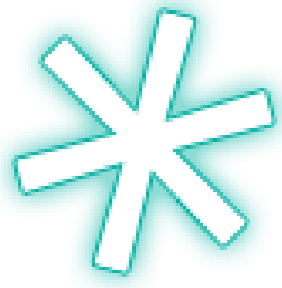


# ILLUUME

The Promise and Reality of Behavior Programs: Are They a Reliable Resource?

Anne Dougherty, Jeff Schlegel, and Tyler Schlegel  
September 2013

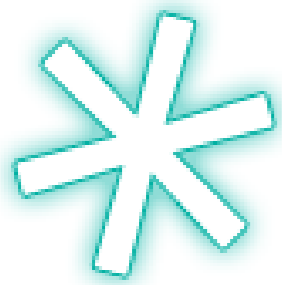




Are behavior programs a reliable resource? Can they be counted on?

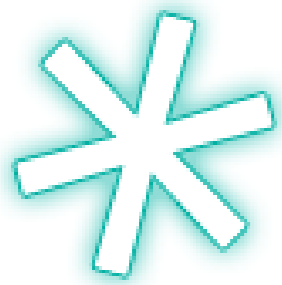
- \* What types of behavior programs have been studied to date?
- \* What are the annual energy savings associated with these programs?
- \* How long will the savings last?
  - \* What actions contribute to these savings?
- \* How generalizable are these savings?



