

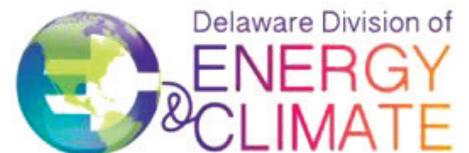
# Delaware

Energy Efficiency Advisory Council

Assisting with the development and deployment of energy efficiency programs and financing mechanisms that will be offered by Delaware energy providers



2016 Annual Report



## Council Members

Council Member	Affiliation	Representing
Rob Underwood, Chair	Division of Energy and Climate	Department and Natural Resources and Environmental Control, Division of Energy and Climate
Glenn A. Moore	Delmarva Power	Affected Energy Provider
Mark A. Nielson	Delaware Electric Cooperative	Affected Energy Provider
Bill O'Brien	Chesapeake Utilities	Affected Energy Provider
Scott Lynch	Delaware Municipal Electric Corporation	Affected Energy Provider
Amy Roe	Delaware Audubon Society	Environmental Sector
Sanjay Kapuria	Jaykal LED Solutions	Commercial Sector
Carl Johnson, P.E., CEM	Perdue Farms, Inc.	Agricultural Sector
John Sykes	Delaware Interfaith Power and Light	Low-income Sector
Cassandra T. Marshall	Quaker Hill Neighborhood Association	Residential Sector
Michael Messer	Delaware Energy Users Group	Manufacturing Sector
Joseph Schorah	Sheet Metal Workers Local Union 19	Delaware Sustainable Energy Utility*
State Senator Harris B. McDowell, III (D, Wilmington)	State Senate	Delaware Sustainable Energy Utility

\*As Executive Director of the DESEU, Tony DePrima is given the proxy of one of the DESEU Council members on an "as needed" basis. Mr. DePrima has also been a key contributor to the EEAC throughout 2016.

**On the cover:** The Luna I. Mishoe Science Center is one of 26 Delaware State University buildings to receive energy efficiency upgrades funded through Energy Efficiency Revenue Bonds issued the Delaware Sustainable Energy Utility. The upgrades reduced the Center's energy consumption by 41 percent.

**Stay informed:** The EEAC meets on the second Wednesday of each month. Meeting agendas, minutes, and other materials are available on the EEAC website at:

<http://www.de.gov/eeac>

# From the Chair



Dear Delawareans,

Energy efficiency is one of the easiest and most cost-effective ways to reduce energy costs for consumers, reduce pollution, combat climate change, create jobs, and increase economic development. The Delaware Energy Efficiency Advisory Council (EEAC) brings together energy professionals across the field to develop energy efficiency programs that help Delawareans use less energy and save money.

In 2015, the members of the EEAC laid the foundation for launching statewide energy efficiency programs by researching the needs of energy providers and consumers, possible programs, and what actions would be needed to support them. Program offerings in development for 2017-2019 include building energy audits followed by installation of recommended upgrades, discounts or rebates for efficient product purchases, loans for commercial energy efficiency upgrades, and behavior programs that help participants decrease energy use at times of the day when energy is most in demand, and therefore most expensive (peak demand).

How will the EEAC determine whether these programs actually save energy and money as intended? The process of answering this question is referred to as Evaluation, Measurement, and Verification (EM&V). With great support from numerous stakeholders throughout 2016, DNREC developed Delaware's first ever EM&V regulations, which became effective January 11, 2017.

This report highlights the progress made by the EEAC in 2016. Program successes include energy and cost savings realized by DNREC's energy efficiency and weatherization programs, as well as the development of subcommittees to tackle EM&V and investigate opportunities to better serve low-income Delawareans.

This truly unique and comprehensive collaboration of energy professionals has enabled concrete action across the field, making headway to lower costs for Delaware consumers and reduce the adverse impacts of energy use on our public health and resources. It has brought public and private entities together and given a voice to those who provide energy and those who use it. I look forward to another successful year of working together to bring the benefits of energy efficiency to all Delawareans.

Sincerely,

Handwritten signature of Robert Underwood.

