

October 11, 2022  
Jaclyn Rambarran



# Evaluation of C&I Non-participants

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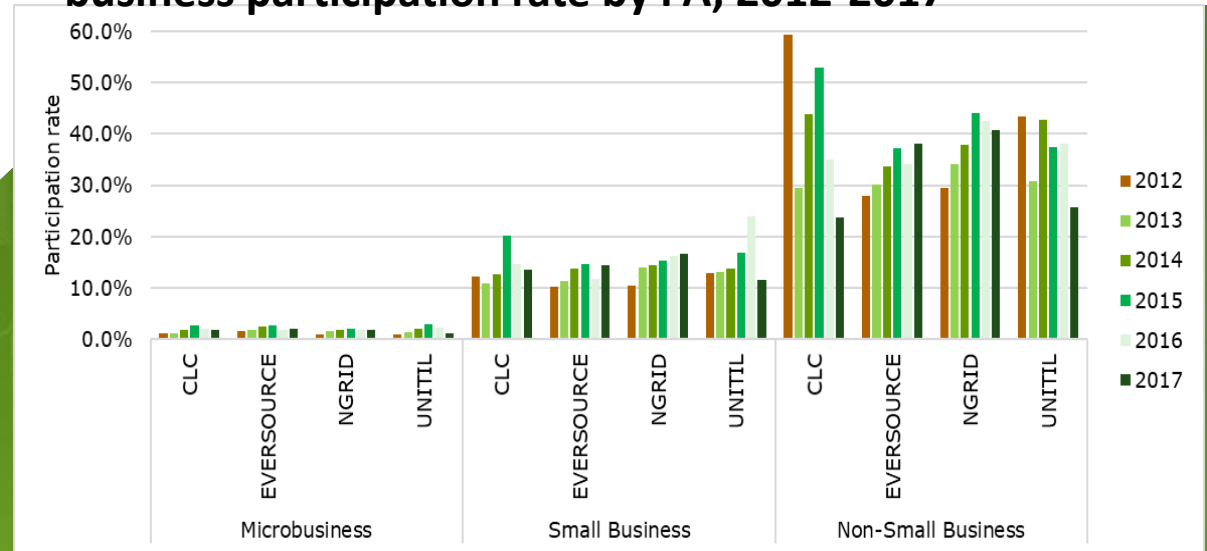
# Most recent C&I non-participant evaluation focused on small businesses

- Large businesses typically have high participation rates\*
- Past evaluation studies conducted on mid-size businesses
- Gap in research on smaller businesses

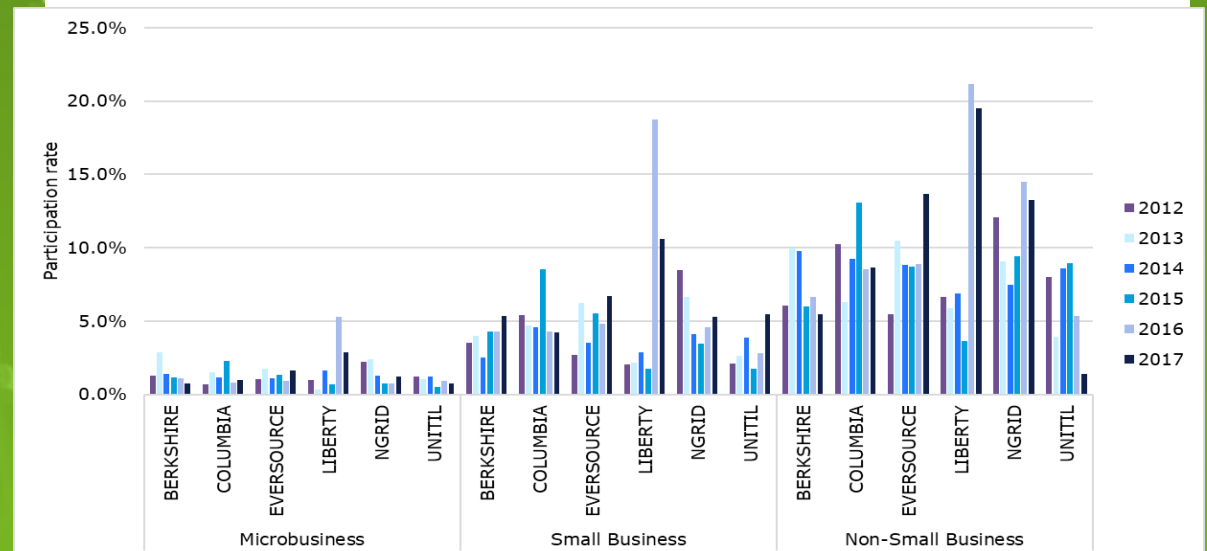
\*participation captures the ratio of accounts within the analysis population that participated in energy efficiency programs. There are a greater number of small and microbusiness accounts than non-small businesses in the C&I population

Figures from DNV, "Final Report: Commercial and Industrial Small Business Nonparticipant Customer Profile Study", 2020