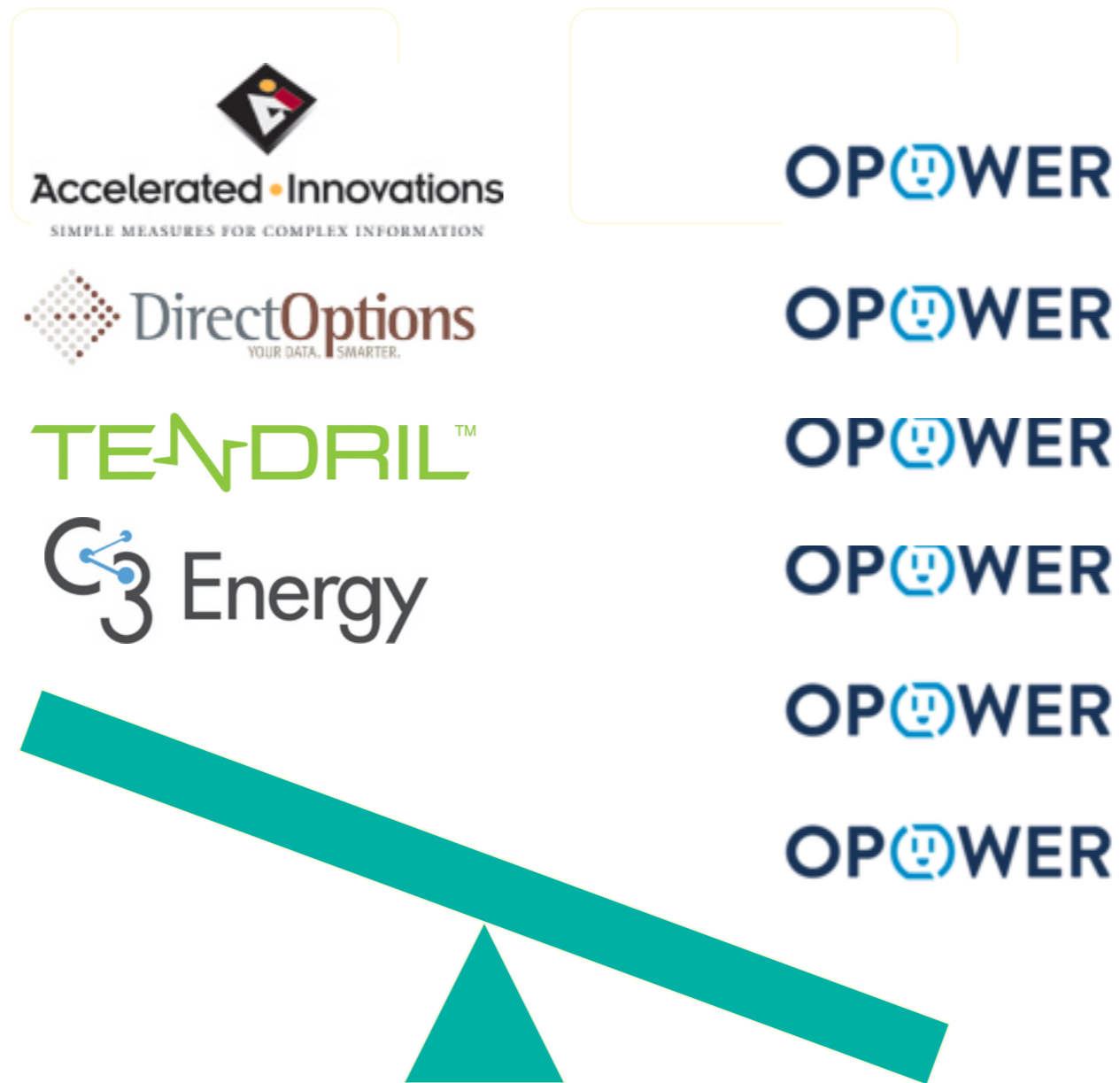


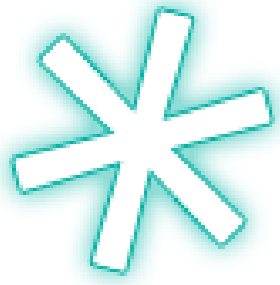
# Are behavior programs a reliable resource? Can they be counted on?

- \* The proportion of major program administrators including behavioral programs in their EE portfolio has grown from close to no activity in 2009, to around one in 10 in 2010, and now 1 in 4 (25%) in 2013.