Robert Underwood

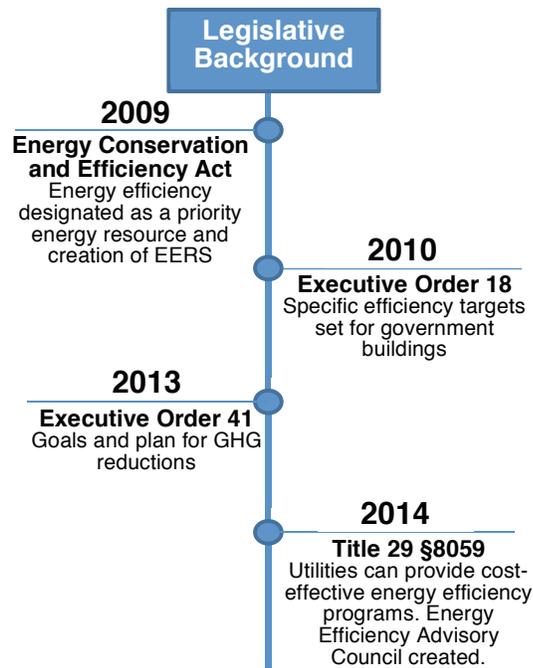
**DNREC** - Energy Program Administrator, **EEAC** – Chair



# Legislative Background

The timeline shown here highlights the progression of key energy efficiency legislation in Delaware. The Energy Conservation and Efficiency Act, which passed in 2009, designated energy efficiency as a priority energy resource and created Energy Efficiency Resource Standards (EERS) requiring a reduction in energy use through energy efficiency and conservation measures. In 2014, the Delaware General Assembly passed legislation that greatly expanded the state’s commitment to and investment in energy efficiency for all utility customers. Title 29 §8059 of the Delaware Code enables all of Delaware’s energy providers to offer cost-effective energy efficiency programs to their customers in collaboration with the Delaware Sustainable Energy Utility (DESEU). The legislation specified that private financing and proceeds from the Regional Greenhouse Gas Initiative should be used to fund programs in addition to funds

*This 2016 Annual Report of the Energy Efficiency Advisory Council highlights the actions of the Council over the past year to continue making progress towards the implementation of energy efficiency programs that will be available to all Delawareans.*



recovered from ratepayers. It also requires that regulations be promulgated specifying how energy savings should be measured and verified. The legislation also created the Energy Efficiency Advisory Council (EEAC, or Council), which is composed of a variety of energy efficiency stakeholders appointed by the Cabinet Secretary of the Department of Natural Resources and Environmental Control (DNREC). The Council is tasked with assisting the state’s electric and natural gas utilities with the development and deployment of energy efficiency programs that are cost-effective, reliable, and feasible for residential, low income, and commercial and industrial customers. The EEAC, in collaboration with the Public Advocate and the Public Service Commission, will recommend adoption of financing mechanisms such as on-bill financing, property assessed clean energy models, and other innovative financing tools. This 2016 Annual Report of the Energy Efficiency Advisory Council highlights the actions of

the Council over the past year to continue making progress towards the implementation of energy efficiency programs that will be available to all Delawareans.

This report focuses on the efforts of the EEAC in 2016. Although entities other than DNREC have implemented energy efficiency programs in the past and continue to do so, those programs did not come before the EEAC for review during 2016. The EEAC expects that programs implemented in 2016 and 2017 by the DESEU, Delaware Electric Cooperative (DEC), the Delaware Municipal Electric Corporation (DEMEC), and Chesapeake Utilities, as well as programs proposed for 2018 and beyond, will be brought before the EEAC for discussion in 2017. All such programs will be included in the 2017 annual report.

# 2016 Accomplishments



## DNREC's Existing Efficiency Programs

### Energy Efficiency Investment Fund

The Energy Efficiency Investment Fund (EEIF) provides financial incentives to Delaware businesses, local governments, and non-profits to make building and technology upgrades that result in energy, peak demand, and operating cost savings. The program includes both prescriptive and custom incentives. Prescriptive incentives are designed to reduce paperwork and administrative costs for common measures with well-documented costs and savings. Custom incentives provide financial support for more complex and comprehensive projects. In 2015 and 2016, EEIF provided more than three million dollars in grant incentives to over 250 commercial facilities, generating electric savings of more than 24 million kilowatt-hours (kWh) and gas savings of over 600 MMBtu. While available funds were fully committed by early in the year, EEIF still finalized numerous projects resulting in significant savings in 2016. These savings will be evaluated and included in DNREC's contribution to the statewide electric savings goal.

### Weatherization Assistance Program

The Weatherization Assistance Program (WAP) provides energy retrofits to low-income homes in Delaware, which are upgrades designed to both increase the health and safety of the home and decrease the monthly energy cost burden for the residents. Trained weatherization professionals provide a walk-through audit followed by no-cost installation of common efficiency measures, such as weather-stripping, air sealing, LED lighting, and programmable thermostats. In 2016, the DNREC sub-grantee that implements the program served 232 low-income homes, generating energy savings of approximately 135,000 kWh and 5,700 MMBtu.





