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May 20 2019

# Duke Energy Carolinas Collaborative Meeting

January 31, 2019



# Meeting Agenda

- Safety
- Regulatory and Program Update
- Purpose Statement
- 2019 Priorities and Commission Directives, Part 1—Background, Discussion, Brainstorming
- Low-Income EE Research and Discussion
- Lunch and Cost-effectiveness Report Update
- 2019 Priorities and Commission Directives, Part 2—Culling, Selection, Next Steps
- Program Modification Updates
  - Neighborhood Energy Savers
  - Residential Assessments
- Wrap Up

- **Tips for Driving Safely in the Rain**
- **Get Your Car Ready**
  - Check tire tread and pressure
  - Windshield Wipers
  - Check headlights, taillights, brake lights
- **Slow Down**
  - You lose 1/3 of your traction in the rain
  - Reduce your speed by a third as a rule of thumb. If the speed limit is 55 mph, aim for under 40 mph.

## Safety Continued

### ■ Back Off

- Forget the old rule about keeping a certain number of car lengths between you and the vehicle in front of you.
- Focus on staying 3-4 seconds behind the vehicle in front of you in dry conditions. Watch the vehicle in front of you as it passes a fixed marker, such as a street light, he says. Then count 3 seconds. Add more time if it's raining, staying about 5 seconds behind.

### ■ Technology

- Don't use cruise control during the rain

<https://www.edmunds.com/car-safety/tips-and-techniques-for-driving-in-rain.html>

# Regulatory Update

## North Carolina

- DEC Filing February 26, 2019

## South Carolina

- DEC Filing March 1, 2019
- Program filings:
  - DEC PowerShare – approved in NC, filed in SC
  - DEC Smart \$aver Filing – increased cost-effectiveness – filed in SC, approved in NC – effective Feb 1, 2019
  - DEP Smart \$aver and online store expansion – filed in SC, approved in NC – effective Feb 1, 2019

## Program Update – Small Business Energy Saver

### Tiered Incentives

- Incentive design modification newly implemented which promotes & encourages bundled, deep energy retrofit projects for SMB customers
  - Higher, tiered incentives for multi-system/measure projects
    - Moving from a flat, per kWh saved incentive rate (\$0.22 per kWh saved)
  - Actively incentivizes customers to take on efficiency upgrades beyond lighting
- Vendor Requirements
  - New requirements and targets for vendor Lime Energy for Tier2/Tier 3 project achievement
- Consultative Approach
  - Energy Advisors listen to customer's needs and offer several options for improvements
  - Advise the customer on the best deal/ROI for their business

## Program Update – Small Business Energy Saver

### Tier 1: LED Lighting measures

- Lowest incentive rate (\$ per kWh saved): **\$0.19**

### Tier 2: Refrigeration; Sensors; Smart Thermostats

- Incentive rate (\$ per kWh) increases: **\$0.22**

### Tier 3: HVAC controls & optimization; HVAC tune-ups

- Highest incentive rate: **\$0.25**

### Total project incentive still caps at 80% of the project cost

- Tiered incentive design encourage bundling measures by leveraging kWh savings from lower tiers to boost overall project incentive

# Program Update – Small Business Energy Saver

## New Marketing Campaign

**We do it all.  
You save up to 80%.**

Let us help you choose your upgrades.

Ready to explore which energy improvements can help your business save? Our energy advisors are ready to guide you through the options and help your business get the best deal possible

**Schedule your free energy assessment now.**  
xxx.xxx.xxx or [duke-energy.com/xxxxxxxx](http://duke-energy.com/xxxxxxxx).



**Choose more.  
Save more.**

The more energy efficiency upgrades you choose to include, the more costs we'll cover – up to 80%! Plus, we'll handle all the work, save you time, and make sure that you love the results!

**Heating and Cooling**

From smart thermostats to energy efficient HVAC systems, we'll help you choose the right upgrades for your business. Plus, we'll handle all the work, save you time, and make sure that you love the results!



**Lighting**

From LED lighting to smart lighting controls, we'll help you choose the right upgrades for your business. Plus, we'll handle all the work, save you time, and make sure that you love the results!



**We do it all.  
You save up to 80%.**

Let us help you choose your upgrades.

Ready to explore which energy improvements can help your business save? Our energy advisors are ready to guide you through the options and help your business get the best deal possible

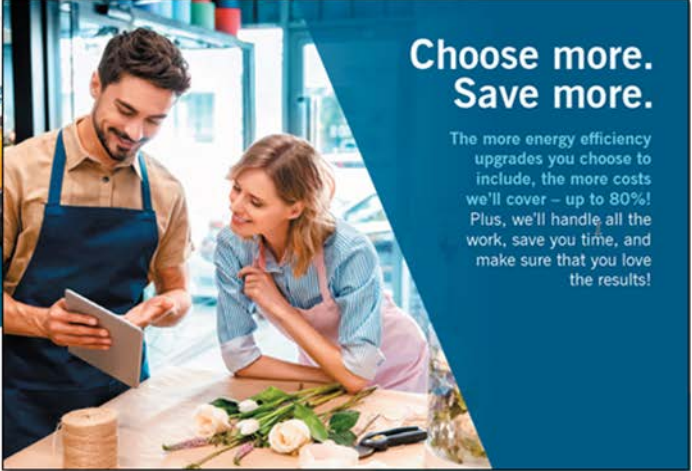
**Schedule your free energy assessment now.**  
xxx.xxx.xxx or [duke-energy.com/xxxxxxxx](http://duke-energy.com/xxxxxxxx).

**Refrigeration**

From smart thermostats to energy efficient HVAC systems, we'll help you choose the right upgrades for your business. Plus, we'll handle all the work, save you time, and make sure that you love the results!

**Choose more.  
Save more.**

The more energy efficiency upgrades you choose to include, the more costs we'll cover – up to 80%! Plus, we'll handle all the work, save you time, and make sure that you love the results!







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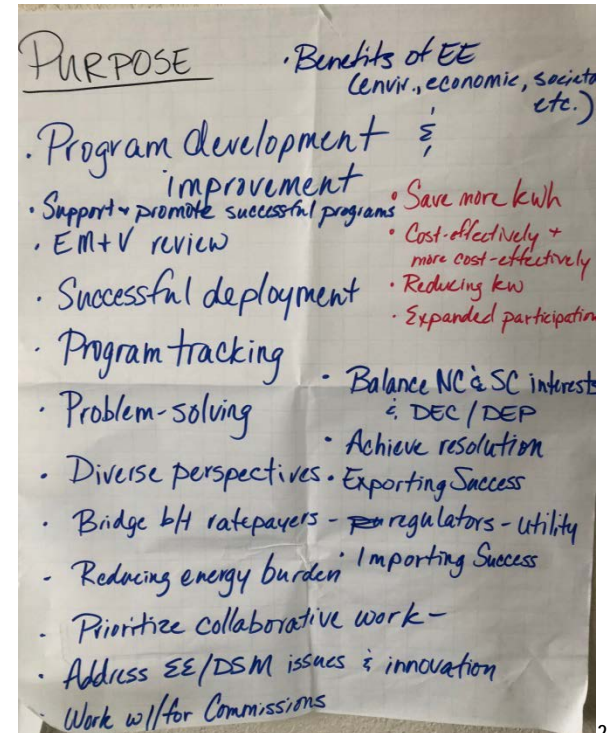
## Purpose Statement