- \* The share of budget dedicated to behavioral programs ranges from 0.3% to 10% of overall portfolio spending.
- \* Annual electric savings range from .1% to 27% of total residential portfolio goal
- \* The proportion of kWh savings attributable to behavioral programs is on average 3 to 4x the budget share



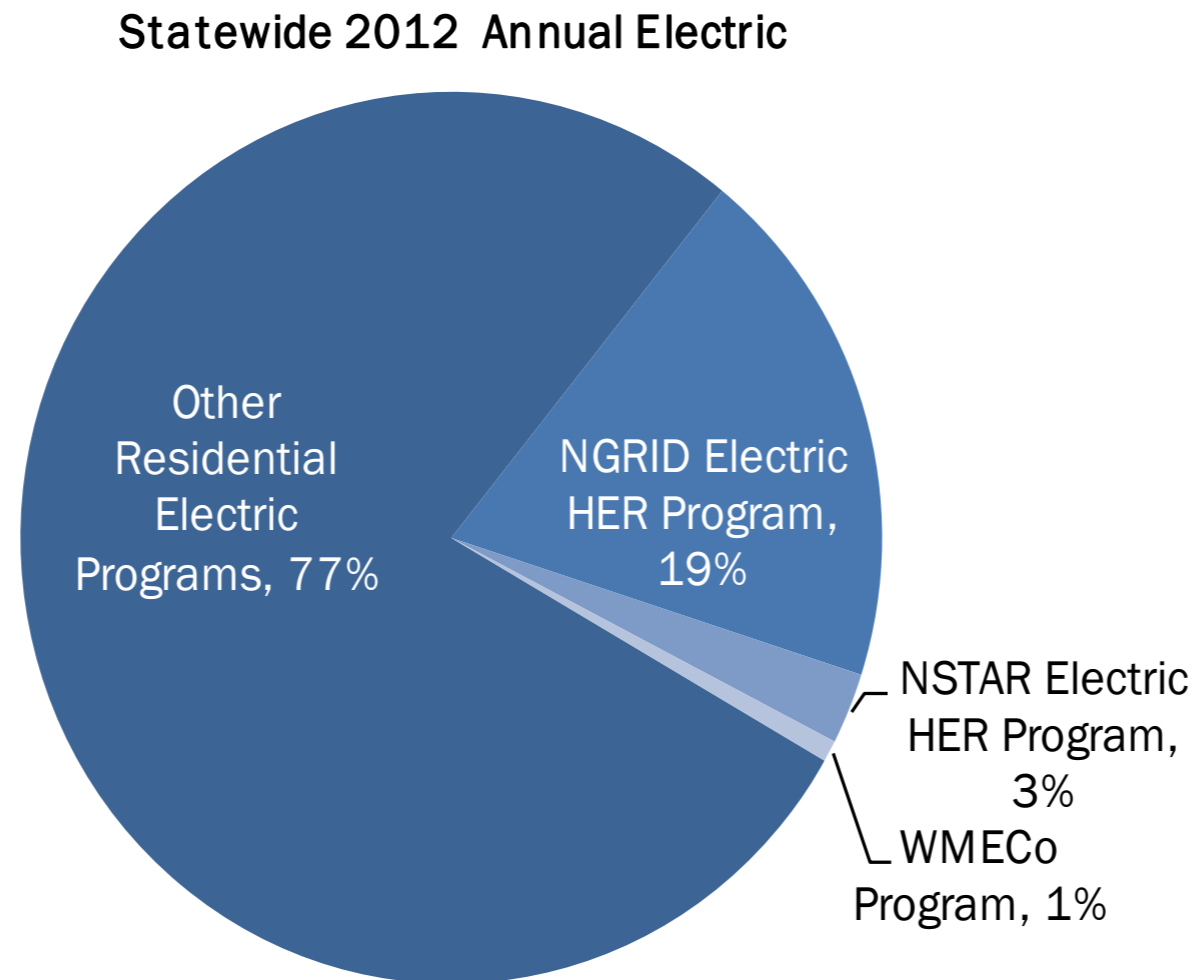
# What types of behavior programs have been studied to date?





