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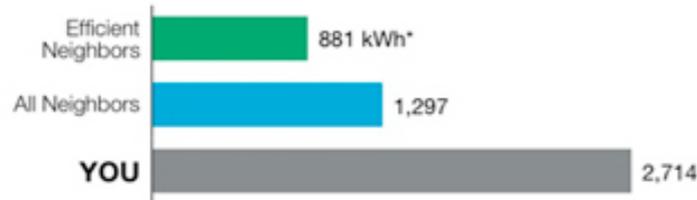
Behavioral Programs as a Resource

AESP Fall Chapter Meeting, October 2013



Examples of “behavioral energy efficiency”

Last 2 Months Neighbor Comparison | You used **109% MORE** electricity than your neighbors.



* kWh: A 100-Watt bulb burning for 10 hours uses 1 kilowatt-hour.

HOW YOU'RE DOING:

You used more than average

Turn the report over to find ways to save

1% - 2.5% Reduction per Household

Who are your Neighbors?

All Neighbors

Approximately 100 occupied, nearby homes that are similar in size to yours (avg 1,827 sq ft)

Efficient Neighbors

The most efficient 20 percent from the "All Neighbors" group

0% - 9% Reduction per Household





Changing residential portfolios

	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

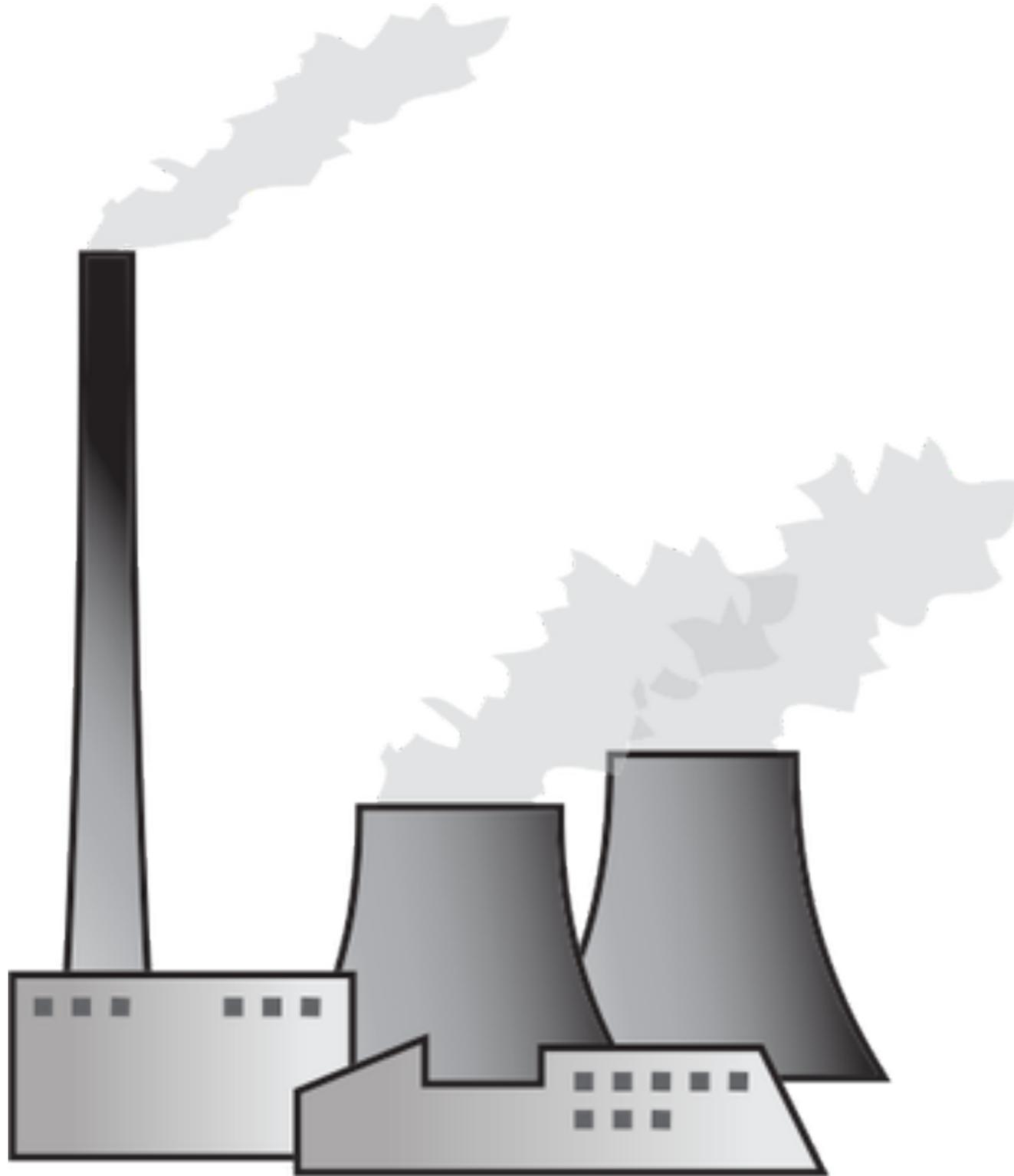


Behavior programs as a resource

Source

Duration

Cost to Acquire





What is the source of the 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*

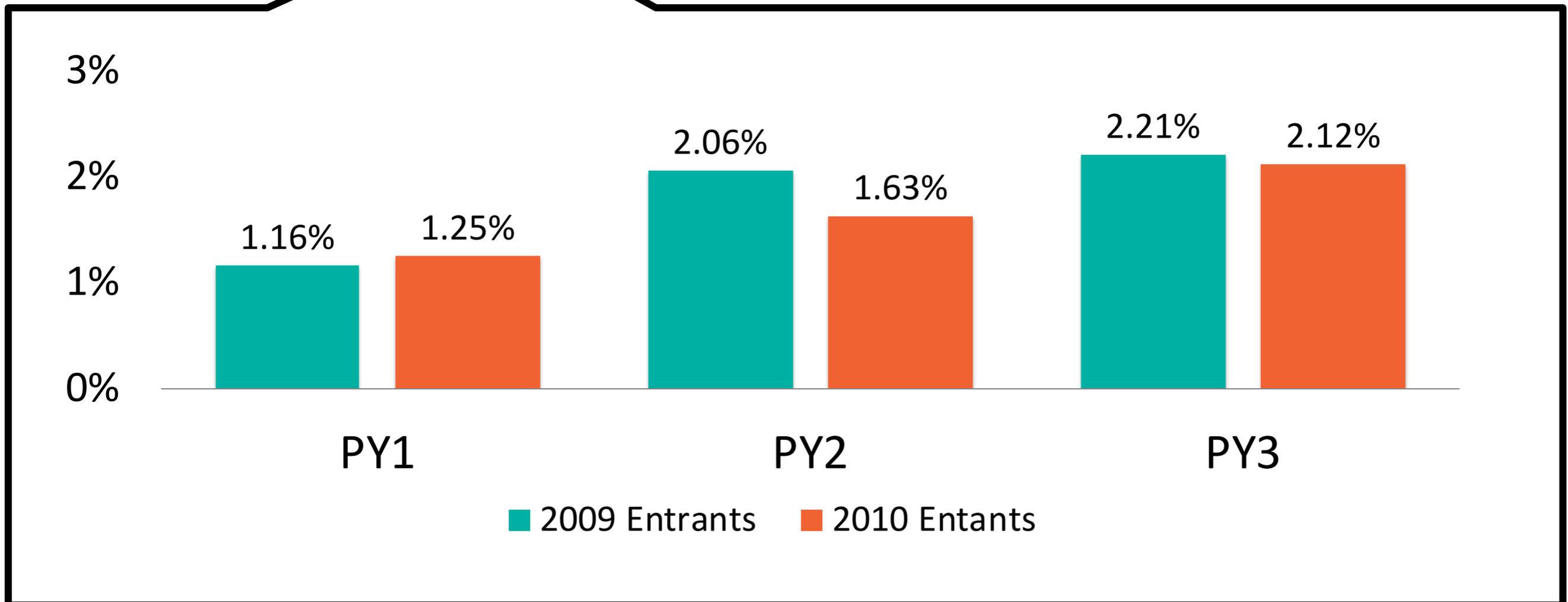
MA Three-year Cross-cutting Behavioral Program Evaluation, Opinion Dynamics with Navigant Consulting, 2012