### Electric microbusiness, small business and non-small business participation rate by PA, 2012-2017



### Gas microbusiness, small business and non-small business participation rate by PA, 2012-2017



# Agenda

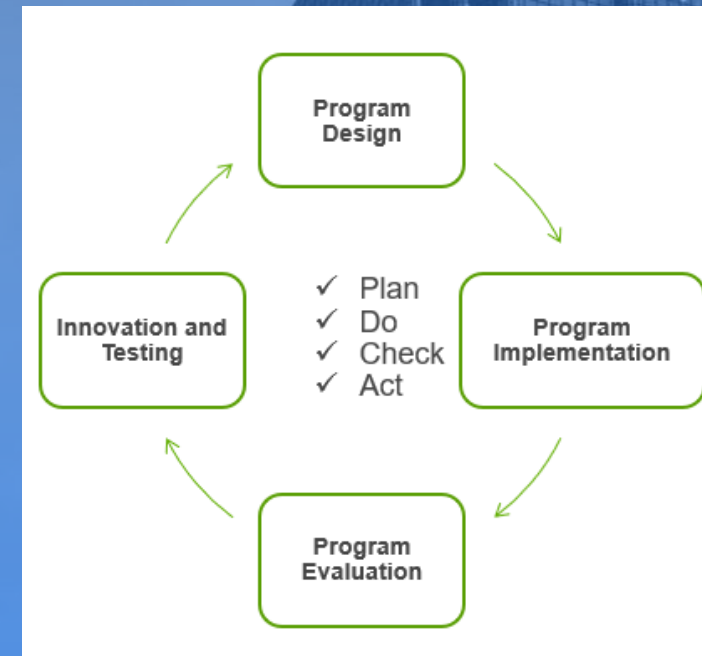
**Past Research on small and mid-size  
businesses**  
2011-2017

**Evaluation of Mid-Size C&I Programs**  
2018

**Small Business Non-Participant Customer  
Profile Study**  
2020

# MA PAs Seek to Continually Improve Program Delivery

- Non-residential Small Business Direct Install Program Multi-Tier Program Structure Assessment Process Evaluation (2011)
- Non-Controls Lighting Evaluation for the MA Small Business Direct Install Program: Multi-Season Study (2012)
- MA Small Business Direct Install 2010-2012 Impact Evaluations (2013)
- Small & Medium Sized Food Stores Market Sector Profile (2014)
- Small & Medium Healthcare Market Sector Profile (2014)
- Small Business Program Process Evaluation (2015)
- Mid-Size Customer Needs Assessment (2013)
- Mid-Size Customer Needs Assessment Public Webinar (April 3, 2014)



# Mid-Size Customer Needs Assessment (2013)

- Study analyzed mid-size electric accounts in 2011 and concluded mid-size accounts presented an opportunity for PAs to increase savings
- Recommended actions PAs could take to better serve midsize accounts





# C&I 2011-2016 Mid-size Customer Assessment (2018)

- Conducted by DNV, expanded on mid-size customer needs assessment completed in 2013
- Goals of evaluating impact of steps PAs took to service midsize accounts from 2011-2016
- Examined changes in performance indicators over that time
- Conducted in-depth-interviews with 9 PA staff and 52 market actors (including customers/end users)



# Findings from C&I 2011-2016 Mid-Size Customer Assessment



**Midsized electric & gas accounts no longer underperforming compared to large & small accounts**

**Upstream programs have had substantial impact on participation of midsize accounts**

More custom/comprehensive measures had been installed since the 2013 study, but still represented a small portion of overall energy efficient installations

**Majority of customers who previously installed measures said they wanted to install more**

Many said there are no real barriers. Those who cited barriers were concerned with expeditious and accurate ROI and administrative burden of doing projects rather than upfront cost.

**Vendors mentioned costs as primary barrier to participation**

**Many electric participants stated there were no additional energy efficiency needs to be addressed**

Implied program may have been adequately serving the perceived needs of midsize customers at the time of the evaluation.



# Small Business Non-Participant Customer Profile Study (2020)

- As part of their ongoing efforts to serve all customers, in the 2019-2021 Energy Efficiency Plan (October 19, 2018 Term Sheet) the PAs agreed to **conduct tailored evaluations in 2019 that address participation levels and potential unaddressed barriers** for (a) businesses (small, mid-size, and large) and (b) residential customers by income levels and non-English speaking populations.



## Study Objectives

Provide analysis on patterns of participation from 2012-2017

Compare participation and savings rates across small business sub-segments and program activity categories

Study not designed to identify opportunity; did not look at potential savings for microbusinesses nor the barriers faced

## Defining Customer Size



**Microbusiness:** <0.11 GWh  
**Small businesses:** 0.11-1.5 GWh  
**Non-small business:**  $\geq 1.5$  GWh



**Microbusiness:** <8,000 therms  
**Small business:** 8,000-40,000 therms  
**Non-small business:**  $\geq 40,000$  therms





## Analysis by Business and Project Characteristics

- The research team conducted a preliminary analysis on 10 different groupings of businesses and projects
  - Three of these groupings (shown **in orange**) did not show consistent patterns of non-participation and so were not analyzed further
  - Seven of these groupings (shown **in blue**) showed significant differences in participation and were analyzed in more detail



