



March 2, 2020

Adam Teitzman
Director, Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd
Tallahassee, Florida 32399-0688

Subject: 2020 Orlando Utilities Commission Annual Conservation Report

Dear Mr. Teitzman

Attached please find an electronic version (in PDF format) of the 2020 Orlando Utilities Commission (OUC) Annual Conservation Report. The 2020 OUC Annual Conservation Report was prepared by nFront Consulting LLC (nFront) and is being submitted by nFront on behalf of OUC.

If you have any questions about this report, please do not hesitate to contact me.

Respectfully submitted,

Bradley Kushner

Executive Consultant

nFront Consulting LLC

BradKushner@nFrontConsulting.com

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### **Orlando Utilities Commission**

**2020 Annual Conservation Report** 

**Demand-Side Management and Conservation Programs Offered in Calendar Year 2019** 

Prepared by:

nFront Consulting LLC

March 2020









### Table of Contents

1.0 Introduction	1-1
1.1 OUC's Current Approved Numeric Conservation Goals	1-1
1.2 OUC's DSM and Conservation Programs	1-1
2.0 Conservation Goals and Demand-Side Management Plan	2-1
2.1 Approved Numeric Conservation Goals	2-1
2.2 OUC's DSM and Conservation Programs	2-1
2.2.1 Energy Survey Programs	2-1
2.2.1.1 Residential Home Energy Survey Program	2-1
2.2.1.2 Commercial Energy Audit Program	2-2
2.2.2 Rebate Programs	2-3
2.2.2.1 Residential Duct Repair Rebates Program	2-3
2.2.2.2 Residential Ceiling Insulation Upgrade Rebates Program	2-3
2.2.2.3 Residential Window Film/Solar Screen Rebates Program	2-3
2.2.2.4 Residential High Performance Windows Rebates Program	2-3
2.2.2.5 Residential Efficient Electric Heat Pump Rebates Program	2-3
2.2.2.6 Residential New Home Rebates Program	2-4
2.2.2.7 Residential Efficiency Delivered Program	2-4
2.2.2.8 Commercial Efficient Electric Heat Pump Rebates Program	2-5
2.2.2.9 Commercial Duct Repair Rebates Program	2-5
2.2.2.10 Commercial Window Film/Solar Screen Rebates Program	2-6
2.2.2.11 Commercial Ceiling Insulation Upgrade Rebates Program	2-6
2.2.2.12 Commercial Cool/Reflective Roof Rebates Program	2-6
3.0 Status of OUC's Approved Numeric Goals	3-1

#### 1.0 INTRODUCTION

In accordance with Rule 25-17.0021, Florida Administrative Code, the Florida Public Service Commission (FPSC) must establish numeric conservation goals for the Orlando Utilities Commission (OUC) at least once every five years. In addition, OUC must file an annual report showing the status of its numeric conservation goals.

#### 1.1 OUC's Current Approved Numeric Conservation Goals

OUC's residential and commercial/industrial numeric conservation goals for the 2015 through 2024 period were established by the PSC pursuant to Order No. PSC-13-0645-PAA-EU. The FPSC's Consummating Order (PSC-15-0359-CO-EG), issued September 8, 2015, approved OUC's 2015 Demand-Side Management Plan (DSM Plan). The Consummating Order confirmed Order No. PSC-15-0325-PPA-EG, the FPSC Notice of Proposed Agency Action that recommended approval of OUC's DSM Plan. OUC's DSM Plan sets forth the programs that OUC anticipated offering to achieve the numeric conservation goals established by the FPSC. The approved numeric conservation goals are summarized in Section 2.0 of this report, and OUC's actual DSM reductions are presented in Section 3.0 of this report.

#### 1.2 OUC's DSM and Conservation Programs

OUC has been increasingly emphasizing its DSM and conservation programs to increase customer awareness of such programs. Not only do these programs help customers save money by saving energy, the programs help OUC reduce emissions of greenhouse gases and better position OUC to meet possible future greenhouse gas regulations. It should be noted that government mandates have forced manufacturers to increase their efficiency standards, thereby decreasing the incremental amount of energy savings achievable. In addition, the efficiency of new generation has increased and natural gas prices have remained at or near historic lows for the last several years, and look to continue to do so for the near future. These appliance and generating unit efficiency improvements, coupled with low natural gas prices, have mitigated to some degree the effectiveness of DSM and conservation programs, as overall efficiency increases in the marketplace partially offset the benefit of such programs.

The following two sections of this report provide more specific details concerning the DSM and conservation programs offered by OUC in calendar year 2019 (Section 2.0), and present the participation levels and associated numeric savings for each of OUC's quantifiable conservation programs which were offered in 2019 (Section 3.0) consistent with OUC's submitted DSM Plan. As noted in Order No. PSC-15-0325-PAA-EG, annual energy reductions associated with OUC's residential and commercial/industrial energy surveys will no longer be counted towards achieving DSM goals. As such, Tables 3-1 through 3-3 do not reflect energy reductions associated with OUC's energy survey programs.

The conservation programs included in the DSM Plan and offered to OUC's customers in 2019 consist of the following:

- Residential Home Energy Survey Program Walk-Through and Online
- Residential Duct Repair Rebates Program
- Residential Ceiling Insulation Upgrade Rebates Program
- Residential Window Film/Solar Screen Rebates Program
- Residential High Performance Windows Rebates Program

## ORLANDO UTILITIES COMMISSION 2020 ANNUAL CONSERVATION REPORT

- Residential Efficient Electric Heat Pump Rebates Program
- Residential New Home Rebates Program
- Residential Efficiency Delivered Program
- Commercial Energy Audit Program
- Commercial Efficient Electric Heat Pump Rebates Program
- Commercial Duct Repair/Replacement Rebates Program
- Commercial Window Film/Solar Screen Rebates Program
- Commercial Ceiling Insulation Upgrade Rebates Program
- Commercial Cool/Reflective Roof Rebates Program

#### 2.0 CONSERVATION GOALS AND DEMAND-SIDE MANAGEMENT PLAN

#### 2.1 Approved Numeric Conservation Goals

Table 2-1 presents the annual peak demand and energy reduction goals established for OUC by the FPSC.