How long will the savings last?

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

nationalgrid





How long will the savings last?

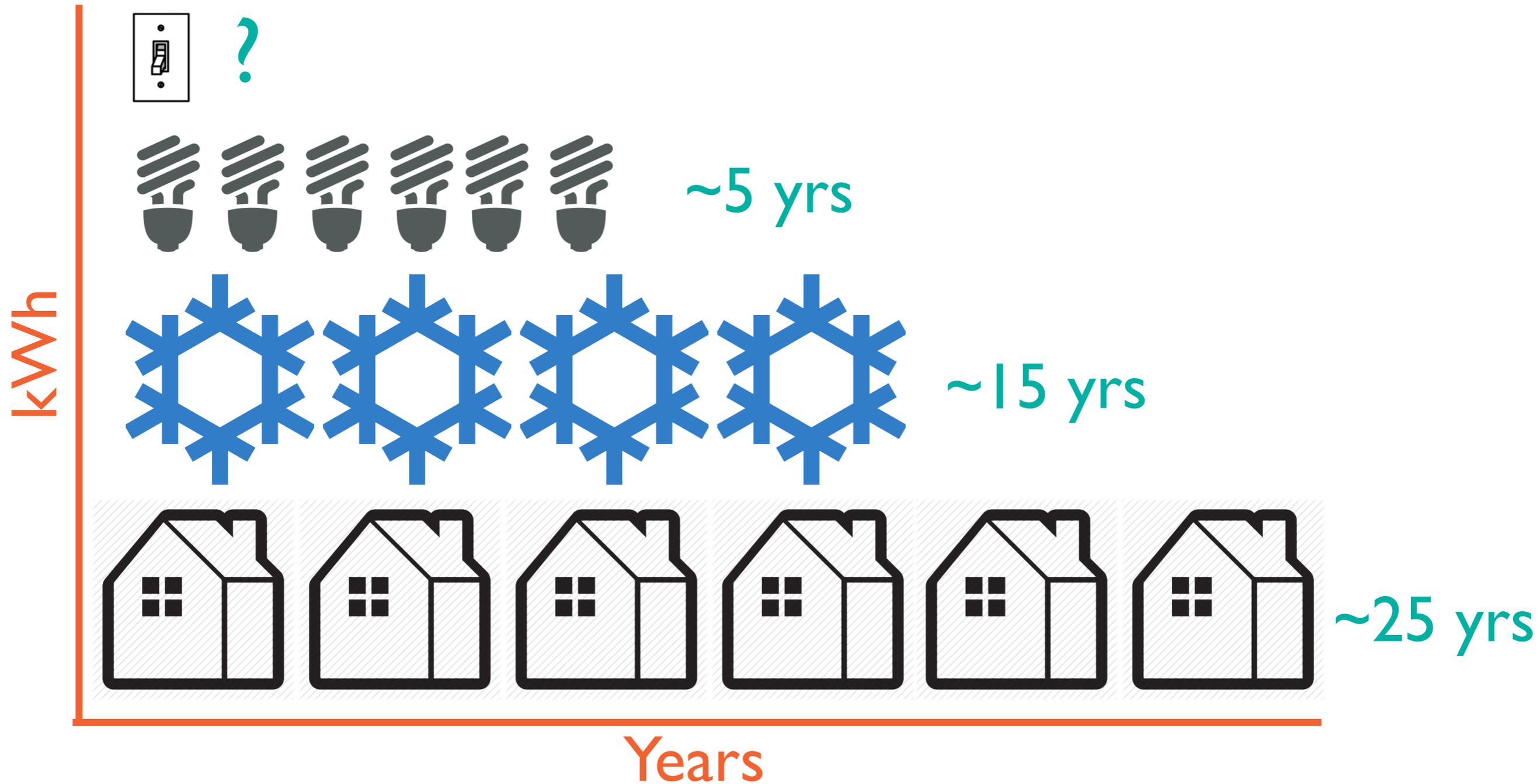
- * Persistence should be considered in two ways: (1) with treatment, and (2) **without treatment**



