

RESIDENTIAL SECTOR OVERVIEW

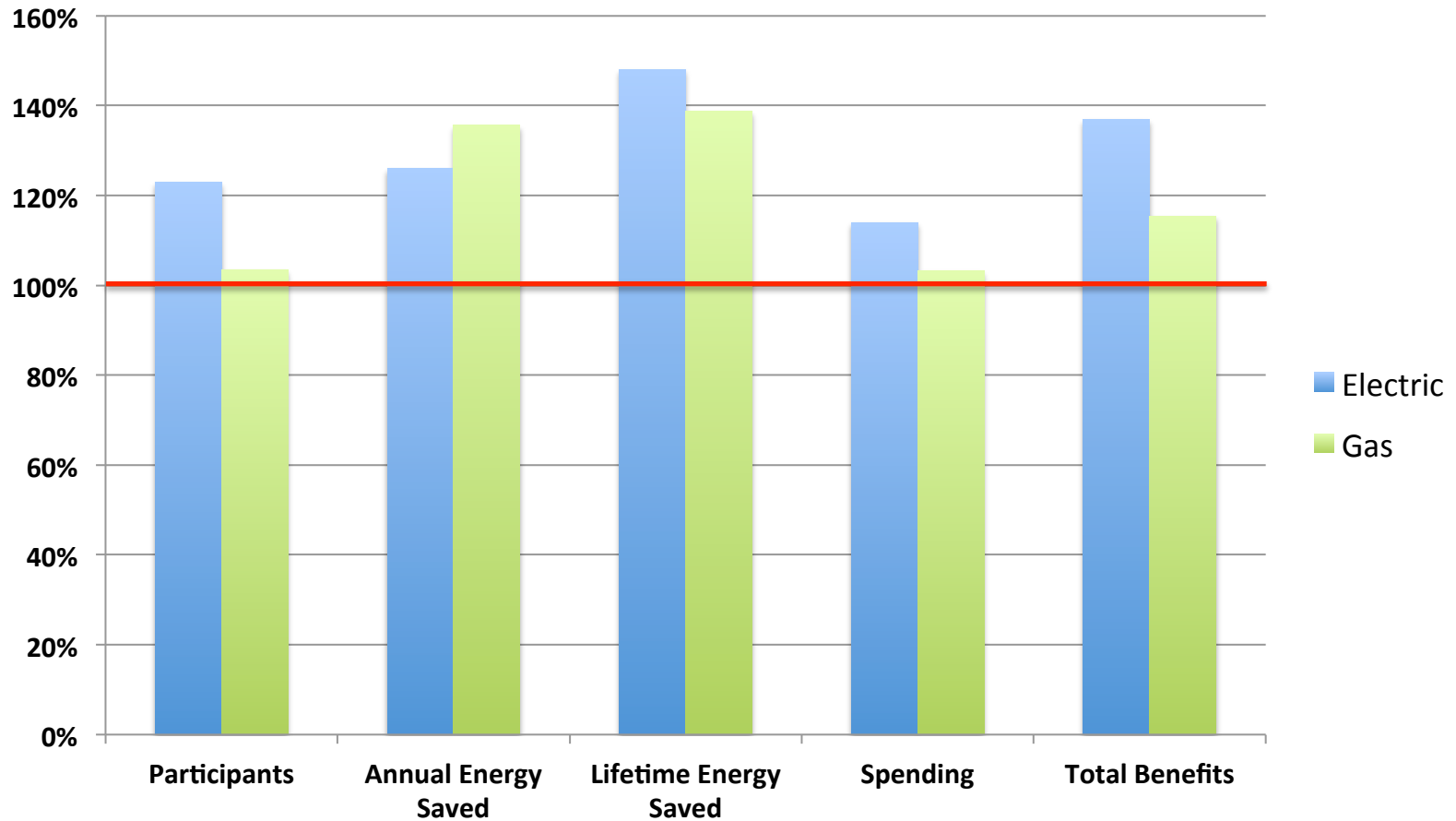
**COUNCIL WORKSHOP
FEBRUARY 9, 2015**

OBJECTIVE



- ▶ Provide overview and context for subsequent discussions on products, multi-family and whole house
 - Products today
 - Whole house, including multi-family, on 2/26
 - Low income will be addressed separately on 2/26
- ▶ Focus on showing relative contribution of residential initiatives to achievement of goals
 - To support assessment of priorities
 - To provide an enhanced understanding of the roles the various initiatives play for achieving the various goals