	Table 2-1										
FPSC's Approved Numeric Conservation Goals for OUC											
	Reside	ential Reduction	Goals	Commercial	/Industrial Red	uction Goals					
Year	Summer (MW)	Winter (MW)	Annual Energy (GWh)	Summer (MW)	Winter (MW)	Annual Energy (GWh)					
2015	0.05	0.04	0.14	0.20	0.49	0.34					
2016	0.08	0.08	0.30	0.28	0.57	0.50					
2017	0.12	0.12	0.45	0.30	0.70	0.66					
2018	0.16	0.16	0.60	0.36	0.70	0.75					
2019	0.20	0.21	0.72	0.37	0.66	0.82					
2020	0.21	0.21	0.77	0.39	0.70	0.85					
2021	0.21	0.22	0.80	0.40	0.78	0.86					
2022	0.19	0.20	0.72	0.37	0.78	0.85					
2023	0.19	0.18	0.66	0.39	0.74	0.82					
2024	0.16	0.16	0.57	0.36	0.70	0.80					
Total	1.57	1.58	5.73	3.42	6.82	7.25					

#### 2.2 OUC's DSM and Conservation Programs

The FPSC has established residential and commercial/industrial conservation goals for OUC for the 2015 through 2024 period (refer to Table 2-1). The programs that OUC offered during calendar year 2019 are described in the following subsections. Program incentives included in the descriptions are current as of the time this report was prepared.

#### 2.2.1 Energy Survey Programs

#### 2.2.1.1 Residential Home Energy Survey Program

OUC has been offering home energy surveys dating back to the late 1970's. The home energy walk-through surveys were designed to provide residential customers with recommended energy efficiency

measures and practices customers can implement and to encourage participation in various OUC rebate programs. The home energy surveys are available to both single family and multi-family residential customers.

The Residential Energy Walk-Through Survey includes a review of the customer electric consumption history as well as a walkthrough review of the attic; heating, ventilation, and air conditioning (HVAC) system; air duct and air returns; window caulking; weather stripping around doors; faucets and toilets; and lawn sprinkler systems. OUC provides participating customers specific tips on conserving electricity and water as well as details on customer rebate programs. OUC Conservation Specialists are using this walk-through type audit as a means of motivating OUC customers to participate in other conservation programs and qualify for appropriate rebates.

In addition to the Energy Walk-Through, OUC offers customers an interactive Online Home Energy Audit. The Online Home Energy Audit walks the customer through a complete visual assessment of energy and water efficiency in his or her home. The online audit has several benefits over the walk-through survey, including the convenience of viewing it at any time without a scheduled appointment and the ability to conduct it numerous times. The interactive Online Home Energy Audit is available on OUC's web site at <a href="http://www.OUC.com/energyaudit">http://www.OUC.com/energyaudit</a>.

One of the primary benefits of the Residential Energy Survey Program is the education it provides to customers on energy conservation measures and ways their lifestyle can directly affect their energy use. Customers participating in the Energy Survey Program are informed about their historical energy usage and conservation measures that they can implement. Customers will benefit from the increased efficiency in their homes, and decreased electric and water bills.

The Home Energy Audit rates how efficient a customer's home energy use is and where one can make improvements to lower utility bills. Participation is tracked through service orders that are produced when appointments are scheduled and completed. Online Surveys are tracked through the service provider, who produces monthly activity reports.

#### 2.2.1.2 Commercial Energy Audit Program

The commercial/industrial Energy Audit Program has been offered for several years and is focused on increasing the energy efficiency of commercial buildings and includes a free survey comprised of a physical walk-through inspection of the commercial facility performed by trained and experienced energy experts. The survey will include a pre walkthrough review of historical energy usage as well as a walkthrough to examine heating and air conditioning systems including duct work, refrigeration equipment, lighting, water heating, motors, process equipment, and the thermal characteristics of the building including insulation. Following the inspection the customer receives a written report detailing cost-effective recommendations to make the facility more energy and water efficient. Participating customers are encouraged to participate in other OUC commercial programs and directly benefit from energy conservation, which decreases their electric and water bills.

OUC customers can participate by calling the OUC Customer Service Call Center and requesting an appointment for a Walk-Through Energy Survey. Participation is tracked through service orders that are produced when appointments are scheduled and completed.

#### 2.2.2 Rebate Programs

The following outlines the various rebate programs OUC offers to its customers. Customers can participate by submitting a rebate application online at http://www.OUC.com/rebates. Proofs of purchase and/or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

#### 2.2.2.1 Residential Duct Repair Rebates Program

The residential Duct Repair Rebates Program originated in 2000 and is designed to encourage customers to repair leaking ducts on existing systems. Qualifying customers must have an existing central air conditioning system of 5.5 tons or less and ducts must be sealed with mastic and fabric tape or any other Underwriters Laboratory (UL) approved duct tape. Participating customers receive a rebate for 100 percent of the cost of duct repairs on their homes, up to \$100.

#### 2.2.2.2 Residential Ceiling Insulation Upgrade Rebates Program

The attic is the easiest place to add insulation and lower total energy costs throughout the seasons. The residential Ceiling Insulation Rebates program has been offered for several years and is designed to encourage customers to upgrade their attic insulation. Participating customers receive \$0.10 per square foot for upgrading their attic insulation to R-30 or greater. The program applies to conditioned areas only.

#### 2.2.2.3 Residential Window Film/Solar Screen Rebates Program

Installing window film on pre-existing homes can help reflect the heat during hot summer days and help the efficiency of home cooling units. The residential Window Film/Solar Screen Rebates Program has been offered for several years and is designed to encourage customers to install solar shading on their windows. Participating customers will receive a rebate in the amount of \$0.55 per square foot for installation of solar shading film with a shading coefficient of 0.5 or less on east-, west, and south-facing windows. ENERGY STAR® qualified double pane windows do not qualify for this rebate.

