract, SEU Advisory Board, and the District’s energy assistance program. The audit team found that agencies have implemented these provisions according to the law. Although the audit team did not conduct a detailed financial audit of SETF and EATF spending, based on DOEE quarterly SETF and EATF spending reports submitted to the Council from FY 2011 to FY 2018, we determined that DOEE had sufficient SETF and EATF budget authority to fund the SEU contract, SEU Advisory Board, and energy assistance program at the levels prescribed in the CAEA, as amended.⁷² Further, when the Council determined that future revenue from the SETF or EATF would be insufficient to achieve the desired program objectives, the Council passed several pieces of legislation during the period 2016 to 2018 that increased the ratepayer fees to generate greater income for the two funds.

A previous ODCA audit determined that on multiple occasions between enactment of the CAEA and FY 2015, the Mayor and the Council passed legislation to sweep SETF and EATF fund balances into the General Fund to fund other priorities, or directed that DOEE use the SETF and EATF to fund specific DOEE activities.⁷³ As a legislative body the Council has the authority to pass laws that change the intent of prior legislation—there is no procedural or legal barrier to the Council passing legislation that overwrites the CAEA. But the specific case of the Council sweeping or repurposing SETF and EATF fund balances prompts the question of whether it is appropriate to use ratepayer funds for programs that do not directly benefit the same population of ratepayers. In a previous audit issued in June 2016, ODCA stated that the PSC believed it was not appropriate to take ratepayer funds and redirect these monies to purposes other than energy efficiency, renewable energy, or energy assistance, because these purposes were identified in the CAEA as benefiting ratepayers. We also noted that DOEE had indicated there was sufficient funding available through FY 2015 for the energy efficiency, renewable energy, and energy assistance program despite the repurposing of SETF and EATF fund balances.

The Council raised SETF fees twice and EATF fees once between 2016 and 2018 upon determining that future revenue from the SETF or EATF would be insufficient for the programs to achieve the desired program objectives. In 2016 the Council concluded that SETF revenue would be insufficient to fund the SEU contract in future years,⁷⁴ and raised the SETF fee in the Renewable Portfolio Standard Expansion Amendment Act of 2016. In 2017 the Council concluded that EATF revenue was insufficient to fund the Low-Income Home Energy Assistance Program (LIHEAP), and raised the EATF fee in the FY18 Budget

72 As the scope of the audit spans the time frame October 22, 2008 (effective date of CAEA) to May 3, 2018 (ODCA entrance conference with DOEE), ODCA’s analysis of SETF and EATF funding does not include any changes to the CAEA that resulted from the enactment of the CleanEnergy DC Omnibus Amendment Act of 2018, which became effective on March 22, 2019.

73 Since 2009, a net total of \$24.1 million has been transferred from SETF and \$7.4 million from EATF to the General Fund.

74 In FY16, total SETF revenue was \$20.5 million. The budget in FY16 for the SEU contract, EM&V, independent review, and DOEE oversight totaled \$22.1 million; spending in FY16 for these line items totaled \$21.4 million.

Support Act of 2017. In 2018 the Council determined that the SETF should provide additional funding to DOEE or the DCSEU for energy programs to benefit low-income residents and other purposes, and raised the SETF fee in L22-257, the CleanEnergy DC Omnibus Amendment Act of 2018.⁷⁵

In reviewing the implementation and impact of the CAEA provisions establishing the SETF and EATF, the audit team found that the Council did not always follow the same process for public notification when contemplating increases to the SETF and EATF assessments on electricity and gas suppliers that result in the surcharges on ratepayers' bills. Although there is no specific requirement in the Council Rules that a committee must hold a hearing when proposing to increase fees or taxes, the audit team found that in the case of the increases to SETF fees in 2016 and 2018 the Council held a hearing to allow for public comment on the two stand-alone pieces of legislation—the Renewable Portfolio Standard Expansion Amendment Act and the CleanEnergy DC Omnibus Amendment Act. In the case of the increase to the EATF fee in 2017, the Council raised the fee as part of the FY18 Budget Support Act, which meant that there was significantly less opportunity for public comment. In contrast to a stand-alone piece of legislation, for which the committee of jurisdiction holds a hearing prior to markup, many of the changes the Council adds to the Budget Support Act do not receive a hearing prior to markup.

Recommendation 9

To demonstrate greater transparency and to justify any increases to SETF and EATF fees, the Council should introduce stand-alone legislation when proposing changes to ratepayer fees and hold a hearing to solicit public comment on the proposed changes to ratepayer fees.

Finding

Although the requirement for building energy performance benchmarking cannot be causally linked to energy savings, it is a prerequisite for establishing building energy performance standards.

We determined that DOEE successfully implemented the fourth major provision of the CAEA, which requires publicly and privately-owned buildings in the District of a certain size to submit data to DOEE on building attributes and energy performance on an annual basis. These provisions, known as building energy performance benchmarking requirements, mandate that owners of buildings 50,000 square feet or greater submit benchmarking data beginning in 2013. After providing a grace period and compliance assistance, DOEE began enforcing compliance with the 2013 and 2014 benchmarking requirements in 2015. DOEE uses this data to compare buildings' energy efficiency using the Energy Star Portfolio

⁷⁵ The CleanEnergy DC Omnibus Amendment Act of 2018 of 2018 became law on March 22, 2019.

Manager tool.⁷⁶

**Figure 20: Building Energy Performance Benchmarking Requirements —
DOEE Reported Compliance Rates**

| Year | Target | Actual |
|---------|--------|--------|
| FY 2013 | N/A | 77% |
| FY 2014 | 70% | 64% |
| FY 2015 | 85% | 83% |
| FY 2016 | 90% | 86% |
| FY 2017 | 90% | 76% |
| FY 2018 | 80% | 91% |

Source: DOEE

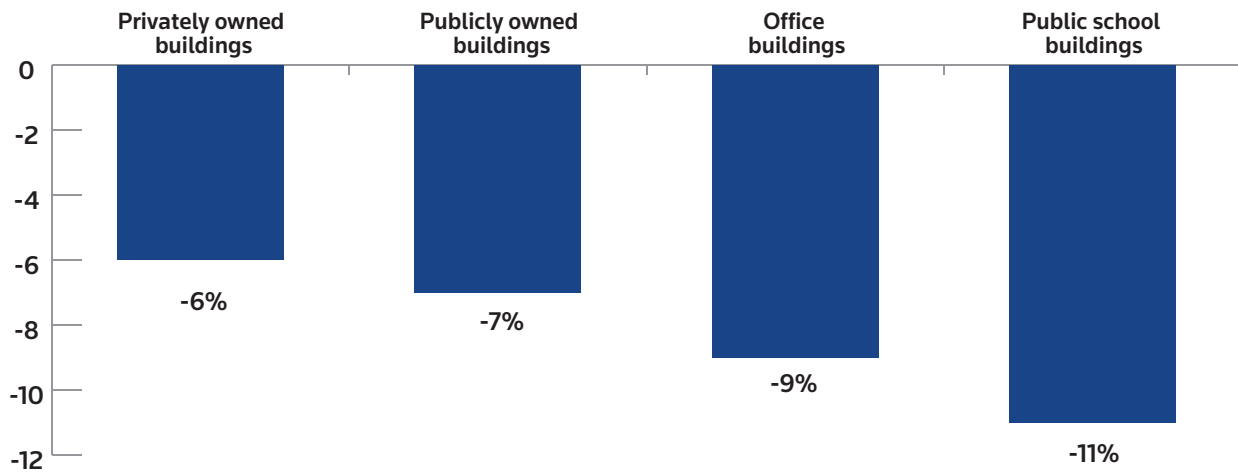
As shown above, compliance with building energy benchmarking requirements is slightly but not significantly below DOEE targets. (Overall compliance was more than 75% between FY 2015 and FY 2017.) In FY 2018, the most recent year for which data is available, DOEE reported an actual compliance rate of 91%, compared to a target of 80%.

The Requirement to Report Building Energy Data is Correlated with Improvements in Building Energy Efficiency but Not Linked Causally

It is not possible to quantify the impact of the benchmarking requirements in helping the District achieve its climate goals. According to DOEE, the benchmarking requirements were designed to achieve several objectives, including encouraging property owners and managers to pay attention to their buildings' energy consumption and providing property owners a means to use relative energy efficiency as a selling point when competing for tenants. DOEE told the audit team that between 2013 and 2017 energy consumption decreased by 3% in privately-owned buildings and by 6% in publicly-owned buildings. Over this same time period office buildings' energy usage fell by 8% and public schools' energy usage fell by 11%, according to DOEE. However, the audit team found no evidence of a causal relationship between the requirements and the improvements in building energy efficiency. According to DOEE, estimating the energy savings attributed to the energy benchmarking requirements would require market research to understand what motivated property owners to make energy efficiency improvements to their buildings. DOEE has not conducted this market research.

⁷⁶ The Energy Star Portfolio Manager tool is a software program managed by the Environmental Protection Agency and Department of Energy that allows building owners to input data on building attributes and energy consumption and generates a ranking of that building's energy efficiency relative to national averages.
<https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager>

Figure 21: Decrease in District Buildings' Energy Consumption, 2013–2017



Source: DOEE

The building energy benchmarking requirements did lay the groundwork for future action to reduce GHG emissions from the building sector. Before the District can set specific standards for building energy performance that building owners must meet DOEE needs a sufficient number of years of baseline data to gauge whether a set of standards is ambitious and feasible. According to DOEE, the agency needs at least three to four years of benchmarking data to accurately determine the average energy efficiency characteristics for particular classes of buildings and whether a particular standard is feasible. In this way, having the benchmarking requirements in place since 2013 will allow DOEE to move quickly to establish the building energy performance standards that are now required under the CleanEnergy DC Omnibus Amendment Act of 2018.⁷⁷

Residential Submetering Has the Potential to Save Tenants Money

In evaluating whether there are any additional avenues to improve the energy efficiency of the District's building stock we identified two policy areas that the Council and DOEE could consider. Encouraging the practice of "submetering" represents one policy tool that the District does not currently employ. "Submetering" refers to when the building owner pays a bulk rate for electricity on the basis of a utility-owned master meter, and then charges tenants for their actual individual usage based on property-

⁷⁷ The energy benchmarking data was also valuable in helping to inform the policies and programs managed by DOEE and the DCSEU. DOEE and the DCSEU told the audit team that the energy benchmarking data was useful in understanding energy efficiency trends and identifying buildings that could benefit from energy efficiency improvements. Among other internal analyses, DOEE used the energy benchmarking data to generate an interactive map of buildings' energy efficiency scores and to analyze trends in building owners' decisions to switch fuels from natural gas to electricity (or vice versa) for certain building systems and appliances. The energy benchmarking data also helped to inform an analysis of potential building energy performance standards for use in the District by the C40 Private Buildings Efficiency Network and Lawrence Berkeley National Laboratory.

owned submeters. “Direct metering” is when each unit is supplied with a utility-owned meter and the utility bills each tenant for electricity usage at the retail residential rate. “Master metering” is when the building owner pays a bulk rate for electricity on the basis of a utility-owned master meter, and then charges tenants equally for the electricity costs without regard for actual usage. New York City requires submetering of non-residential buildings greater than 25,000 square feet. In the District, the D.C. code expressly permits but does not require submetering of non-residential buildings but is silent on submetering of residential buildings.⁷⁸

Submetering has the potential to reduce energy consumption because it allows tenants to save money when they use less electricity. The practice of residential submetering generally involves installing electric meters (“submeters”) for each unit in a building that is master-metered. A master-metered building typically pays a bulk-rate for electricity, and without submeters each residential unit pays the same amount per square foot toward the master-metered electricity bill regardless of actual electricity consumption. If the building owner decides to install submetering equipment, the building continues to be master-metered but each unit is now only responsible for paying the building owner for the amount of electricity they consume. The possible benefits are two-fold: the building continues pay the bulk-rate for electricity and the tenant is motivated to reduce energy consumption because the occupant realizes any resulting savings.

