



LARRY HOGAN
Governor

BOYD K. RUTHERFORD
Lt. Governor

KENNETH C. HOLT
Secretary

TONY REED
Deputy Secretary

June 27, 2018

The Honorable Larry Hogan
State House
100 State Circle
Annapolis, Maryland 21401

The Honorable Thomas V. "Mike" Miller, Jr.
President
Senate of Maryland
State House, H-107
Annapolis MD 21401

The Honorable Michael E. Busch
Speaker
Maryland House of Delegates
State House, H-101
Annapolis MD 21401

Re: Report required by Environment Article § 2-1305(c)

Gentlemen:

Please see the CY16 and CY17 Green House Gas Annual Reports for the Department of Housing and Community Development. These reports are in compliance with Environment Article § 2-1305(c).

Sincerely,

Joseph R. Seehusen

cc: Sarah Albert, Department of Legislative Services (5 copies)





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KENNETH C. HOLT
Secretary

TONY REED
Deputy Secretary

January 16, 2018

The Honorable Larry Hogan
Governor, State of Maryland
State House
100 State Circle
Annapolis, Maryland 21401

Governor Hogan:

On behalf of the Maryland Department of Housing and Community Development, I am pleased to submit the 2017 Annual State Agency Report for the Maryland Department of Housing and Community Development developed in accordance with the State Environment Article §2-1305, as defined in House Bill 514 Chapter 429,2015 . This status of programs annual requirement under the law that governs the Maryland Commission on Climate Change asks that numerous state agencies submit annual reports on progress surrounding the implementation of climate change programs to both the Governor and the Commission. This report details the results of the efforts for CY 2016 reductions.

Sincerely,

Kenneth C. Holt
Secretary

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Enclosure





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January 16, 2018

Maryland Commission on Climate Change
C/O Maryland Department of the Environment
Secretary Ben Grumbles
1800 Washington Blvd.
Baltimore MD. 21230

Commissioner Grumbles:

On behalf of the Maryland Department of Housing and Community Development, I am pleased to submit the 2017 Annual State Agency Report for the Maryland Department of Housing and Community Development developed in accordance with the State Environment Article §2-1305, as defined in House Bill 514 Chapter 429,2015 . This status of programs annual requirement under the law that governs the Maryland Commission on Climate Change asks that numerous state agencies submit annual reports on progress surrounding the implementation of climate change programs to both the Governor and the Commission. This report details the results of the efforts for CY 2016 reductions.

Sincerely,

A handwritten signature in blue ink that reads "Kenneth C. Holt".

Kenneth C. Holt
Secretary

Enclosure





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2017 Status of Programs Annual State Agency Annual Report
Reductions for CY 2016
Maryland Department of Housing and Community Development
Energy Efficiency for Affordable Housing
Statewide Building Codes

This report details the results of the efforts in the Maryland Department of Housing and Community Development's programs for reductions in greenhouse gas emissions during calendar year (CY) 2016. This report is pursuant to State Government Article §2-1305, as defined in House Bill 514 Chapter 429, 2015.

Program Description

The Maryland Department of Housing and Community Development (the Department) manages a portfolio of energy conservation and retrofit programs that reduce energy costs and address critical health and safety hazards for Maryland residents with several programs for low income families. These programs directly reduce greenhouse gas emissions through energy use reduction.

One of the Department's programs core goals is energy reduction aimed at those that do not have financial resources for a conventional loan or other capital for improvements. These programs, managed by the Department's Housing and Building Energy Programs division include:

- **The Weatherization Assistance Program**, helps eligible low income households across the State of Maryland with the installation of energy conservation measures in their home. These measures reduce the consumption of energy, greenhouse gas emissions and the cost of maintenance for these homes. Funding is provided by the U.S. Department of Energy and the Strategic Energy Investment Fund. The Division also receives enhancement to implementation of the US Department of Energy Weatherization Assistance Program from revenue generated from the Regional Greenhouse Gas Initiative Program.
- **The EmPOWER Low Income Energy Efficiency Program and the Multifamily Energy Efficiency and Housing Affordability Program** help low income households with installation of energy conservation measures in their homes. Funding is provided by ratepayers of the five (5) participating EmPOWER Maryland utility companies. These funds are regulated by the Public Service Commission.
- **The Targeted and Enhanced Weatherization Program** combines typical weatherization improvements with measures that reduce health and safety risks in the home. This program for low income homeowners in the Baltimore Gas & Electric territory outside of Baltimore City is funded through the Customer Investment Fund created during the merger of Constellation and Exelon.
- **The Improved Efficiency for Affordable Multifamily Housing Program** is also funded through the Customer Investment Fund and it covers the costs of energy conservation measures for multifamily projects in the Baltimore Gas & Electric territory that serve low income communities.