#### 2.2.2.4 Residential High Performance Windows Rebates Program

Energy-efficient windows can help minimize heating, cooling, and lighting costs. The residential High Performance Windows Rebates program has been offered for several years and is designed to encourage customers to install windows that improve energy efficiency in their homes. Customers will receive a \$1.50 rebate per square foot for the purchase of ENERGY STAR® rated energy efficient windows.

#### 2.2.2.5 Residential Efficient Electric Heat Pump Rebates Program

The residential Efficient Electric Heat Pump Rebates program provides rebates to qualifying customers in existing homes who install heat pumps having a seasonal energy efficiency ratio (SEER) of 15.0 or higher. Customers will obtain a rebate in the form of a credit on their bill ranging up to \$1,630, depending upon the SEER rating and capacity (tons) of the new heat pump. The following table illustrates the incentives available depending on the size and efficiency of the Heat Pump installed.

	SEER	15	16	17	18	19	20	21	22	23
	1	\$ 5	\$ 55	\$ 95	\$ 135	\$ 170	\$ 205	\$ 230	\$ 260	\$ 280
<u>@</u>	1 1/2	30	105	175	230	285	330	375	415	450
ons)	2	60	160	250	325	400	460	520	570	620
	2 1/2	90	215	325	425	510	590	660	725	785
Size	3	115	270	400	520	625	720	805	885	955
l S	3 1/2	145	320	475	615	740	850	950	1,040	1,125
_	4	175	375	550	710	850	975	1,090	1,195	1,290
⋖	4 1/2	205	430	630	805	965	1,105	1,235	1,355	1,460
	5	230	485	705	900	1,075	1,235	1,380	1,510	1,630

#### 2.2.2.6 Residential New Home Rebates Program

What was previously named the Residential Gold Ring Home Program has been transformed into a more flexible "a la carte" program offering a variety of choices for the builder or home buyer and has been renamed the New Home Rebates program. This transformation was based on feedback OUC received from the residential building community in order to increase the level of participation in OUC's program. The chart below reflects an example of the incentives available.

Rebate	Rate of Rebate	Square Footage	Total
Ceiling Insulation Upgrade to R-38 or higher	\$0.03/sq. ft.	2,000	\$60
Heat Pump	Up to \$1,630	N/A	\$500
Energy Star® Heat Pump Water Heater	\$500	N/A	\$500
Solar Water Heater	\$900	N/A	\$900

#### 2.2.2.7 Residential Efficiency Delivered Program

What was once referred to as the home energy fix-up program has been revamped and expanded to allow for any OUC customer (energy, water, or both energy and water) to participate and renamed the Efficiency Delivered program. The program is available to residential customers (single family homes) and provides up to \$2,000 of energy and water efficiency upgrades based on the needs of the customer's home. A Conservation Specialist from OUC performs a survey at the home and determines which home improvements have the potential of saving the customer the most money. The program is an income based program which is the basis for how much OUC will help contribute toward the cost of improvements and consists of three household income tiers:

Household Income	OUC Contribution
Less than \$40,000	85% (not to exceed \$2,000)
\$40,001-\$60,000	50% (not to exceed \$2,000
Greater than \$60,000	Rebates only

- \$40,000 or less OUC will contribute 85 percent of the total cost (not to exceed \$2,000),
- \$40,001 to \$60,000 OUC will contribute 50 percent of the total cost (not to exceed \$2,000),
- greater than \$60,000 OUC will contribute the rebate incentives that apply toward the total cost.

Each customer must request and complete a free Residential Energy Survey. Ordinarily, Energy Survey recommendations require a customer to spend money replacing or adding energy conservation measures: however, customers may not have the discretionary income to implement these measures especially those in the lower income tier. Under this program, OUC will arrange for a licensed, approved contractor to perform the necessary repairs based on a negotiated and contracted rate. The remaining portion of the cost the customer is responsible for, can be paid directly to OUC or over an interest-free 12-month period on the participant's monthly electric bill.

To be eligible for this program, the customer's account must be in good credit standing with the exception of our low-income customers who are only required to have a current balance that is not delinquent. Some of the improvements covered under this program include ceiling insulation, duct system repair, pipe insulation, window film, window caulk, door caulk, door weather stripping, door sweep, threshold plate, air filter replacement, toilet replacement, irrigation repairs, water flow restrictors and minor plumbing repairs. Several new measures are under consideration to be added to this program.

The purpose of the program is to reduce the energy and water costs especially for low-income households, particularly those households with elderly persons, disabled persons and children. Through this program, OUC helps to lower the bills of customers who may have difficulty paying their bills, thereby decreasing the potential for costly service disconnect fees and late charges. OUC believes that this program will help customers afford other essential living expenses. For others, this program offers a one-stop-shop to facilitate the implementation of a whole suite of conservation measures at reasonable costs and prescreened qualified contractors.

#### 2.2.2.8 Commercial Efficient Electric Heat Pump Rebates Program

The commercial Efficient Electric Heat Pump Rebates program provides rebates to qualifying customers in existing buildings who install heat pumps having a seasonal energy efficiency ratio (SEER) of 15.0 or higher. Customers will obtain a rebate in the form of a credit on their bill ranging up to \$1,630, depending upon the SEER rating and capacity (tons) of the new heat pump. The following table illustrates the incentives available depending on the size and efficiency of the Heat Pump installed.