Residential submetering could, however, present complications for low-income and rent-controlled housing. In master-metered buildings where tenants’ utility costs are normally included in the total rent, submetering would allow the landlord to offer a decrease in rent in return for the tenant taking on the cost of paying utilities. However, the District might need to establish an oversight mechanism to allow the tenant some recourse in the event that paying for utilities significantly outweighs the savings on rent. And submetering presents further complications for master-metered buildings participating in low-income housing programs because the subsidy to the landlord usually includes an amount for utility costs. Submetering in these situations would require a mechanism to equitably share with the tenant any savings on utilities that result if the tenant uses less energy.

To capitalize on the potential for submetering to realize energy savings and cost savings for tenants, the Council may need to enact legislation explicitly legalizing submetering in residential buildings and authorize District agencies to provide incentives for building owners to install submetering equipment in residential and non-residential buildings.

Recommendation 10

The D.C. Council should consider incentives or requirements for submetering of non-residential buildings, and changes to District law to allow residential submetering.

⁷⁸ District law and regulations allow submetering of non-residential buildings but omit any mention of residential submetering, see D.C. Code §34-1552 et seq..

Green Leases Have the Potential to Create Mutual Benefits for Landlord and Tenant

Another potential avenue for stimulating greater energy efficiency in the District's building stock is to encourage landlords and tenants to adopt elements of a "green lease." A green lease differs from a standard commercial lease by incorporating specific clauses that allow the property owner to pass on some portion of the cost of energy efficiency improvements to the tenant in return for allowing the tenant and landlord to mutually benefit from the resulting energy savings. The potential to contribute to the District's climate goals could be significant: A nationwide study suggests employing green leases could reduce energy consumption in U.S. office buildings by 11% to 22%.⁷⁹

In our fieldwork we were told that at least one major commercial landlord and property owner currently employs green leases in the District. The District offers no incentives to encourage other landlords and tenants to engage in the practice.

Recommendation 11

DOEE should determine whether incentives for landlords and tenants to enter into green leases would materially advance the District's GHG emissions reduction goals, and if so, the agency should develop regulations or a legislative proposal to establish incentives for green leases.

Finding

The District's climate policy does not adequately address emissions from commuters driving downtown and from ride-hailing fleets.

Evaluating the overall impact of the CAEA on the District's ability to achieve its climate goals also involves identifying sources of GHG emissions that the District is not effectively curtailing. The provisions of the CAEA attempted to address GHG emissions from buildings and electricity consumption via energy efficiency programs and more aggressive RPS requirements. Subsequently, the District has enacted legislation and set out strategies in the Clean Energy DC Plan⁸⁰ to further reduce GHG emissions from buildings and electricity consumption, and to address emissions from certain transportation sources.

The Clean Energy DC Plan's recommendations for reducing GHG emissions from transportation sources include encouraging District residents and car-sharing services to use electric vehicles and setting targets for reducing emissions from public buses. The Clean Energy DC Omnibus Amendment Act of 2018 codified some of these recommendations in law by instituting new requirements for public buses and privately-owned vehicle fleets (i.e. commercial motor carriers, limousines, taxis) to consist entirely of zero

⁷⁹ https://www.imt.org/wp-content/uploads/2018/02/Green_Lease_Impact_Potential.pdf

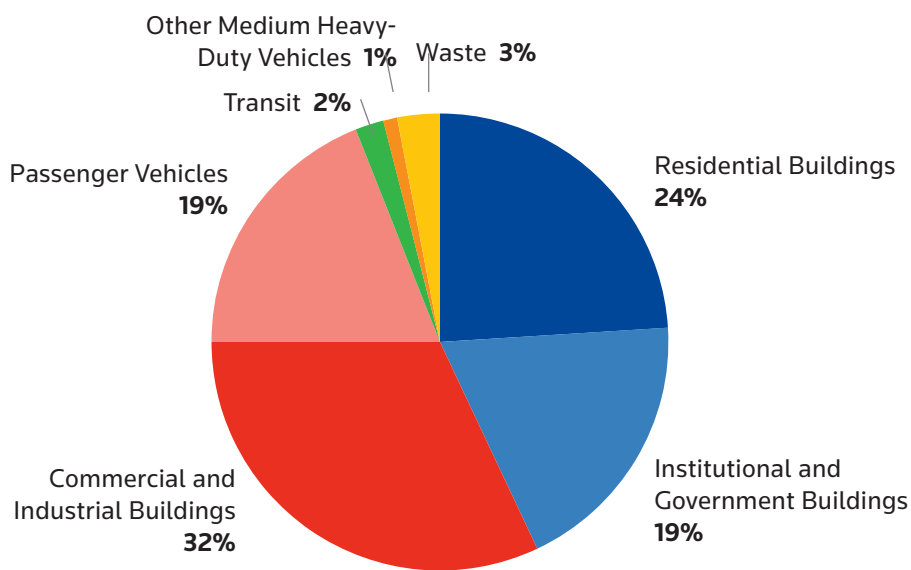
⁸⁰ The Clean Energy DC Plan, published in August 2018, represents the most recent iteration of the District's climate change strategy. <https://doee.dc.gov/cleanenergydc>

emission vehicles by 2045. And the CleanEnergy DC Omnibus requires that ride-hailing fleets submit plans by January 1, 2022, to increase the proportion of zero-emission vehicles and vehicle-miles-traveled by zero-emission vehicles.⁸¹ Last, the CleanEnergy DC Omnibus mandates that the District Department of Transportation (DDOT) outline a plan for encouraging the adoption of zero-emission vehicles by District drivers and authorizes the District government to participate in any regional governmental initiative to reduce GHG emissions from the transportation sector.

Where the District’s policies appear to be falling short is in addressing GHG emissions from passenger and commercial vehicles (excluding public buses and other transit). The Clean Energy DC Plan does not include any recommendations for addressing these categories of transportation sources, and the CleanEnergy DC Omnibus does not set any specific targets for reducing GHG emissions from ride-hailing fleets. Instead the legislation delegates the responsibility for setting targets to the ride-hailing fleet companies themselves.

In 2018 ODCA released an audit of the District Government’s employee parking policies, and found that the Worksite Parking Program was charging significantly below-market parking rates, which runs counter to the District’s stated goals of encouraging commuting by public transportation and reducing GHG emissions from transportation sources.

Figure 22: Modeled Proportion of GHG Emissions by Sector, 2015



Source: Clean Energy DC Plan

⁸¹ The District’s taxation of ride-hailing as a service treats all type of vehicles equally—all rides are subject to a 6% gross receipts tax, per the FY 2019 Budget Support Act.

The contribution of passenger and commercial vehicles to the District’s GHG emissions inventory is significant and could grow unless the District addresses this gap in its climate policy. As shown in the chart above, passenger and commercial vehicles (excluding buses and other transit) contribute approximately 20% of the District’s GHG emissions. And the growth of ride-hailing fleets indicates that emissions from passenger vehicles could increase: The use of ride-hailing fleets in major U.S. cities, for example, has resulted in a net increase in vehicle-miles-traveled.⁸²

To address these sources of GHG emissions the District may want to consider a more aggressive approach to curtailing GHG emissions from ride-hailing fleets. The District could also develop a strategy for reducing emissions from all drivers in the District, rather than focusing solely on District residents’ decisions about whether to purchase or use an electric vehicle. For example, the District could pass laws to discourage commuters (District and non-District residents) from driving internal combustion vehicles downtown during peak hours.⁸³

In commenting on the draft report, DOEE provided new information about actions that both DOEE and DDOT are taking to develop a set of concrete proposals for tackling GHG emissions from passenger and commercial vehicles. DOEE is currently developing a strategy for reducing GHG emissions from the entire transportation system, including trips associated with ride-hailing companies, as part of an effort to meet the Mayor’s goal of achieving carbon neutrality for the District by 2050. Furthermore, DOEE informed ODCA that DDOT is already engaged in a study of pricing strategies to reduce congestion in the District.

Recommendation 12

To reduce GHG emissions from passenger and commercial vehicles, the Mayor and the D.C. Council should establish a congestion pricing program assuming DOEE and DDOT studies substantiate its value to meet District climate goals. DOEE should also study various options to require ride-hailing fleets to operate electric and hybrid-electric vehicles in the District.

82 “Emerging Policy Approaches to Electrify Ride-Hailing in the United States,” The International Council on Clean Transportation, January 2019.

83 In 2017, Councilmembers Cheh and Allen introduced the Transportation Benefit Equity Amendment Act to require employers offering parking benefits to employees to also offer the option for employees to receive an equivalently-valued benefit. In 2019, Councilmembers Cheh and Allen re-introduced the bill with several modifications.

Conclusion

Since the enactment of the Clean and Affordable Energy Act of 2008, the District’s energy and environmental policy has gradually focused more intently on addressing the District’s contribution to climate change. In responding to the Council’s direction to “review the overall effectiveness of the Act in reducing the District’s contribution to climate change thus far and potential to reduce it further in the future,” ODCA found that the District has met certain milestones but could do more to achieve its goals and achieve them more cost-effectively. ODCA determined that implementation of the Clean and Affordable Energy Act of 2008 (CAEA) is substantially complete, and that the District of Columbia Sustainable Energy Utility (DCSEU) has made progress toward meeting the goals and targets laid out by the statute and the Department of Energy and Environment (DOEE). On the other hand, ODCA recommends that DOEE and the DCSEU make better use of ratepayer funds by reducing free ridership in DCSEU programs and altering the management of energy efficiency programs to improve DOEE’s ability to establish sufficiently ambitious performance goals and targets.

Over time the Renewable Energy Portfolio Standard (RPS) program has come to serve as the District’s primary mechanism for demonstrating that the District is reducing GHG emissions associated with electricity consumption. Thus far, however, the requirements for electricity suppliers to purchase electricity from local solar generation facilities have failed to convince residents and businesses to invest in solar panels at a rate sufficient to meet the RPS objectives, which raises questions about whether the RPS program—specifically the local solar requirement—is helping to achieve the District’s climate goals at a reasonable cost.⁸⁴ Further, one could argue that the District could set a better policy example for other states. To the extent that mitigating climate change is the District’s primary energy goal, ODCA recommends that the District consider policies that require electricity suppliers to meet a zero-carbon standard, which would embrace all cost-effective technologies for generating carbon-free electricity rather than a standard tied to particular technologies like the RPS. ODCA also suggests that the District consider policies that match the District’s demand for electricity with real-time supply of carbon-free electricity. This would create an incentive for the industry to develop a zero-carbon electricity grid using all technologies that could be cost-effectively deployed to generate around-the-clock carbon-free electricity.