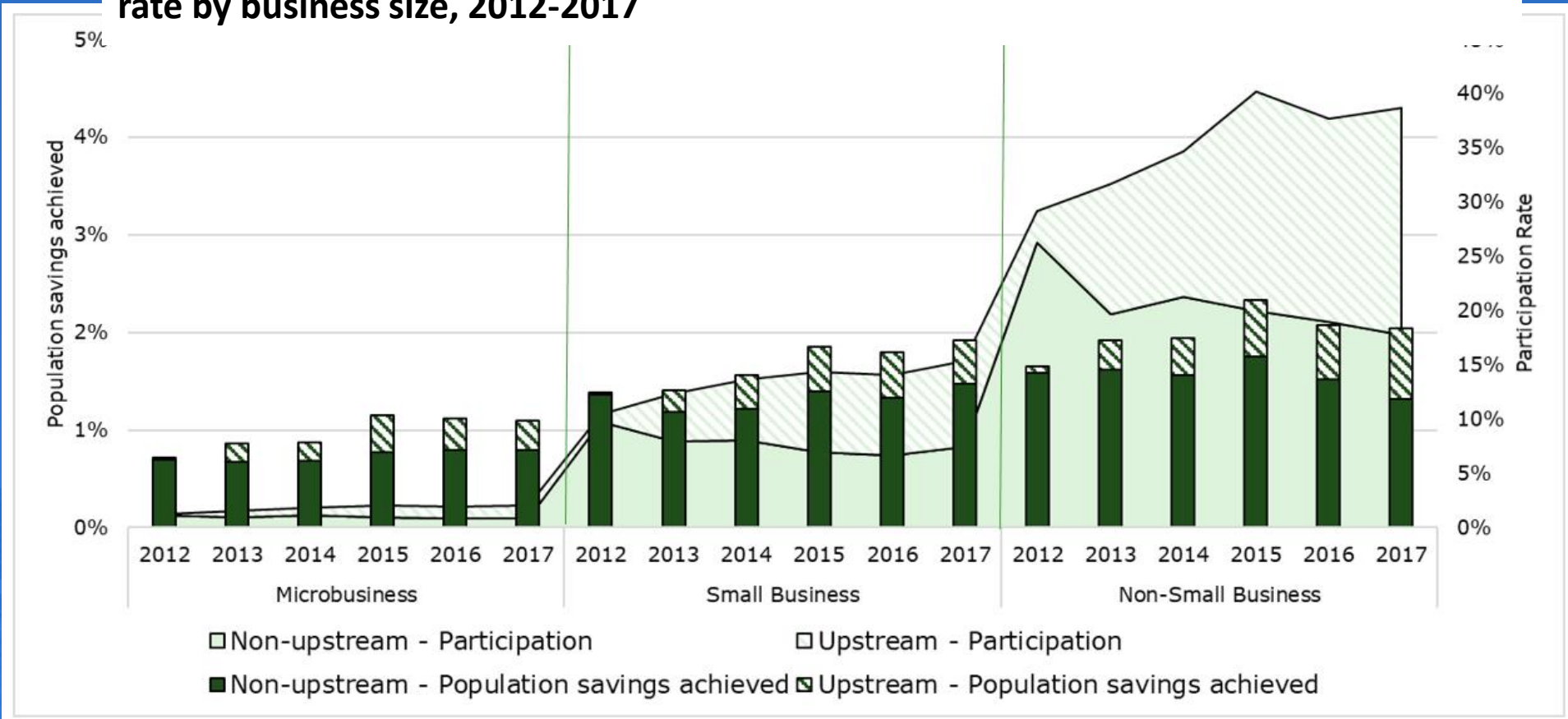


# Statewide population savings achieved and participation rate, electric



Electric microbusiness population savings achieved and participation\* across the analysis period have been consistently lower than those of small business and non-small business