	SEER	15	16	17	18	19	20	21	22	23
	1	\$ 5	\$ 55	\$ 95	\$ 135	\$ 170	\$ 205	\$ 230	\$ 260	\$ 280
<u> </u>	1 1/2	30	105	175	230	285	330	375	415	450
ons)	2	60	160	250	325	400	460	520	570	620
	2 1/2	90	215	325	425	510	590	660	725	785
Size	3	115	270	400	520	625	720	805	885	955
S	3 1/2	145	320	475	615	740	850	950	1,040	1,125
_	4	175	375	550	710	850	975	1,090	1,195	1,290
<	4 1/2	205	430	630	805	965	1,105	1,235	1,355	1,460
	5	230	485	705	900	1,075	1,235	1,380	1,510	1,630

#### 2.2.2.9 Commercial Duct Repair Rebates Program

The commercial Duct Repair Rebates program started in 2009. OUC will rebate 100 percent of cost, up to \$100. Qualifying customers must have an existing central air conditioning system of 5.5 tons or less and ducts must be sealed with mastic and fabric tape or Underwriters Laboratory (UL) approved duct tape.

#### 2.2.2.10 Commercial Window Film/Solar Screen Rebates Program

The commercial Window Film/Solar Screen rebate program started in 2009 and is designed to help reflect the heat during hot summer days and retain heat on cool winter days. OUC will rebate customers \$0.55 per square foot for window tinting and solar screening with a shading coefficient of 0.5 or less on east-, west- and south-facing windows. ENERGY STAR® qualified double pane windows do not qualify for this rebate.

#### 2.2.2.11 Commercial Ceiling Insulation Upgrade Rebates Program

The commercial Ceiling Insulation Rebates Program started in 2009 and was designed to increase a building's resistance to heat loss and gain. Participating customers receive \$0.10 per square foot, for upgrading their attic insulation to R-30 or higher.

#### 2.2.2.12 Commercial Cool/Reflective Roof Rebates Program

The commercial Cool/Reflective Roof Rebates program started in 2009 and was designed to reflect the sun's rays and lower roof surface temperature while increasing the lifespan of the roof. OUC will rebate customers at \$0.12 per square foot for ENERGY STAR® cool/reflective roofing that has an initial solar reflectance greater than or equal to 0.70.

#### 3.0 STATUS OF OUC'S APPROVED NUMERIC GOALS

Tables 3-1 through 3-3 illustrate OUC's actual demand and energy reductions versus the peak demand and energy reductions approved by the FPSC. As shown in Tables 3-1 through 3-3, OUC exceeded each of the FPSC-approved peak demand and energy reductions in 2019 [i.e. summer and winter peak demand (kW) and annual energy (MWh) for residential and commercial/industrial customer classes].

As noted in Order No. PSC-15-0325-PAA-EG, annual energy reductions associated with OUC's residential and commercial/industrial energy surveys will no longer be counted towards achieving DSM goals. As such, Tables 3-1 through 3-3 do not reflect energy reductions associated with OUC's survey programs, which OUC continued to offer during 2019 (with the number of surveys completed, by type, summarized below).

Residential Energy Surveys – On-Site/Single Family Homes: 920

Residential Energy Surveys – On-Site/Multi Family Homes: 358

Residential Energy Surveys – Online: 180

• Commercial Energy Audits: 74

Table 3-4 lists the summer and winter peak demand (kW) and annual energy (MWh) reductions for each of the programs included in the demand and energy reductions presented in Tables 3-1 through 3-3.

Tables 3-5 through 3-16 present the annual demand and energy savings for the rebate programs offered by OUC during calendar year 2019 (as discussed in Order No. PSC-15-0325-PAA-EG) and as discussed in Section 2.0 of this report. Each table also includes the actual program costs and participation for 2019 and participation projections for years 2020 through 2024, unless otherwise noted. The utility costs associated with the programs have been updated based on actual costs incurred during calendar year 2019. Unless otherwise noted, actual cumulative penetration rates for each program reflect 2015 as the base year and do not consider customer participation prior to 2015.

# ORLANDO UTILITIES COMMISSION 2020 ANNUAL CONSERVATION REPORT

	Table 3-1 Comparison of Actual Conservation Reductions to FPSC's Approved Numeric Conservation Goals – Residential Programs											
	Winter Peak	kW Reduction	Summer Peak k	kW Reduction	MWh Energ	y Reduction						
Year	Achieved Reduction	FPSC- Approved Goal	Achieved Reduction	FPSC- Approved Goal	Achieved Reduction	FPSC- Approved Goal						
2015	369	40	447	50	845	140						
2016	409	80	482	80	1,161	300						
2017	314	120	416	120	826	450						
2018	267	160	384	160	763	600						
2019	347	210	501	200	1,028	720						
2020		210		210		770						
2021		220		210		800						
2022		200		190		720						
2023		180		190		660						
2024		160		160		570						

	Table 3-2 Comparison of Actual Conservation Reductions to FPSC's Approved Numeric Conservation Goals – Commercial/Industrial Programs												
	Winter Peak	kW Reduction	Summer Peak k	kW Reduction	MWh Energ	y Reduction							
Year	Achieved Reduction	FPSC- Approved Goal	Achieved Reduction	FPSC- Approved Goal	Achieved Reduction	FPSC- Approved Goal							
2015	743	490	2,181	200	13,367	340							
2016	1,297	570	2,528	280	12,259	500							
2017	4,442	700	5,037	300	31,008	660							
2018	4,665	700	3,653	360	34,684	750							
2019	3,495	660	3,352	370	14,333	820							
2020		700		390		850							
2021		780		400		560							
2022		780		370		850							
2023		740		390		820							
2024		700		360		800							

Note: OUC is working with the City of Orlando to retrofit existing streetlights with more efficient LED lighting. The demand and energy reductions corresponding to the City of Orlando's streetlight retrofit program are included in the total achieved reductions reflected in this table. Demand and energy reductions from OUC's Indoor Lighting Rebates, Indoor Lighting Billed Solutions, and Custom Incentives are included in the total achieved reductions reflected in this table. See Table 3-4 for the winter peak kW, summer peak kW, and MWh energy reductions associated with these programs.