# Purpose Statement

## Keywords from the Discussion on November 27<sup>th</sup>:

- Collaborate
- Broad spectrum of stakeholders
- Shared goals/objectives
- Prospective rather than reactive input to programs
- Ensure program equity for hard-to-reach market segments
- Cost-effectiveness testing
- Focus on actionable steps
- Optimize program success from the diverse perspectives of ratepayers, contractors, Duke, the Commission
- Advisory
- Maximize benefits, economic and environmental
- Improve efficiency and effectiveness compared with litigation



## Draft Purpose Statements

- The purpose of the Duke Collaborative is to serve as a forward-looking forum that harnesses the insights, experience and participation of diverse stakeholders to collaboratively pursue actionable policy and programmatic improvements to ensure optimal performance of Duke's energy efficiency program design and implementation in the Carolinas with the ultimate aim of maximizing the social, economic, and environmental benefits achieved by the utilities' energy efficiency portfolios.
- The Carolinas Collaborative is an advisory group made up of interested stakeholders from across North and South Carolina representing a wide array of customer groups and interests to ensure that Duke DSM/EE programs are designed innovatively, implemented responsibly, and evaluated thoroughly to achieve the most benefits from energy efficiency.



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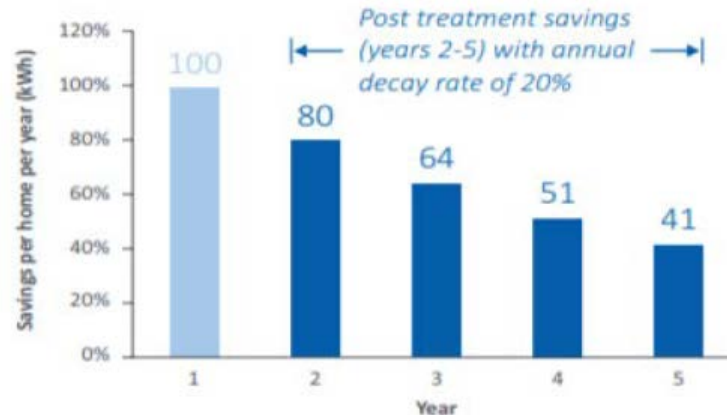
## 2019 Priorities and Commission Directives Part 1



# MyHER Savings and Persistence

## Question of MyHER First Year Savings vs. Persistence

- Customers are automatically opted in and remain in until final bill or until opt out
- Duke uses a one-year measure life for MyHER
- The following issues were brought up in testimony:
  - Duke is counting savings every year as new incremental savings under the assumption that if the reports had stopped, the savings would have stopped as well.
  - Savings persist after the report is stopped. Therefore some savings are the result of last year's reports and not new incremental annual savings that can be counted toward this year's goals.



# Impact Evaluations

- Sound and Rigorous Evaluation Characteristics
  - Results are complete and transparent with reported levels of uncertainty
  - Data, methods, and assumptions are appropriate for the evaluated program
    - Level of effort undertaken with the evaluation needs to be weighed against the value of the savings
  - Consistency; evaluators working with the same data and using the same methods and assumptions should reach the same conclusions
  - Uniform Methods Project (DOE) provides a framework set of protocols for determining savings from energy efficiency measures and programs; protocols provide a straightforward method for evaluating gross energy savings for residential, commercial, and industrial measures commonly offered in EE programs in the United States
  - International Performance Measurement & Verification Protocol (IPMVP) provides the framework for how measurement & verification should be conducted

*“Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted.”*

# Duke MyHER EM&V

- Billing analysis using randomized control trials
- Must have 13 months on the program before EM&V
- Comparisons made monthly—snapshot of program impact across all participants
- Assigned to cohorts for accurate treatment and control grouping
- Savings evaluated monthly for annual aggregate
- Used as projection for next year's rider



# Point by Point Discussion

## Concerns in comments

- Duke assumes that the savings from the My Home Energy Report last only for as long as participants are receiving the report
- Duke counts the savings from all program participants, regardless of the year in which they started participating, as part of its estimates of the *new* annual savings
- Savings do not vanish once someone stops receiving reports
- After reports end, savings decay at a rate of approximately 20% per year, meaning that savings persist into year 4

## Duke method

- One year measure life for behavioral program
- Counts savings as directly attributable to program activities for the purpose of cost recovery/NLR
- Agree. However, with the exception of very few opt outs, Duke customers stop receiving reports when the final bill and are no longer customers
- Agree that savings decay over time; however, since reports don't cease, savings in Duke's program mitigates decay. Savings declination from desensitization is captured in monthly snapshot.

# Point by Point Discussion

## Concerns in comments

- Persistence reduces the amount of *new* annual savings a utility can count from repeat participants towards any annual savings goals.
- Duke may need to adjust program design and delivery and not return to a group of customers until at least three or four years have passed since they were last treated

## Duke method

- Savings are determined to be directly attributable to the program and therefore counted.
- Frequency of communication is necessary to keeping customer engaged. Variety is achieved through content and medium. Reacquiring customers can be expensive.

# Technical Resource Manual

- 2013 - Mostly discussed in series of phone calls moderated by Advanced Energy
- Goal was to develop statewide TRM for NC and SC
- Barrier with incorporating municipal and cooperative utilities, also SCE&G and Dominion
- Group did not continue to pursue TRM for NC or SC

- Duke's perspective:
  - None of the barriers encountered 2013 have changed in 2019
  - Not an initiative that Duke alone can accomplish
  - Protocols are standardized nationally
  - EM&V is well-documented, transparent and sufficient to accomplish regulatory purposes
  
- What problems does a TRM solve?
  - 
  - 
  -

# Opt Out Recruitment and Retention

“assess the potential to reduce the number of customers who opt out of its programs by improving business customers' understanding of its programs and/or improving the designs of its programs to make them more attractive to such customers”

## Opt Out Recruitment and Retention

- Duke's perspective:
  - Agree that tremendous potential for savings and customer benefits lie in C&I projects
  - Nonresidential team and large account managers are actively working to find potential participants, identify projects, and develop engaging programs
  - Using Energy Efficiency Engineers and customer analytics
  - Reduced opt-in timeframe for DEP and extended window to make the opt-in decision for DEC
- Barriers:
  - Economics of opt-in are often not appealing to customers
  - EE Staff is limited in their ability to help with potential projects because of awareness and funding constraints
  - C&I projects are customer-specific and not well suited for generic program design

# Residential Smart \$aver Participation

“endeavor to improve participation in its Residential Smart \$aver program significantly through establishment of a midstream channel for promoting some of the measures through equipment distributors (and possibly retailers and/or other parts of the supply chain), increasing incentives, enhancing marketing, and/or other means to reach more customers.”





# Residential Smart \$aver Energy Efficiency Program Update

# Program Overview

The purpose of this Program is to offer customers a variety of energy conservation measures that increase energy efficiency in existing residential dwellings.

The Program utilizes a network of participating contractors to do the following:

1. To encourage attic insulation, air sealing and duct sealing.
2. To encourage the installation of heat pump water heaters.
3. To encourage high efficiency variable speed pool pumps.

# Program Overview

- Incentives are only applicable to measures installed by a contractor approved by Duke Energy.
- Duke Energy contracts with a third party vendor for application processing, incentive payment disbursement, and customer/contractor support.
- The Program is available to customers whose premise is at least one year old, who are served on a residential rate, and who meet the service delivery qualifications.