# What are the annual energy savings associated with these programs?

Behavioral Prog. Achieved Savings as a Percent of 2012 MA Annual Savings

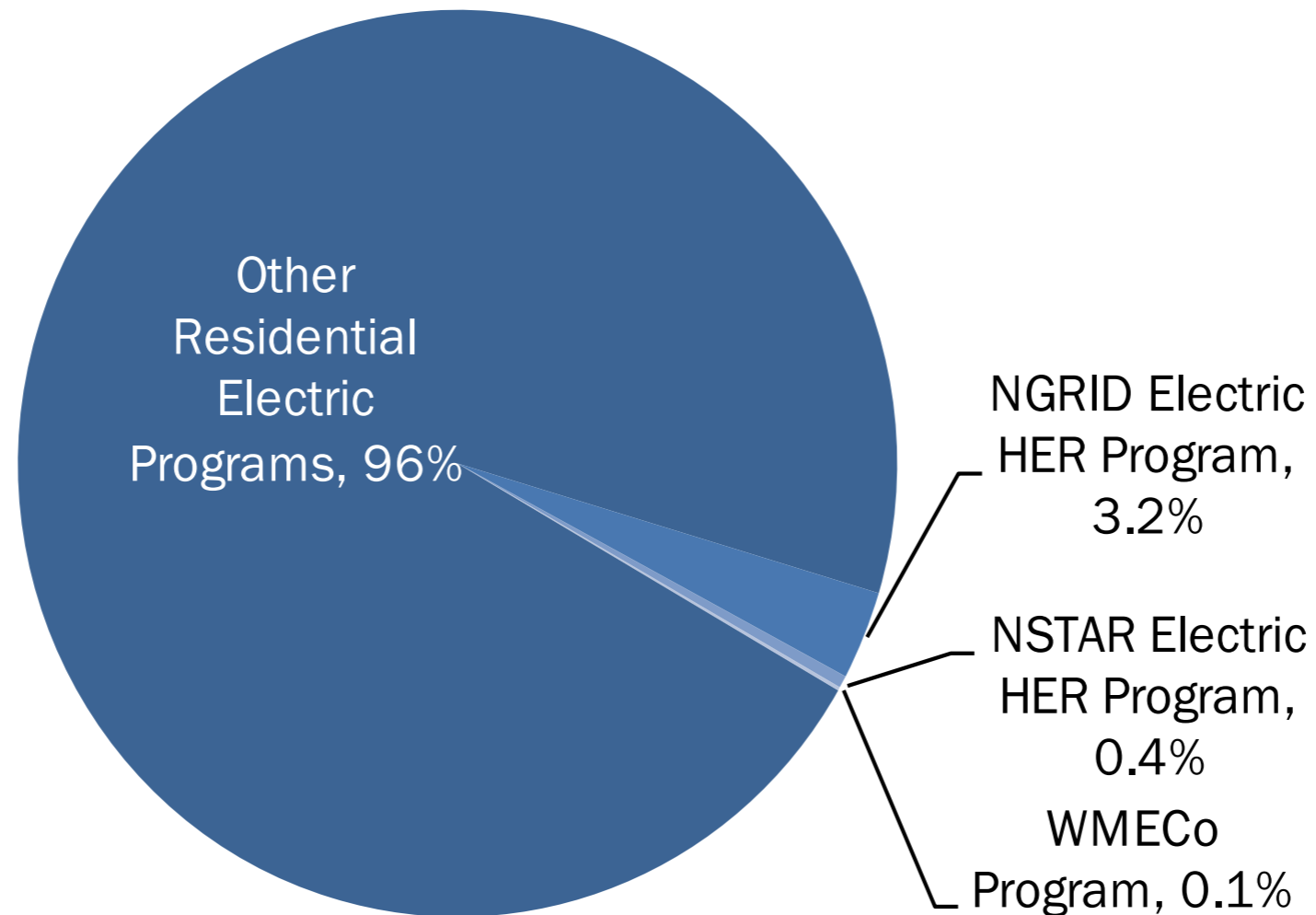


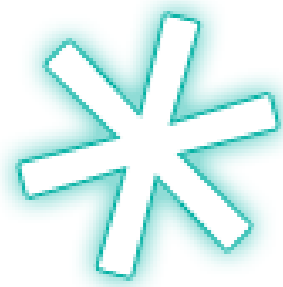


# What are the annual energy savings associated with these programs?

## Behavioral Programs Achieved Savings as a Percent of 2012 Lifetime Savings

Statewide 2012 Lifetime, Electric

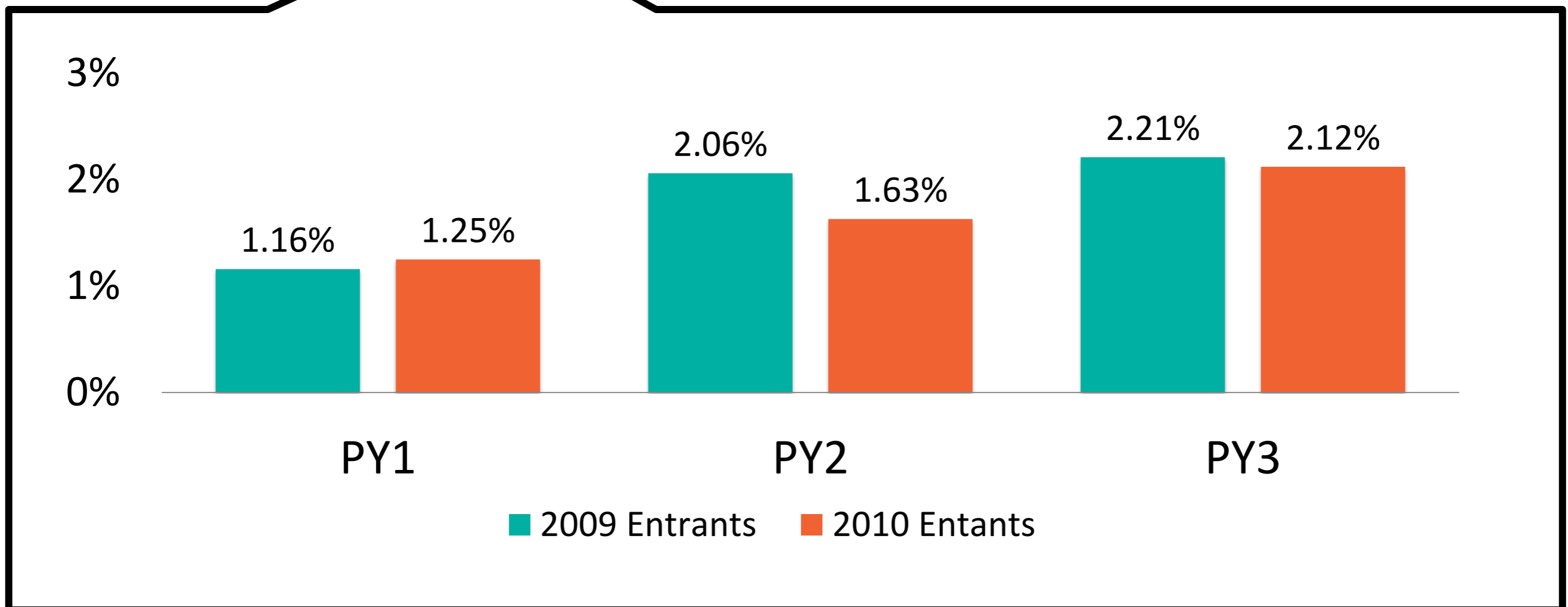




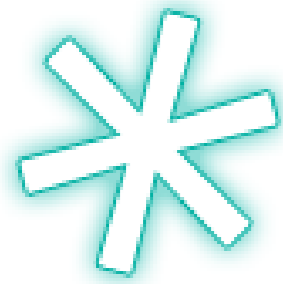
# How long will the savings last?

- \* Persistence should be considered in two ways:  
(1) **with treatment**, and (2) Without treatment

nationalgrid







# How long will the savings last?

- \* Persistence should be considered in two ways:  
(1) with treatment, and (2) **without treatment**