Last, the District could do more to address GHG emissions from passenger and commercial vehicles. The contribution of these vehicles to the District’s GHG emissions inventory is significant and could grow unless the District addresses this gap in its climate policy. The Clean Energy DC Plan does not include any recommendations for addressing these categories of transportation sources, and the CleanEnergy DC Omnibus does not set any specific targets for reducing GHG emissions from ride-hailing fleets—the legislation delegates the responsibility for setting targets to the ride-hailing fleet companies themselves.

⁸⁴ There are no provisions under [Title 34 Chapter 14A](#) of the D.C. Code (Renewable Energy Portfolio Standards) that require the DC Public Service Commission or the District Government to perform a cost effectiveness analysis related to the RPS program. Under [§ 34-1439. Rules, duties, and powers of the Commission](#) the PSC is required to report to the Council on the amount of compliance fees paid by electricity suppliers, but there are no requirements related to performing a cost-effectiveness or relative cost-effectiveness analysis of the program.

Agency Comments

On December 2, 2019, we sent a draft copy of this report to DOEE for review and written comment. DOEE responded on January 16, 2020. Agency comments are included here in their entirety, followed by ODCA's response.

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment



January 16, 2020

Kathleen Patterson
District of Columbia Auditor
717 14th Street, NW, Suite 900
Washington, DC 20005

Subject: DOEE comments regarding ODCA's draft report titled "DC's 2008 Clean Energy Act: Lower Emissions But Too Many Cars & Not Enough Solar."

Dear Ms. Patterson:

The Department of Energy & Environment (DOEE) provides the enclosed comments in response to the Office of the District of Columbia Auditor's (ODCA) draft Audit Report titled "DC's 2008 Clean Energy Act: Lower Emissions But Too Many Cars & Not Enough Solar."

DOEE has reviewed the audit findings and recommendations, and has taken them under advisement for consideration going forward. The enclosed comments provide responses to each recommendation provided by ODCA, and clarify other components of the report.

DOEE thanks ODCA for this opportunity to provide comments prior to the release of the final report, and appreciates the collaboration between the agencies during the audit process.

Should you have any questions, please contact me or Taresa Lawrence, Deputy Director, Energy Administration at (202) 671-3313.

Sincerely,

A handwritten signature in green ink that reads "Tommy Wells". The signature is fluid and cursive, written over the printed name and title.

Tommy Wells
Director

Enclosure

ODCA Finding

The DCSEU has made progress in meeting its contractual performance targets, but DOEE rewards the DCSEU for energy efficiency projects that would have happened without the DCSEU's assistance.

ODCA Recommendation

DOEE should modify the incentives for the DCSEU to reward interventions that lead to additional energy savings and GHG emissions reductions and limit the amount of DCSEU spending on projects with energy savings that would have occurred even without the DCSEU's involvement.

DOEE Response: DISAGREE

DOEE recognizes the need to ensure the value and cost-effectiveness of DCSEU program investments, noting that there are pros and cons to different ways of assessing program performance and attribution. And as noted in the audit report, assessing the significance of the testimonial evidence provided by beneficiaries of DCSEU incentives can be very tricky, and requires in-depth surveys of program participants and non-participants to accurately estimate a net-to-gross ratio that can be applied to some programs. In many instances, including the example cited in the report, the persons interviewed after project completion were not involved in the pre-project discussions and decision-making processes. The DCSEU works with many highly motivated customers to advance their timelines for implementation of projects and will be relied upon to provide technical assistance and incentives to help low performing buildings comply the newly established Building Energy Performance Standards. As such, it would be difficult for DOEE to solely rely on net energy savings as the primary means of rewarding the DCSEU for surpassing established energy savings targets.

DOEE would advocate for the continued use of gross savings to measure program performance (similar to the approach taken in other states including Maryland), with net savings assessments used to guide program design and ensure the overall cost-effectiveness of the DCSEU programs. Gross savings metrics can provide greater clarity on program goal attainment, without the added cost and complexity of establishing net savings factors. Additionally, the DCSEU's current funding would be inadequate to achieve current savings targets, if the metrics for annual reductions in electricity and natural gas consumption in the District were based on net savings. The acquisition cost comparison included in the audit's findings on the DCSEU's Progress in Meeting Contractual Performance Targets can be used to illustrate the budget levels and increases in existing DCSEU Contract funding that would be needed to achieve 1% of retail sales for a reference year of 2014 if DOEE were to shift to net savings targets. To achieve

savings at 1% of retail sales for both electricity and natural gas, the DCSEU would require roughly \$38 million in annual funding, as opposed to the current implementation contract budget of approximately \$19.1 million. Since these acquisition costs described in the Auditor's report are based on gross savings, shifting to net savings metrics for current DCSEU Contract goals would further exacerbate the need for additional funding.

Given that the DCSEU's Contract is performance-based and includes penalties for failure to achieve minimum savings targets, DOEE does not dictate the amount the DCSEU is allowed to spend on a particular project. As noted in the DCSEU's Annual Evaluation, Measurement, and Verification Reports, which are written by independent evaluators, the DCSEU's portfolio of programs have consistently passed the Societal Cost Test using net savings values. This indicates that the DCSEU programs, when taken as a whole, provide positive returns to District ratepayers for every dollar spent by the DCSEU. Since 2011, the DCSEU has helped District residents, businesses, and institutions achieve nearly \$1 billion in lifetime energy cost savings, invested more than \$35 million with Certified Business Enterprises (CBEs) so that businesses in DC have new opportunities to succeed in the green economy, and created green career opportunities for hundreds of District residents.

Although DOEE disagrees that net savings should be used as the metric to measure performance of DCSEU programs, DOEE is open to working with the DCSEU and other stakeholders to explore the feasibility of reconciling existing performance metrics and targets with the Auditor's suggestion to use net savings metrics and determine whether DCSEU's current performance targets are sufficiently ambitious.

ODCA Statement

Aligning the DCSEU's Performance Goals with the District's Climate Change Strategy

ODCA Recommendation

DOEE should align the DCSEU performance benchmarks and targets with the District's climate change strategy by prioritizing GHG reductions versus energy savings.

DOEE Response: PARTIALLY AGREE

DOEE supports the above recommendation in principle and will work with the DCSEU to officially add a Greenhouse (GHG) metric as a tracking goal in the existing DCSEU Contract, and not the primary benchmark for assessing DCSEU's performance. The DCSEU has been tracking and reporting its contributions to the District's overall GHG achievements for several years, and the DCSEU's GHG reductions are independently verified by a third-party evaluator. Using GHG reductions as a tracking goal will ensure that the DCSEU maintains fiscal prudence and accountability when implementing the ratepayer-funded program and will ensure there are no unintended consequences of prioritizing GHG reductions over energy savings. For example, prioritizing a GHG metric may make it easier for electrification and thermal measures to contribute to the DCSEU portfolio goals, however it also highlights tradeoffs for strategic electrification because the amount of GHG reductions claimed by the DCSEU will be affected by how clean the fuel mix is in the electric grid. Hence, it may not be prudent to prioritize GHG reductions as the primary goal for the DCSEU at this juncture because it may encourage the DCSEU to incentivize more natural gas measures in the short-term. In addition, the topic of fuel switching and general accounting for all metrics must be clear.

ODCA Statement

Establishing a “One-Stop-Shop” for Energy Efficiency Services, Incentives, and Loans

ODCA Recommendation

The Mayor and Council working with DOEE should consolidate the administration of energy efficiency services, potentially under the Green Finance Authority, to create a single portal, or “one-stop-shop” for consumers.

DOEE Response: PARTIALLY AGREE

DOEE agrees with the idea of a “one-stop-shop” or central customer interface for financing, incentives, and technical resources, however, DOEE does not believe the one-stop-shop should be located within the Green Finance Authority. DOEE believes that collaboration between all market actors across the District is critical to meeting the city’s aggressive goals. In our experience, this collaboration happens most effectively through relationships and behavior, not through an organizational realignment. If the goal is to create a one-stop web portal, then DCSEU should be the entity designated to do so. The DCSEU has the reputation and capability and can quickly set up a portal and expand it as necessary to meet the needs of the market. However, it is critically important to the continued success of the District’s energy efficiency programs for the DCSEU to also remain primarily focused on maximizing customer engagement, participation, and impact through its programs and meeting its performance benchmarks targets.

Similarly, if the intent is to create a one-stop-shop for all energy efficiency projects in the District, then it would not be prudent to take a well-functioning entity such as the DCSEU which has clear goals and contractual objectives, and place it under an entity that has not been fully established and does not have a proven track record of meeting its intended goals. The GFA is currently in start-up phase, with a Board of Directors having met for the first time in July 2019, and is expecting to hire executive leadership in March 2020. While significant efforts have been completed by DOEE in order to facilitate the launch of the GFA, it will take approximately twelve (12) months, or through the end of FY20, to fully develop the organizational infrastructure, including staffing, lender relationships, and performance metrics before the GFA can be ready to bring a package of financial tools to market.

Further, the Auditor’s finding misses a larger picture with regard to the District’s energy reduction landscape. In the near future, a number of new actors including PEPCO, Washington Gas, the High Performing Building Hub and other energy service companies will all be playing major roles in the energy efficiency, GHG, and renewable energy space. Without coordination,

there is sure to be large-scale market confusion, duplicative efforts, and/or inefficiencies. One suggestion is for DOEE to strengthen its position in a central coordinating role for programs aimed at achieving the District's climate and energy goals. DOEE could provide this coordination at a macro level, and would prioritize continued customer engagement by responsible entities and programs, to ensure maximum efficiency and coordination. All programs are not necessarily required to be housed under one roof in order to provide a better customer experience. A well-designed web resource (referenced above) and key personnel responsible for overseeing and coordinating these programs would strengthen all programs and allow for greater efficiency in operation.

DOEE believes the Green Finance Authority (GFA) should be positioned and able to help all market actors, without structural ties to any one particular entity. All entities providing energy efficiency and renewable energy projects should be able to access support from the Green Bank. DOEE notes the path to an energy efficiency project does not start at a bank. It starts, rather, with an analysis of the existing energy savings opportunities (typically provided by DCSEU experts) and then with the identification of resources or available financial incentives to purchase and install the energy saving measure.

ODCA Statement

The DCSEU's Value to Ratepayers Depends on Whether Program Goals are Ambitious

ODCA Recommendation

DOEE should determine which functions of the DCSEU are best accomplished under contract and which functions are best accomplished by an entity such as the Green Finance Authority and recommend to the D.C. Council how to distribute these functions accordingly.

DOEE Response: PARTIALLY AGREE

DOEE agrees with this statement but disagrees with the recommendation.