**Electric upstream and non-upstream population savings achieved and participation rate by business size, 2012-2017**



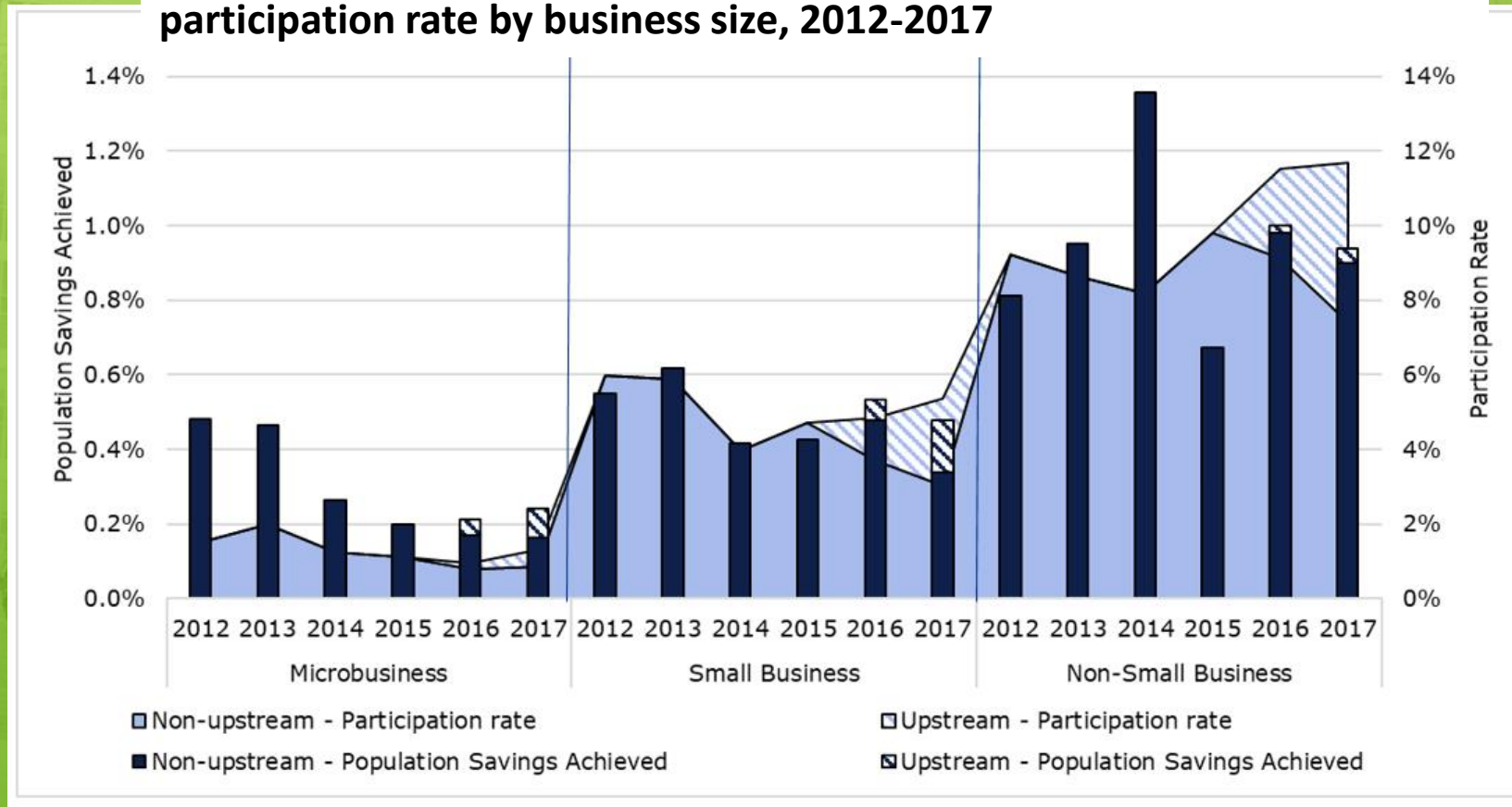
\*definitions of population savings achieved and participation rate in Appendix

## Statewide population savings achieved and participation rate, gas



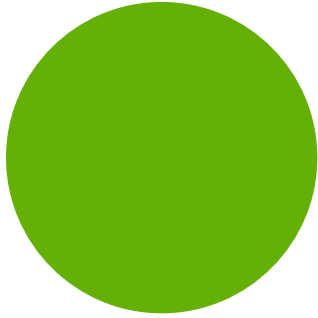
- Similar to electric, gas microbusinesses show lower participation rates and population savings achieved\* compared to small and non-small business
- For small and non-small businesses, population savings achieved fluctuated throughout the analysis period

**Gas upstream and non-upstream population savings achieved and participation rate by business size, 2012-2017**

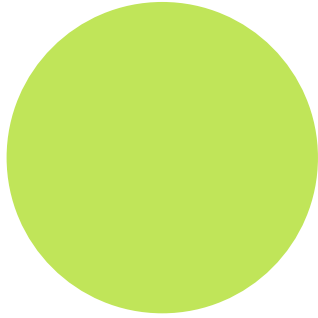


\*definitions of population savings achieved and participation rate in Appendix

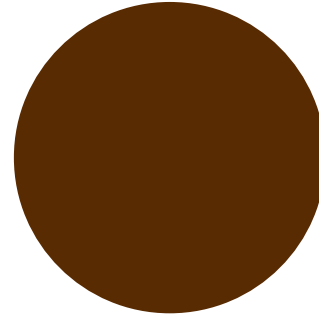
# Key Takeaways



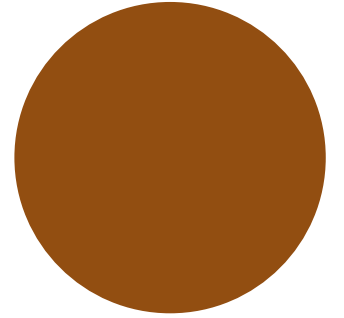
Microbusinesses have consistent patterns of lower population savings and account participation rates than other small and non-small businesses



Upstream lighting initiatives have driven substantial increase in the number of microbusiness participants over analysis period



High turnover in microbusiness accounts indicated by higher participation at location level compared to participation at the account level



Strategies to address needs of microbusinesses should consider seasonal businesses' unique energy and budgetary needs



# PA efforts to serve all customers



**Ensuring equity in participation has long been a priority for EEAC and has been the subject of public comment**

**The PAs have a long history of efforts to serve all customers, including small businesses:**

Standardization of the small business definition and shift to using energy (kWh) instead of demand (kW) for classifying C&I customers by size, resulting in better categorization of businesses

Implementation of a shared, comprehensive marketing strategy across PAs starting in 2019-2021 plan, including language translation for non-English speaking customers