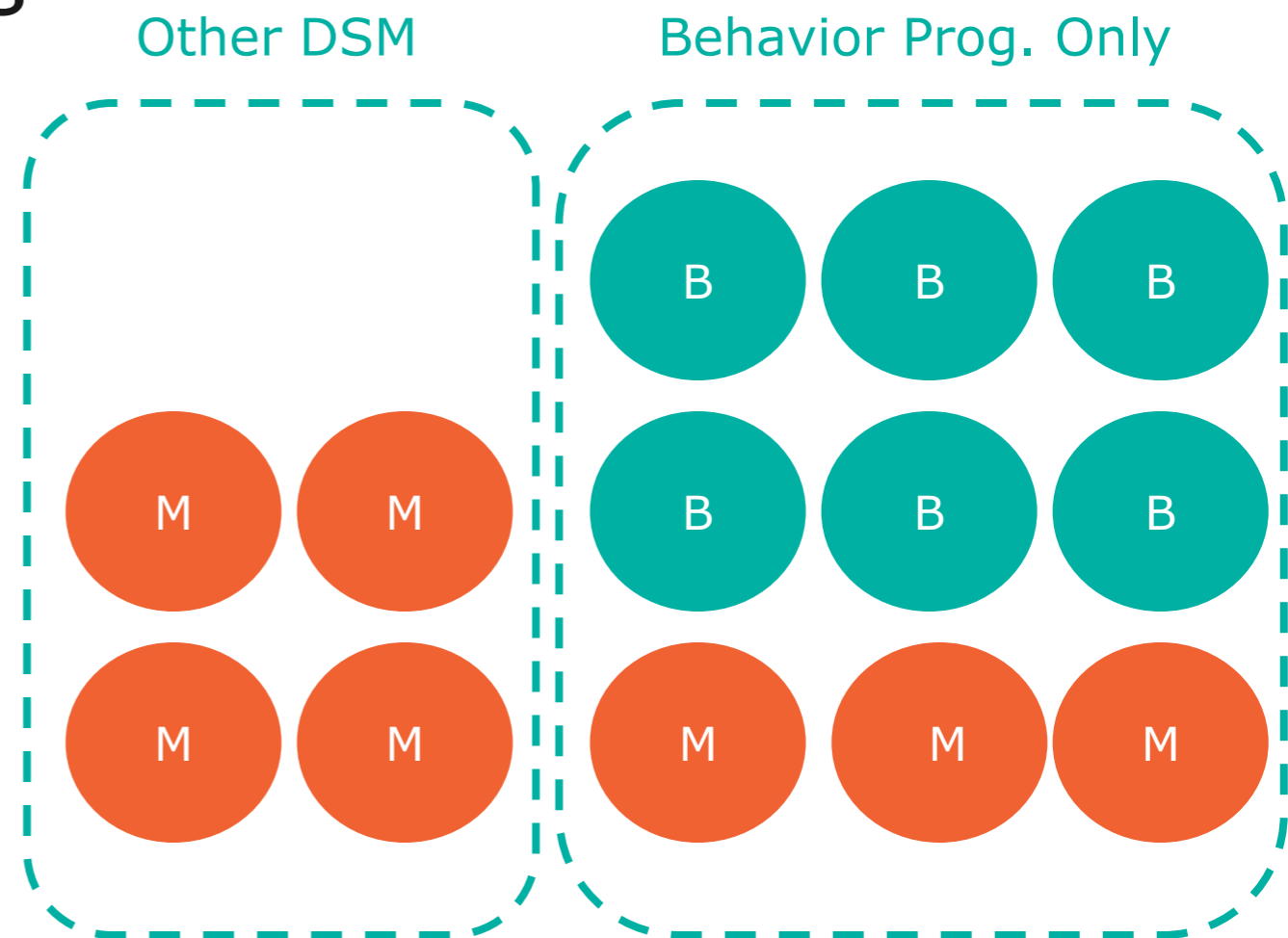
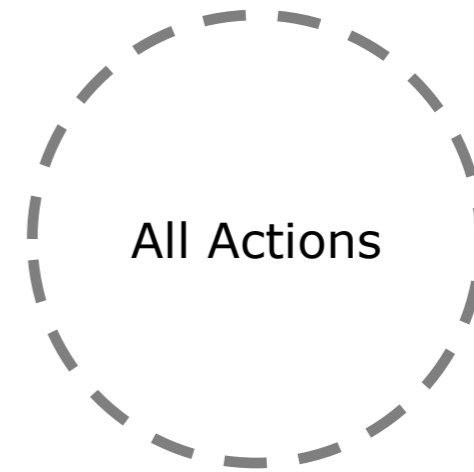


- Savings with *treatment per household*:  
**2.8%**
- *Percent reduction in savings after two years without treatment*: **39%**



# What actions contribute to these savings?

- \* The source matters
- \* Affects key questions related to:
  - \* Attribution
  - \* Persistence
  - \* Measure life