With regard to the statement, the DCSEU's value to ratepayers does depend on whether the program goals are ambitious, to the extent that the goals determine the degree of financial return received from investment of ratepayer funds, as well as the degree to which the other goals laid out in the legislation that created the DCSEU are achieved, such as equity and green job creation. As noted in the DCSEU's Annual Evaluation, Measurement, and Verification Reports, which are written by independent and experienced evaluators, the DCSEU's portfolio of programs have consistently passed the Societal Cost Test (SCT) mandated by the Clean and Affordable Energy Act of 2008, meaning that ratepayers' investment in the DCSEU is generating a positive return for them in energy savings. In Fiscal year 2018, the DCSEU's SCT ratio was 2.34. This means that the DCSEU programs, when taken as a whole, provide a positive return of \$2.34 to District ratepayers for every dollar spent by the DCSEU. Since 2011, the DCSEU has helped District residents, businesses, and institutions achieve nearly \$1 billion in lifetime energy cost savings, invested more than \$35 million with Certified Business Enterprises (CBEs) so that businesses in DC have new opportunities to succeed in the green economy, and created green career opportunities for hundreds of District residents. The DCSEU has also invested more than \$39 million in energy efficiency and renewable energy projects in low-income communities, increasing the comfort of thousands of families and allowing those families to put the dollars they save on their energy bills where it matters most to them. The DCSEU's work has culminated in the prevention of more than 6.2 million tons in lifetime greenhouse gas emissions.

The DCSEU's performance-based multiyear contract is also the first of its kind in the country to combine energy reduction goals with social equity goals and green job creation, and it is important that those DCSEU program goals be ambitious as well. The DCSEU's performance under the current structure of the contract has helped strengthen the District's reputation as a

leader in the energy efficiency and sustainability arena year over year, receiving national and international recognition.

With regard to the recommendation, DOEE believes that all of the main functions of the DCSEU are well suited for a performance contract and are aligned with the Council's original intent of creating a nimble entity that designs and implements sustainable energy programs for District residents and businesses. And DOEE believes the Green Finance Authority (GFA) should be positioned and able to help all market actors without structural ties to any one particular entity—all entities providing energy efficiency and renewable energy projects should be able to access support from the Green Bank. DOEE does not believe that it would be efficient to further limit the roles and functions of each entity through legislation or contracts, as this would constrain the operations of these entities to those activities which have been predetermined, and discourage entrepreneurship, collaboration, and the ability to seek opportunities for leveraging, to maximize the return on investment of ratepayer funds.

ODCA Statement

The SEU Advisory Board Fulfills its Obligations but Stakeholders Indicate Its Role is Limited

ODCA Recommendation

DOEE should recommend to the D.C. Council how to restructure the makeup of the SEU Advisory Board to more effectively advise DOEE on the SEU contract, which is one of the primary statutory goals of the SEU Advisory Board.

DOEE Response: DISAGREE

DOEE believes the SEU Advisory Board (Board) is properly constituted, and mandates representation from key stakeholders, organizations, and industries, to be able to perform its advisory role comprehensively. DOEE does not believe the Board should be restructured. The Board has taken certain steps to maximize its usefulness, as it relates to its statutory purpose to provide advice and recommendations to DOEE regarding DCSEU's performance. Changes made include increasing the frequency of its meetings from quarterly, as mandated, to monthly; increasing the number of subcommittees to tackle specific issues before bringing recommended actions to the whole Board; naming a Vice Chair to lead meetings and convene calls during absences of the Chair; and drafting its annual report to Council in a timely manner.

The Board's recommendations are provided during regularly scheduled Board meetings throughout the year, and in its annual report to Council. DOEE takes the Board's comments under advisement to inform actions taken with DCSEU and the DCSEU contract. For example, the Board recommended changes to the structure of DCSEU's benchmarks, including adding a savings requirement to the low-income spend benchmark, and adding a new benchmark on leveraging. DOEE adopted these recommended changes.

SEU Advisory Board members are appointed for 3 year terms, so DOEE will recommend knowledgeable candidates when terms expire, and new Board members are sought to fill vacancies.

ODCA Finding

The District's regulatory strategy for reducing carbon emissions from electricity generation does not represent a technology-neutral or least-cost approach to achieving climate change goals.

ODCA Statement

CAEA Requirement for Energy Suppliers to Submit Energy Portfolio Reports is Unenforceable, Says DOEE.

ODCA Recommendation

The D.C. Council should amend D.C. Code § 34-1434(d) to either create an enforceable requirement or repeal this provision of the law.

DOEE Response: AGREE

DOEE's agrees the CAEA requirement for energy suppliers to submit energy portfolio reports is unenforceable for the reasons stated in the audit report, and DOEE has never received any of these reports. DOEE will seek advice and pursue a legislative amendment through the appropriate channels, to repeal this provision of the law.

ODCA Statement

RPS Requirements Have Failed to Spur Sufficient Investment in Solar Generation in the District

ODCA Recommendation

DOEE should examine the cost-effectiveness of the local solar requirement relative to other mechanisms for reducing carbon emissions from the District.

DOEE Response: DISAGREE

DOEE has already examined the cost-effectiveness of the local solar requirement relative to other mechanisms for reducing carbon emissions from the District. Such information is readily available through reports such as those by the U.S Energy Information Administration or by industry sources like Lazard on the cost of electricity generation technologies. Following the passage of the 2016 law that established of the Solar for All program, DOEE reviewed the cost-effectiveness of rooftop solar systems in comparison to other technologies as a component of informing the Solar for All Implementation Plan, which DOEE submitted to the Council of the District of Columbia in February 2017. Furthermore, DOEE extensively discussed and developed strategies to lower the cost of installing rooftop solar systems in the District with key stakeholders in developing the Solar for All Implementation Plan, and the documents containing the recommendations from those stakeholders were appended to the Implementation Plan. DOEE does not believe that replicating this exercise will be useful or necessary in executing the local solar requirement or achieving the Solar for All program mandate effectively and efficiently.

DOEE also does not agree that RPS requirements have failed to spur sufficient investment in solar generation in the District. Quite to the contrary, the PSC reports on the RPS show that that since the passage of the RPS Amendment Act of 2016, the amount of solar generation in the District has exponentially increased annually. For example, PSC's 2016 RPS report shows that local solar generation grew by roughly 5 MW from January 2014 to January 2016.¹ In comparison, following the passage of the RPS Amendment Act of 2016, local solar generation grew by roughly 30 MW from January 2017 to January 2019, which is a factor of 6.² These facts are inconsistent with the auditor's assertion that RPS requirements have failed to spur investment in solar generation in the District. DOEE further reminds ODCA that the RPS law is

¹ <https://dcpsc.org/PSCDC/media/Images/Renewable-May-2016.pdf>

² <https://dcpsc.org/PSCDC/media/PDFFiles/NaturalGas/Report-on-REPS-for-2018-043018-final.pdf>

designed to create a market in which demand outpaces supply; in fact, this is the key function of the RPS—sending a demand signal that is sufficiently strong enough to spur supply growth. If supply outpaces demand, SREC prices would fall, which would temper new solar installments until the RPS solar carve-out again exceeded the solar supply. The facts show that the District's RPS solar carve-out has indeed worked as intended to spur the growth of local solar generation.

With respect to the cost to ratepayers, DOEE disagrees with the assertion in ODCA's report that DOEE is "primarily concerned with the cost of building solar energy capacity, rather than the cost of compliance with the RPS, which they said had not yet been passed on to ratepayers."³ DOEE does take into consideration the cost to ratepayers of compliance with the RPS when advocating for policy changes. Also, DOEE's understanding is that a portion of the cost of RPS compliance is passed on to ratepayers. The exact amount that is passed on is not clear because the cost of compliance does not appear as a separate surcharge in customers' bills [like the SETF and EATF]. However, a portion of the cost of compliance is presumably accounted for in the per kWh rate charged to customers.

Lastly, DOEE notes that cost-effectiveness, i.e. dollar per ton of GHG, is not the only metric by which DOEE evaluates the District's climate and energy strategies. Sustainability comprises several key components, of which GHG reduction is only one. Other sustainability benefits that DOEE considers and seeks to optimize in the District's climate and energy strategies include resilience, which is improved by local solar generation; air quality, which also benefits from renewable on-site generation; reduced waste, which is another benefit of renewable generation, and local job creation, which is spurred by supporting the growth of local industries and markets, such as solar..

³ ODCA Report, *DC's 2008 Clean Energy Act: Lower Emissions But Too Many Cars & Not Enough Solar*, p. 40, Footnote 60: "In an interview with DOEE managers and staff, DOEE said that they are primarily concerned with the cost of building solar energy capacity, rather than the cost of compliance with the RPS, which they said had not yet been passed on to ratepayers."

ODCA Statement

RPS is Not a Technology-Neutral or Least-Cost Approach to Reducing Greenhouse Gas Emissions

ODCA Recommendation

To more effectively align District regulatory policy with its climate goals, the Mayor and Council should consider establishing a zero-carbon electricity standard which would provide a technology neutral mechanism for encouraging new investments in carbon-free electricity generation.

DOEE Response: DISAGREE

DOEE believes that this recommendation is unlikely to be legally permissible, and it represents a significant change to the District's energy market operations, law, and policy, placing the recommendation outside of the scope of the audit. While DOEE fully appreciates the intent of the recommendation, the reasoning and findings underlying the recommendation, and therefore the recommendation itself, are flawed, specifically with respect to the law and practice governing electricity supply in the multi-state PJM region, as well as the GHG accounting rules under the Global Protocol for Communities. Adoption of this recommendation might be infeasible without repealing a fundamental piece of energy legislation, or, at best, would slow the District's efforts to reduce its GHG liability from the energy sector in the coming decades. Further, DOEE disagrees that subsidizing existing nuclear generation, which already provides 34% of the total supply in PJM, is needed in lieu of wind and solar generation, which only provides 2.9% of the total supply.

Summary

As described, this recommendation would not be feasible without repealing or significantly altering the Retail Electric Competition and Consumer Protection Act of 1999. Even assuming such legislative change, there may be issues implicating the federal constitution. In addition, implementing this recommendation may in fact slow the District's effort to cut GHG emissions. Lastly, DOEE believes that this recommendation calling for a major change to the District's energy policy falls well outside the scope of the audit.

This recommendation presupposes that the power supply sector remains regulated by the District of Columbia and that all District ratepayers receive their supply from the distribution utility, Pepco. While Pepco is still the sole distributor of electricity in the District, since 2000, electricity generation and supply is no longer regulated by the District. Specifically,

implementing the report's recommendation along the line of the zero-carbon electricity standard legislation in the state of Washington, as referenced in the report, would require repealing the Retail Competition Act, with all attendant consequences that follow therefrom.

If this recommendation was contorted to fit within existing law, for example, by adding non-emitting energy credits or zero-carbon energy credits for existing nuclear generation to the District's RPS, it would likely increase the District's GHG emissions liability, since such credits would lack the additionality requirement that is essential to GHG offset accounting rules under the Global Protocol for Communities. The RPS-type of policy is a valuable tool for offsetting GHG emissions only to the extent that it spurs the growth of *new* generation of renewable or carbon-free electricity. Existing carbon-neutral generation like nuclear or hydro is already taken into account in the District's GHG accounting of its energy baseline; therefore, providing credits for existing carbon-neutral generation that are part of the baseline calculation would not further reduce the District's GHG emissions liability.