Continued expansion of menu of offerings in the upstream program, which serves many small business customers. From 2016-2020, the expansion has included most lighting categories, HVAC equipment, hot water heaters, and food service

Particularly for microbusinesses, there was a recent effort to offer Main Streets, often including a partnership between chambers and municipalities. This door-to-door “blitz” has proven to be an effective way to reach customers



# Thanks for listening.

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# Appendix





# Metrics for participation (2020 study)



## **Account Participation (rate)**

This metric identifies the ratio of accounts within the analysis population that participated in energy efficiency programs

## **Participant Savings Achieved**

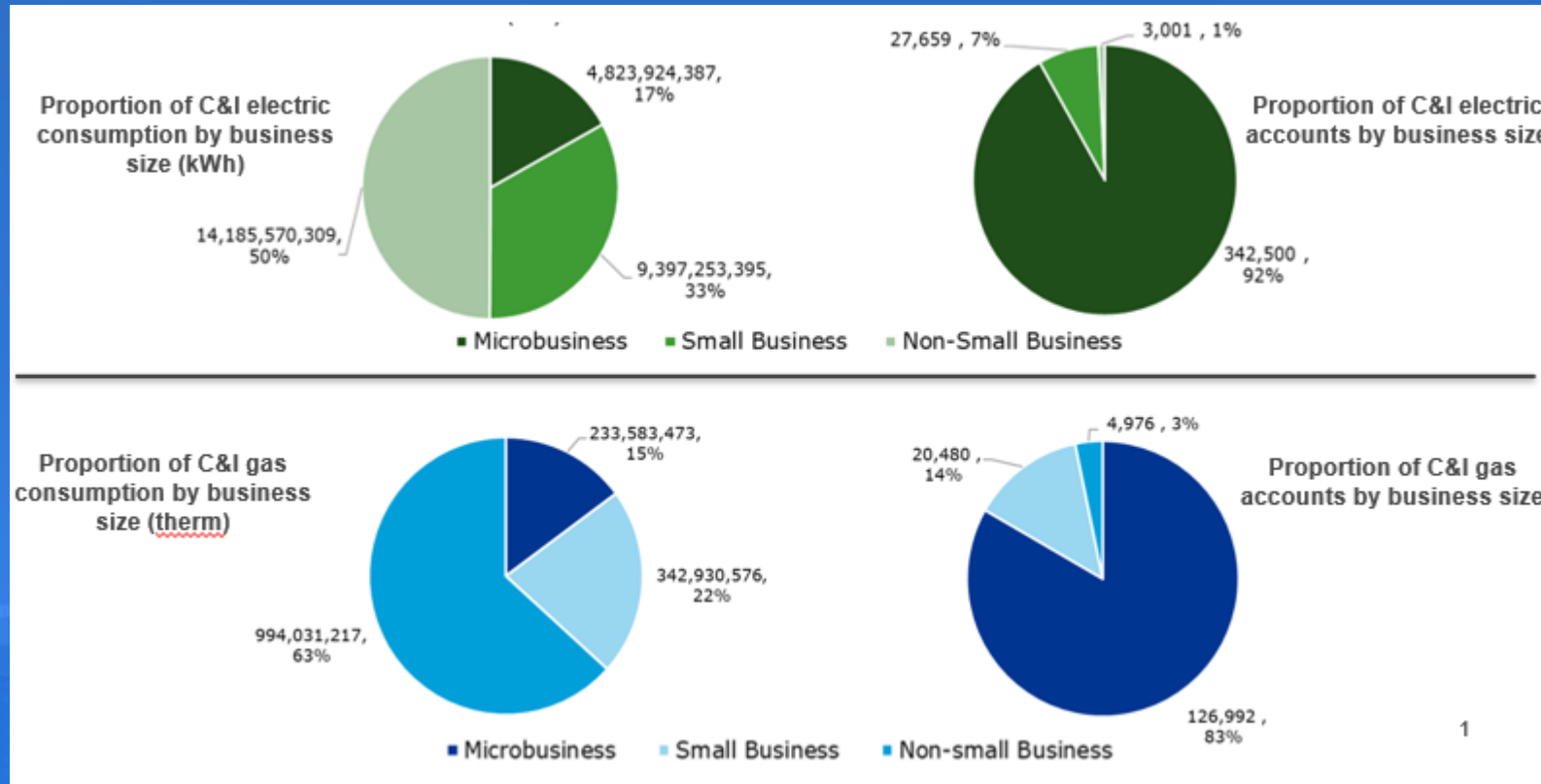
This metric reports energy savings for a specific year for participant accounts relative to the consumption for those participants only

## **Population Savings Achieved**

This metric reports energy savings of participants within a specific analysis population relative to the previous year's consumption of the total analysis population