Table 3-3
Comparison of Actual Conservation Reductions to FPSC's Approved
Numeric Conservation Goals – Residential and Commercial/Industrial Programs

	Winter Peak	kW Reduction	Summer Peak l	www.Reduction	MWh Energ	y Reduction
		FPSC-		FPSC-		FPSC-
.,	Achieved	Approved	Achieved	Approved	Achieved	Approved
Year	Reduction	Goal	Reduction	Goal	Reduction	Goal
2015	1,112	530	2,628	250	14,212	480
2016	1,707	650	3,010	360	13,420	800
2017	4,756	820	5,454	420	31,833	1,110
2018	4,931	860	4,038	520	35,447	1,350
2019	3,842	870	3,853	570	15,361	1,540
2020		910		600		1,620
2021		1,000		610		1,360
2022		980		560		1,570
2023		920		580		1,480
2024		860		520		1,370

Note: OUC is working with the City of Orlando to retrofit existing streetlights with more efficient LED lighting. The demand and energy reductions corresponding to the City of Orlando's streetlight retrofit program are included in the total achieved reductions reflected in this table. Demand and energy reductions from OUC's Indoor Lighting Rebates, Indoor Lighting Billed Solutions, and Custom Incentives are included in the total achieved reductions reflected in this table. See Table 3-4 for the winter peak kW, summer peak kW, and MWh energy reductions associated with these programs.

# ORLANDO UTILITIES COMMISSION 2020 ANNUAL CONSERVATION REPORT

Table 3-4 2019 Program Winter Peak (kW), Summer Peak (kW), and Annual Energy (MWh) Reductions (at the Generator)								
Program	Winter Peak kW Reduction	Summer Peak kW Reduction	MWh Energy Reduction					
Res	idential Programs							
Duct Repair Rebates	13.2	10.1	14.0					
Ceiling Insulation Upgrade Rebates	23.3	12.7	33.5					
Window Film/Solar Screen Rebates	-0.5	1.4	4.4					
High Performance Windows Rebates	58.7	96.9	204.3					
Efficient Electric Heat Pump Rebates	190.6	315.7	617.8					
New Home Rebates	45.7	52.4	108.4					
Efficiency Delivered	15.6	12.0	45.8					
Residential Programs Total	347	501	1,028					
Commerci	ial/Industrial Progra	ams						
Efficient Electric Heat Pump Rebates	1.5	2.5	5.0					
Duct Repair Rebates	0.0	0.0	0.0					
Window Film/Solar Screen Rebates	0.0	0.0	0.0					
Ceiling Insulation Upgrade Rebates	0.7	0.4	487.7					
Cool/Reflective Roof Rebates	0.0	473.6	1,112.9					
LED Streetlighting	618.0	0.0	2,482.9					
Indoor Lighting Billed Solution	1,620.0	1,620.0	5,630.2					
Indoor Lighting Rebates	937.4	937.4	4,093.9					
Custom Incentives	317.7	317.7	520.0					
Commercial/Industrial Programs Total	3,495	3,352	14,333					
Residential and Commercial/Industrial Programs Total	3,842	3,853	15,361					

#### Table 3-5. Residential Duct Repair Rebates

Program Name: Residential Duct Repair Rebate
Program Start Date: 2015
Measure: Residential Duct Repair Rebate
Reporting Period: 2019

Α	В	С	D	E	F	G	Н	I	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	195,606	97,803	269	269	0.28%	367	367	0.38%	98
2016	201,941	100,971	269	538	0.53%	140	507	0.50%	(31)
2017	206,989	103,495	269	807	0.78%	91	598	0.58%	(209)
2018	210,899	105,450	269	1,076	1.02%	53	651	0.62%	(425)
2019	216,113	108,057	269	1,345	1.24%	44	695	0.64%	(650)
2020	220,717	110,359	269	1,614	1.46%				
2021	225,221	112,611	269	1,883	1.67%				
2022	229,515	114,758	269	2,152	1.88%				
2023	233,633	116,817	269	2,421	2.07%				
2024	237,626	118,813	269	2,690	2.26%				

Eligibility Level 50.0%

Annual Demand and Energy Savings	Per Inst	allation	Program Total	
Annual Demand and Energy Savings	@meter	@generator	@meter	@generator
Summer kW Reduction	0.22	0.23	9.74	10.12
Winter kW Reduction	0.29	0.30	12.70	13.20
kWh Reduction	306	318	13,467	13,992

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	\$103	\$4,514
Utility Recurring Cost	\$0	\$0
Utility Nonrecurring Rebate	\$100	\$4,400
Utility Recurring Rebate	\$0	\$0

Annual Benefits =  $B_{npv} \times d/[1-(1+d)^{-n}] = ($412,546)$  where:

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

#### Table 3-6. Residential Ceiling Insulation Upgrade Rebates

Program Name: Residential Ceiling Insulation Rebate

Program Start Date: 2015

Measure: Residential Ceiling Insulation Rebate

Reporting Period: 2019

Α	В	С	D	E	F	G	н	I I	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	195,606	48,901	253	253	0.52%	125	125	0.26%	(128)
2016	201,941	48,647	253	506	1.04%	90	215	0.44%	(291)
2017	206,989	48,394	253	759	1.57%	97	312	0.64%	(447)
2018	210,899	48,142	253	1,012	2.10%	76	388	0.81%	(624)
2019	216,113	47,892	253	1,265	2.64%	91	479	1.00%	(786)
2020	220,717	47,643	253	1,518	3.19%				
2021	225,221	47,395	253	1,771	3.74%				
2022	229,515	47,149	253	2,024	4.29%				
2023	233,633	46,904	253	2,277	4.85%				
2024	237,626	46,660	253	2,530	5.42%				

Eligibility Level 25.0%

Annual Demand and Energy Savings	Per Inst	allation	Program Total	
Annual Demand and Energy Savings	@meter	@generator	@meter	@generator
Summer kW Reduction	0.13	0.14	12.22	12.70
Winter kW Reduction	0.25	0.26	22.47	23.35
kWh Reduction	354	368	32,239	33,497