The Department also offers a growing portfolio of energy loan products.

- **The BeSMART Home Loan Program** offers financing to homeowners across the state for energy efficiency replacement and/or upgrade of appliances, heating, cooling and ventilation systems and whole house envelope improvements.
- The Division grew the BeSMART platform in CY 2017 to support the energy efficiency upgrades at Perry Point - an affordable housing rehabilitation that will serve veterans. The Division plans to continue to expand this program in CY 2017 and beyond.

Maryland Law, Public Safety Article, Section 12-503, requires the Department of Housing and Community Development (DHCD) to adopt through regulation (Maryland Building Performance Standards; COMAR 05.02.07) the latest version of the International Building Code (IBC), the International Residential Code (IRC) and the International Energy Conservation Code (IECC) with any modifications as the Maryland Building Performance Standards (MBPS). The MBPS applies to all buildings and structures constructed within the State. Local jurisdictions are authorized to adopt amendments to MBPS to suit local conditions.

International Code Council (ICC) publishes new editions of codes every three years. Consequently, the Department must adopt these new editions on a three year cycle. The new codes are expected to generally increase energy efficiency over time.

Program Objectives

Under the Housing and Building Energy Programs, the Division provides grants and low cost loans with flexible terms for the purchase and installation of energy efficiency improvements in single family and affordable multifamily rental housing developments. The program is being undertaken as part of the State's efforts to:

1. reduce the energy cost burden on Marylanders,
2. reduce greenhouse gas emissions,
3. promote energy efficiency and renewable energy sources,
4. provide a healthier environment in which to live,
5. create and preserve affordable rental housing opportunities,
6. create jobs, and
7. foster business development and sustainable mortgages by reducing the energy burden on residents and property owners.

Implementation Milestones

The goal of the Division's programs is to reach eligible residents. In calendar year 2016, the Division served 5,517 households.

The 2015 Greenhouse Gas Emissions Reduction Act Plan Update published October 2015 stated that these programs could reduce 0.02 metric tons of carbon dioxide equivalent (CO₂e) in 2020. This is twice the reduction realized in calendar year 2016.

Estimated Emission Reductions for CY 2016

In calendar year 2016, the Division's energy programs alone reduced greenhouse gas emissions in the state by **0.008** million metric tons of carbon dioxide equivalent (MMtCO₂e). This value is based on projects funded in the calendar year.

Program	MMBtu Saved	Metric Tons CO₂e
EmPOWER - Single Family (State)	64,942	5,810
Customer Investment Fund - Single Family (State)	7,488	553
Weatherization Assistance Program (Federal)	6,622	877
Multifamily Energy Efficiency and Housing Affordability (State)	4,646	1,307
Customer Investment Fund -Multifamily (State)	5,935	643
TOTAL	89,633	9,190

The Division's reduction in greenhouse gas emissions were calculated using project specific energy reductions estimated per measure. The Division used the 2016 emission factors provided by PJM, the Maryland region electric grid operator, the Department of Energy's eGRID sub-regional data and data from the U.S. Environmental Protection Agency's national greenhouse gas inventory.¹

Enhancement Opportunities

In CY 2016, the Department continued to pursue opportunities to expand its loan and grant programs. The Department began to develop an expansion of the BeSMART program into business, non-profit and multifamily lending.

The Department sees an opportunity from leveraging the experience of its multifamily, single family, and business lending to grow the energy programs.

The Division is also looking at opportunities to address not only energy efficiency - but the energy security of Marylanders. The Division is seeking resources to assist in bringing renewable technologies to low and moderate income communities. This includes opportunities to expand the deployment of solar technology.

Funding

In each of the last three years, the Division's financial commitments (direct benefits to Marylanders and administrative costs) averaged \$20 to \$25 million.² This is largely supported by the Customer Investment Fund - which will be fully expended in FY 2018 - and the EmPOWER funding which requires renewal every three years.

The Division is currently pursuing an opportunity to develop additional low interest loan options for its portfolio of programs. This will support multi-family and neighborhood business programs.