# What actions contribute to these savings?

- \* Data points to as much as 40% of savings associated with physical measures



Estimated savings breakdown:  
*Measures: 40%*  
*Behaviors: 60%*

4 Year SMUD OPower Impact Evaluation, Integral Analytics 2013



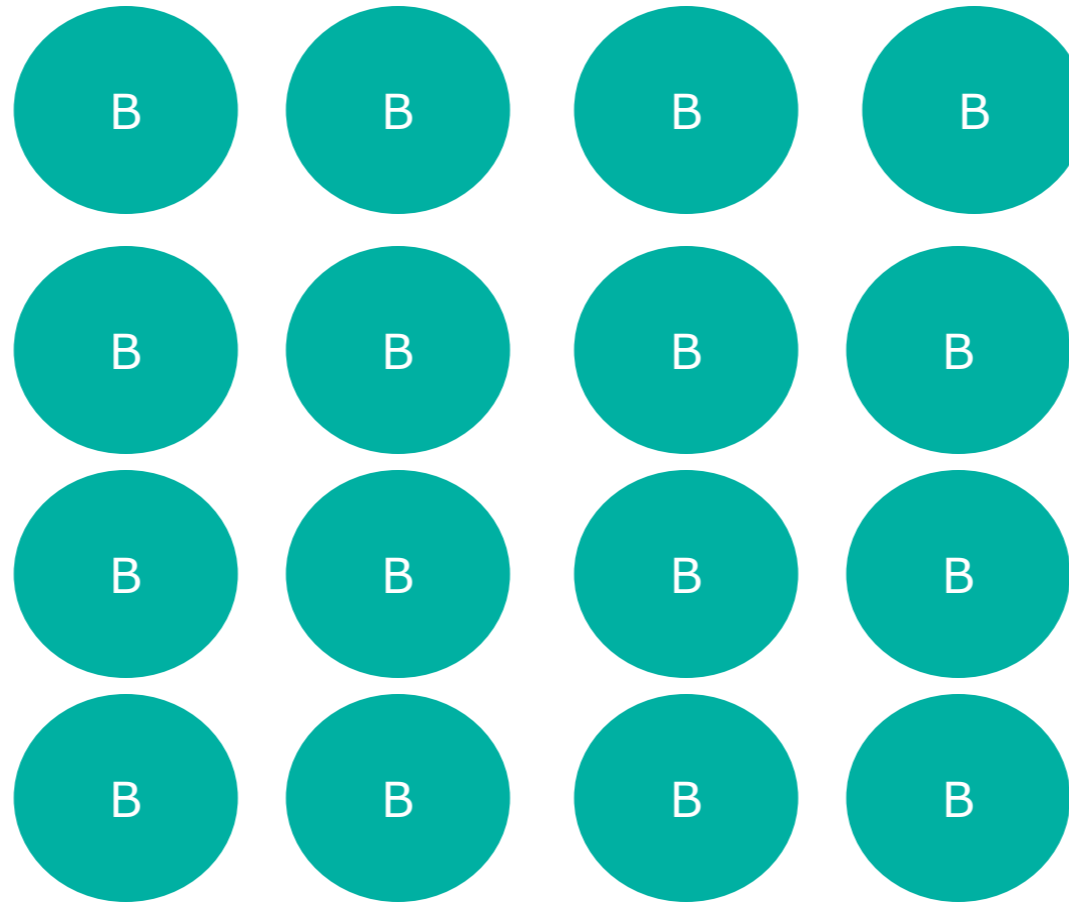
Treatment customers reported greater measure-based actions compared to control group, including: *consumer electronics, building envelope, low-cost measures*

MA Three-year Cross-cutting Behavioral Program Evaluation, Opinion Dynamics with Navigant Consulting, 2012



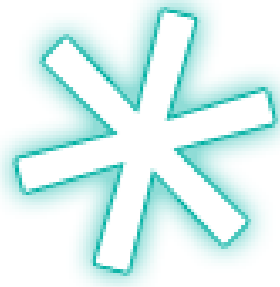
# How long will the savings last?