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



How long will the savings last?

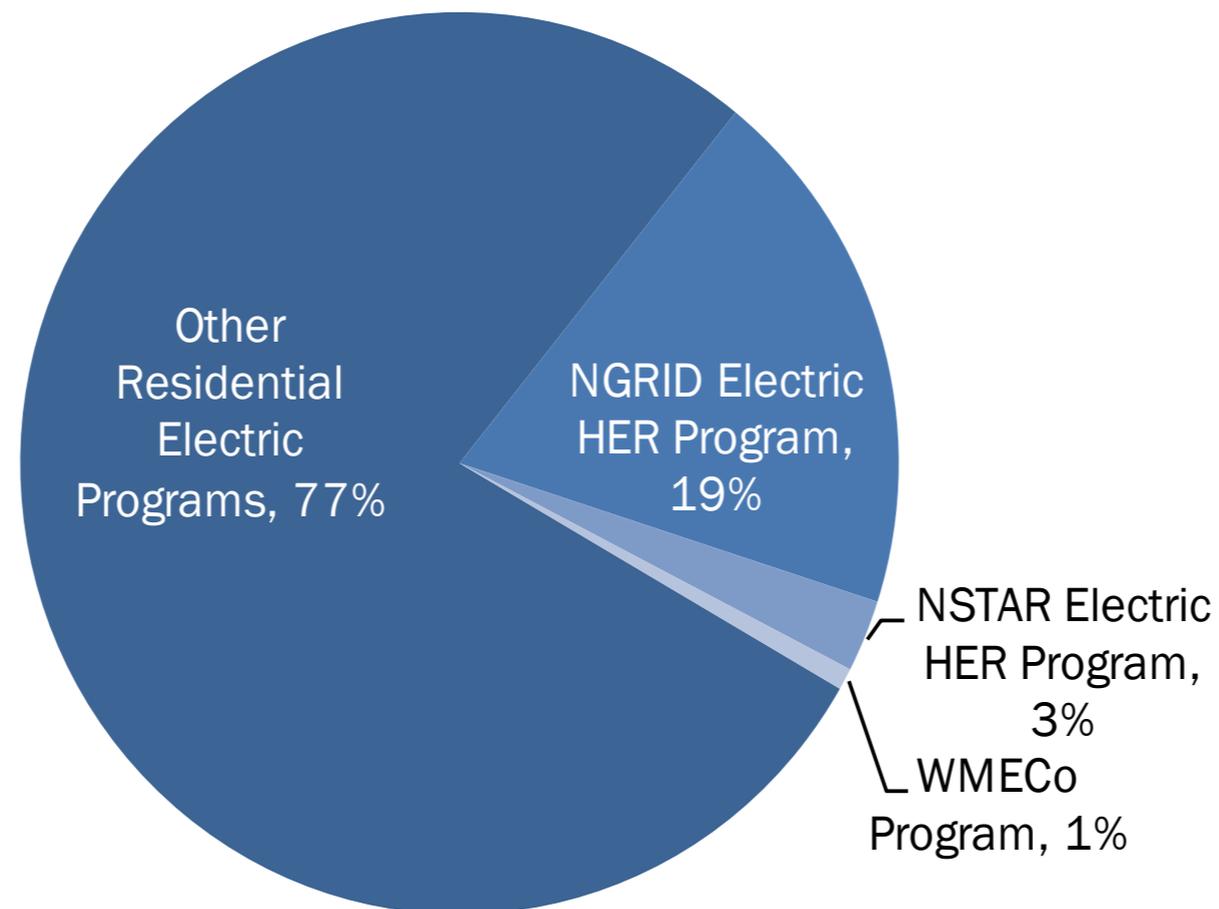




How long will the savings last?