2013 STATEWIDE RES SECTOR ACHIEVEMENTS RELATIVE TO GOALS



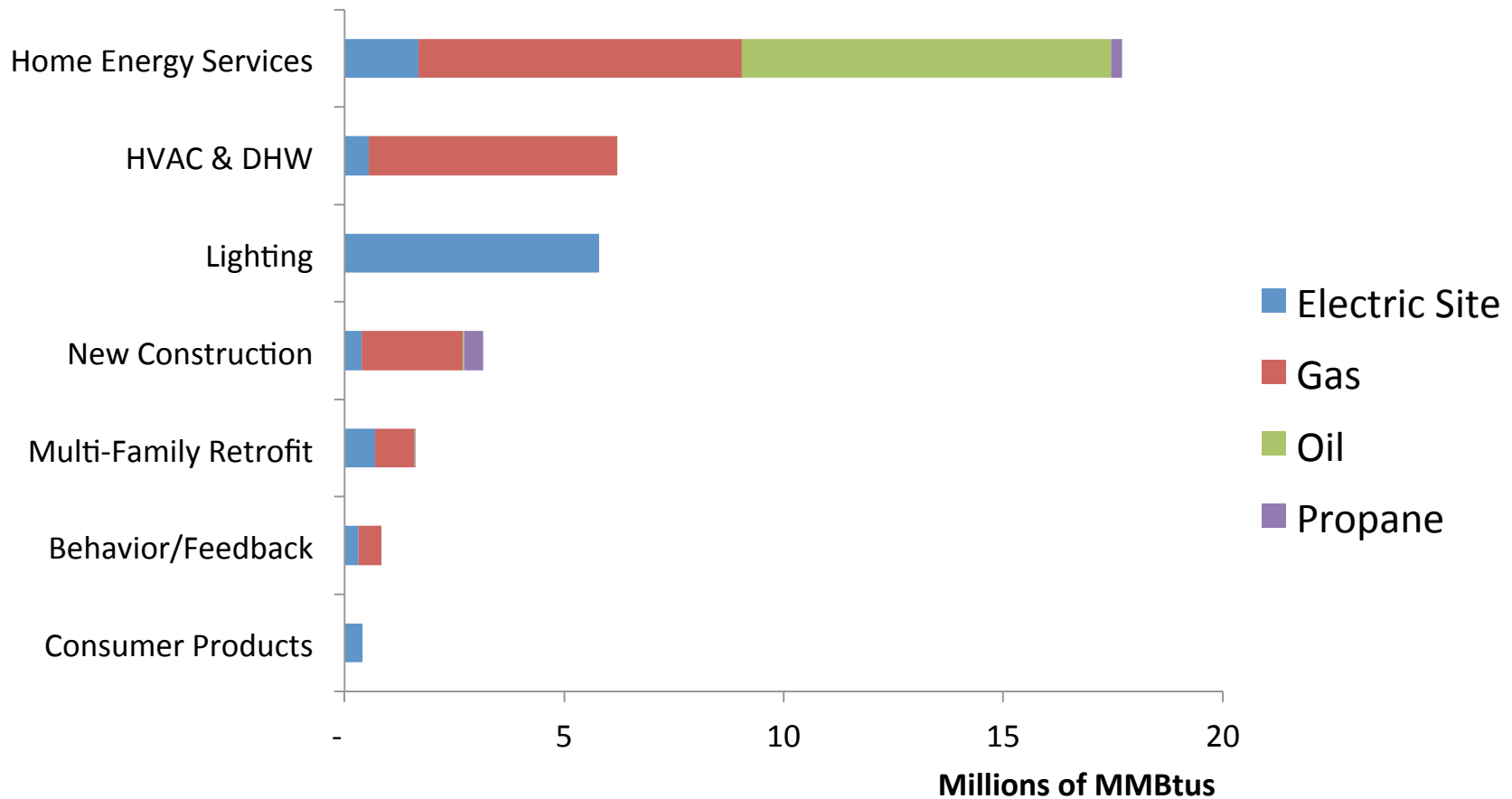
RESIDENTIAL SECTOR PROGRAMS AND INITIATIVES

	Electric Initiatives	Gas Initiatives
Products Program	<ul style="list-style-type: none"> Cooling & Heating Equipment Lighting Consumer Products 	<ul style="list-style-type: none"> Heating and Water Heating
Whole House Program	<ul style="list-style-type: none"> New Construction Multi-Family Retrofit Home Energy Services Behavior/Feedback 	<ul style="list-style-type: none"> New Construction Multi-Family Retrofit Home Energy Services Behavior/Feedback
Hard-to-Measure Program	<ul style="list-style-type: none"> DOER Assessment Education EEAC Consultants HEAT Loan R&D and Demonstration Sponsorships & Subscriptions Statewide Marketing Workforce Development 	<ul style="list-style-type: none"> DOER Assessment Education EEAC Consultants HEAT Loan R&D and Demonstration Sponsorships & Subscriptions Statewide Marketing Workforce Development