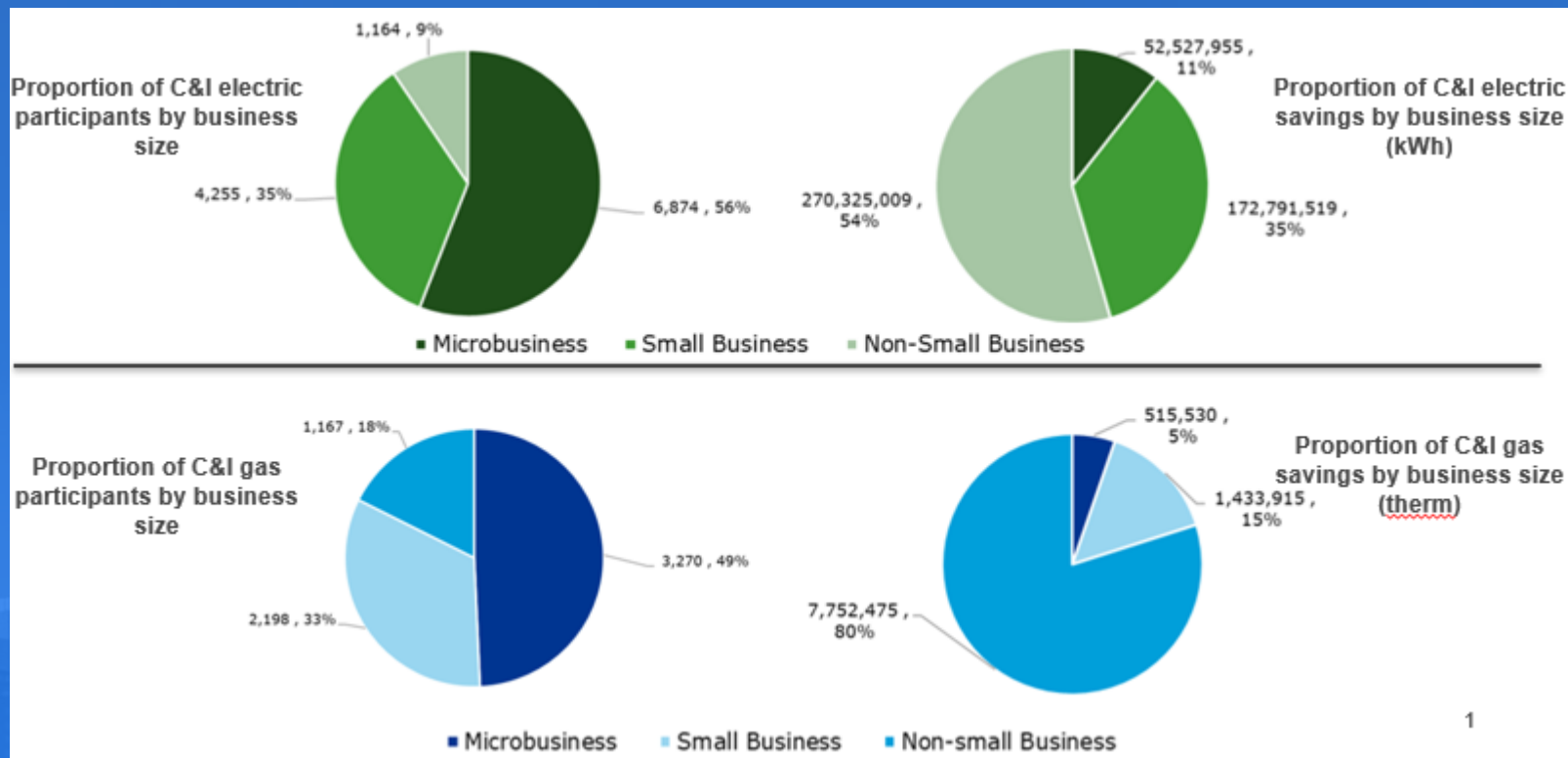
## 2017 proportion of C&I consumption, accounts, participants and savings by business size (electric)

- Microbusinesses account for only 17% of C&I electric consumption, but hold 92% of the accounts
- Microbusinesses account for only 15% of C&I gas consumption, but hold 83% of the accounts



## 2017 proportion of C&I consumption, accounts, participants and savings by business size

- Microbusinesses account for only 11% of C&I electric savings, but account for 56% of participating C&I gas accounts
- Microbusinesses account for only 5% of C&I gas savings, but account for 49% of participating C&I gas accounts