¹ The Division used CO₂ emission factors from the PJM Environmental Information System, [<https://www.pjm-eis.com/reports-and-events/public-reports.aspx>], CH₄ and N₂O factors from the DOE Power Profiler tool based on the eGRID subregion [<http://www.epa.gov/powerprofiler>], and natural gas and oil factors from the EPA's national inventory [https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf]. Global Warming Potential data come from the Intergovernmental Panel on Climate Change's Second Assessment Report (100 year).

² Based on fiscal year

Challenges

The Department will continue to grow the number of residents served by its programs each year. Success will depend on continued funding, enhanced marketing, and support from partners, contractors, and State leadership.

Development of new program offerings or refinement of existing pilot programs can benefit from providing more comprehensive funding for typical scope items known as Non- Energy Benefits. These funds are used to perform incidental repairs and health and safety work for the properties in a more holistic approach that is fully funded similar to the Customer Investment Fund Single Family Enhanced Weatherization Program.

Relevant Information

The portfolio of programs within the Department of Housing and Community Development has a direct impact on the economic vitality of the State.

The Division's programs support residents and businesses in direct funding of energy efficiency projects that create or sustain jobs. Energy bill reductions free up funds that can be spent on family well-being or as investments. The Division's programs improve health through reduced air and water pollution from power plants, but also directly remediate hazards such as mold, asbestos and lead in the house.

Department Contact Information:

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CY 2016 DHCD Energy Programs - GHG Savings

Area	Program	CO2 Saved (MT)	CH4 Saved (MT)	N2O Saved (MT)	CO2e Saved (MT)
TOTAL		8,138.07	0.20	0.07	8,164.09
Electricity		5,589.38	0.15	0.06	5,612.57
SF	EmPOWER	3,925.66	0.10	0.05	3,941.95
SF	CIF	188.82	0.01	0.00	189.61
SF	DOE	873.27	0.02	0.01	876.89
MF	MEEHA	431.99	0.01	0.01	433.78
MF	CIF	169.64	0.00	0.00	170.35
Natural Gas		2,392.93	0.05	0.00	2,395.25
SF	EmPOWER	1,866.35	0.04	0.00	1,868.15
SF	CIF	207.19	0.00	0.00	207.40
SF	DOE	-	-	-	-
MF	MEEHA	72.71	0.00	0.00	72.78
MF	CIF	246.68	0.00	0.00	246.92
Oil		155.76	0.01	0.00	156.27
SF	EmPOWER	-	-	0	-
SF	CIF	155.76	0.01	0.00	156.27
SF	DOE	-	-	0	-
MF	MEEHA	-	-	0	-
MF	CIF	-	-	0	-

Area	Program	MWh Saved	Therms (NG) Saved	Gallons (Oil) Saved	Units	MMBtu Saved	MTCO2e
SF	EmPOWER - Single Family	8,724	351,740	-	3,510	64,942	5,810
SF	Customer Investment Fund - Single Family	420	39,049	15,255	125	7,488	553
SF	Weatherization Assistance Program	1,941	-	-	226	6,622	877
MF	Multifamily Energy Efficiency and Housing Affordability	960	13,703	-	1,013	4,646	507
MF	Customer Investment Fund -Multifamily	377	46,491	-	643	5,935	417
TOTAL		12,421	450,983	15,255	5,517	89,632	8,164
					Total MMTCO2e		0.008

Formula
Entry Cell

Conversion Factors

Electricity

CO2	992.0448 lbs/MWH	PJM System Mix 2016	https://gats.pjm-eis.com/gats2/PublicReports/PJMSysMix/Filter
CH4	0.02644407 lbs/MWH	2012 DOE eGRID, RFCE	http://www.epa.gov/powerprofiler
N2O	0.011487298 lbs/MWH	2012 DOE eGRID, RFCE	http://www.epa.gov/powerprofiler

Natural Gas

CO2	0.05444 kg/scf	EPA	https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf
CH4	0.00103 g/scf	EPA	https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf
N2O	0.0001 g/scf	EPA	https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf

Oil

CO2	10.21 kg/gallon	EPA	https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf
CH4	0.41 g/gallon	EPA	https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf

N2O	0.08 g/gallon	EPA	https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf
Global Warming Potential			
CO2	1	SAR, 100 Ye IPCC	https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html
CH4	21	SAR, 100 Ye IPCC	https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html
N2O	310	SAR, 100 Ye IPCC	https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html
Other			
1 kg	2.20462	lb	
1 kg	0.001	MT	
1 scf	0.01026	therms of natural gas	
1 gallon Oil#2	0.141	MMBtu	
1 therm	0.1	MMBtu	