DOEE notes that the recommendation's reference to other states enacting "zero-carbon electricity standards" is somewhat misplaced and inapplicable to the District's circumstances. For example, the intent of the zero carbon energy credit (ZEC) in New York is mainly to subsidize uneconomical existing nuclear generation, not reducing GHG emissions by building new nuclear generation. New York is well within its rights to consider such incentives in considering the fuel mix of its generation fleets as a part of its state generation resource planning. Unlike New York, however, the District has no in-state generation that it can influence. In addition, the state of New York, unlike the District, exercises significant control over its generation resources due to the fact that it has its own wholesale market and transmission system called the New York Independent System Operator. In contrast, the District belongs to a multi-state regional transmission system (13 states plus the District), and each PJM state with its own generation fleet has its own generation resource planning powers that are beyond the District's influence. The example referenced in California is similar in its intent. The California law imposes a broad obligation on its in-state generation resource planning bodies to ensure that electricity will be carbon free by 2045. Even in California, because it is partially open to retail supply competition, the state does not mandate any specific purchase of zero carbon electricity supply, as the auditor suggests that the District do. In fact, the California law states that the state generation planning for zero-carbon electricity must not contravene the Interstate Commerce Clause. California, like New York, has its own wholesale market and transmission system called the California Independent System Operator.

Discussion

The Renewable Portfolio Standard policy was developed and adopted by US states as a tool to accomplish two goals simultaneously: to increase the amount of renewable electricity

generation through a market-based mechanism, and to further promote electricity restructuring, or electric deregulation.⁴ The District's version of electricity restructuring is the Retail Electric Competition Act, similar to a version adopted by 16 other states. The RPS has been currently adopted by 29 states and the District of Columbia.

DOEE respectfully disagrees with the following assertions and associated implications underlying the recommendation:

- "First, the power of the District to stimulate investment in new renewable generating facilities [through the RPS] is limited by the rather small percentage of the PJM's electricity that the District consumes."

The District has ample power to stimulate investment in new renewable generation facilities. The District consumes more than 11 million MWh of electricity per year, which is significant enough to induce new renewable energy projects. For example, the electricity demand of several universities located in the District including George Washington University and American University is partially being met by new renewable energy projects, which were specifically built for the universities.⁵ The District can spur the development of renewable energy projects commensurate with the amount of its consumption when complemented by appropriate ancillary services. It is true that the District's energy consumption within the consumption in the PJM territory is a small share, but the auditor appears to suggest that moving to a carbon-neutral standard that includes nuclear energy will somehow allow the District to influence in the generation makeup of PJM, which comprises 13 states including Illinois, Indiana, Michigan, Ohio, Pennsylvania, Virginia, Maryland, and New Jersey. No matter the energy policy tool that the District chooses, its influence in the PJM market can only be limited by the amount of its consumption. It is a simple matter of supply and demand economics.

Rephrasing the report's assertion, DOEE would state that the power of the District to stimulate investment in new generating facilities, no matter the fuel source, is limited by the rather small percentage of the PJM's electricity that the District consumes.

The prospect of District policies incentivizing new nuclear generation built in the near future in PJM is very unlikely for the very reason that the District has such small market power in PJM. This is why nuclear plant proposals are typically made in fully regulated states that have many captive ratepayers and a large energy demand, not in medium-sized cities with a deregulated electric market where its ratepayers can choose among several federally-governed energy

⁴ See p.4, "Renewable Portfolio Standards: A Factual Introduction to Experience from the United States", LBNL-62569, Lawrence Berkeley National Laboratory & Energy Information Administration, April 2007, <https://emp.lbl.gov/sites/all/files/lbnl-62569.pdf>.

⁵ See <https://provost.gwu.edu/capital-partners-solar-project>

suppliers. DOEE is aware of the development of small modular reactors (SMRs) that can be deployed at a smaller size. However, even assuming that the market signal from the District was strong enough to induce the development of new nuclear generation including SMRs, in practice, the permitting, siting, licensing, and construction process could take well over a decade. It should be noted that construction of new nuclear plants comes with significant project delivery risks. Such risk is amply illustrated by the recently abandoned nuclear power project in South Carolina, already costing South Carolina ratepayers \$9 billion without a viable plant.⁶ In contrast, new grid-scale solar and wind projects take between 3 and 5 years to come online, and their costs are continuing to decline while their efficiency is improving.

- “Some environmental advocates oppose incentives for nuclear energy on the grounds that nuclear energy poses safety risks and that renewables such as solar and wind are cheaper to bring on line. If the District intends to prioritize climate change mitigation as a matter of policy then the District should be encouraging investments in both intermittent and “firm” sources of carbon-free power to reduce GHG emissions associated with the District’s actual electricity consumption and set a sound policy example for other states.”

It is well-recognized that new solar and wind projects are cheaper and can be brought online much quicker, and with much less risk, than new nuclear energy projects. Clearly, DOEE believes it must be prudent in protecting its residents and businesses from risky investments.

That said, DOEE agrees that it should promote both intermittent⁷ and firm sources of carbon-free electricity, and it continues to support the operation of the Calvert Cliffs generation facilities, which have been injecting nuclear-generated electricity into the PJM grid. As the report acknowledges, the share of nuclear electricity in the PJM grid is 34.5%, by far the most dominant fuel source. Renewable generation is merely 5.4% of the total share, with solar and wind comprising 2.9%. Therefore, DOEE disagrees with the report’s assertion that DOEE should incentivize nuclear energy, which is already dominating the fuel mix in the vast PJM territory. Rather, DOEE believes that what requires the District’s support is new renewable energy development. To ensure our RPS did this more effectively, the Clean Energy DC Omnibus

⁶ https://www.postandcourier.com/politics/potential-buyer-eyeing-abandoned-billion-sc-nuclear-project-legislator-says/article_5939affa-6db5-11e9-beb3-d7ab843a5b3d.html

⁷ There is some misunderstanding regarding the impact of intermittent generation on the grid. Most modern grids operating in modernized countries can absorb up to 40%-50% of intermittent generation without grid-scale battery storage and without adverse impact to the grid, according to the reports by the Intergovernmental Panel on Climate Change and by the European Commission on Energy System Transition. In California, the intermittent generation provides on average about 1/3 of total generation needed to meet demand without adverse impacts to the grid, and it has operated with as much as 50% of total generation from solar and wind in June 2018. PJM is very far from reaching that scenario in the foreseeable future.

<http://www.caiso.com/Documents/MonthlyRenewablesPerformanceReport-Jun2019.html>

Amendment Act of 2018 limited the eligibility of Renewable Energy Certificates (RECs) to projects in PJM, which will significantly enhance the effectiveness of the RPS in supporting new generation, improving the additionality of the RECs purchased for reducing the District's GHG liability.

Moreover, the auditor appears to suggest that the 29 states that have adopted the RPS rather than a nuclear-led carbon-free standard for electricity are in error. DOEE believes that the RPS policies of these 29 states is sound, for the aforementioned reasons, and many of these states are examining appropriate strategies for system balancing needs, using a diversified set of measures such as a high-voltage transmission network to connect renewable resources in different time zones, energy storage, as well as conventional carbon-neutral sources.

- “Furthermore, by putting in place a requirement for electricity suppliers to demonstrate that they purchased sufficient zero-carbon electricity to match each hour of electricity demand in the District—24/7, 365 days a year—the District could better demonstrate leadership by more closely aligning policies with goals. DOEE would not need to measure progress in reducing GHG emissions by accounting for the average carbon intensity of the PJM grid since by design the policy would require that electricity come from zero-carbon sources.”

DOEE believes the above statement in the report misconstrues several key facts of the multi-state wholesale electricity operation and market of PJM, as well as the GHG accounting rules that the District uses along with many other cities committed to fighting climate change.

Currently, the District's RPS already requires all electricity suppliers to demonstrate that they “purchased sufficient” zero-carbon, i.e. renewable, electricity to match each hour of electricity consumption in the District through the year. The report appears to suggest that substituting “zero-carbon electricity” for “RECs” will somehow eliminate DOEE's need “to measure progress in reducing GHG emissions by accounting for the average carbon intensity of the PJM grid since by design the policy would require that electricity come from zero-carbon sources.” However, that suggestion is incorrect. Even if the District established such a standard, DOEE will still need to measure progress in reducing GHG emissions by accounting for the average carbon intensity of the PJM grid in accordance with the additionality requirement under the GHG accounting rules that the District uses.⁸

To the contrary, the amount of GHG emissions stemming from PJM's average carbon intensity would likely *not* be reduced through a zero-carbon electricity standard, if it makes existing

⁸ The District, per commitments to the Global Covenant of Mayors and C40 Cities, follows the Global Protocol For Community-Scale GHG Inventories (GPC) to complete its annual GHG inventory. The GPC is available at: <https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>.

nuclear and hydrogen power plants eligible. This is because the generation outputs from these facilities will already have been reflected in the District's GHG inventory as the baseline level of emissions from the energy sector. Therefore using a zero-carbon electricity standard as opposed to RPS would not eliminate the need to use the average carbon intensity of PJM in determining the baseline GHG liability of the District's electricity consumption. In contrast, the use of RPS to the extent that it produces new renewable generation in PJM will reduce the District's GHG liability from its baseline level for the energy sector.

What the report appears to suggest is that the District require, somewhat akin to the state of Washington, which has a fully regulated energy market, every electricity supplier (electric utility in the case of the state of Washington) to directly enter into bilateral contracts with zero-carbon electricity generators, rather than purchase power from the PJM wholesale generation markets and auctions, which receives bids and aggregates and mixes generation from hundreds of generators for every hour of the demand in PJM without *any* regard to the fuel type. Buying power from PJM's wholesale auction would preclude the type of assurance that the report is seeking: that every hour of electricity generation is supplied by zero carbon electricity generators. Once generation is pooled and mixed in the wholesale market of PJM, the fuel attributes disappear, i.e. electrons are not tagged with fuel type identifiers, making such assurance all but impossible. Therefore, the intent of the recommendation could not be achieved by buying energy from PJM-facilitated energy markets, and the energy suppliers would have to resort to bilateral, individual contracts with carbon-neutral generation suppliers.

DOEE has considered such an approach, i.e. bilateral contract requirement, in the past, but does not believe it is consistent with the Retail Competition Act, and, even if DOEE assumed otherwise, DOEE is unsure if the District has the legal authority to dictate the procurement and behavior of wholesale electricity suppliers, which are regulated by the Federal Energy Regulatory Commission under federal law, including the Interstate Commerce clause. DOEE notes that even in California, which has only minimally deregulated the electricity supply sector, the law does not impose specific obligations on energy suppliers in a manner similar to the state of Washington, where the electric utilities play the role of electric suppliers. Requiring wholesale electricity suppliers to buy environmental, rather than energy, attributes—whether they are RECs or ZECs—may not trigger the same legal concern because such a requirement has only an incidental impact for wholesale electricity suppliers. However, the District may not have the authority to essentially prohibit wholesale electricity suppliers from using PJM's core market products, which may be viewed as putting an undue burden on interstate commerce.

On the other hand, if the auditor is suggesting that the RPS be amended to require electricity suppliers to purchase ZECs instead of RECs, that suggestion would lead to the same or, likely, a worse outcome with regard to GHG emissions from the District's electricity use. The District's GHG accounting must include the average carbon intensity in PJM, adjusted by the additionality

of RECs or ZECs, if the RPS were amended to become a ZEC policy. ZECs would necessarily be subject to the same scrutiny as RECs—to avoid “green-washing”—by examining whether they represent an actual displacement of the fossil fuel-generated electricity from the baseline scenario by causing the development of new, additional zero-carbon generation of electricity. And ZECs from existing nuclear generation that are already reflected in the District’s baseline GHG emissions will not meet the additionality requirement.

- If mitigating climate change is the District’s primary energy policy goal, the District’s policies should target GHG reductions by incentivizing all technologies that contribute to developing a zero-carbon electricity grid.