<b>2018 YTD Results</b>	<b>Annual Forecast</b>	<b>Actual at 6/30/2018</b>	<b>Variation</b>
Savings (MWH)	3,134	3,441	307
Savings (MW)	1.14	0.86	-0.28
Participants		11,866	
2018 Program Expenses		\$3,063,295	

# Marketing Strategy

1. Trade Ally marketing targets HVAC and Home Performance Contractors.
2. Program information and Trade Ally resources available on program's website.
3. Bill inserts and email campaigns used in 2018.
4. Paid search and special offer campaigns with Trade Allies have increased awareness and reduced incremental customer costs.
5. Working with National Retailers and Distributorships for instant POS rebate solutions which reduce the need for Trade Ally reporting and rebate submissions as well as expedite the rebate turn-times for improved customer experience.

Save up to \$640 next summer!

Pool expenses sending you off the deep end?

Act now, and you could find yourself swimming in extra cash next summer.

As a Duke Energy customer, you can save up to \$640\* in the first year when you upgrade to a quieter, more efficient pool pump that helps make your pool cleaner, with less maintenance required.

[START SAVING](#)

An ENERGY STAR® certified variable-speed pool pump:

- Gets you a \$300 rebate after you install, using a participating contractor.
- Pays for itself in less than two years.
- Saves you up to \$340 each year in energy costs.

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# Highlights

1. Customers and Trade Allies enjoy the tiered incentive structure.
2. The Referral Channel generated ~ 11,000 referrals through June 2018.
3. Star rating for Referral Channel increased from 4.68 to 4.88 out of 5 in Q1 – Q2 of 2018.
4. Program results show reduced incremental cost for other measures.

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**High Efficiency Heat Pump Water Heater Digital Media**

Water heater over 10 years old?  
**Don't wait until it fails.**

Get \$350 when you upgrade your water heater.

[Find a contractor](#)

**High Efficiency Heat Pump Water Heater National Retailer Display**

**Cut water heating costs in half.**

Save big when you upgrade to a heat pump water heater.

**LOWER BILLS**  
Save up to \$250 on water heating costs\*

**REBATE**  
Qualify for a \$350 mail-in rebate from Duke Energy.

Get your \$350 cash rebate in three easy steps:

- STEP ONE: Make your selection. Select and purchase the ENERGY STAR® model that fits your needs.
- STEP TWO: Installation. Schedule an installation date with one of our participating contractors.
- STEP THREE: Get your cash. Submit your rebate application.

\*Not available in California. A heat pump hot water heater is a certified ENERGY STAR® water heater. †Rebate amount varies based on the ENERGY STAR® model.

For more information, call 866.507.3496 or visit [duke-energy.com/SavingBig](#)

Lead's is not responsible for the fulfillment of the rebate.

DUKE ENERGY | Smart Savers®

**High Efficiency Heat Pump Water Heater National Retailer Display**

Enjoy easy summertime savings.

Want to save up to \$640 next summer? We can help.

1. Program continues to encourage Trade Ally staff training and certifications related to quality diagnostic instruments and processes.
2. Requirements for diagnostic-based measures *were recently lessened due* to the high cost of equipment, the need for additional industry certifications (limiting contractor availability) and a lack of consumer demand, amongst others.
3. Program needs to address how additional costs for diagnostic tools, training and practices impact Trade Ally customer pricing vs. internal costs.

# Discussion Topics

**1. How to improve customer participation?**

**2. How to better market the program?**

- Of note, the program is an end-of-life/burnout opportunity, meaning an HVAC system, water heater or pool pump has to break in order for someone to take advantage. From a marketing perspective, the timing is challenging.

**3. What changes would make the program more cost effective?**

- Of note, customer incremental cost is high on these technologies.

**4. What new measures could be considered?**

- NCBPA Survey Suggestions: ventilation requirement, geothermal HVAC, smart water heating/controls.

# Building on Midstream Channel Success

“build on recent success and progress-in promoting efficiency measures for business customers through the midstream channel of its non-residential Smart \$aver prescriptive rebate program.”



# Downstream

## Select your rebate

Start improving your home's energy efficiency.



Heat Pump Water Heater  
Install >

Get \$350



# Midstream

## Save on Energy-Efficient Lighting

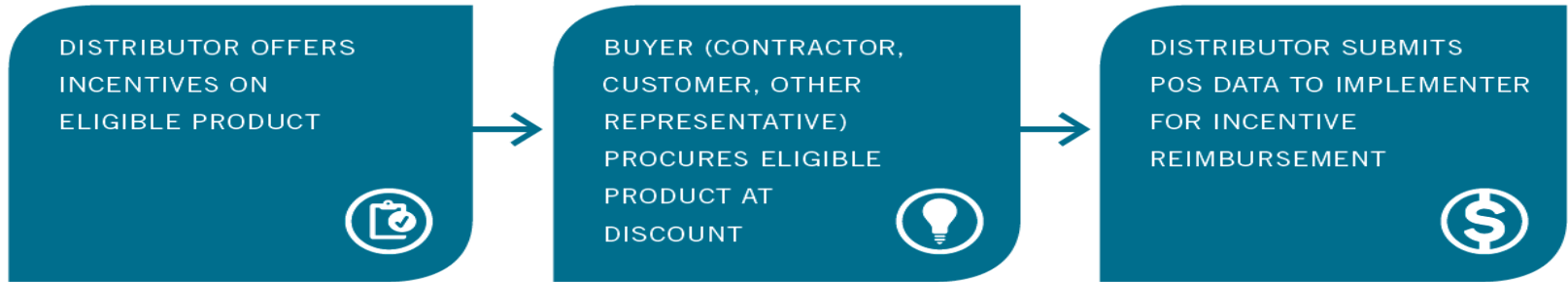


Discounts at local retail stores >

Get instant discounts on LED bulbs at a store near you. Find a retailer.



# Midstream model



# Why a midstream model?

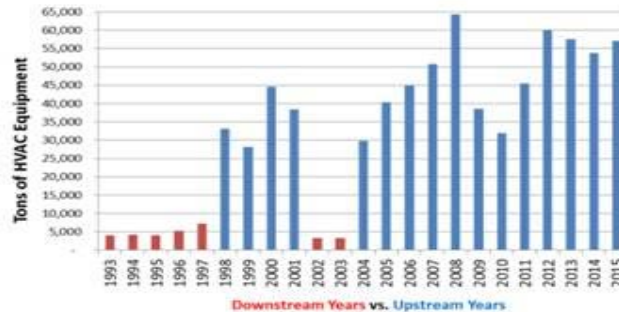
- Accelerate technology adoption
- Increase distributor stocking of efficient products
- Reduce “transaction costs” for customer
- Increase product volumes:



## Results

2010-2012 Energy Savings: 82 GWh (PG&E and SCE combined)

2010-2012 Peak Reduction: 31 MW (PG&E and SCE combined)



Energy Solutions

# Whole House Retrofits

“consider greater promotion of whole-building retrofits, including support for both (A) improvements to building envelopes (e.g. insulation and air leakage reduction); and (B) retrofitting single-family and multi-family buildings that currently have electric-resistance heating with high-efficiency heat pumps.”

# Smart Saver and Whole Home Energy Considerations

Eddy Moore  
Energy and Climate Program Director  
Coastal Conservation League

January 30, 2018



The mission of the Coastal Conservation League is to protect the threatened resources of the South Carolina coastal plain—its **natural landscapes, abundant wildlife, clean water and quality of life**—by working with citizens and government on proactive, comprehensive solutions to environmental challenges.