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

Statewide 2012 Annual Electric

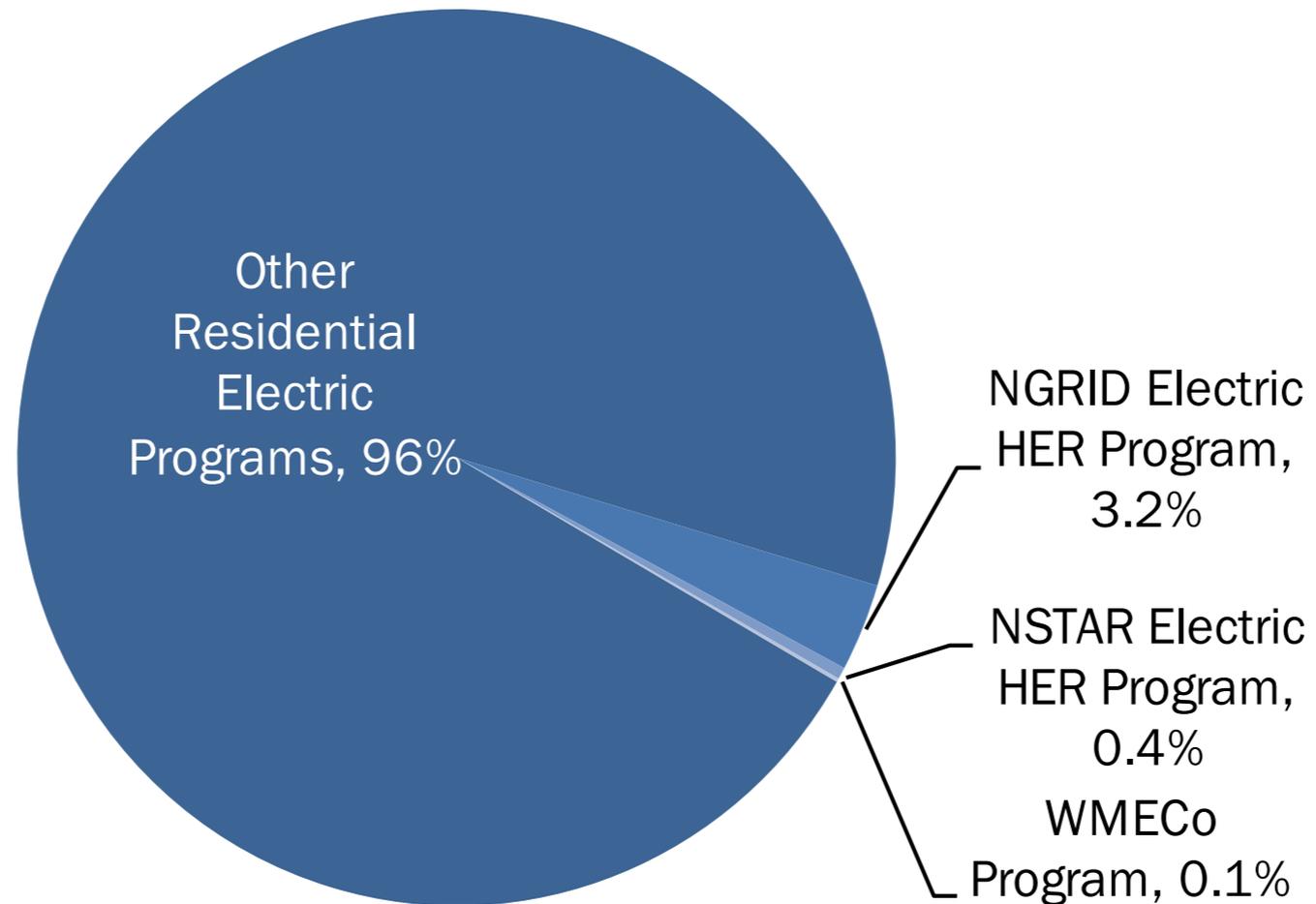




How long will the savings last?