Again, DOEE notes that nuclear energy is already the most dominant source of all electricity generation in PJM, let alone in the context of carbon-free electricity. DOEE believes that nuclear energy is adequately subsidized and represented in PJM, as demonstrated by its 34.5% share, and that where the District can most effectively intervene to reduce GHG emissions of its electric use is through an RPS policy targeting renewable energy generation, which makes up a meager 5.4% (2.9% from solar and wind).

- A zero-carbon electricity standard would have a greater impact on reducing GHG emissions if the policy encouraged new investments in carbon-free power by limiting the number of credits that suppliers could purchase from existing zero-carbon (e.g. nuclear) power plants. For that matter, the District’s current RPS policy places no limit on the number of RECs that qualify from older wind and solar farms with excess capacity. Limiting the number of RECs that qualify from older renewable or other zero carbon facilities would help to focus the District’s policy on encouraging new sources of zero-carbon energy, serving as a model for other states’ climate policies.

DOEE agrees that RECs or ZECs should be sufficiently constrained to spur the development of new generation. However, given the report’s acknowledgement of the District’s small market impact in PJM, DOEE questions the validity of the claim that simply putting additional constraints on ZECs or RECs will have a significant market impact on the future of new generation in PJM. The District’s policies regarding GHG accounting and REC eligibility significantly impact how the District accounts for its GHG liability, but these policies will have only a limited role in shaping the future of generation resources in PJM, which has 13 other state members.

Lastly, the report notes that a few other states have adopted zero-carbon electricity standards, and that the District should follow them. DOEE notes that none of these states are situated in the same regulatory framework as the District of Columbia. The District is only one of 14 jurisdictions in PJM, which operates the regional transmission

and wholesale market and lies outside the District’s regulatory reach. Moreover, the District has a restructured, or deregulated, electricity market. In contrast, most of the states indicated in the report, such as Washington and Nevada, do not have retail energy competition and these jurisdictions can fully control and regulate their utilities and generation fleets operating within their territories, and some of these states even have their own transmission and wholesale market, such as New York ISO, and California ISO. DOEE does not believe that their policy options are comparable to the District.

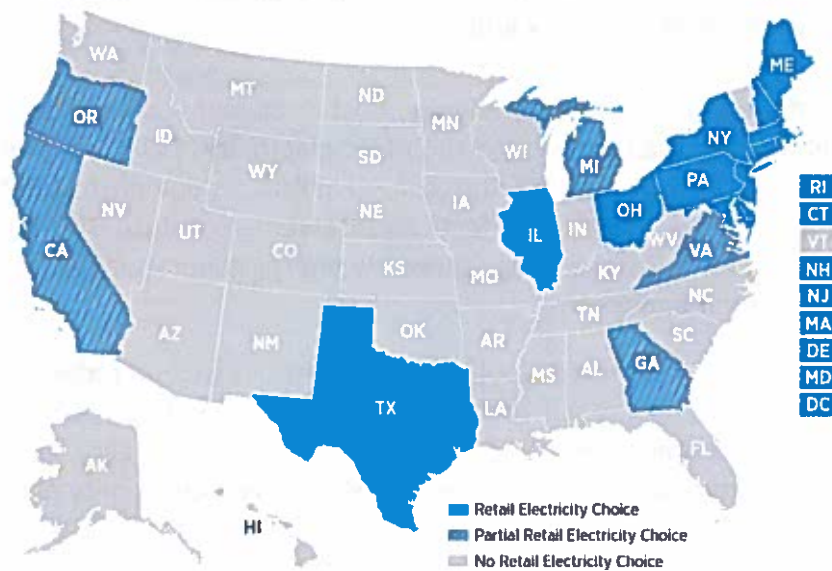


Figure 1. States with retail electricity choice

Source: State public utility commissions (2017)*

ODCA Finding

The Sustainable Energy Trust Fund and Energy Assistance Trust Fund have funded the SEU contract, SEU Advisory Board, and Energy Assistance Program at the levels prescribed by the D.C. Council.

ODCA Recommendation

To demonstrate greater transparency and to justify any increases to SETF and EATF fees, the Council should introduce stand-alone legislation when proposing changes to ratepayer fees and hold a hearing to solicit public comment on the proposed changes to ratepayer fees.

DOEE Response: PARTIALLY AGREE

DOEE agrees that transparency is important when passing legislation increasing fees or taxes on residents, and that the Council and the Mayor should ensure that such increases are made as transparently and with as much public input as possible. However, DOEE recognizes that there may be times that budgetary stresses surrounding important programs justify including increases to fees as part of larger legislation supporting the District's budget and programs, such as the Budget Support Act. The Budget Support Act as proposed by the Mayor receives a public hearing at the Council.

ODCA Finding

Although the requirement for building energy performance benchmarking cannot be causally linked to energy savings, it is a prerequisite for establishing building energy performance standards.

ODCA Statement

Residential submetering has the potential to save tenants money.

ODCA Recommendation

The Council should consider incentives or requirements for submetering of non-residential buildings, and changes to District law to allow residential submetering.

DOEE Response: PARTIALLY AGREE

DOEE does not believe that incentives or requirements for submetering of non-residential buildings are currently necessary. Submetering for non-residential buildings is already allowed under DC law and regulations, and DOEE has not heard from non-residential building owners or tenants that conversion to submetering is an issue that requires subsidization or mandates. Further, implementation of the Building Energy Performance Standard (BEPS) program, created by the CleanEnergy DC Omnibus Amendment Act of 2018, will create its own incentives for building owners to invest in submetering to improve the energy efficiency of non-residential tenants. Building owners will want to know the energy intensity of tenants because this will impact the building's overall energy performance.

DOEE agrees that residential submetering has potential to save tenants money and that changes to District laws and regulations should be considered to allow residential submetering. In master-metered residential buildings, energy costs are typically apportioned based on square footage of the unit rather than actual energy consumption. The costs or savings resulting from any changes in energy consumption from a master-metered unit are socialized across all units. Therefore, residents in master-metered buildings have little incentive to conserve energy or invest in energy efficiency upgrades. Submetering of residential buildings would empower households to better manage their energy bills through conservation and energy efficiency.

However, residential submetering should be introduced only with appropriate protections in place for residential tenants, especially low to moderate income tenants. Particular consideration must be taken regarding the effect of submetering for those residents receiving HUD utility allowances. Enabling legislation and supporting regulations must be developed to define the rights and obligations of residential tenants and building owners when it comes to

submetering, and key stakeholders, including the Office of People's Counsel, the DC Housing Authority, and low income housing developers should be consulted as part of the policymaking and rulemaking process.

ODCA Statement

Green Leases Have the Potential to Create Mutual Benefits for Landlord and Tenant

ODCA Recommendation

If DOEE determines that incentives for landlords and tenants to enter into green leases would materially advance the District’s GHG emissions reduction goals, the agency should develop regulations or a legislative proposal to establish incentives for green leases.

DOEE Response: PARTIALLY AGREE

DOEE agrees in principle that green leases do have the potential to materially advance the District’s GHG emission reduction goals. However, we believe that new regulations or legislation are unnecessary as DOEE currently has the authority to incentivize green leases through its various programs. Furthermore, a strong incentive for entering into green leases already exists through the mandates that landlords will be required to meet under the Building Energy Performance Standards (BEPS). DOEE also believes, as noted in the Clean Energy DC Plan (Action Item EB.7), that landlords will be better served by DOEE encouraging the adoption of green leases through education, training, and recognition programs rather than through the development of regulations or legislation.

ODCA Finding

The District’s climate policy does not adequately address emissions from commuters driving downtown and from ride-hailing fleets.

ODCA Recommendation

DOEE should study the feasibility, costs, and GHG emission reduction benefits of various options for reducing GHG emissions from passenger and commercial vehicles and from ride-hailing fleets operating in the District. Among other options, DOEE should study imposing a congestion zone charge for fossil- fuel-powered commuter vehicles entering Downtown DC during peak hours, with the proceeds possibly funding improvements in public transportation. DOEE should also study various options to require ride- hailing fleets to operate electric and hybrid-electric vehicles in the District.

DOEE Response: This recommendation is comprised of *three* discrete parts, and each part is separately addressed, as provided below:

- I. **ODCA Recommendation:** DOEE should study the feasibility, costs, and GHG emission reduction benefits of various options for reducing GHG emissions from passenger and commercial vehicles and from ride-hailing fleets operating in the District.

DOEE Response: DISAGREE

An additional study is unnecessary, given current studies that will more deeply assess strategies needed to reduce GHG emissions from the transportation sector. DOEE is currently developing a strategy to achieve the Mayor's goal to achieve carbon neutrality by 2050 that will include strategies and associated GHG emissions reduction for the transportation sector, including trips associated with transportation network companies. A deeper look at travel associated with ride-hailing would require data from transportation network companies that is not currently publicly available. DOEE is also leading the development of the Clean Vehicle Transition Plan. As described in the CEDC Act, the plan will provide recommendations for strategies, policies, costs, and timelines for achieving the goal of EVs making up 25% of registered vehicles in the District by 2030.

- II. **ODCA Recommendation: Among other options, DOEE should study imposing a congestion zone charge for fossil-fuel-powered commuter vehicles entering Downtown DC during peak hours.**

DOEE Response: DISAGREE

As noted in the report, the District Government, through DDOT, is already funding a study of pricing strategies to address congestion. That study is currently underway and the findings will inform the previously mentioned carbon neutrality strategy. An additional study is unnecessary at this point.

- III. **ODCA Recommendation: DOEE should also study various options to require ride-hailing fleets to operate electric and hybrid-electric vehicles in the District.**

DOEE Response: PARTIALLY AGREE

Strategies to reduce emissions from ride-hailing fleets through electrification will be included in the forthcoming carbon neutrality strategy and the Clean Vehicle Transition Plan. However, DOEE recommends looking more broadly into this issue, including exploring voluntary programs as well as requirements to increase the use of electric vehicles by ride-hailing and shared vehicle series.

General DOEE Comments

ODCA Report, page 10, bullet point #1

Change the timeline for achieving certain maximum benchmark targets from one year to multiple years, as long as the DCSEU achieves the minimum targets in any given year (with the exception of the green jobs and low-income spending benchmarks, which remained annual benchmarks)."

DOEE Comment

As noted in ODCA's report, the FY 2017 DCSEU contract has four performance benchmarks that are multiyear [5 year] targets. However, for three of the four multiyear performance benchmarks [electricity, natural gas, and renewable energy], the FY 2017 contract does not require the DCSEU to meet minimum benchmarks each year. Instead the DCSEU is held to meeting the Year 5 benchmark by end of Year 5 of the contract, and penalties are imposed only after Year 5. In other words, for these multiyear benchmarks, the DCSEU could miss the minimum targets for Years 1-4, but would still not be penalized as long as it achieved the Year 5 minimum target by the end of Year 5.

It is true that for these three of the multiyear benchmarks, the DCSEU is incentivized to meet the minimum targets each year because it is then paid out the incentive amount for that year, instead of having to wait until after Year 5. However, there is no penalty imposed in Years 1-4, and the DCSEU is subject to a penalty only if it does not achieve the minimum Year 5 target by the end of Year 5.

ODCA Report, page 15, last sentence

Members are unpaid, but the law authorizes Board members to charge for expenses associated with carrying out their duties, up to \$2,000 per Board member per year.