# 2016 Accomplishments

## DNREC's Planned Programs for 2017-2019

### Commercial and Industrial Programs Plans

In 2016, DNREC also developed, submitted, and received Council acceptance for two programs serving commercial and industrial customers. The submitted program plans provide details on program activity in the next three years, including estimates of savings, costs, participant targets, and cost effectiveness ratios. This will result in DNREC continuing EEIF in 2017 with new funding from the Pepco/Exelon merger

*Pepco Holdings, Inc, the parent company of Delmarva Power & Light DPL) merged with Exelon in March 2016. As a result of the merger, Exelon is providing more than \$430 million in settlement funds to customers and communities in Delaware, the District of Columbia, Maryland, and New Jersey. EEIF and E2I each received \$8 million from this settlement.*

settlement (see box at right), and ongoing funding from the Regional Greenhouse Gas Initiative (RGGI), the Sustainable Energy Utility (DESEU), and DNREC. A new program, Energy Efficiency Industrial (E2I), will also be added to DNREC's energy efficiency program portfolio. Also funded with settlement money, it will be aimed specifically at efficiency projects implemented at large industrial facilities for Delmarva Power and Light (DPL) customers in Delaware. The E2I program will allow DNREC to direct targeted resources to DPL's largest energy consumers and ensure that the largest efficiency projects available are captured and acted upon, increasing energy savings, reducing environmental impact, and supporting the financial stability of Delaware's businesses. Over three years, these two programs are expected to reduce Delaware's statewide electric load by 0.6%, with a similar reduction in gas load.

2017-2019 Planned EEIF and E2I Savings Summary			
		EEIF	E2I
<b>Electric</b>	Savings in MWh	43,954	21,242
	C&I buildings powered by savings for 1 year	90	43
<b>Gas</b>	Savings in MMBtu	144,439	183,552
	C&I buildings heated by savings for 1 year	257	327

C&I buildings details calculated using CBECS 2012 data based on 30,000 ft<sup>2</sup> building

### Weatherization Assistance Program Plan

In 2016, DNREC developed, submitted, and received Council acceptance for their 2017-2019 WAP plan. While the program design and structure will remain the same, the numbers of homes visited per year is expected to increase and the administrative costs per home are expected to decrease. Furthermore, DNREC is in the process of implementing more sophisticated data tracking and reporting procedures for the program. This will allow for better analysis of specific measures installed and the associated savings achieved. By 2019, WAP activities are projected to expand to reach 400 homes per year, saving each recipient hundreds of dollars in utility bills annually.

2017-2019 Planned WAP Savings Summary		
<b>Electric</b>	Savings in MWh	598
	Homes powered by savings for 1 year	55
<b>Gas</b>	Savings in MMBtu	25,524
	Homes heated by savings for 1 year	350

Calculated using EIA 2013 annual residential electric and gas consumption data

# 2016 Accomplishments



## Setting Goals and Targets

Delaware energy providers that are planning to administer Council-accepted energy efficiency programs from 2017-2019 include DNREC, DESEU, DPL, Chesapeake Utilities, Delaware Municipal Electric Corporation (DEMEC), and Delaware Electric Cooperative (DEC). The figures below show preliminary program plan savings details from these program administrators. Each program administrator's contribution is shown individually, with the collective total savings shown in relation to the statewide target, represented by the dashed line. These amounts reflect current planning assumptions by each entity and are still preliminary. They also assume that all efficiency programs and savings will be subject to EM&V activities as specified in the EM&V regulations. Note that the first program year in this cycle is considered to be 2017, but that the Council has agreed to allow program administrators with currently-operating programs to include verified savings generated in 2016 towards the 2017 program year.

As shown, initial indications are that the statewide goals are well within reach, even if program plans change or actual program savings are less than projected. The Council considers the overall three-year total goal to be more important than the individual annual goals, and will therefore continue to monitor gas program progress towards cumulative targets each year.