Behavioral Programs Achieved Savings as a Percent of 2012 Lifetime Savings

Statewide 2012 Lifetime, Electric



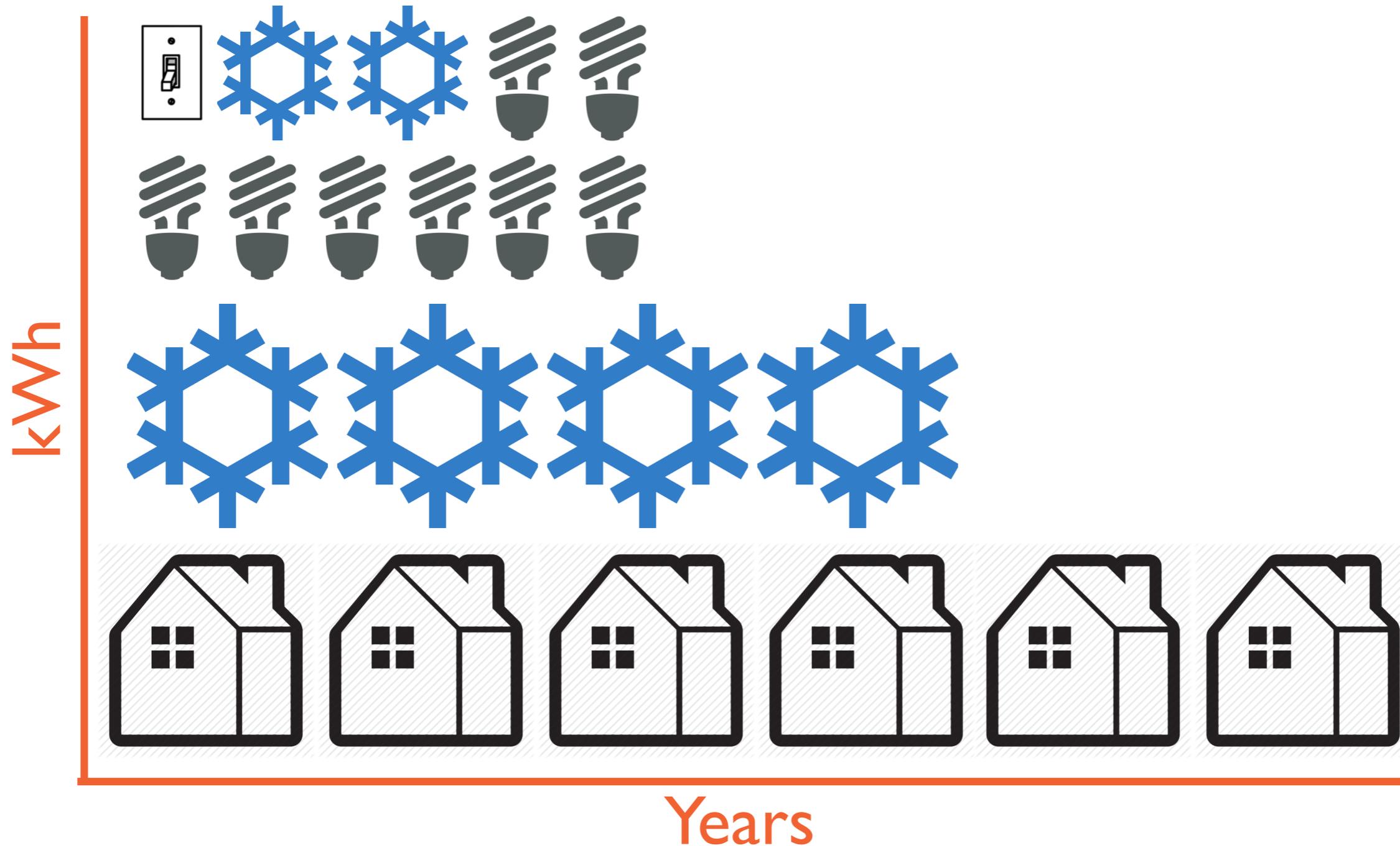


What is the cost to acquire these savings?