DOEE Comment

As noted in the ODCA report, the original CAEA authorized \$2,000 per Board member to fund Board activities. However, the current version of this provision authorizes no more than \$9,800 for the entire Board:

"(4) The activities of the SEU Advisory Board under § 8-1774.03 in the amount of \$9,800 annually;" [DC Code § 8-1774.10(c)(4)].

ODCA Response to Agency Comments

ODCA appreciates DOEE's thorough review of our report and its recommendations. Effectively implementing the District's energy policies and maximizing the District's ability to mitigate climate change is vital to fulfilling the District Government's obligations to its residents, businesses, and to society at large. We value DOEE's collaboration and commitment to making program improvements wherever possible.

In its written comments, DOEE expressed substantial support for implementing the first four ODCA recommendations in the report, which relate to how the agency can extract greater value from its contract with DCSEU to administer the District's energy efficiency programs. First, DOEE expressed willingness to work with the DCSEU to incorporate the concept of net savings in evaluating whether the DCSEU's contract benchmarks and targets are sufficiently ambitious. Second, DOEE expressed support in principle for ODCA's recommendation that the agency modify the DCSEU's contract benchmark targets to prioritize greenhouse gas (GHG) emissions reductions over energy savings. Third, DOEE agreed with ODCA's recommendation that the agency create a central customer interface—or "one-stop-shop"—for energy efficiency financing, incentives, and technical resources. And fourth, DOEE agreed with ODCA that maximizing the value that District residents receive from DCSEU-administered energy efficiency programs is dependent upon establishing sufficiently ambitious contract benchmark targets that the DCSEU must achieve.

Where DOEE disagreed with our recommendations for improving the administration and performance of the DCSEU's programs, the agency largely pointed to problems with one (out of potentially several) ways of implementing ODCA's recommendations. For example, DOEE does not believe that the agency should rely solely on net savings to measure the DCSEU's performance. ODCA's recommendation, however, stated that DOEE "should modify the incentives for the DCSEU to reward interventions that lead to additional energy savings and GHG emission reductions and limit the amount of DCSEU spending on projects with energy savings that would have occurred even without the DCSEU's involvement." In discussing the basis for this recommendation, ODCA described how an energy efficiency program relying on gross savings to measure its performance can count all energy savings—even from projects that are deemed by evaluators as free riders because they would have occurred anyway without the need for incentives. In contrast, an energy efficiency program that to some extent factors in net savings in measuring performance (which discounts energy savings by the amount of free ridership) will be motivated to avoid providing funding to projects that would have occurred anyway. DOEE may not believe the agency should rely solely on net savings to measure the DCSEU's performance, but it is not clear if DOEE actually disagrees with the recommendation, which stated more broadly that DOEE should modify the DCSEU's performance management system in order to limit free ridership. We underscore that the intent of our recommendation is for DOEE to extract greater value from the DCSEU contract by boosting the energy savings and GHG emissions reductions per dollar of contract funding.

Likewise DOEE pointed to problems with one (out of potentially several) ways of implementing ODCA's third recommendation, which relates to how DOEE administers the DCSEU contract and other District energy efficiency programs. DOEE does not believe that the Green Bank should serve as the central

customer interface for financing, incentive, and technical resources, and describes other options for achieving the intent of the recommendation. ODCA notes that the recommendation did not specify the Green Bank as the only option for implementing a “one-stop-shop” customer interface. We commend DOEE for pursuing other avenues for improving the coordination and efficient delivery of all energy efficiency services provided through the DCSEU contract and through related entities such as the Green Bank and the DC Property Assessed Clean Energy (DC PACE) financing program.

Last, DOEE disagreed with ODCA’s recommendation that the agency should determine which functions of the DCSEU are best accomplished under contract versus by a quasi-independent governmental entity such as the Green Bank with greater freedom to pursue long-term objectives without the constraint of a fixed period of contract performance. DOEE stated that the agency does not believe that the Green Bank should take on any of the DCSEU’s current responsibilities; rather, DOEE believes all of the main functions of the DCSEU are well suited for a performance contract. In response, ODCA reiterates that its recommendation is intended to bolster DOEE’s ability to maximize the lifetime GHG emissions reductions that the District can achieve given the various programs and capabilities at DOEE’s disposal (e.g. contracts, agency-administered programs, Green Bank-administered programs).

With regard to the Sustainable Energy Utility Advisory Board, DOEE disagreed with ODCA’s recommendation that DOEE report to the D.C. Council how to restructure the Board to more effectively advise DOEE and the DCSEU. DOEE instead stated that the Board is properly constituted and does not require restructuring. Given the nature of the feedback we received from current and former Board members and other stakeholders, it is legitimate to question whether the SEU Advisory Board is adding real value to DOEE’s decision-making and helping to improve the DCSEU’s performance. We hope that DOEE and the D.C. Council will look closely at how the Board could be more effective with a revised mission and reporting structure.

DOEE disagreed with both of ODCA’s recommendations related to the District’s efforts to reduce carbon emissions from electricity consumption. DOEE did not agree with the recommendation to examine the cost-effectiveness of the local solar requirement relative to other mechanisms for reducing carbon emissions in the District, because the agency claims it has already completed this cost-effectiveness analysis. However, DOEE’s comments do not provide any evidence (reports, testimony, etc) that the agency has completed a cost-effectiveness analysis of the local solar requirement relative to other mechanisms for reducing carbon emissions from the District. Nor could ODCA find statements of this nature in reviewing archived videos of the Q&A portions of the Council hearings that would most likely include comments from DOEE to this effect. The intent of the recommendation is to better inform the D.C. Council and the Executive on the costs—primarily to District electricity ratepayers—of the local solar requirement as laid out under current law. Without this information on cost-effectiveness it appears that the D.C. Council and the Executive will continue making decisions about how to spend ratepayer funds without full knowledge of the ramifications of their decisions.

Separately, DOEE disagreed with ODCA’s recommendation that the Mayor and D.C. Council consider establishing a zero-carbon electricity standard, which would provide a technology-neutral mechanism for encouraging new investments in carbon-free electricity generation. DOEE’s opposition to the idea of considering a zero-carbon electricity standard stems from an analysis of two ways to implement a zero-

carbon electricity standard, and the agency's comments indicate that DOEE has determined that these two approaches are not feasible for the District to undertake. There is no consensus view on the part of stakeholders, though, that the approaches DOEE is describing are infeasible; and in any event it is not clear that no other pathways exist for implementing some form of a zero-carbon electricity standard in the District. The intent of ODCA's recommendation is to promote investment in both intermittent sources (e.g. wind, solar) and firm sources (nuclear, battery-storage, other new technologies) of carbon-free electricity—a goal that DOEE indicated it shares. Furthermore, ODCA's recommendation is predicated on the idea that the District's ability to stimulate investment in new generating facilities is limited by the small percentage of the PJM's electricity that the District consumes. Given this fact, our recommendation focuses on the District serving as a leader by setting an example: We should adopt a set of policies for other states and localities to follow that will send a clear and effective signal to the electricity market that we want 100 percent carbon-free electricity, 24 hours a day, 365 days a year.

With regard to ODCA's recommendations related to reducing energy consumption from commercial and residential buildings in the District, DOEE agreed that the District's policies should encourage submetering—particularly in residential buildings—and the use of green leases. Where DOEE disagreed is in the need for creating new incentives and requirements to encourage these practices; DOEE believes that the agency's plans for implementing the Building Energy Performance Standard (BEPS) program will include sufficient incentives for building owners to invest in submetering—at least where it is allowed in non-residential buildings—and also sufficient incentives for buildings owners to adopt green leases. ODCA acknowledges that the BEPS program will, by setting standards for certain size-classes of privately-owned commercial and residential buildings in the District, encourage building owners to identify the most cost-effective means of improving energy efficiency. Although the timeline for fully implementing BEPS stretches to 2026, ODCA encourages DOEE to adopt ODCA's recommendations and use the implementation of BEPS as evidence of compliance.

Last, partly in response to DOEE's written comments and feedback ODCA received from DOEE in the audit exit conference, ODCA is modifying its final recommendation, which relates to the finding that the District's climate policy does not adequately address emissions from commuters driving downtown and from ride-hailing fleets. ODCA originally recommended that DOEE study the feasibility, costs, and potential GHG reductions of various options for reducing emissions from passenger and commercial vehicles and from ride-hailing fleets, including an option to establish a congestion-zone pricing scheme for Downtown D.C. We recently learned that the agency is now developing a strategy for reducing GHG emissions from the transportation sector, including trips associated with ride-hailing companies, as part of an effort to attain the Mayor's goal of achieving carbon neutrality for the District by 2050. Furthermore, DOEE informed ODCA that the District Department of Transportation (DDOT) is already engaged in a study of pricing strategies to reduce congestion in the District. Based on this information, ODCA is recommending that the District move ahead to adopt a congestion pricing scheme, assuming the studies and analyses undertaken by DDOT and DOEE provide sufficient evidence that it is in the best interest of the District to do so.

Summary of Report Recommendations

With a few noted exceptions the recommendations in this report can be implemented without any additional costs to the Department of Energy and Environment (DOEE) and help to advance the goals of the agency, as shown below.

| Recommendation | Is There a Cost to the Agency to Implement? | Potential to Generate Revenue or Savings to the District? | Specific Agency/Entity or District-Wide Goal Advanced by Recommendation |
|--|---|---|--|
| 1. DOEE should modify the incentives for the DCSEU to reward interventions that lead to additional energy savings and GHG emissions reductions and limit the amount of DCSEU spending on projects with energy savings that would have occurred even without the DCSEU's involvement. | No | No | District-wide: In December 2017, Mayor Bowser pledged to make the District carbon neutral and climate resilient by 2050. |
| 2. DOEE should align the DCSEU performance benchmarks and targets with the District's climate change strategy by prioritizing GHG reductions versus energy savings. | No | No | District-wide: In December 2017, Mayor Bowser pledged to make the District carbon neutral and climate resilient by 2050. |
| 3. The Mayor and D.C. Council working with DOEE should consolidate the administration of energy efficiency services, potentially under the Green Finance Authority, to create a single portal, or "one-stop-shop" for consumers. | No | No | DOEE FY 2020 strategic objective #4: "Increase engagement with District residents, businesses, and institutions in meaningful and equitable ways to increase understanding and adoption of innovative sustainability practices and implement cutting edge programs and policies that ensure the District remains a national and international leader in areas of sustainability, green building deployment, and climate change mitigation and adaptation." |

| Recommendation | Is There a Cost to the Agency to Implement? | Potential to Generate Revenue or Savings to the District? | Specific Agency/Entity or District-Wide Goal Advanced by Recommendation |
|--|---|---|---|
| <p>4. DOEE should determine which functions of the DCSEU are best accomplished under contract and which functions are best accomplished by an entity such as the Green Finance Authority and recommend to the Council how to distribute these functions accordingly.</p> | No | No | <p>DOEE FY 2020 strategic objective #4: "Increase engagement with District residents, businesses, and institutions in meaningful and equitable ways to increase understanding and adoption of innovative sustainability practices and implement cutting edge programs and policies that ensure the District remains a national and international leader in areas of sustainability, green building deployment, and climate change mitigation and adaptation."</p> |
| <p>5. DOEE should recommend to the D.C. Council how to restructure the SEU Advisory Board to more effectively advise DOEE and the DCSEU.</p> | No | No | <p>DOEE FY 2020 strategic objective #6: "Create and maintain a highly efficient, transparent, and responsive District government."</p> |
| <p>6. The D.C. Council should amend §34-1434(d) to create a clearly enforceable requirement and monitor its enforcement or repeal this provision of the law.</p> | No | No | <p>DOEE FY 2020 strategic objective #4: "Increase engagement with District residents, businesses, and institutions in meaningful and equitable ways to increase understanding and adoption of innovative sustainability practices and implement cutting edge programs and policies that ensure the District remains a national and international leader in areas of sustainability, green building deployment, and climate change mitigation and adaptation."</p> |