COASTAL  
CONSERVATION  
LEAGUE

# Theoretical/policy goals

- Overall energy savings, within constraint of cost effectiveness (more technically, maximizing net benefits).
- Comprehensiveness for each customer(not stranding opportunities): aligns w/ reduced free ridership, higher NTG, market transformation, efficient use of time, expertise & material.
- Leaving customer in better position than they even knew they wanted.



# What are the opportunities for comprehensive home energy savings?

- Building envelope
  - Insulation
  - Infiltration (attic and otherwise)
  - ductwork
- HVAC equipment and controls
- Lighting and appliances
- Hot water
- Beneficial electrification & DG.

# An ideal?

- Building envelope tight & insulated, including ducts.
- Manual J/D calcs to properly size equipment
- Install of high-E, properly-sized HVAC w/ quality install, including smart therm.
- Easy appliance/water heat solutions done.
- Info recorded/communicated on any other opportunities.

# Implied goals

- Profitable, workable for trade allies on a project by project and season by season basis.
- Raises the level of quality in the industry.
- Platform for new technologies, information usage and opportunities.



# Smart Saver: interesting successes

- Over half of energy savings from equipment with high upfront cost (HVAC, ASHP).
- 75% when you include smart thermostats.
- 17% of savings from relatively small number of pool pumps (how are they reached/targeted? Direct install? How many also do HVAC?).
- Significant attic infiltration savings.
- Trade allies learned EE and ¼ very interested in more training.\*

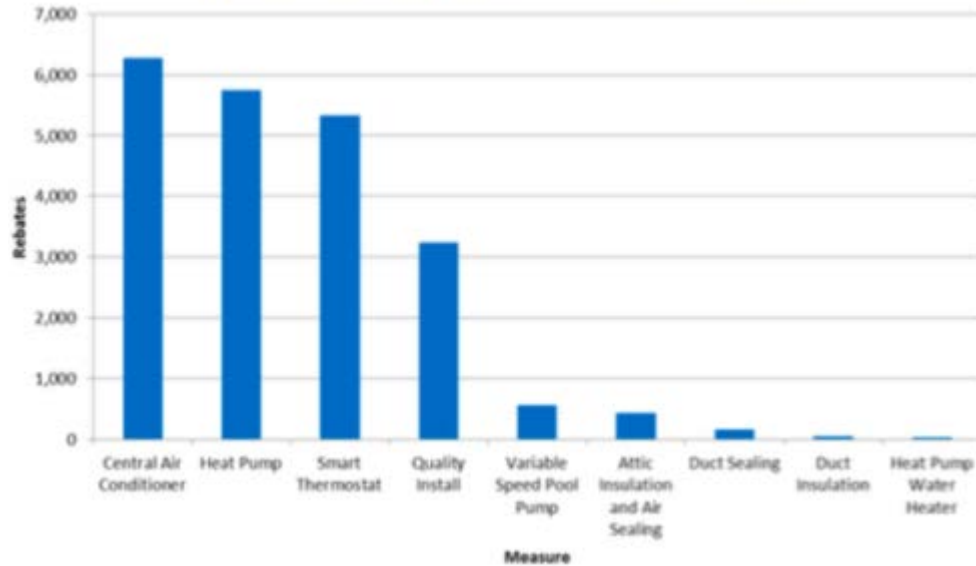


# Flip Side: potential opportunities in relatively low-dollar services

- Such as (Page 1): No participation in AC tuneup—factual question: is this service substantially similar to Quality Install?\*
- Shoulder month revenue?
- Reinforce QI as routine?
- Track older equipment for later rebate?

...More opportunity?—the building envelope

Figure 1-1: Smart Saver Rebated Measures





# Building envelope measures: substantial per-customer savings

- Attic insulate/seal            824 kWh
- Duct insulate                    634 kWh
- Duct infiltration                438 kWh
  
- Heat pump                        490 kWh
- Smart Therm                    400 kWh
- Air conditioner                225 kWh
- Quality install                 13\* kWh



# Factual questions

- no infiltration service beyond attic?\*
- Is Manual J actually required/implemented for HVAC?
- In practice, will envelope improvements reduce HVAC size?





# Utility side, rather than customer/contractor side: C-E.

- Natural gas savings, for C-E testing\*
- Deeper understanding of natural gas and winter peak impacts.
  - Fig 4: zero peak value for HPWH
  - Attic insul/infil has bigger winter peak impact than heat pump—more infiltration opportunities?\*
  - Gas price/capacity impacts.

# Noted EM&V Recommendations

- Work w trade allies to streamline QI reporting: retain it.
- Elim Tier 1? Broader theme of focus/package services?



# Other opportunities?

- Low-cost measures (LED, aerator, setpoint)
- Engagement opportunities (DR)
- Early replacement?
  - 3% replaced units in good working condition\*
  - 60% replaced units that were “getting old”\*\*

# Baseline of understanding

- How does the Smart Saver program interact w/ the home energy audit program?
- If cost effectiveness of full audit is a concern, then what are the costs? (i.e. how big is the gap in C-E?):
  - Assumed program component costs
  - Assumed cost of incremental/new services
  - Calculated UTC?

# Thank you!

Eddy Moore

Energy and Climate Program Director

Coastal Conservation League

[eddym@scccl.org](mailto:eddym@scccl.org) | (501) 772-5426 (cell)



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# Collaborative Effectiveness

# Collaborative Improvements

- Duke's perspective:
  - Suggestions made in filing and subsequent conversations were valid and instructive
  - Changes underway—
    - participation in developing the agenda,
    - emphasis on self-determination of purpose and priorities
    - more 2-way communication in and between meetings,
    - diversified discussion leaders,
    - intentional feedback loop to follow the full "life cycle" of issues/ideas
- Additional issues to address
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## Low Income EE Research and Discussion





# Energy Efficiency for Low Income Households - Background and 2019 Priorities -

Duke Collaborative  
January 31<sup>st</sup>, 2019



# Overview

1. Assessing the Scale of Need / Current Status of Low Income EE
2. Duke Historic Impact and Lessons Learned
3. Discussion of Potential 2019 Low Income EE Priorities

## Scale of Need

- ▶ Demand for Low Income EE greatly exceeds available services, resulting in deferrals and long waiting lists
- ▶ Low Income households may involve numerous hard-to-serve conditions: multifamily, renters, rural, manufactured housing, houses in poor physical condition, health and safety issues, non-electric heating
- ▶ Low Income EE makes up a comparatively small % of utility portfolio budgets and savings
- ▶ Low Income EE is an investment in Economic Security - comparable to Economic Development

# Existing Low Income Programs

## DEC / DEP Programs

- ▶ DEC Income Qualified
- ▶ Neighborhood Energy Savers
- ▶ Helping Home Fund
- ▶ Pay-for-Performance Pilot

## Federal & State Programs

- ▶ Low Income Home Energy Assistance Program (LIHEAP) / Heating Appliance Repair and Replacement Program (HARRP)
- ▶ Weatherization Assistance Program (WAP)

## Blue Cross Blue Shield Healthy Home Initiative

Some Counties also have municipal & non-profit programs

# Key Challenges with Existing Funding

- ▶ Unpredictable funding allocations create challenges for implementation agencies, esp. workforce retention
- ▶ Gap between per home total EE project costs and available funding
- ▶ Funding use restrictions are often at odds with building conditions and needs at the individual household level:
  - Incidental Repairs
  - Health and Safety Requirements
  - Heating Type
- ▶ Coordination and leveraging funds are needed to serve clients, but present numerous challenges
- ▶ Available funding and scope of interventions can vary widely from county to county

# Duke Low Income EE

## Historic Impact

- ▶ Helping Home Fund
- ▶ DEC Income Qualified
- ▶ Neighborhood Energy Savers
- ▶ Programs in other states



## Major Lessons Learned

- ▶ Program Design
- ▶ Implementation
- ▶ Performance
- ▶ Regulatory
- ▶ Other?