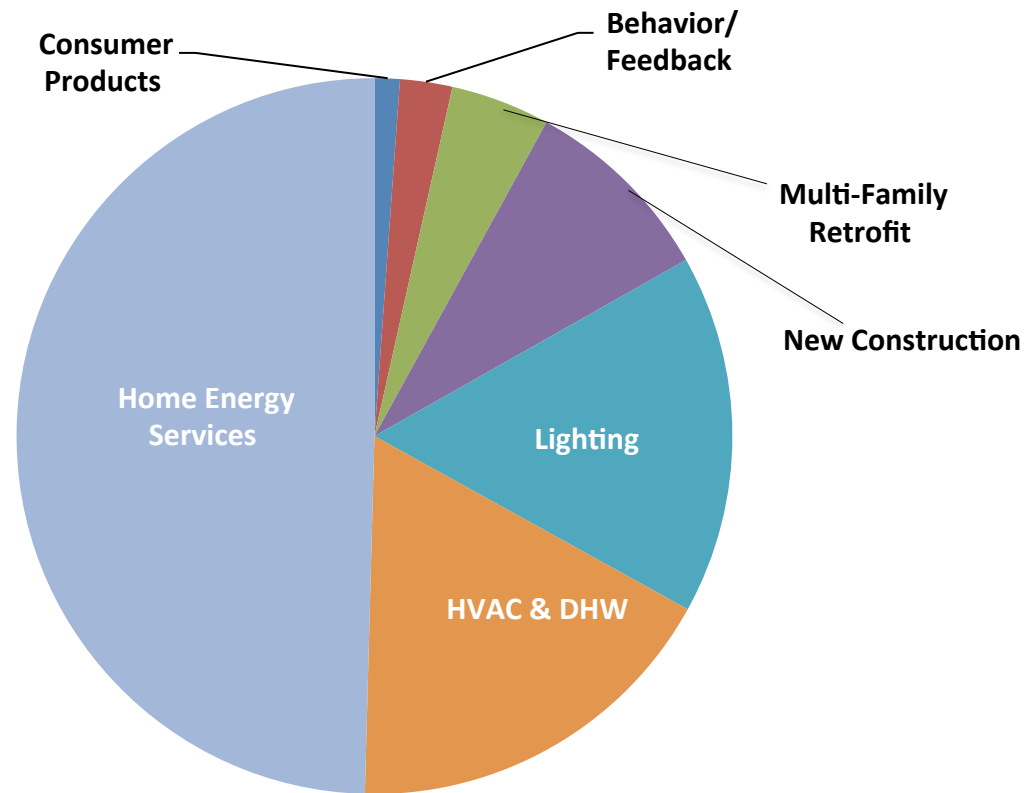


SAVINGS

LIFETIME ENERGY SAVINGS BY INITIATIVE (ALL FUELS)



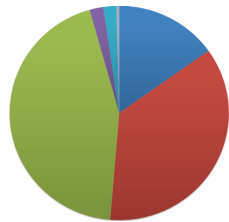
2013 LIFETIME SAVINGS ALL FUELS



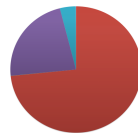
Percentage of total sector savings in MMBtus
Electric and gas initiatives combined

RESIDENTIAL SECTOR LIFETIME INITIATIVE SAVINGS BY END-USE (ALL FUELS)

Home Energy Services



HVAC & DHW



Lighting



New Construction



Multi-Family Retrofit



Behavior/Feedback



Consumer Products



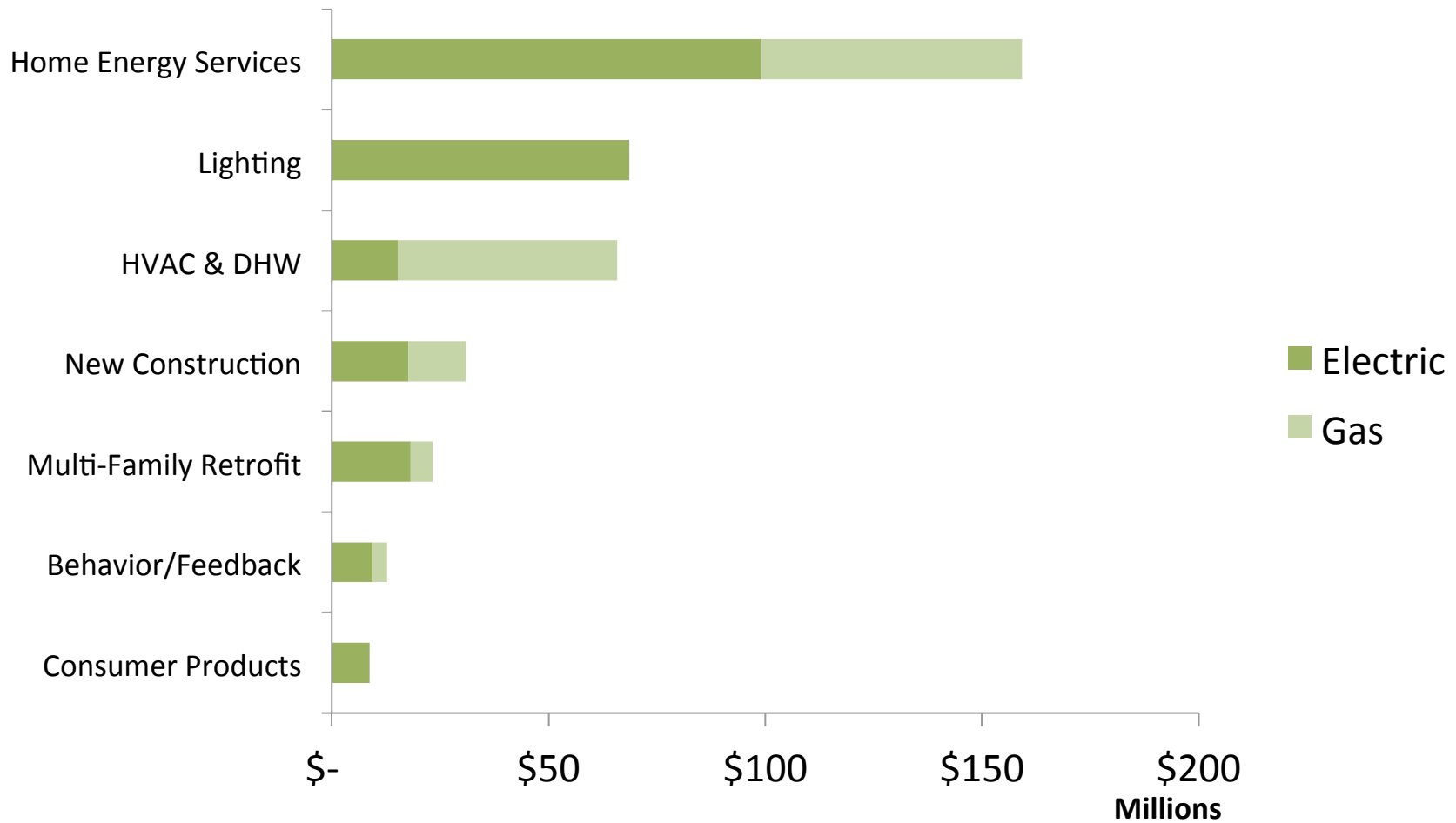
- Lighting
- HVAC
- Envelope
- Hot Water
- Behavior
- Refrigeration
- Consumer Electronics
- Solar Hot Water

Pie size is representative of each initiative's relative contribution to the total sector energy savings (site MMBtus).