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	\$119	\$10,807
Utility Recurring Cost	\$0	\$0
Utility Nonrecurring Rebate	\$146	\$13,322
Utility Recurring Rebate	\$0	\$0

Annual Benefits =  $B_{npv} \times d/[1-(1+d)^{-n}] = ($348,639)$  where:

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

#### Table 3-7. Residential Window Film/Solar Screen Rebates

Program Name: Residential Window Film / Solar Screen Rebate
Program Start Date: 2015
Measure: Residential Window Film / Solar Screen Rebate
Reporting Period: 2019

Α	В	С	D	E	F	G	Н	I	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	195,606	97,803	90	90	0.09%	36	36	0.04%	(54)
2016	201,941	100,971	90	180	0.18%	33	69	0.07%	(111)
2017	206,989	103,495	90	270	0.26%	18	87	0.08%	(183)
2018	210,899	105,450	90	360	0.34%	17	104	0.10%	(256)
2019	216,113	108,057	90	450	0.42%	13	117	0.11%	(333)
2020	220,717	110,359	90	540	0.49%				
2021	225,221	112,611	90	630	0.56%				
2022	229,515	114,758	90	720	0.63%				
2023	233,633	116,817	90	810	0.69%				
2024	227 626	110 012	90	900	0.76%				

Eligibility Level 50.0%

Annual Demand and Energy Savings	Per Inst	allation	Program Total		
Annual Demand and Energy Savings	@meter	@generator	@meter	@generator	
Summer kW Reduction	0.10	0.11	1.36	1.41	
Winter kW Reduction	-0.03	-0.04	-0.45	-0.47	
kWh Reduction	323	335	4,193	4,357	

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	\$108	\$1,406
Utility Recurring Cost	\$0	\$0
Utility Nonrecurring Rebate	\$92	\$1,201
Utility Recurring Rebate	\$0	\$0

Annual Benefits =  $B_{npv} \times d/[1-(1+d)^{-n}] = ($97,502)$  where:

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

#### Table 3-8. Residential High Performance Windows Rebates

Program Name: Residential High Performance Window Rebate Program Start Date:

Measure: Residential High Performance Window Rebate

Reporting Period:

Α	В	С	D	E	F	G	н	I	J
Calendar <b>Y</b> ear	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	195,606	97,803	197	197	0.20%	188	188	0.19%	(9)
2016	201,941	100,971	197	394	0.39%	203	391	0.39%	(3)
2017	206,989	103,495	197	591	0.57%	179	570	0.55%	(21)
2018	210,899	105,450	197	788	0.75%	157	727	0.69%	(61)
2019	216,113	108,057	197	985	0.91%	376	1,103	1.02%	118
2020	220,717	110,359	197	1,182	1.07%				
2021	225,221	112,611	197	1,379	1.22%				
2022	229,515	114,758	197	1,576	1.37%				
2023	233,633	116,817	197	1,773	1.52%				
2024	237,626	118,813	197	1,970	1.66%				

Eligibility Level 50.0%

Annual Demand and Energy Savings	Per Inst	allation	Program Total	
Annual Demand and Energy Savings	@meter	@generator	@meter	@generator
Summer kW Reduction	0.25	0.26	93.27	96.91
Winter kW Reduction	0.15	0.16	56.50	58.70
kWh Reduction	523	543	196,617	204,286

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	\$175	\$65,910
Utility Recurring Cost	\$0	\$0
Utility Nonrecurring Rebate	\$213	\$80,024
Utility Recurring Rebate	\$0	\$0

Annual Benefits =  $B_{npv} \times d/[1-(1+d)^{-n}] = (\$1,570,056)$ 

where:

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan (approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

#### Table 3-9. Residential Efficient Electric Heat Pump Rebates

Program Name: Residential Heat Pump Rebate
Program Start Date: 2015

Measure: Residential Heat Pump Rebate

Reporting Period: 2019

Α	В	С	D	E	F	G	н	I	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	195,606	5,868	1,013	1,013	17.26%	1,057	1,057	18.01%	44
2016	201,941	6,058	1,013	2,026	33.44%	1,126	2,183	36.03%	157
2017	206,989	6,210	1,013	3,039	48.94%	903	3,086	49.70%	47
2018	210,899	6,327	1,013	4,052	64.04%	957	4,043	63.90%	(9)
2019	216,113	6,483	1,013	5,065	78.12%	1,040	5,083	78.40%	18
2020	220,717	6,622	1,013	6,078	91.79%				
2021	225,221	6,757	1,013	7,091	104.95%				
2022	229,515	6,885	1,013	8,104	117.70%				
2023	233,633	7,009	1,013	9,117	130.08%				
2024	237,626	7,129	1,013	10,130	142.10%				

Eligibility Level 3.0%

Annual Demand and Energy Savings		allation	Program Total		
Annual Demand and Energy Savings	@meter	@generator	@meter	@generator	
Summer kW Reduction	0.29	0.30	303.83	315.68	
Winter kW Reduction	0.18	0.18	183.40	190.56	
kWh Reduction	572	594	594,579	617,768	

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	\$192	\$199,316
Utility Recurring Cost	\$0	\$0
Utility Nonrecurring Rebate	\$345	\$358,697
Utility Recurring Rebate	\$0	\$0

Annual Benefits =  $B_{npv} \times d/[1-(1+d)^{-n}] = ($668,710)$  (\$616,102) (\$275,177) (\$475,674) where: (SEER 15) (SEER 16) (SEER 17) (SEER 18)

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

#### Table 3-10. Residential New Home Rebates

Program Name: New Home Rebate (Formerly Gold Ring)

Program Start Date: 2015

Measure: New Home Rebate (Formerly Gold Ring)