# Duke Collaborative

- ▶ **Strategic Vision:** Equitable EE programs are appropriately scaled to meet the need
- ▶ **Goal Setting:** What can we do in 1, 2, 3 years to work towards this strategic vision?
- ▶ **Priorities:** What program changes or new proposals are needed to meet this goal?
- ▶ **Approach:** What next steps are needed to put this into action?

# 2019 Priorities Discussion

- ▶ Overarching Goal Setting
- ▶ Growing / Modifying Existing Duke Low Income Programs
- ▶ Modifying / Expanding Impact from Non-Income Qualified Programs
- ▶ Potential New Programs
- ▶ Leveraging Multiple Funding Sources
- ▶ Others?





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# NC NSPM Cost Effectiveness Update





# Cost Effectiveness Testing Update

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## Where we are:

1. Assessing opportunities to modernize practices and protocols using the National Standard Practice Manual (NSPM) as guide.
2. Collecting stakeholder input on what changes may be wanted and how to make them. Consideration given to impact on SC.
3. NCUC action may be initiated in response to a petition filing, as part of a current or future docket, or enactment of legislation.
4. Initial step of the NSPM is to document the state's goals, policies and regulations for utility EE.
5. Policy efforts underway to improve C&I Opt-Out and increase utility EE % goals support completing NSPM process first.

## Session Law 2007-397 aka “Senate Bill 3”:

- Requires utilities to meet a portion of energy needs through renewables and energy efficiency.
- Requires DSM/EE programs to be cost effective.
- Provides for the recovery of DSM/EE program costs, net lost revenues and an incentive to encourage development of DSM/EE programs.
- **Cost effective means:** program costs are less than the costs the utility would otherwise incur to meet demand and energy requirements with conventional generation resources.

## Activities underway:

1. EE Roadmap Working Group has begun addressing the need for state goals, policies and regulations on utility EE in NC.
  - *Similar work is needed in SC (ref: State Energy Plan).*
2. Ongoing analysis of original SB3 rulemaking order in NC.
  - *Need decision on what's allowable in current regulations.*
3. *Stakeholder input needed from SC regulators on this process.*
4. Ongoing evaluation of the best “trigger” to prompt the NSPM process, whether through NCUC filing or legislation.
  - *Legislative language is in NC bill drafting via Rep. Szoka.*

## Questions that need to be answered:

1. How and why does NC want to invest in EE (esp. utility EE), and what are NC's desired outcomes?
2. What are the relevant impacts of programs to account for based on relevant state goals?
3. To what extent is there symmetry between EE costs and benefits?
4. How will any changes in NC impact SC?
5. What is the best process to initiate the NSPM?

## Possible timeline:

- Feb: Stakeholders/Public Staff define policies/options in current regs.
- Mar: Initiate NSPM process via NCUC filing or enabling legislation.
- Apr: EE Roadmap Working Group reports on NC goals, policies and regulations. SC regulators determine support and priority for this process.
- May: Initiate NSPM process via working group to:
  - Assess alignment of current tests w/ policy goals.
  - Catalog utility system and cost/benefit impacts.
- Jun: Develop plan to align NSPM principles with practices.
- Jul: Working group report to NCUC and stakeholders.



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# 2019 Priorities and Commission Directives Part 2





## Culling, Selection, and Next Steps

- *Savings and Persistence in MyHER*
  -
- *Opt Outs*
  -
- *TRM*
  -

## Culling, Selection, and Next Steps

- *Smart \$aver residential participation*
  -
- *Building on the midstream channel success*
  -
- *Whole House Retrofits*
  -

## Culling, Selection, and Next Steps

- *Collaborative Effectiveness*
  -
- *Low Income Programs*
  -



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## Program Modification Updates



# Neighborhood Energy Savers

# Community Outreach Programs

## Overview – Low Income Statistics



Low Income is defined as families with incomes  $\leq$ 200% of the Federal Poverty Guidelines

Household Size	200% of Poverty
1	\$24,120
2	\$32,480
3	\$40,840
4	\$49,200
5	\$57,560
6	\$65,920

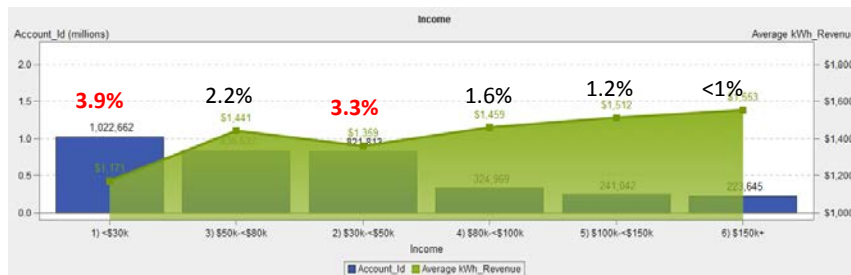
While 51% of all customers live in homes built before 1960, 72% of Low Income customers live in older inefficient homes

Housing Stock Demographics Built Before 1960		
Jurisdiction	Customer Accounts w/Homes Built Before 1960	Accounts <200% of Poverty
DEC(NC)	812,171	388,123
DEP(NC)	573,141	274,136
DEC(SC)	267,854	132,076
DEP(SC)	135,870	56,734
<b>TOTAL</b>	<b>1,789,036</b>	<b>851,069</b>
	<b>51.5%</b>	<b>72.3%</b>

On average, 33% of all of Duke Energy Customers are Low Income; however DEP SC is significantly higher at 52%

Low Income Accounts by Jurisdiction			
Jurisdiction	Customer Accounts	Accounts <200% of Poverty	% Low Income by Jurisdiction
DEC(NC)	1,679,656	540,302	32.17%
DEP(NC)	1,169,392	376,778	32.22%
DEC(SC)	484,932	178,297	36.77%
DEP(SC)	135,870	71,756	52.81%
<b>TOTAL</b>	<b>3,469,850</b>	<b>1,168,133</b>	<b>33.6%</b>

The energy burden (% of % paid in energy bills to income) is higher for low income customers



# Neighborhood Energy Saver Program

## Program Overview



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### Program Design

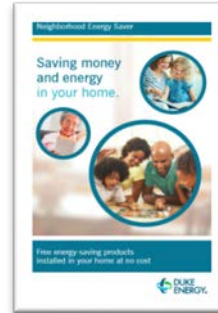
- Operates in all jurisdictions
- Recruit customers in pre-selected neighborhoods to participate in energy efficiency program
- Provide customers with measures and education that reduce energy consumption
- Neighborhood kickoff event to disseminate program information to customers

### Eligibility

- Pre-selected neighborhoods consisting of 50% or more households, at or below 200% of the FPG
- Neighborhoods are approximately 500-2000 households