COSTS

2013 COST OF ELECTRIC AND GAS INITIATIVES





BENEFITS

BENEFIT CATEGORIES DEFINED

Resource Benefits

- Electric savings
- Gas savings

Other Resource Benefits

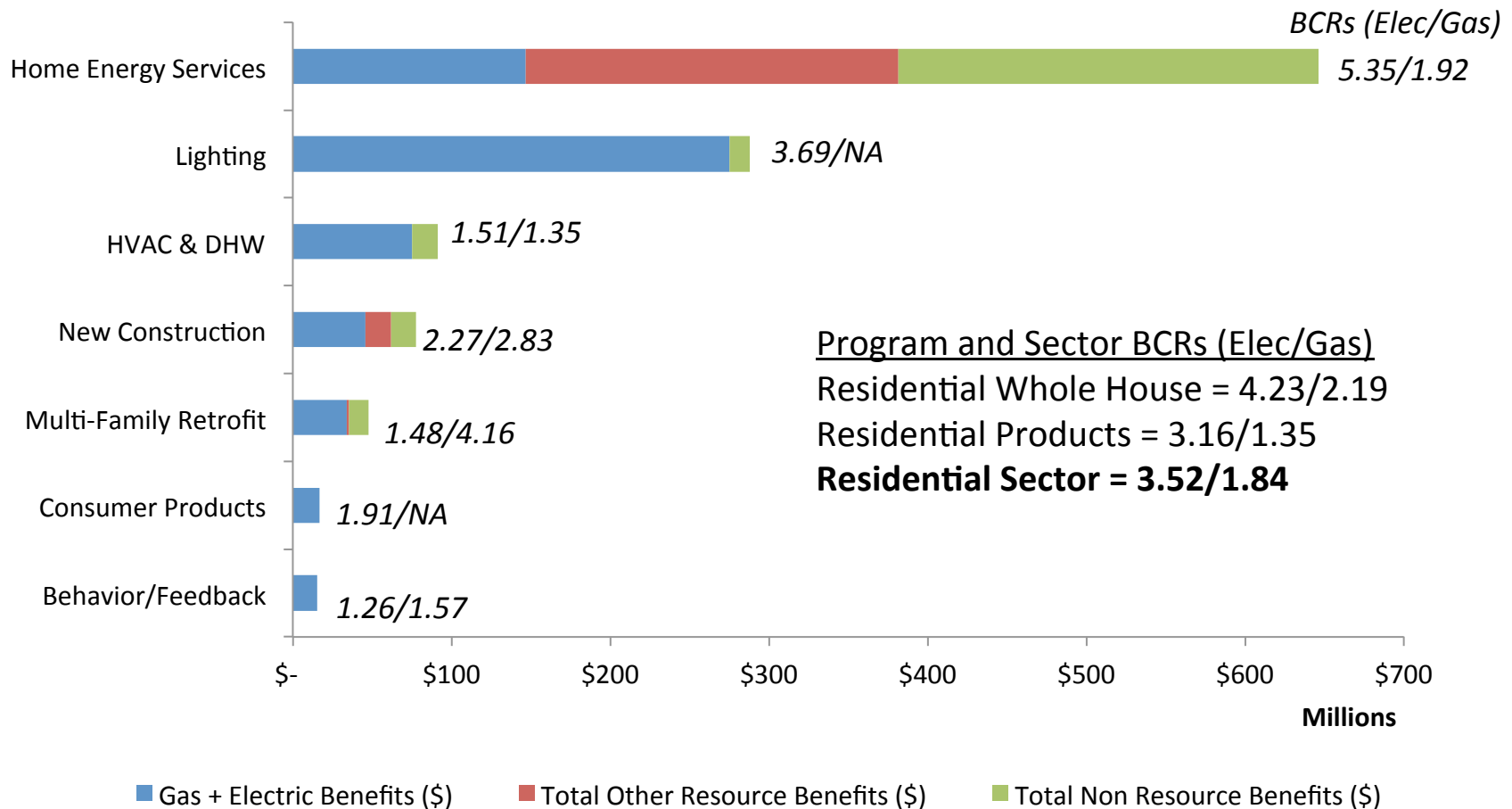
- Oil savings
- Propane savings
- Water savings

Non-Resource Benefits

- Thermal comfort
- Noise reduction
- Home durability
- Equipment maintenance
- Health benefits
- Property value increase