Figure 1: Total PA Plans Progress Towards Goals - Electric

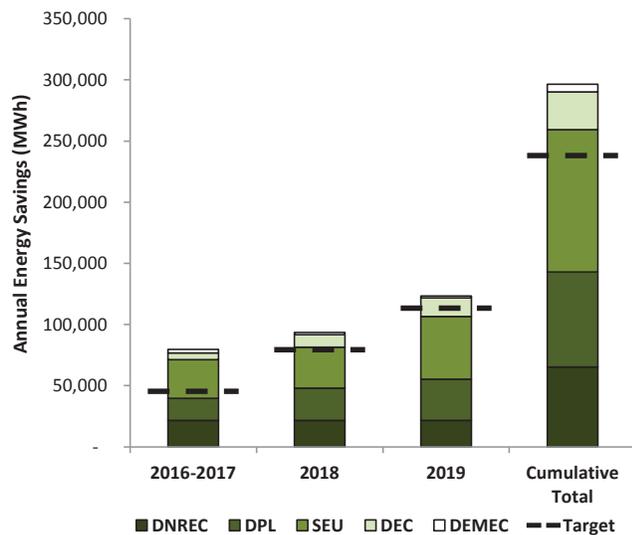
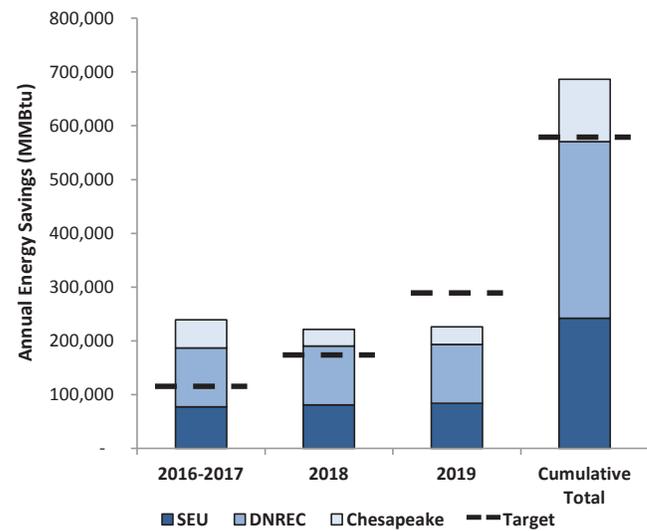


Figure 2: Total PA Plans Progress Towards Goals - Gas





# 2016 Accomplishments

## Bringing in Outside Organization Expertise

As the Council works towards developing efficiency program offerings, it has brought in outside organizations to share their knowledge and expertise from other successful jurisdictions. The American Council for an Energy-Efficient Economy (ACEEE) provided insight into reaching large commercial and industrial customers with a presentation highlighting strategies for promoting energy efficiency with large customers. Synapse Energy Economics, a research and consulting firm based out of Massachusetts, provided expertise and assistance with developing avoided costs of energy from the implementation of energy efficiency programs for Delaware, through a presentation to the EM&V committee. By drawing on experience from others and incorporating lessons learned into program planning efforts, the EEAC supports the development of programs that are successful and cost-effective from the start.

*Avoided Costs are the forecasted economic benefits of energy savings, defined by the EPA as the costs that would have been incurred if energy efficiency savings were not realized.*

## Developing EM&V Regulations

Under state legislation, DNREC is required to develop regulations that address efficiency program evaluation, measurement, and verification. These regulations are the foundation for sound savings claims and will define the procedures and standards that will be used to demonstrate, document, and report compliance with the energy savings targets. During 2015, DNREC collaborated with the Council to draft comprehensive regulations to fulfill this requirement. Throughout 2016, DNREC continued to move the regulations through the state's process for promulgation in accordance with the state's Administrative Procedures Act and the State Register of Regulations requirements. This included several individual steps, including the following important milestones:

- Holding two public workshops
- Discussion and debate within the Council at several meetings, resulting in substantial Council input to the content and language of the proposed regulations
- Proposed regulations submitted to the Office of the Registrar
- Holding a public hearing on the published regulations
- Regulations submitted to the state Office of the Registrar for publication

The EM&V Regulations became effective on January 11, 2017. This is an important milestone in the EEAC process, as they provide a framework that supports the credibility and comparability of energy efficiency savings and validates their contribution towards the savings targets established by the Council. For utilities regulated by the Public Service Commission (PSC), they will also support the PSC's assessment of the costs and benefits of efficiency programs and the utilities' requests to recover the costs of delivering the programs as an appropriate use of ratepayer funds.