- * Annual electric savings range from 0.1% to 27% of total residential portfolio goal
- * The share of budget dedicated to behavioral programs ranges from 0.3% to 10% of overall portfolio spending.
- * The proportion of kWh savings attributable to behavioral programs is on average 3 to 4 x the budget share



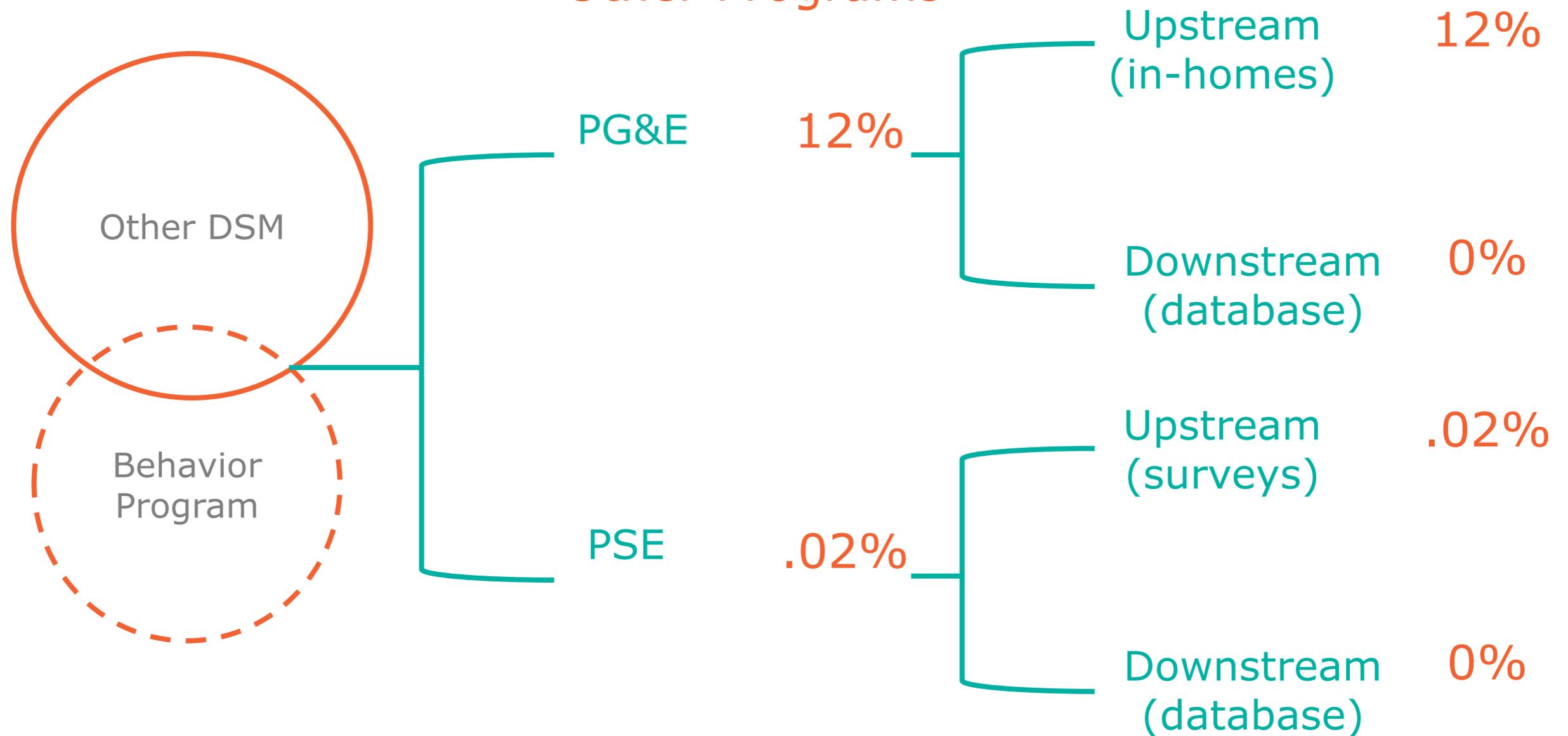
Are we paying twice for the same savings?