### Program Measures

- Whole house walk-through assessment
- LEDs starting 2017 (CFLs 2009-2017)
- Water Heater Wrap / Pipe Wrap / Temperature Check
- Water Saving Shower Head /Aerators
- Switch Plate Wall Thermometer
- HVAC Winter Kit for wall/window unit
- Foam Insulation Spray /Caulking
- Door Weather Stripping / Sweep
- AC/Heat Filters (Year Supply)
- Room A/C Cover
- Energy Saving Calendar



### Program Education

- Leave Behind Brochure
- Energy efficiency education on consumption and reduction
- Maintenance of installed measures
- Resources available for other energy efficient products and services

### Program Implementation

- Implementation Vendor - Honeywell since 2016
  - GoodCents was vendor in DEC 2013-2015
- 4 Crews
  - DEC NC – Charlotte & Greensboro
  - DEC SC - Greenville
  - DEP - Raleigh

#### Approach

- Identify the neighborhood
- Work with key community leaders
- Send out communication to eligible customers
- Hold a kick off event / information meeting
- Door to Door / Street by Street canvassing method
- Goal of 70% penetration within each neighborhood

# Neighborhood Energy Saver Program

## Program to Date Results / Enhancement Process



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### Consumer Benefits

- Professionally installed energy efficiency measures at no cost to customer
- 10% QC to ensure work is performed

### Customer Satisfaction

- High Customer Satisfaction >97%
- Survey postcard left behind with customer once measures installed

### Overview of Production

Neighborhoods	Count	Total Eligible Households	Total PTD Production	% Production
DEP-NC	33	38,374	29,220	76.1%
DEP-SC	12	16,573	11,832	71.4%
Duke Energy NC	48	56,172	34,353	61.2%
Duke Energy SC	25	24,715	13,494	54.6%
<b>Total</b>	<b>118</b>	<b>135,834</b>	<b>88,899</b>	<b>65.4%</b>

### Program Enhancements

- Brainstorm possible enhancements to the program
- Receive input from the Collaborators
- Once feasible, Program submitted to the New Product Development team to take through the gate process
  - Request measure costs
  - Determine participation
  - Determine energy savings of new measures
  - Run DSM
- Program submitted to Management for approval
- If approved, Program filed to Utilities Commission for review and approval
- Finalize vendor contract with new measures
- Upon approval, implement new measures

### Program to Date Production

Jurisdiction	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
DE Progress – NC	3,489	4,263	3,228	2,616	3,185	3,342	3,812	3,301	1,984	29,220
DE Progress – SC	1,336	794	1,304	1,777	915	471	600	1,572	3,063	11,832
Duke Energy NC				1,813	6,754	4,405	6,063	8,244	7,074	34,353
Duke Energy SC				1,103	2,328	1,990	2,442	2,840	2,791	13,494
<b>Total</b>	<b>4,825</b>	<b>5,057</b>	<b>4,532</b>	<b>7,309</b>	<b>13,182</b>	<b>10,208</b>	<b>12,917</b>	<b>15,957</b>	<b>14,912</b>	<b>88,899</b>
<b>Annual MWH Savings</b>	<b>3,958</b>	<b>2,082</b>	<b>2,182</b>	<b>2,941</b>	<b>5,128</b>	<b>4,408</b>	<b>5,124</b>	<b>6,282</b>	<b>5,912</b>	<b>38,019</b>



# Community Outreach Programs

## Overview – Weatherization Overview



	DEC NC	DEC SC	DEP
Program Design	Tiered program	Tiered Program	Pay for Performance Incentives
Start Date	Feb 2015	Feb 2015	Pilot in Buncombe Cty only Jan 2019
Primary Agency Funding	<p>The programs are implemented using the local State Weatherization Agency, who follows DOE/LIHEAP rules. Agencies determine customer eligibility based on income, assess the home performing a NEAT (National Energy Audit Tool) analysis, and install measures based on cost-effectiveness from the NEAT Tool. Each state works on differing fiscal years, but the grant \$ provided from DOE/LIHEAP have strict requirements.</p> <ul style="list-style-type: none"> <li>• Must be used only for the purpose intended (weatherization work)</li> <li>• Must stay within their average spend per home</li> <li>• Must be used within the fiscal year allocated (SC Apr 1 – Mar 30; NC July 1 – June 30)</li> <li>• A % (12-18%) can be used for health and safety</li> <li>• If annual contract spent/completions not met, will impact next year’s allocation to the agency</li> <li>• <b>Any incentives/rebates provided must go back into the grant and follow all of the above rules*</b></li> </ul>		
# of Agencies Participating	13 agencies – Coordinated through NCCAA	3 Eligible; only 1 participating (GLEAMNS)	Currently only 1 agency
Exceptions / Challenges	*NC books incentives as non-discretionary income – resulting in higher participation in the program	Very low participation in the program; booked as an “Applicable Credit” SC agencies have issues meeting DOE/LIHEAP goals and spending	No experience yet. Program just launched.
Annual Budget Goal vs. Actual	\$3.3M / \$2.3M actual / Avg spend	\$1M; / \$71K	\$50 K
PTD Participation	2,700 Participants	39 Participants	Just launched
MWH Savings	4,705 MWH Weatherization; 651 MWH for Refrigerator Replacement		

# Community Outreach Programs

## Overview – Weatherization Overview



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2015-2018 Combined	2015		2016		2017		2018		Total	
DEC WX - Project Type	Projects	Total Paid	Projects	Total Paid	Projects	Total Paid	Projects	Total Paid	Projects	Total Paid
Refrigerator Replacement	41	\$ 28,465.50	133	\$ 92,977.50	145	\$ 96,736.50	170	\$ 135,245.50	489	\$ 353,425.00
Weatherization Tier 1	81	\$ 39,299.10	80	\$ 36,564.97	48	\$ 23,743.31	73	\$ 34,655.86	282	\$ 134,263.24
Weatherization Tier 2	318	\$ 737,993.88	604	\$ 1,388,517.58	385	\$ 923,784.21	370	\$ 942,775.96	1677	\$ 3,993,071.63
HVAC Replacement	2	\$ 382.20	16	\$ 79,624.49	58	\$ 316,613.24	215	\$ 1,188,836.44	291	\$ 1,585,456.37
<b>Total</b>	<b>442</b>	<b>\$ 806,140.68</b>	<b>833</b>	<b>\$ 1,597,684.54</b>	<b>636</b>	<b>\$ 1,360,877.26</b>	<b>828</b>	<b>\$ 2,301,513.76</b>	<b>2739</b>	<b>\$ 6,066,216.24</b>

North Carolina	2015		2016		2017		2018		Total	
DEC WX - Project Type	Projects	Total Paid	Projects	Total Paid	Projects	Total Paid	Projects	Total Paid	Projects	Total Paid
Refrigerator Replacement	41	\$ 28,465.50	133	\$ 92,977.50	145	\$ 96,736.50	168	\$ 133,502.25	487	\$ 351,681.75
Weatherization Tier 1	81	\$ 39,299.10	80	\$ 36,564.97	48	\$ 23,743.31	70	\$ 34,403.01	279	\$ 134,010.39
Weatherization Tier 2	318	\$ 737,993.88	594	\$ 1,368,482.85	385	\$ 923,784.21	346	\$ 872,829.73	1643	\$ 3,903,090.67
HVAC Replacement	2	\$ 382.20	16	\$ 79,624.49	58	\$ 316,613.24	215	\$ 1,188,836.44	291	\$ 1,585,456.37
<b>Total</b>	<b>442</b>	<b>\$ 806,140.68</b>	<b>823</b>	<b>\$ 1,577,649.81</b>	<b>636</b>	<b>\$ 1,360,877.26</b>	<b>799</b>	<b>\$ 2,229,571.43</b>	<b>2700</b>	<b>\$ 5,974,239.18</b>