All benefits are quantified in terms of dollars

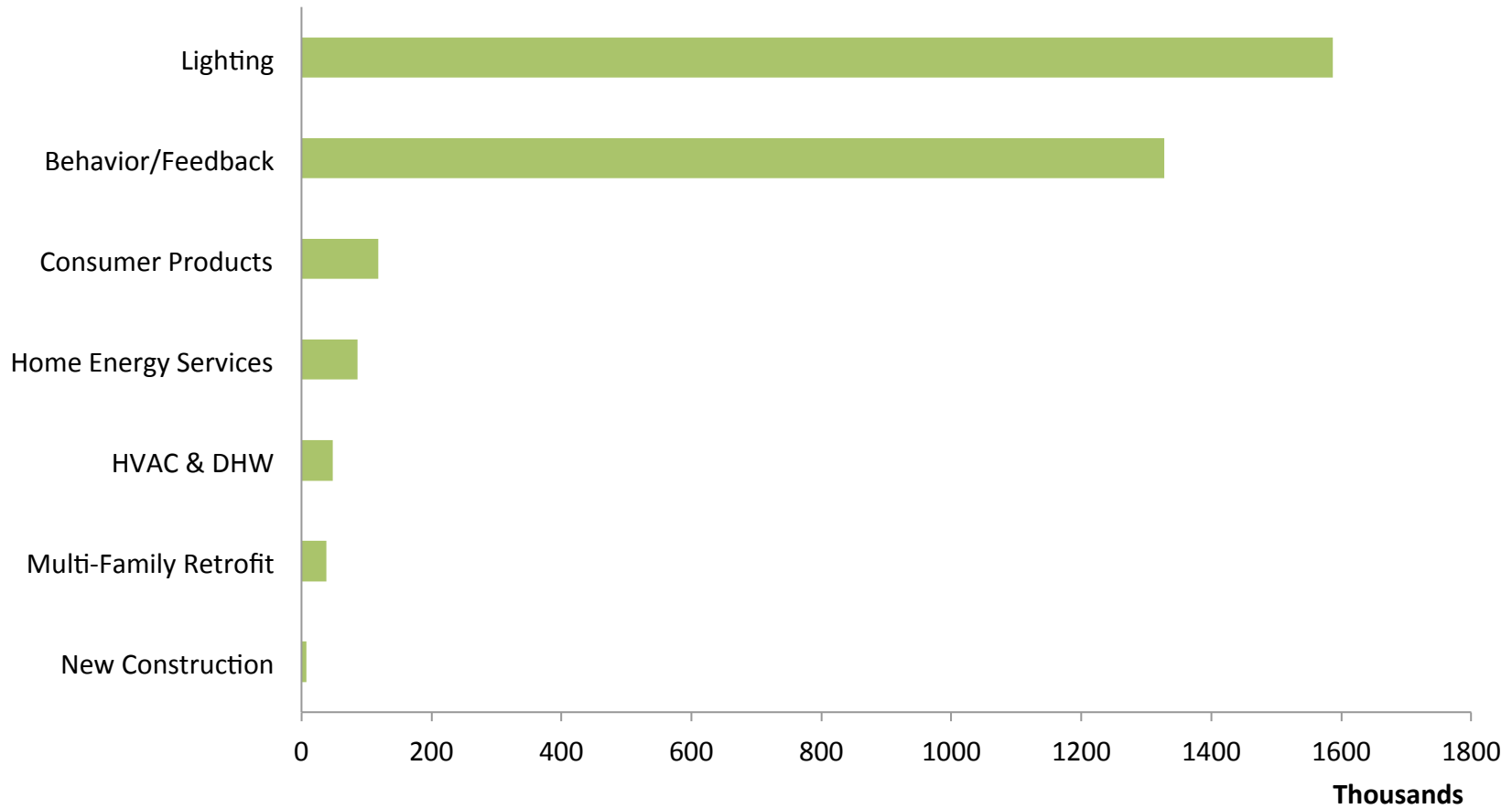
2013 BENEFITS AND BENEFIT COST RATIOS



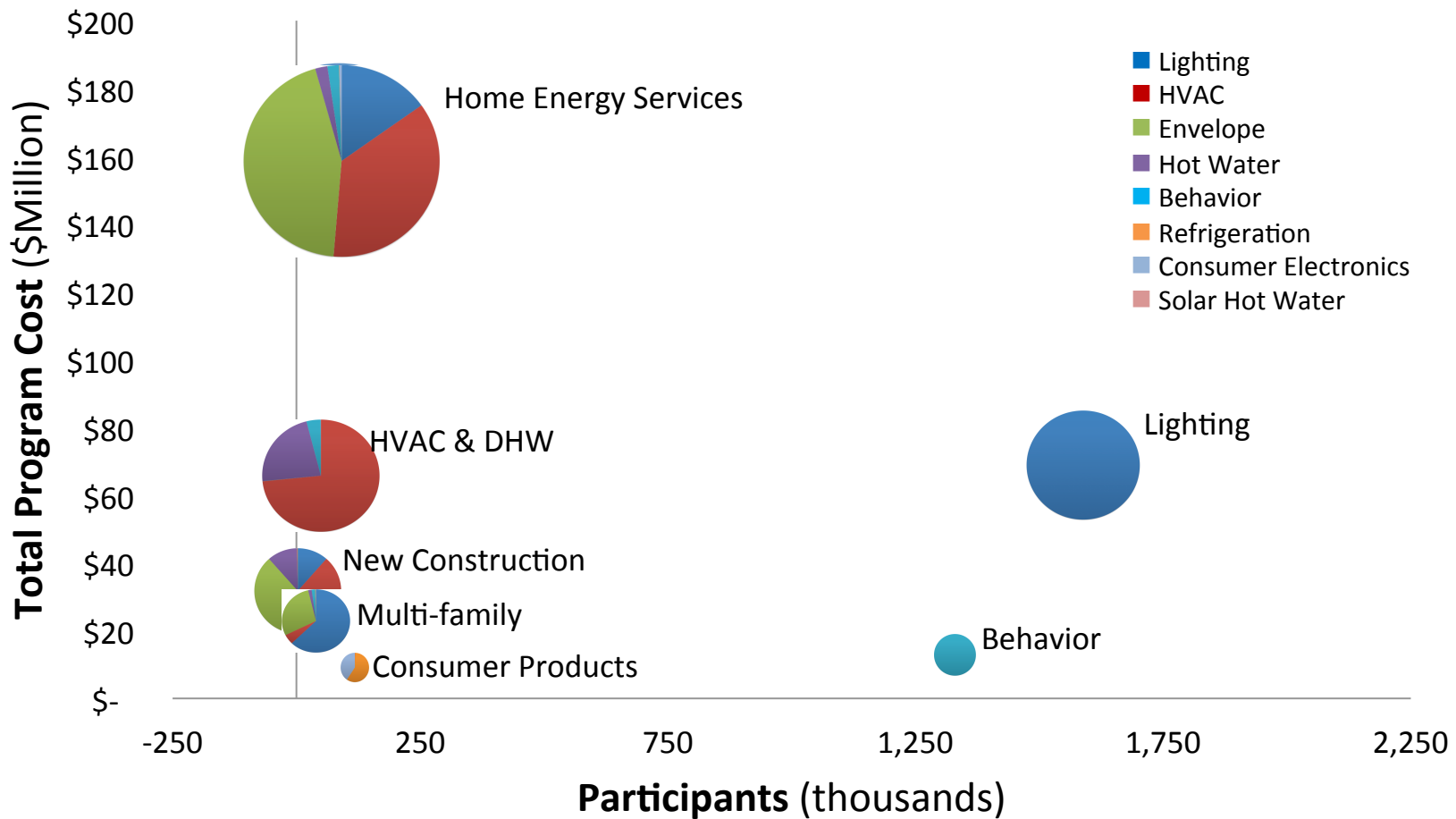


PARTICIPANTS

PARTICIPANTS



PULLING IT ALL TOGETHER: INITIATIVE SAVINGS BY END USE (LIFETIME SITE MMBTU)