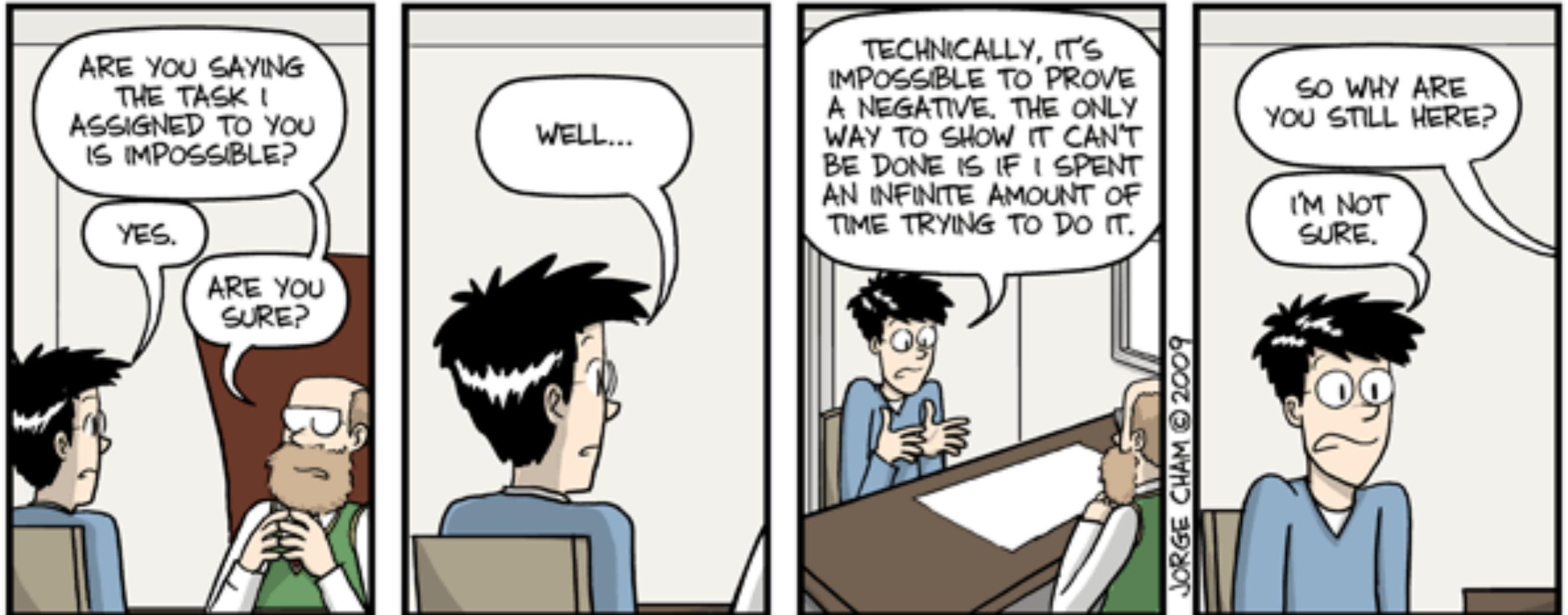
Channeling and double-counting

% of Total HER Savings due to Other Programs





Behavior programs as a resource



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