Reporting Period: 2019

Α	В	С	D	E	F	G	н	1	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	195,606	2,851	23	23	0.81%	0	0	0.00%	(23)
2016	201,941	2,271	23	46	2.03%	99	99	4.36%	53
2017	206,989	1,760	23	69	3.92%	177	276	15.69%	207
2018	210,899	2,346	23	92	3.92%	274	550	23.44%	458
2019	216,113	2,072	23	115	5.55%	284	834	40.25%	719
2020	220,717	2,027	23	138	6.81%				
2021	225,221	1,932	23	161	8.33%				
2022	229,515	1,853	23	184	9.93%				
2023	233,633	1,797	23	207	11.52%				
2024	237,626	1,797	23	230	12.80%				

Eligibility Level 45.0% of new construction

Annual Demand and Energy Savings		allation	Program Total		
Annual Demand and Energy Savings	@meter	@generator	@meter	@generator	
Summer kW Reduction	0.18	0.18	50.40	52.36	
Winter kW Reduction	0.15	0.16	43.96	45.68	
kWh Reduction	367	382	104,366	108,436	

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	\$123	\$34,986
Utility Recurring Cost	\$0.00	\$0
Utility Nonrecurring Rebate	\$122	\$34,558
Utility Recurring Rebate	\$0.00	\$0

Annual Benefits =  $B_{npv} \times d/[1-(1+d)^{-n}] = ($2,486)$  where:

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

#### Table 3-11. Residential Efficiency Delivered

Program Name: Residential Efficiency Delivered

Program Start Date: 2015

Measure: Residential Efficiency Delivered

Reporting Period: 2019

Α	В	С	D	E	F	G	н	1	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	195,606	54,770	197	197	0.36%	588	588	1.07%	391
2016	201,941	56,544	197	394	0.70%	82	670	1.18%	276
2017	206,989	57,957	197	591	1.02%	95	765	1.32%	174
2018	210,899	59,052	197	788	1.33%	6	771	1.31%	(17)
2019	216,113	60,512	197	985	1.63%	76	847	1.40%	(138)
2020	220,717	61,801	197	1,182	1.91%				
2021	225,221	63,062	197	1,379	2.19%				
2022	229,515	64,264	197	1,576	2.45%				
2023	233,633	65,417	197	1,773	2.71%				
2024	237,626	66,535	197	1,970	2.96%				

Eligibility Level 28.0%

Annual Demand and Energy Savings		allation	Program Total		
Affilial Defilation and Effergy Savings	@meter	@generator	@meter	@generator	
Summer kW Reduction	0.15	0.16	11.51	11.96	
Winter kW Reduction	0.20	0.21	15.01	15.60	
kWh Reduction	580	603	44,110	45,830	

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	\$195	\$14,787
Utility Recurring Cost	\$0	\$0
Utility Nonrecurring Rebate	\$869	\$66,044
Utility Recurring Rebate	\$0	\$0

Annual Benefits = B<sub>npv</sub> x d/[1-(1+d)<sup>-n</sup>] = (\$504,488)

where:

 $B_{npv}$  = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

Table 3-12. Commercial Efficient Electric Heat Pump Rebates

Program Name: Commercial Heat Pump Rebate

Program Start Date: 2015

Measure: Commercial Heat Pump Rebate

Reporting Period: 2019

Α	В	С	D	E	F	G	н	1	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	29,498	1,377	40	40	2.91%	10	10	0.73%	(30)
2016	29,801	1,391	40	80	5.75%	113	123	8.84%	43
2017	30,165	1,408	40	120	8.52%	1	124	8.81%	4
2018	30,729	1,434	40	160	11.16%	21	145	10.11%	(15)
2019	31,329	1,462	40	200	13.68%	8	153	10.46%	(47)
2020	31,762	1,482	40	240	16.19%				
2021	32,225	1,504	40	280	18.62%				
2022	32,671	1,525	40	320	20.99%				
2023	33,116	1,545	40	360	23.29%				
2024	33,554	1,566	40	400	25.55%				

Eligibility Level 4.7%

Annual Demand and Energy Savings		allation	Program Total		
Annual Dernand and Energy Savings	@meter	@generator	@meter	@generator	
Summer kW Reduction	0.30	0.31	2.39	2.49	
Winter kW Reduction	0.18	0.19	1.47	1.53	
kWh Reduction	596	619	4,768	4,954	

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	\$75	\$598
Utility Recurring Cost	\$0	\$0
Utility Nonrecurring Rebate	\$321	\$2,570
Utility Recurring Rebate	\$0	\$0

Annual Benefits =  $B_{npv} \times d/[1-(1+d)^{-n}] = (\$3,583)$  (\$25,773) (\$38,124) (\$32,423) where: (SEER 15) (SEER 16) (SEER 17) (SEER 18)

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

#### Table 3-13. Commercial Duct Repair Rebates

Program Name: Commercial Duct Repair Rebate

Program Start Date: 2015

Measure: Commercial Duct Repair Rebate

Reporting Period: 2019

Α	В	С	D	E	F	G	н	1	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	29,498	14,749	44	44	0.30%	4	4	0.03%	(40)
2016	29,801	14,901	44	88	0.59%	96	100	0.67%	12
2017	30,165	15,083	44	132	0.88%	1	101	0.67%	(31)
2018	30,729	15,364	44	176	1.15%	0	101	0.66%	(75)
2019	31,329	15,665	44	220	1.40%	0	101	0.64%	(119)
2020	31,762	15,881	44	264	1.66%				
2021	32,225	16,113	44	308	1.91%				
2022	32,671	16,336	44	352	2.15%				
2023	33,116	16,558	44	396	2.39%				
2024	33,554	16,777	44	440	2.62%				

Eligibility Level	50.0%

Annual Demand and Energy Savings	Per Inst	allation	Program Total	
Annual Demand and Energy Savings	@meter	@generator	@meter	@generator
Summer kW Reduction	0.00	0.00	0.00	0.00
Winter kW Reduction	0.00	0.00	0.00	0.00
kWh Reduction	0	0	0	0

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	N/A	\$0
Utility Recurring Cost	N/A	\$0
Utility Nonrecurring Rebate	N/A	\$0
Utility Recurring Rebate	N/A	\$0