# 2016 Accomplishments



## Building a Foundation for Consistency in Data Collection

The Council has been proactive in ensuring the ability to measure statewide progress and compare program administrator performance by establishing a consistent data collection process. A major step in this process is the procurement of a contractor as the provider of a Statewide Energy Efficiency Database. Procured through the DESEU with assistance from DNREC, the database will initially serve to track the progress of the programs implemented by these two program administrators. The database will also accept data from the tracking systems of other energy providers, thereby providing a central repository for data on all of the energy efficiency programs in Delaware. Development is underway; the database is expected to be operational by early in the second quarter of 2017.

**“The SEU is happy to provide the funding and administration for the Statewide Energy Savings Database, this is exactly the kind of work that was envisioned by the Legislature when they created the SEU to be the one stop shop for energy programs in Delaware.”**

**-Tony DePrima,  
DESEU Executive Director**

## Creation of Sub-Committees

### EM&V Subcommittee

Once the EM&V regulations were being finalized, the Council launched the EM&V Committee as a sub-committee of the full EEAC. Four meetings were held in 2016, which resulted in several accomplishments, including recommendations to the full Council on program net-to-gross ratios, avoided costs, and non-energy impacts values, which are all essential for the calculation and assessment of program costs, savings, and cost effectiveness. All recommendations of the Committee were advanced to the Council and unanimously approved.

The Committee conducted its work on these topics using an iterative, research-based approach. Initial presentations to the Council introduced each topic and its relevance to the larger EEAC effort. Following this discussion, DNREC and the EEAC Consultant provided draft recommendations or datapoints for the Committee’s consideration. The research process was enriched through data contributions from Committee members (e.g., net-to-gross ratios, avoided costs) and, in the case of avoided costs, through guidance from an outside expert. Further discussion within the Committee typically resulted in revisions to the material before consensus was reached on a recommendation to the EEAC for consideration.



# 2016 Accomplishments

## Low-Income working group

The EEAC Low-Income Working Group (LIWG) was established in 2016 to support joint efforts by the energy efficiency industry and community-focused stakeholders to implement a one-time \$4 million low-income energy efficiency grant initiative funded by the settlement in the Pepco Holdings – Exelon merger. Stakeholders to the LIWG include EEAC members (including utility representatives), state agencies, community action agencies, community-based organizations, faith-based organizations, and community foundations. To date, the LIWG has worked to complete an analysis to identify the highest concentrations of community need within Delaware, established consensus on key grant criteria for the settlement funds, and drafted a grant guidance document intended to guide and instruct applicants on how to apply for the settlement funds.

Though the settlement funds initiative has been the primary focus of the LIWG, the group recognizes the value of bringing a diverse group of stake-holders together to discuss energy efficiency issues focused on low-income community members. The LIWG plans to keep meeting regularly after settlement grant funds have been dispersed in an effort to monitor the grant program’s progress but also to work with Delaware utilities to create new energy efficiency program concepts and provide feedback and support.

## Summary of 2016 EEAC Accomplishments

- EM&V Regulations developed by Council and DNREC; effective starting January 11, 2017
- Program cycle confirmed as 2017-2019, with “look-back” for 2016 savings
- Avoided costs approved by Council
- Net-to-gross ratios approved by Council
- Non-energy impacts approved by Council
- DNREC 2017-2019 program plan accepted by Council

# Looking Forward



The Council has continued to make progress on its statutory obligations to assist affected energy providers in the development of energy efficiency, peak demand reduction, and emission-reducing fuel switching programs, to review plans for such programs and recommend them for acceptance by the appropriate regulatory authority, and to develop EM&V regulations. Over the next year, the Council will continue to carry out its responsibilities, which will include reviewing additional program plans brought forward by utilities and other program administrators and beginning efforts to collect and review data on efficiency program progress and activity. The program administrators have made substantial progress with program design; the recently completed EM&V regulations and other guidance from the EM&V Committee are major steps towards bringing plans to completion.

As program plans are introduced, much remains to be done to get them implemented. While the program plans are going through the acceptance process, the Council will review each plan and work to apply best practices from other jurisdictions while considering the unique opportunities and conditions found in Delaware. During 2017 the Council will review each program administrator's plan. The PSC retains the authority to approve the actions of the regulated utilities. Affected energy providers that are not regulated by the Commission may elect to develop, implement and fund programs for energy efficiency and peak demand reduction recommended for approval by the boards of directors for rural electric cooperatives or the pertinent local regulatory authorities for municipal electric companies.