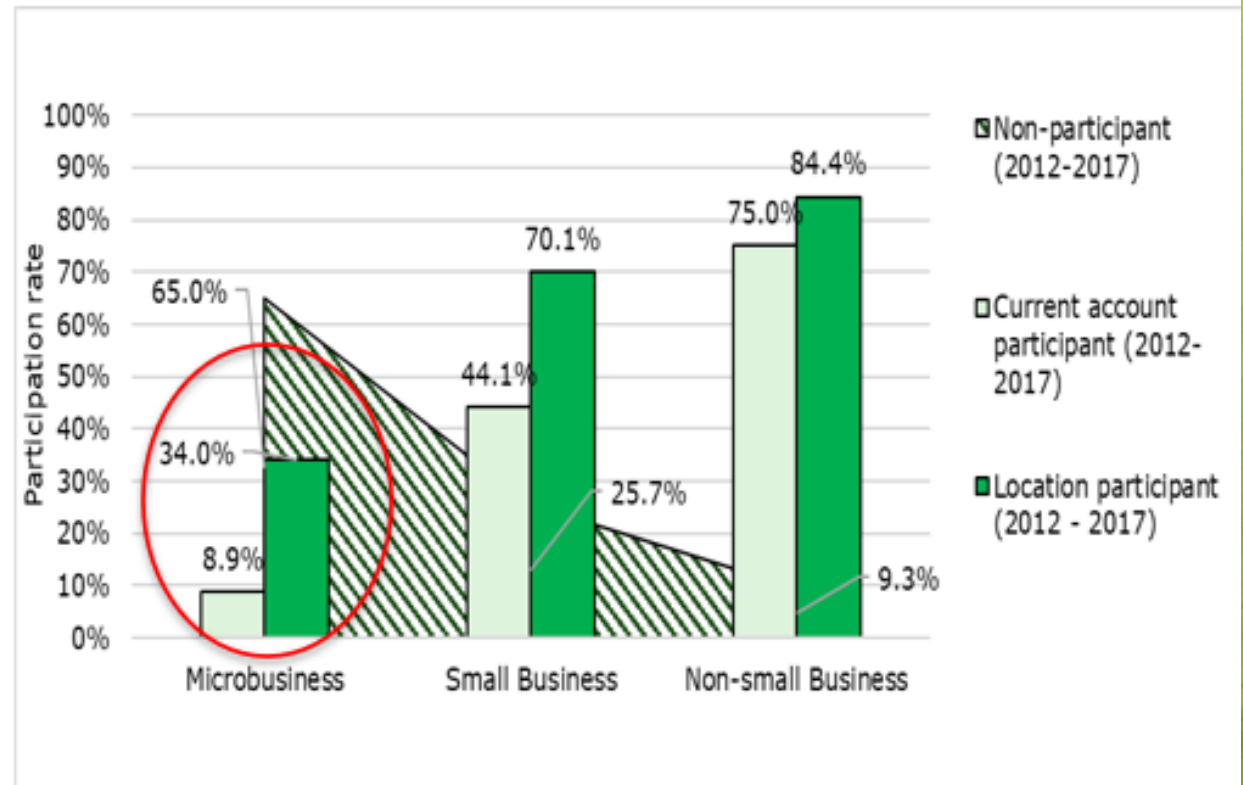




## Location analysis

- There is a large gap in participation rates between currently active account participation and location participation for electric microbusinesses, at 9% and 34% respectively
- This gap is even larger for gas microbusinesses, at 6.6% currently active account participation and 52.9% location participation
- This indicates that there was high turnover in microbusiness accounts
- It is important to consider business turnover in analyzing C&I patterns of participation, but more analysis is needed to determine precisely how important it is

**Electric current account participation, location participation, and non-participation rates for 2012 – 2017 by business size\***



\*It is important to note that the current account participation and location participation rates are not mutually exclusive: a current account participant can also be at a location that participated previously, and therefore these rates do not add up to 100%.

## Modified initiative analysis, electric

- In 2017, microbusiness upstream lighting participants were twice that of microbusiness turnkey participants, yet they provided less than half the savings of the turnkey participants
- Engaging microbusinesses via upstream lighting alone increases microbusiness participation, but does not substantially impact population savings achieved
- Engaging microbusinesses through multiple or other initiatives, such as turnkey, can increase depth of savings

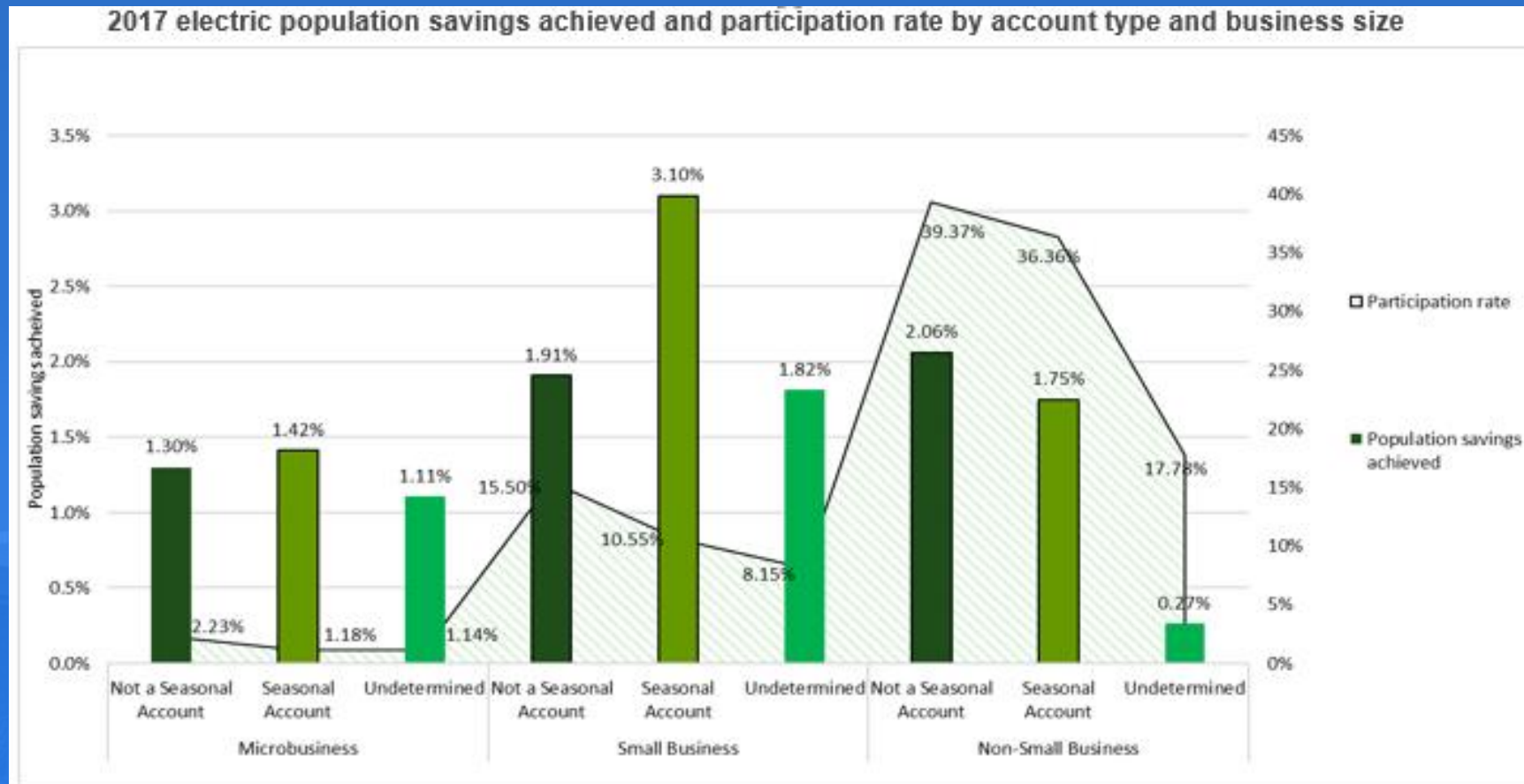
**Microbusiness electric participation rate and population savings achieved by modified initiative, 2017**