Annual Benefits =  $B_{npv} \times d/[1-(1+d)^{-n}] = ($261,143)$  where:

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

#### Table 3-14. Commercial Window Film/Solar Screen Rebates

Program Name: Commercial Window Film / Solar Screen Rebate

Program Start Date: 2015

Measure: Commercial Window Film / Solar Screen Rebate

Reporting Period: 2019

Α	В	С	D	E	F	G	н	T I	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	29,498	28,023	9	9	0.03%	6	6	0.02%	(3)
2016	29,801	28,311	9	18	0.06%	1	7	0.02%	(11)
2017	30,165	28,657	9	27	0.09%	1	8	0.03%	(19)
2018	30,729	29,192	9	36	0.12%	3	11	0.04%	(25)
2019	31,329	29,763	9	45	0.15%	0	11	0.04%	(34)
2020	31,762	30,174	9	54	0.18%				
2021	32,225	30,614	9	63	0.21%				
2022	32,671	31,037	9	72	0.23%				
2023	33,116	31,460	9	81	0.26%				
2024	33,554	31,876	9	90	0.28%				

Eligibility Level 95.0%

Annual Demand and Energy Savings	Per Inst	allation	Program Total	
Annual Demand and Energy Savings	@meter	@generator	@meter	@generator
Summer kW Reduction	0.00	0.00	0.00	0.00
Winter kW Reduction	0.00	0.00	0.00	0.00
kWh Reduction	0	0	0	0

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	N/A	\$0
Utility Recurring Cost	N/A	\$0
Utility Nonrecurring Rebate	N/A	\$0
Utility Recurring Rebate	N/A	\$0

Annual Benefits = B<sub>npv</sub> x d/[1-(1+d)<sup>-n</sup>] = (\$3,853)

where:

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

Table 3-15. Commercial Ceiling Insulation Upgrade Rebates

Program Name: Commercial Ceiling Insulation Rebate

Program Start Date: 2015

Measure: Commercial Ceiling Insulation Rebate

Reporting Period: 2019

Α	В	С	D	E	F	G	н	I I	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	29,498	14,749	7	7	0.05%	13	13	0.09%	6
2016	29,801	14,742	7	14	0.09%	3	16	0.11%	2
2017	30,165	14,735	7	21	0.14%	1	17	0.12%	(4)
2018	30,729	14,728	7	28	0.19%	2	19	0.13%	(9)
2019	31,329	14,721	7	35	0.24%	2	21	0.14%	(14)
2020	31,762	14,714	7	42	0.29%				
2021	32,225	14,707	7	49	0.33%				
2022	32,671	14,700	7	56	0.38%				
2023	33,116	14,693	7	63	0.43%				
2024	33,554	14,686	7	70	0.48%				

Eligibility Level 50.0%

Annual Demand and Energy Savings		allation	Program Total		
Annual Demand and Energy Savings	@meter	@generator	@meter	@generator	
Summer kW Reduction	0.18	0.19	0.37	0.38	
Winter kW Reduction	0.34	0.35	0.68	0.70	
kWh Reduction	235	244	469	488	

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	\$6	\$11
Utility Recurring Cost	\$0	\$0
Utility Nonrecurring Rebate	\$203	\$406
Utility Recurring Rebate	\$0	\$0

Annual Benefits =  $B_{npv} \times d/[1-(1+d)^{-n}] = ($3,877)$  where:

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.

#### Table 3-16. Commercial Cool/Reflective Roof Rebates

**Program Name:** Commercial Cool / Reflective Roof Rebate

Program Start Date: 2015

Measure: Commercial Cool / Reflective Roof Rebate

Reporting Period: 2019

Α	В	С	D	E	F	G	н	1	J
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level % (E/C*100)	Actual Annual Number of Program Participants	Actual Cumulative Number of Program Participants	Actual Cumulative Penetration Level % (H/C*100)	Actual Participation Over (Under) Projected Participants (H-E)
2015	29,498	1,967	12	12	0.61%	12	12	0.61%	0
2016	29,801	1,987	12	24	1.21%	10	22	1.11%	(2)
2017	30,165	2,011	12	36	1.79%	5	27	1.34%	(9)
2018	30,729	2,049	12	48	2.34%	5	32	1.56%	(16)
2019	31,329	2,089	12	60	2.87%	11	43	2.06%	(17)
2020	31,762	2,117	12	72	3.40%				
2021	32,225	2,148	12	84	3.91%				
2022	32,671	2,178	12	96	4.41%				
2023	33,116	2,208	12	108	4.89%				
2024	33,554	2,237	12	120	5.36%				

Eligibility Level 6.7%

Annual Demand and Energy Savings	Per Inst	allation	Program Total		
Annual Demand and Energy Savings	@meter	@generator	@meter	@generator	
Summer kW Reduction	41.44	43.06	455.87	473.65	
Winter kW Reduction	0.00	0.00	0.00	0.00	
kWh Reduction	97,372	101,169	1,071,087	1,112,859	

Costs	Per Participant	Program Total
Utility Nonrecurring Cost	\$2,306	\$25,361
Utility Recurring Cost	\$0	\$0
Utility Nonrecurring Rebate	\$3,879	\$42,666
Utility Recurring Rebate	\$0	\$0

Annual Benefits =  $B_{npv} \times d/[1-(1+d)^{-n}] = ($881,401)$  where:

B<sub>npv</sub> = cumulative present value of the net benefits over the life of the program for measures installed during the reporting period

d = 5.5% = discount rate (utility's after tax cost of capital)

n = 10 = life of the program

The Annual Benefits calculation is based on the Total Resource Cost (TRC) test results presented in OUC's 2015 DSM Plan [approved by Consummating Order issued September 8, 2015 (Order No. PSC-15-0359-CO-EG)] and utilizes the 5.5% discount rate and 10-year program life, consistent with the TRC calculations presented in OUC's 2015 DSM Plan.