Council members have developed additional understanding of energy efficiency concepts and approaches over the past year and are well-placed to review and assess the electric and gas efficiency programs that will be brought to them in the coming months. Additional accomplishments expected in 2017 include the following:

- Initial efforts to implement the EM&V Regulations, including reviewing initial EM&V plans for individual programs and a three-year plan for overall evaluation activities
- Completing and launching the Statewide Energy Efficiency Database
- Reviewing and recommending for approval by appropriate regulatory bodies the program plans submitted by several program administrators, including filings by DPL and Chesapeake with the PSC requesting approval to implement the programs
- Reviewing initial reporting of the results of programs already in place by DNREC (as well as the new E2I program), the DESEU, and the unregulated utilities
- Completing the Low Income energy efficiency program design
- EM&V Committee participation in the 2017 update process for the Mid-Atlantic Technical Reference Manual, led by the Northeast Energy Efficiency Partnership (NEEP), the results of which may be applied to the Delaware TRM after review by the Council and the appropriate actions needed to revise the EM&V regulations

# Highlights of Delaware's First Three-Year Energy Efficiency Targets

Over **\$2** in benefits for Delawareans for every dollar invested in energy efficiency

**4¢** per kilowatt-hour: the cost of saving electricity through efficiency, half the cost of electricity supply that would otherwise be needed



**6,100** homes that could be heated with the savings from gas efficiency programs

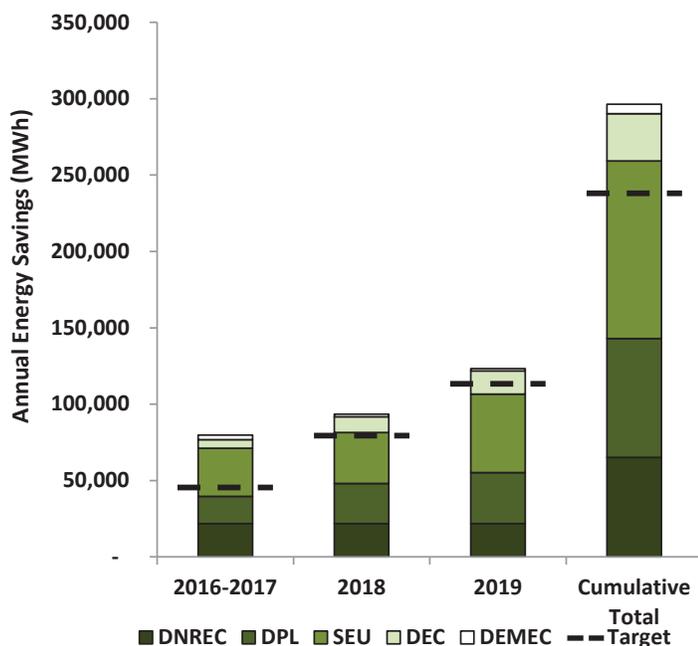


**25,300** homes that could be powered with the savings from electric efficiency programs

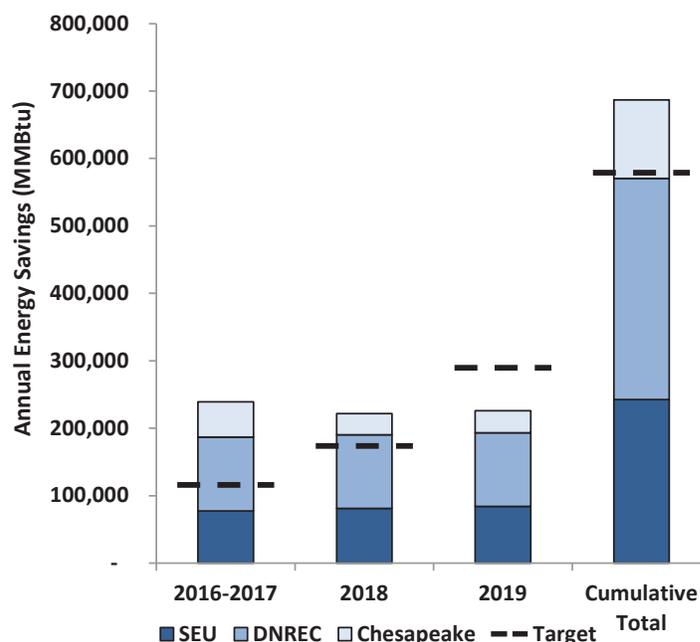


**211,000** metric tons of carbon dioxide emissions avoided each year, the equivalent of taking 43,958 cars off the road

Electric Planned Savings



Gas Planned Savings



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