South Carolina	2015		2016		2017		2018		Total	
DEC WX - Project Type	Projects	Total Paid	Projects	Total Paid	Projects	Total Paid	Projects	Total Paid	Projects	Total Paid
Refrigerator Replacement	0	\$ -	0	\$ -	0	\$ -	2	\$ 1,743.25	2	\$ 1,743.25
Weatherization Tier 1	0	\$ -	0	\$ -	0	\$ -	3	\$ 252.85	3	\$ 252.85
Weatherization Tier 2	0	\$ -	10	\$ 20,034.73	0	\$ -	24	\$ 69,946.23	34	\$ 89,980.96
HVAC Replacement	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
<b>Total</b>	<b>0</b>	<b>\$ -</b>	<b>10</b>	<b>\$ 20,034.73</b>	<b>0</b>	<b>\$ -</b>	<b>29</b>	<b>\$ 71,942.33</b>	<b>39</b>	<b>\$ 91,977.06</b>

Year	Families Received DEC NC WX Services	Paid DEC NC WX Projects	Families Received DEC NC WX and HHF	% DEC NC WX & HHF
2015	403	442	287	71%
2016	724	833	586	79%
2017	559	636	343	61%
2018	659	799	459	69%

	NC Avg/Project	SC Avg/Project
Refrigerator Replacement	\$ 722.14	\$ 871.63
Weatherization Tier 1	\$ 480.32	\$ 84.28
Weatherization Tier 2	\$ 2,375.59	\$ 2,646.50
HVAC Replacement	\$ 5,448.30	
<b>Total</b>	<b>\$ 2,212.68</b>	<b>\$ 2,358.39</b>

# Community Outreach Programs

## Overview – Helping Home Fund



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### \$20M – DEP/DEC Rate Case 2015-2017

#### DEP/DEC Rate Case 2014 – Program Guidelines

- \$3,000 for health and safety repairs
- \$2,000 for appliances - refrigerator, washer/dryer, room A/C unit
- \$3,000 for Weatherization – DEP only
- **\$10K for HVAC installations and/or tune up**

Type	DEC	DEP	Totals	# Projects	% Spend
Appliance Replacement	\$987,251.05	\$645,828.82	\$1,633,079.87	1674	8.2%
Health & Safety	\$1,712,135.69	\$847,904.92	\$2,560,040.61	2727	12.9%
HVAC Replacement	\$6,308,594.66	\$6,291,153.33	\$12,599,747.99	1876	63.3%
Weatherization Tier 1		\$97,174.37	\$97,174.37	322	0.5%
Weatherization Tier 2		\$990,132.69	\$990,132.69	488	5.0%
QA/QC	\$19,304.83	\$15,952.13	\$35,256.96		0.2%
Admin fees	\$1,000,000.00	\$1,000,000.00	\$2,000,000.00		10.0%
<b>Totals</b>	<b>\$10,027,286.23</b>	<b>\$9,888,146.26</b>	<b>\$19,915,432.49</b>	<b>7087</b>	<b>100%</b>

#### Piedmont Merger - Program Guidelines

- \$3,000 for health and safety repairs
- \$2,000 for appliances - refrigerator, washer/dryer, room A/C unit
- **\$800 for HVAC repairs and/or tune up**

### \$.2.5M – Piedmont Merger 2017

Type	DEC	DEP	Totals	Projects	% Spend
Appliance Replacement	\$ 318,410.12	\$ 225,138.81	\$ 543,548.93	397	24%
Health & Safety	\$ 980,578.51	\$ 388,947.36	\$ 1,369,525.87	1067	62%
HVAC Repair	\$ 124,443.18	\$ 98,022.37	\$ 222,465.55	376	10%
Admin fees	\$ 44,944.05	\$ 44,944.05	\$ 89,888.09		4.0%
<b>Totals</b>	<b>\$ 1,468,375.85</b>	<b>\$ 757,052.58</b>	<b>\$ 2,225,428.43</b>	<b>1840</b>	<b>100%</b>

#### DEP Rate Case 2017 - Program Guidelines

- \$3,000 for health and safety repairs
- \$2,000 for appliances - refrigerator, washer/dryer, room A/C unit
- **\$1,000 for HVAC repairs and/or tune up**
- **\$4,000 towards cost of new HVAC system/duct work**

Type	DEP	Projects	% Spend
Appliance Replacement	\$ 20,542.84	14	40%
Health & Safety	\$ 23,116.07	17	45%
HVAC Repair	\$ 5,534.18	11	11%
Admin fees	\$ 1,954.03		4%
<b>Totals</b>	<b>\$ 51,147.12</b>	<b>42</b>	<b>100%</b>

Note: 34 junctions are represented in the 41 paid 2017 firm projects

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# Community Outreach Programs

## Overview – Customer Assistance Funds



Customer Assistance Funds	2018	2018	2017	2017
<b>ENERGY NEIGHBOR FUND</b>	<b>Customer Contributions</b>	<b>Company Contribution</b>	<b>Customer Contributions</b>	<b>Company Contribution</b>
NORTH CAROLINA	\$ 266,000.00	\$ 306,000.00	\$ 273,000.00	\$ 313,000.00
SOUTH CAROLINA	\$ 26,000.00	\$ 26,000.00	\$ 28,000.00	\$ 28,000.00
FLORIDA	\$ 194,000.00	\$ 252,000.00	\$ 209,000.00	\$ 269,000.00
<b>TOTAL</b>	<b>\$ 486,000.00</b>	<b>\$ 584,000.00</b>	<b>\$ 510,000.00</b>	<b>\$ 610,000.00</b>
<b>SHARE THE WARMTH - CAROLINAS</b>	<b>Customer Contributions</b>	<b>Company Contribution</b>	<b>Customer Contributions</b>	<b>Company Contribution</b>
NORTH CAROLINA*	\$ 350,000.00	\$ 577,500.00	\$ 344,250.00	\$ 576,750.00
SOUTH CAROLINA**	\$ 115,000.00	\$ 197,500.00	\$ 114,750.00	\$ 197,250.00
<b>TOTAL</b>	<b>\$ 465,000.00</b>	<b>\$ 775,000.00</b>	<b>\$ 459,000.00</b>	<b>\$ 774,000.00</b>
<b>HEATSHARE – OHIO</b>	<b>Customer Contributions</b>	<b>Company Contribution</b>	<b>Customer Contributions</b>	<b>Company Contribution</b>
	\$ 111,000.00	\$ 200,000.00	\$ 110,000.00	\$ 200,000.00
<b>HELPING HAND - INDIANA</b>	<b>Customer Contributions</b>	<b>Company Contribution</b>	<b>Customer Contributions</b>	<b>Company Contribution</b>
	\$ 112,000.00	\$ 500,000.00	\$ 118,000.00	\$ 700,000.00
<b>WINTERCARE - KENTUCKY</b>	<b>Customer Contributions</b>	<b>Company Contribution</b>	<b>Customer Contributions</b>	<b>Company Contribution</b>
	\$ 26,000.00	\$ 50,000.00	\$ 27,000.00	\$ 50,000.00
<b>SUBTOTAL Customer Assistance Funds</b>	<b>\$ 1,200,000.00</b>	<b>\$ 2,109,000.00</b>	<b>\$ 1,224,000.00</b>	<b>\$ 2,334,000.00</b>
DEC NC Rate Settlement \$ distributed to STW agencies in 2018*		\$ 4,000,000.00		
DEC SC Merger Settlement \$ distributed to STW agencies in 2018**		\$ 600,000.00		
	<b>Total Company Contributions</b>	<b>\$ 6,709,000.00</b>		<b>\$ 2,334,000.00</b>