Initiative	Microbusiness electric participant count, 2017	Microbusiness electric population savings achieved, 2017
Multiple (excluding turnkey)	75	1.24
Multiple (including turnkey)	69	1.40
New Construction	76	1.35
Retrofit	917	11.29
Turnkey	1,995	25.18
Upstream HVAC	143	0.26
Upstream Lighting	3,548	11.75

## Seasonal v. non-seasonal analysis, electric



- Electric microbusinesses have the most seasonal accounts of all business sizes, at 7.74% of the electric C&I population for 2017. (not shown on graph)
- Within microbusiness, non-seasonal account participation is higher than seasonal account participation, but seasonal microbusinesses have higher population savings achieved than non-seasonal (1.42% compared to 1.30%), but hold 83% of the accounts

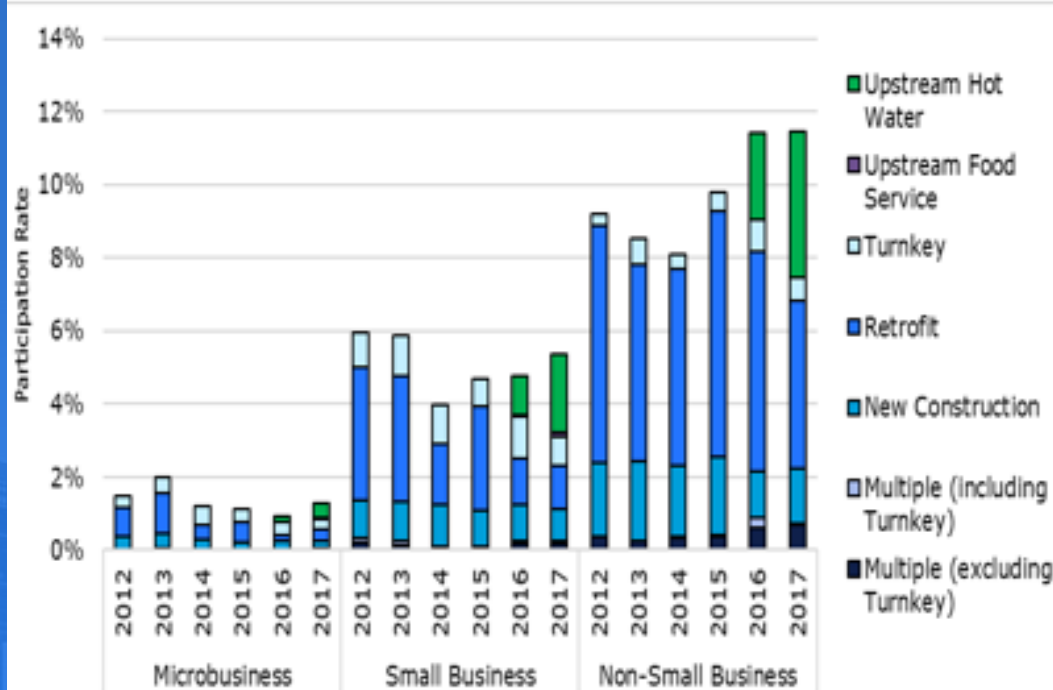




## Modified Initiative Analysis, gas

The introduction of the upstream hot water program in 2016 provided the micro and small business groups with increased savings

**Gas participation rate by modified initiative and business size, 2012 – 2017**



**Gas population savings achieved by modified initiative and business size, 2012 – 2017**