| Recommendation | Is There a Cost to the Agency to Implement? | Potential to Generate Revenue or Savings to the District? | Specific Agency/Entity or District-Wide Goal Advanced by Recommendation |
|---|--|---|---|
| <p>7. DOEE should examine the costeffectiveness of the local solar requirement relative to other mechanisms for reducing carbon emissions from the District.</p> | <p>Yes to the extent DOEE chooses to contract for research on cost-effectiveness</p> | <p>No</p> | <p>DOEE FY 2020 strategic objective #4: "Increase engagement with District residents, businesses, and institutions in meaningful and equitable ways to increase understanding and adoption of innovative sustainability practices and implement cutting edge programs and policies that ensure the District remains a national and international leader in areas of sustainability, green building deployment, and climate change mitigation and adaptation."</p> |
| <p>8. To more effectively align District regulatory policy with its climate goals, the Mayor and Council should consider establishing a zero-carbon electricity standard which would provide a technology-neutral mechanism for encouraging new investments in carbonfree electricity generation.</p> | <p>No</p> | <p>No</p> | <p>District-wide: In December 2017, Mayor Bowser pledged to make the District carbon neutral and climate resilient by 2050.</p> |
| <p>9. To demonstrate greater transparency and to justify any increases to SETF and EATF fees, the Council should introduce stand-alone legislation when proposing changes to ratepayer fees and hold a hearing to solicit public comment on the proposed changes to ratepayer fees.</p> | <p>No</p> | <p>No</p> | <p>DOEE FY 2020 strategic objective #6: "Create and maintain a highly efficient, transparent, and responsive District government."</p> |

| Recommendation | Is There a Cost to the Agency to Implement? | Potential to Generate Revenue or Savings to the District? | Specific Agency/Entity or District-Wide Goal Advanced by Recommendation |
|---|---|---|--|
| 10. The D.C. Council should consider incentives or requirements for submetering of nonresidential buildings, and changes to District law to allow residential submetering. | No | No | DOEE FY 2020 strategic objective #4: "Increase engagement with District residents, businesses, and institutions in meaningful and equitable ways to increase understanding and adoption of innovative sustainability practices and implement cutting edge programs and policies that ensure the District remains a national and international leader in areas of sustainability, green building deployment, and climate change mitigation and adaptation." |
| 11. DOEE should determine whether incentives for landlords and tenants to enter into green leases would materially advance the District's GHG emissions reduction goals, and if so, the agency should develop regulations or a legislative proposal to establish incentives for green leases. | No | No | DOEE FY 2020 strategic objective #4: "Increase engagement with District residents, businesses, and institutions in meaningful and equitable ways to increase understanding and adoption of innovative sustainability practices and implement cutting edge programs and policies that ensure the District remains a national and international leader in areas of sustainability, green building deployment, and climate change mitigation and adaptation." |

| Recommendation | Is There a Cost to the Agency to Implement? | Potential to Generate Revenue or Savings to the District? | Specific Agency/Entity or District-Wide Goal Advanced by Recommendation |
|---|---|---|---|
| <p>12. To reduce GHG emissions from passenger and commercial vehicles, the Mayor and the D.C. Council should establish a congestion pricing program assuming DOEE and DDOT studies substantiate its value to meet District climate goals. DOEE should also study various options to require ride-hailing fleets to operate electric and hybrid-electric vehicles in the District.</p> | <p>No</p> | <p>Yes. Establishing a congestion pricing scheme will generate revenue the District can apply to improving public transportation or related purposes that contribute to reducing GHG emissions from transportation sources.</p> | <p>District-wide: In December 2017, Mayor Bowser pledged to make the District carbon neutral and climate resilient by 2050.</p> |

Appendix A

Clean Energy Legislation in the District by Effective Date

Clean Energy Legislation in the District by Effective Date

| | | |
|------|--|--|
| 2005 | Renewable Energy Portfolio Standard Act | Establish the RPS at 11% renewable and 0.4% local solar by 2022 |
| 2007 | Green Building Act | Set minimum green building standards |
| 2008 | Clean and Affordable Energy Act | Launched the DCSEU, expanded the RPS requirements, and established building energy data reporting |
| 2010 | Energy Efficiency Financing Act | Created DC PACE |
| 2016 | RPS Expansion Amendment Act | Raised RPS to 50% renewable and 5% local solar by 2032, established Solar for All program |
| 2018 | Green Finance Authority Establishment Act | Established DC Green Bank |
| 2019 | CleanEnergy DC Omnibus Amendment Act | Established building energy standards and raises RPS to 100% renewable by 2032 and 10% local solar by 2041 |

Appendix B

Implementation Status of CAEA Provisions

Implementation Status—Clean and Affordable Energy Act of 2008

| Major Provisions | | |
|--|--|--|
| Sustainable Energy Utility Contract Implementation | Sec. 201 Contract with a Sustainable Energy Utility Sec. 202 Structure of the SEU contract Sec. 205 Implementation of the SEU contract Sec. 206 Sustainable Energy Branding | DOEE has implemented all provisions related to establishing the SEU contract. |
| Sustainable Energy Trust Fund (SETF) | Sec. 210 Sustainable Energy Trust Fund | DOEE has established the SETF as a special purpose revenue fund and budgeted the requisite level of SETF funding for programs as required under the CAEA, as amended. ⁸⁵ |
| Energy Assistance Trust Fund (EATF) | Sec. 211 Energy Assistance Trust Fund | DOEE has established the EATF as a special purpose revenue fund and budgeted the requisite level of EATF funding for programs as required under the CAEA, as amended. |
| Renewable Energy Portfolio Standards (RPS) | Title III Renewable Portfolio Standards (RPS) Sec. 301 | DOEE and the Public Service Commission have implemented all significant aspects of the RPS provisions. The CAEA included a minor provision under this section that required energy supply companies to submit data on the average cost per kilowatt hour of electricity by source of generation. However, DOEE has never collected data from electricity suppliers on the average cost of electricity by source of generation because DOEE says this information is not available to suppliers. |

⁸⁵ The audit scope covers the implementation of the Clean and Affordable Energy Act from its effective date (October 22, 2008) to June 14, 2019.

Implementation Status— Clean and Affordable Energy Act of 2008

| Major Provisions | | |
|----------------------------------|---|--|
| Energy Benchmarking Requirements | Title V Energy Benchmarking Requirements for Private and Government Buildings Sec. 501 | DOEE has implemented the provisions requiring owners of buildings > 50,000 ft ² to report data on building energy efficiency and engaged in compliance enforcement. |
| SEU Advisory Board | Sec. 203 Establishment of a SEU Advisory Board Sec. 204 Operations of the SEU Advisory Board | DOEE and the SEU Advisory Board have met their obligations under the law. |

Implementation Status— Clean and Affordable Energy Act of 2008

| Other Provisions | | |
|--|--|--|
| Duties of Public Service Commission (PSC) and Office of the People's Counsel (OPC) | Title IV Public Service Commission and Office of the People's Counsel Sec. 401 Sec. 402 | The CAEA modified the authorizing language for the PSC and OPC to require these entities to consider environmental issues in their decision-making. Testimonial evidence from the PSC and OPC suggests that the organizations consider these factors in their decision-making. |
| Net Metering and Interconnection Rules | Sec. 302 | The Public Service Commission has adopted rules incorporating the changes to net metering and interconnection rules in the CAEA. |
| Submetering | Title VII Submetering provisions Sec. 701 Sec. 702 Sec. 703 | The Public Service Commission has adopted rules incorporating the changes to submetering rules in the CAEA. |
| Electric Company Incentives for Energy Conservation | Sec. 207 (a), (b), (c), and (e) | The PSC approved Pepco's plan for administering energy efficiency programs with SETF funds in the period FY 2009 - FY 2010. The DCSEU began administering energy efficiency programs in FY 2011. |
| Renewable Energy Incentive Program | Sec. 209 Renewable energy incentive program | From FY 2009 – FY 2013 DOEE managed a program that provided rebates to District residents and businesses installing renewable energy systems. The DCSEU began offering incentives and financing to install solar energy systems in FY 2011. |

Implementation Status— Clean and Affordable Energy Act of 2008

| Other Provisions | | |
|--|--|---|
| Electric Company and Gas Company Energy Use Data | Sec. 207 (d) and (f) Sec. 208 Natural gas company | Pepco and Washington Gas have complied with the requirements to provide DOEE and DCSEU with aggregate energy use data and EnergyStar benchmarking data. |
| Large-scale Wind Energy Project Study | Title VI Renewable Energy Study Sec. 601 Sec. 602 | DOEE commissioned the study, which was submitted by the vendor in April 2011. |
| PSC report on long-term financing for consumers for renewable energy and efficiency improvements | Sec. 213 Solar and Renewable Home Improvement Financing Proposal | The Public Service Commission submitted the report to the Council on September 23, 2009. |

Appendix C

Letter from D.C. Councilmember Mary Cheh Requesting CAEA Audit



COUNCIL OF THE DISTRICT OF COLUMBIA
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Mary M. Cheh

Councilmember, Ward 3
Chair, Committee on Transportation and the Environment

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August 15, 2017

Kathy Patterson
District of Columbia Auditor
717 14th Street, NW
Suite 900
Washington, DC 20005

Dear Ms. Patterson,

I write to request that your office do an audit of the Clean and Affordable Energy Act of 2008 (the Act) to determine whether the Act has achieved the purposes for which it was introduced and passed by the Council. The Act was introduced on November 6, 2007, by me and Councilmembers Catania, Wells, Mendelson, Alexander, Bowser, Thomas, Brown, and Chairman Gray, and it became effective on October 22, 2008. Its general purpose was to reduce the District's contribution to global warming by increasing the District's overall energy efficiency and use of renewable energy. As you know, the Act was an omnibus that created the DC Sustainable Energy Utility, increased the District's Renewable Portfolio Standard (RPS), allowed solar thermal power systems to qualify for the RPS, increased the alternative compliance payment for companies that fail to meet the RPS requirements, required the Public Service Commission and the Office of the People's Counsel to consider environmental effects when making decisions, established the District's benchmarking program, and required the Mayor to study the viability of the District government pursuing a new large-scale wind project through public or private financing. I would like you to review the overall effectiveness of the Act in reducing the District's contribution to climate change thus far and potential to reduce it further in the future. Please also identify any changes to structure or implementation of its programs that you feel would make it more effective.

Regards,

Mary M. Cheh

About ODCA

The mission of the Office of the District of Columbia Auditor (ODCA) is to support the Council of the District of Columbia by making sound recommendations that improve the effectiveness, efficiency, and accountability of the District government.

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