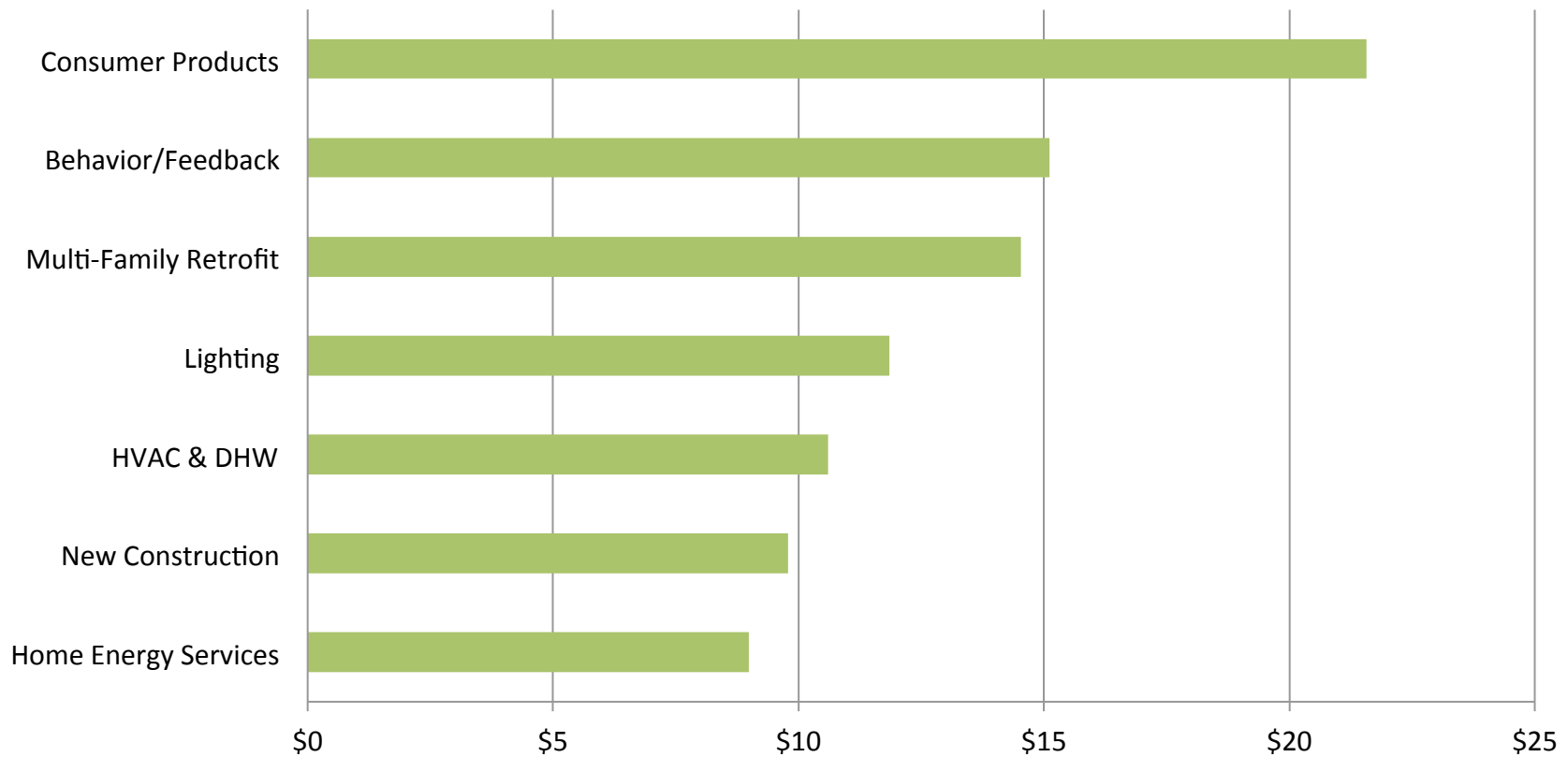


PERFORMANCE INDICATORS

COST EFFICIENCY



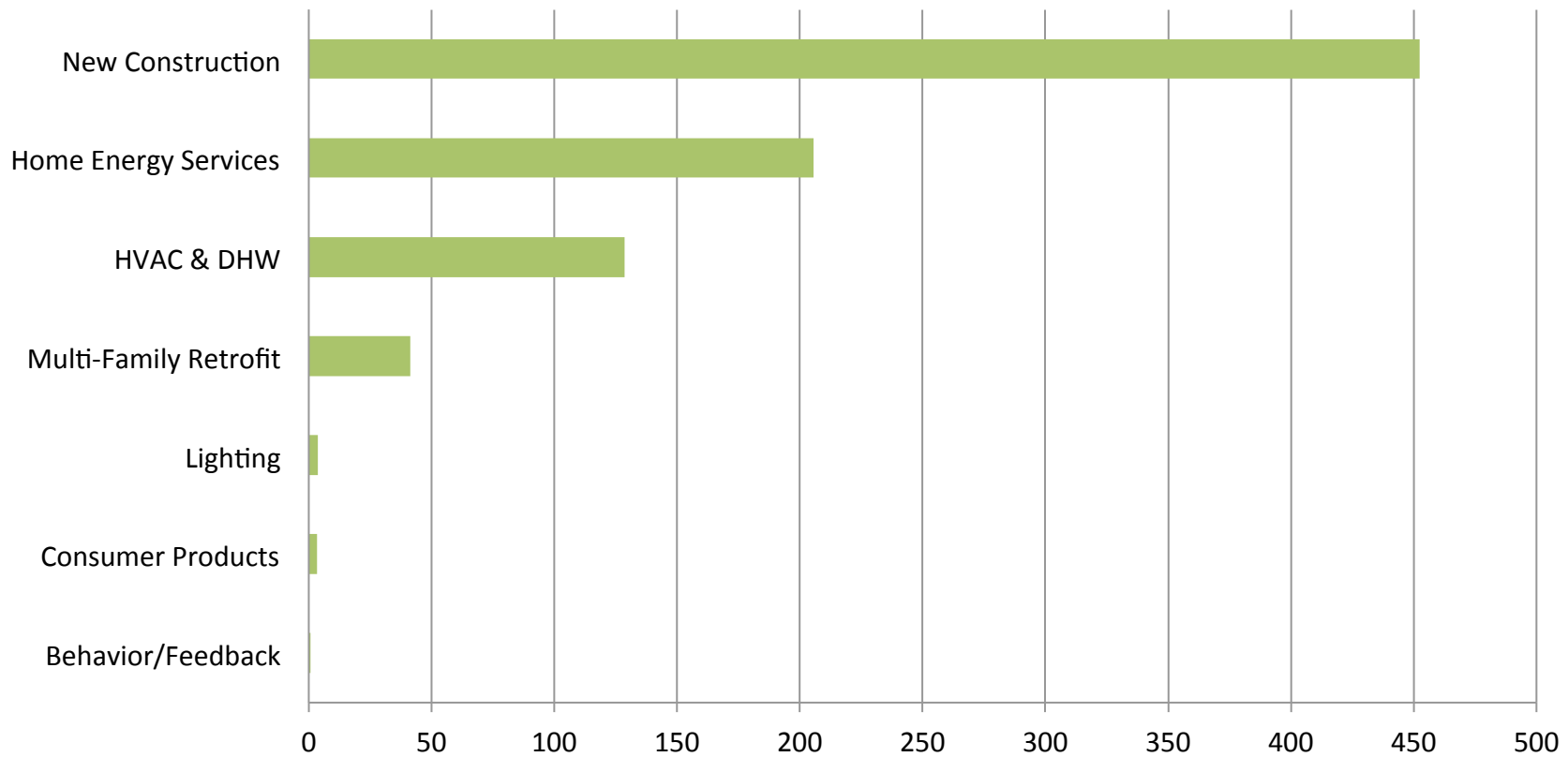
2013 Cost per Lifetime Savings (MMBtu), all Fuels



DEPTH OF SAVINGS



2013 Lifetime Savings per Participant (MMBtu), all Fuels





ADDITIONAL CONTEXT

COUNCIL PRIORITIES



Summary of Priority	2013	2014	2015
Statewide database	X	X	X
Achieve goals	X	X	X
Improve customer access to and use of programs	X	X	X
2016-18 plan		X	X
Analyze and determine Council multi-family recommendation			X
Improve cost efficiency of program delivery	X		
Evaluation	X		

CHANGES IN EFFICIENCY ENVIRONMENT

- ▶ Residential Conservation Services (RCS) revisions
 - Potential to increase savings available to residential homes
 - Oil heated multi-family
 - Homes interested in fuel switching for HVAC or water heating
- ▶ Changes in codes and standards
 - Affect baselines for PA savings calculations
 - Many federal appliance standards have recently changed or will change soon
 - Updated building energy codes
- ▶ Dynamic markets and technologies
 - Improved savings and cost performance for existing technologies (e.g., LEDs)
 - New or increased savings opportunities from technology innovation and market growth (e.g., home energy management systems, cold climate heat pumps, wireless enabled thermostats)