1.16%    2.06%    2.21%    2.21%

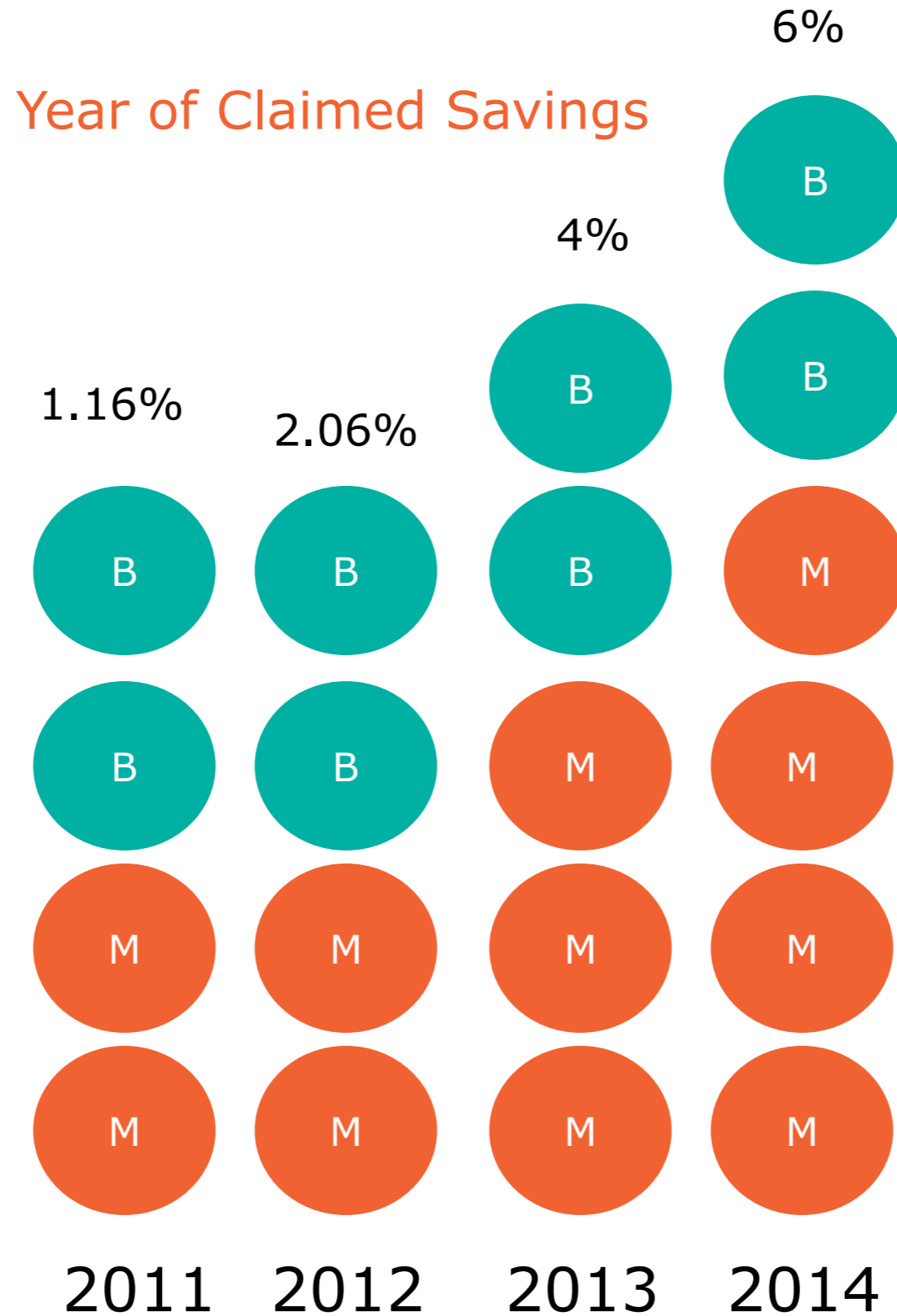


2011    2012    2013    2014

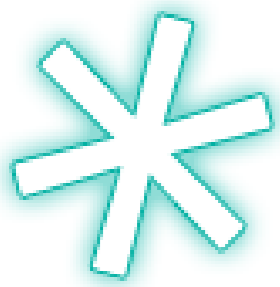
Year of Claimed Savings



# How long will the savings last?

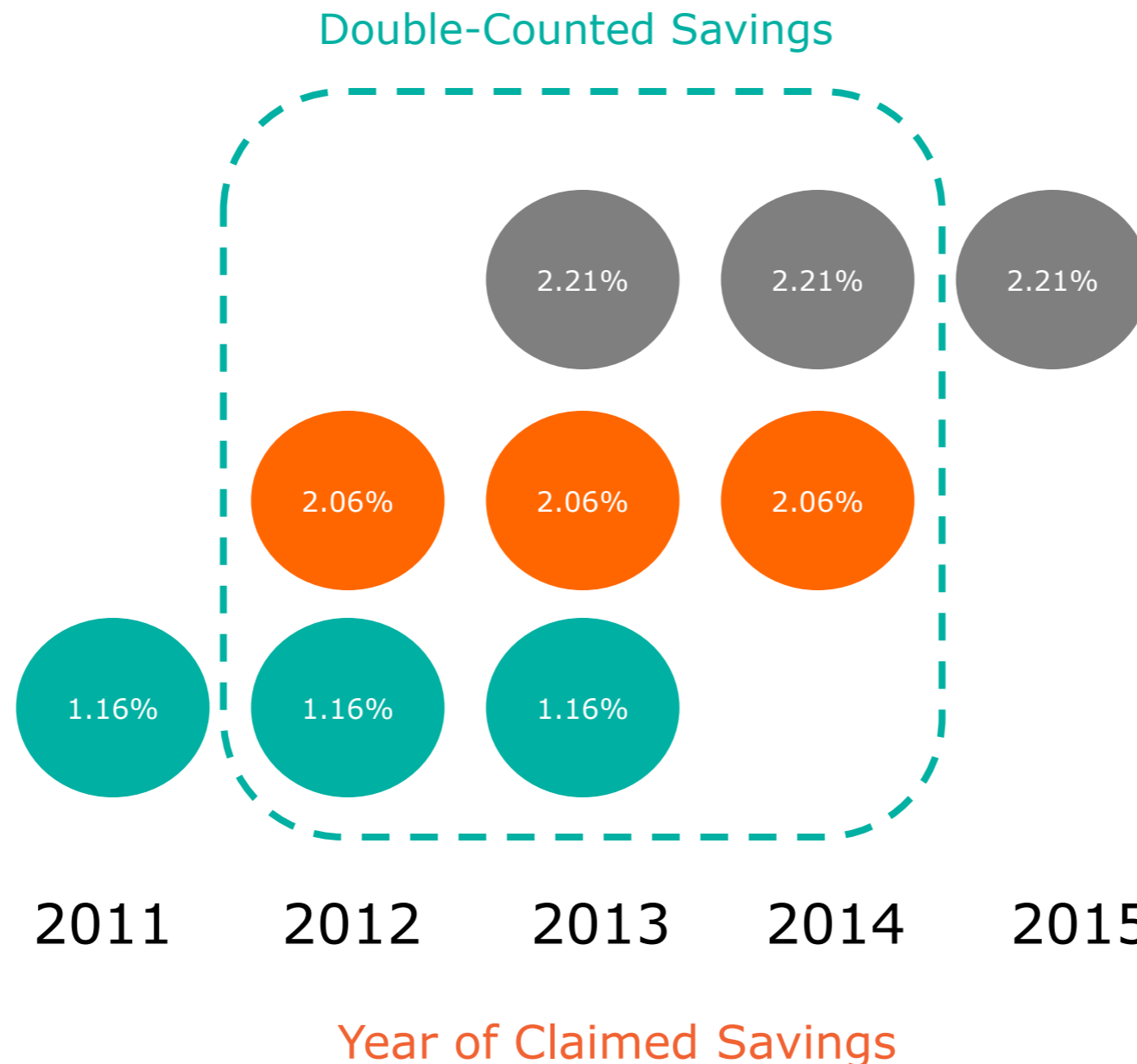


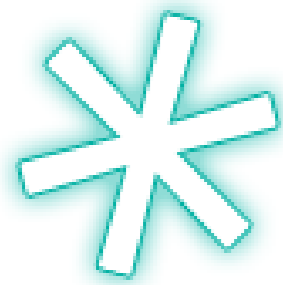




# How long will the savings last?

- \* Extending the measure life has implications for planning.

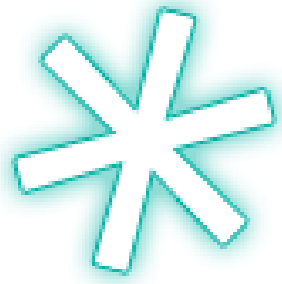




# How generalizable are these savings?

- \* Most programs to date have focused on the highest-using homes.
- \* Little research has been conducted to estimate savings across all usage groups





## A call to action

- \* Behavior programs are a (rapidly) growing proportion of program portfolios
- \* Research must yield results to inform planning
- \* Need national studies with an emphasis on meta data

# ILLUUME

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Anne Illume



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## Actual or Planned Percent of Annual Electric Portfolio Savings (%)

	Actual or Planned Proportion of Electric Portfolio Savings for Behavioral Programs (%)			
	2011	2012	2013	2014
Otter Tail Power Company	24.2%	27.4%	27.4%	6.6%
PPL Electric Utilities	1.3%			
Indianapolis Power & Light				22.2%
NIPSCO	18.6%	5.7%	4.7%	
Puget Sound Energy	8.3%			
ComEd		10.0%	9.9%	12.5%
PNM		9.6%		
Ameren Illinois		9.8%	10.6%	11.6%
Arizona Public Service	7.7%	6.7%		
FirstEnergy - Met-Ed		3.4%	8.2%	
Duke Energy		0.5%	3.9%	
National Grid	12.5%	14.6%		
Bonneville Power Administration				2.1%
Xcel Energy - Minnesota	2.4%	2.2%	2.7%	2.5%
Xcel Energy - Colorado	4.3%	4.2%	7.8%	
FirstEnergy - West Penn Power	0.1%	1.3%	5.8%	

Source: QuadROI