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# Community Outreach Programs

## Overview – Program Participation

Program Participation	Customers <\$50,000						Customers < \$30,000					
Low Income Targeted Program	All Customers	LI Customers	% Low Income*	DEC Customers	DEC LI Customers	% Low Income	All Customers	LI Customers	% Low Income*	DEC Customers	DEC LI Customers	% Low Income
<b>Neighborhood Energy Saver</b>	80,631	65,028	80.6%	25,934	20,465	78.9%	80,631	43,049	53.4%	25,934	13,996	54.0%
	<b>Programs with Customer Investment</b>						<b>Programs with Customer Investment</b>					
<b>Smart Saver</b>	147,239	31,767	21.6%	75,087	17,613	23.5%	147,239	11,213	7.6%	75,087	6,404	8.5%
<b>Online Lighting Store</b>	167,299	45,937	27.5%	102,356	29,682	29.0%	167,299	17,309	10.3%	102,356	11,515	11.2%
<b>Home Energy Imp</b>	135,133	40,063	29.6%				135,133	6,360	4.7%			
	<b>449,671</b>	<b>117,767</b>	<b>26.2%</b>	<b>177,443</b>	<b>47,295</b>	<b>26.7%</b>	<b>449,671</b>	<b>34,882</b>	<b>7.8%</b>	<b>177,443</b>	<b>17,919</b>	<b>10.1%</b>
	<b>Rebates to Customer</b>						<b>Rebates to Customer</b>					
<b>Appliance Recycle</b>	64,193	25,066	39.0%	20,614	8,508	41.3%	64,193	11,858	18.5%	20,614	3,968	19.2%
<b>Power Manager</b>	898,574	369,823	41.2%	215,547	82,105	38.1%	898,574	177,393	19.7%	215,547	37,129	17.2%
	<b>962,767</b>	<b>394,889</b>	<b>41.0%</b>	<b>236,161</b>	<b>90,613</b>	<b>38.4%</b>	<b>962,767</b>	<b>189,251</b>	<b>19.7%</b>	<b>236,161</b>	<b>41,097</b>	<b>17.4%</b>
	<b>Free Programs to Customer</b>						<b>Free Programs to Customer</b>					
<b>Home Energy House Call</b>	254,096	88,917	35.0%	54,079	18,101	33.5%	254,096	37,194	14.6%	54,079	7,696	14.2%
<b>K-12 Education</b>	201,857	83,995	41.6%	114,632	50,738	44.3%	201,857	40,014	19.8%	114,632	24,602	21.5%
<b>MyHER</b>	2,746,125	1,182,166	43.0%	1,330,875	604,097	45.4%	2,746,125	595,658	21.7%	1,330,875	310,200	23.3%
<b>Residential Lighting</b>	1,928,721	838,810	43.5%	1,216,878	567,107	46.6%	1,928,721	412,785	21.4%	1,216,878	290,793	23.9%
<b>Multi-Family EE</b>	78,209	48,236	61.7%	44,173	27,938	63.2%	78,209	32,688	41.8%	44,173	19,031	43.1%
	<b>4,954,912</b>	<b>2,153,207</b>	<b>43.5%</b>	<b>1,261,051</b>	<b>595,045</b>	<b>47.2%</b>	<b>4,954,912</b>	<b>1,081,145</b>	<b>21.8%</b>	<b>1,261,051</b>	<b>309,824</b>	<b>24.6%</b>

\*From REZ tool, based in incomes <\$50K and <\$30K - 2017

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# Residential Assessments

# Residential Energy Assessments

- Potential Program Improvements:
  - Continued optimization of the online enrollment tool to facilitate customer scheduling.
  - Standard Kit upgrades within existing filing parameters - evaluate additional measures for standard kit to increase installation and overall savings to include but not limited to:
    - Pipewrap
    - Additional bathroom aerators
  - Next steps – Progress from ideation to concept gate
    - Compile DSMore Inputs
    - Confirm anticipated upside, cost effectiveness, UTCs and financials are within the existing parameters of the tariff and flexibility guidelines
    - Present proposed modifications to internal/external team for evaluation
    - Notify commission of proposed modifications and final projections regarding participation and savings

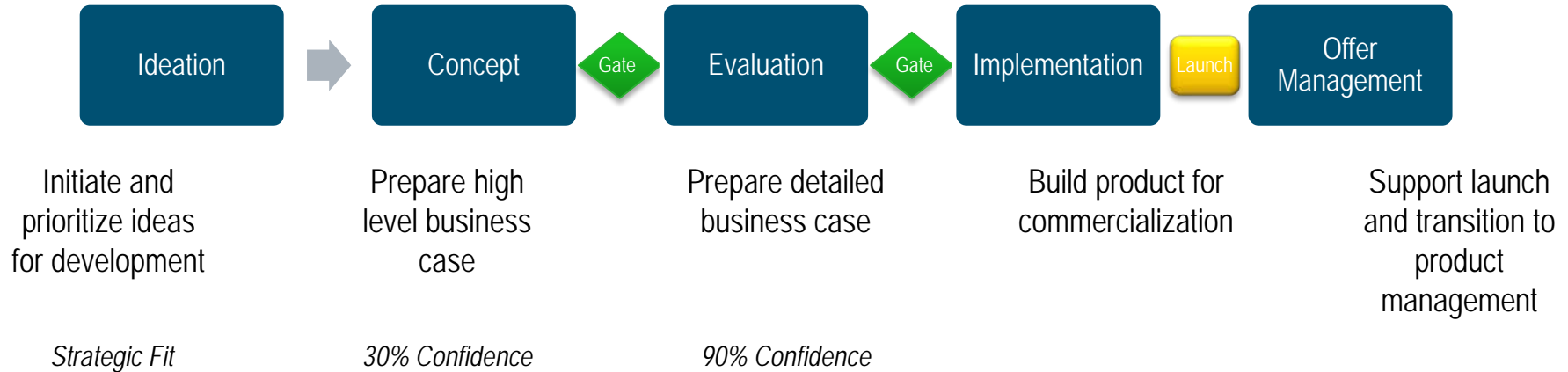


## Residential Energy Assessments

- Potential Program Improvements (Continued):
  - Evaluate additional enhancements that could be offered and installed during the assessment at a discounted price:
    - Blower door option
    - Handheld Showerheads
    - Smart thermostats
    - Specialty Globes
    - Specialty Candelabras
    - TSV Showerheads
  - Implementing post audit follow up with reminders of recommendations/cross-promotional referrals.
  - In addition to the cross promotion of regulated programs coordinate inclusion of non-regulated programs.



## New Product Development | Stage Gate Process



We help by providing a disciplined, repeatable, yet flexible approach to develop new products and services.

# Wrap Up and Scheduling