2013-2015 RESIDENTIAL EVALUATIONS



Study	Completed (expected)
Ductless Mini-Split Heat Pump Assessment	6/2014
Efficient Neighborhoods+® Initiative Evaluation	9/2014
Residential Customer Profile Study	(2/2015)
Lighting Market Assessment	(2/2015)
Multistage Lighting Net-to-Gross Study	(2/2015)
Multifamily Process Evaluation	(3 2015)
HES Program Delivery Assessment	(3/2015)
HEAT Loan Process Evaluation	(6/2015)
Cool Smart Impact Evaluation	(12/2015)
Others (including cross-cutting) Completed studies and schedule available on Council's website	Various

ADDITIONAL PROGRAM PLANNING CONSIDERATIONS

Consideration	Questions to be addressed
Cost effectiveness	Are costs/savings known? Do any 3rd party evaluations exist to substantiate savings?
Customer experience	How will the customer experience be impacted? What is expected customer demand—now and in the future?
Policy/regulatory barriers	Will removing a policy/regulatory barrier be required in order to implement?
Market availability	Does the market/product exist? If so, is there a distribution network for it?
Contractor engagement	How will a very extensive contractor network be impacted?

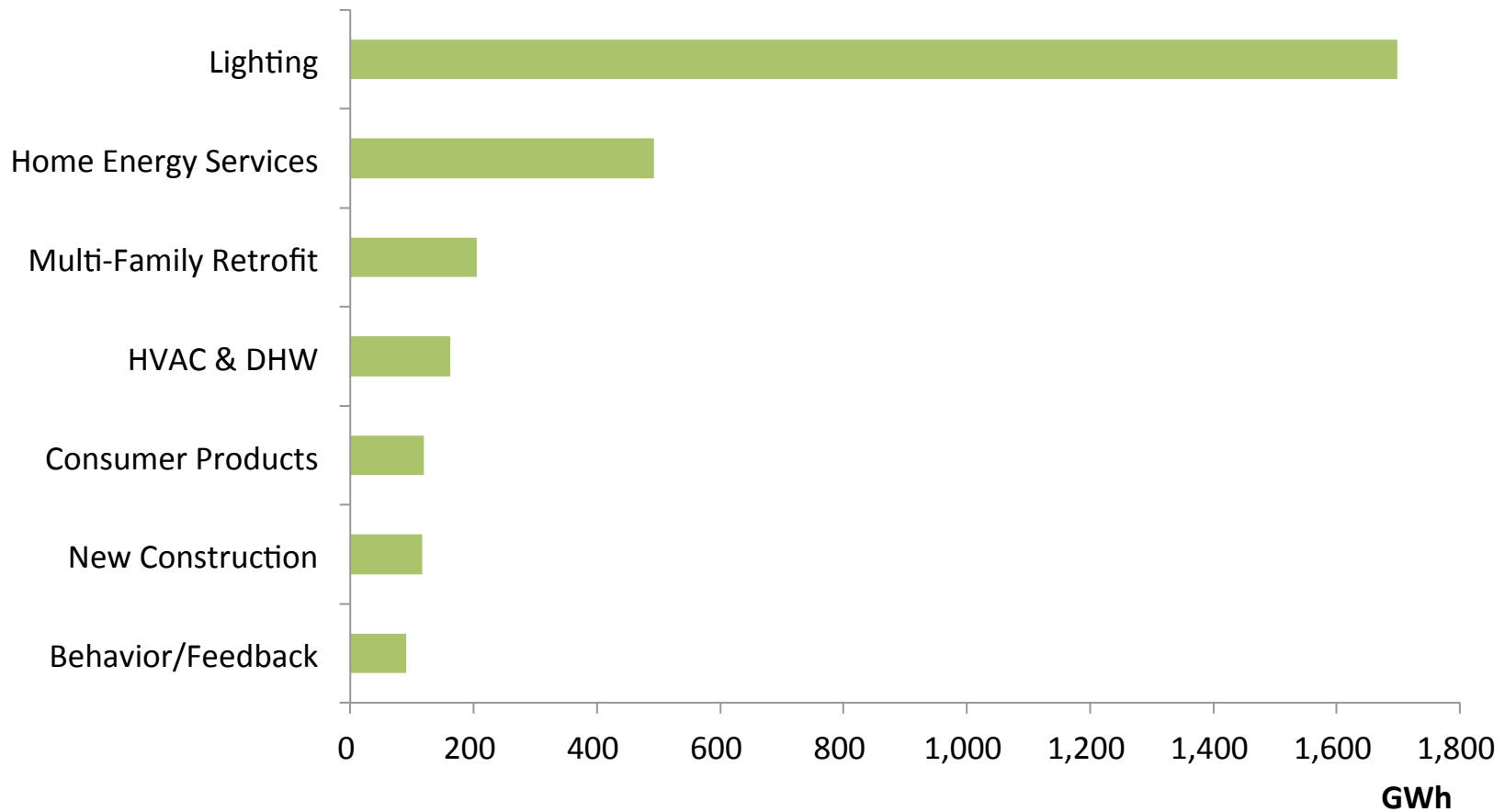
QUESTIONS AND DISCUSSION

- ▶ Clarifying questions?
- ▶ What preliminary observations do Councilors have about residential programs to date and opportunities for 2016-2018?

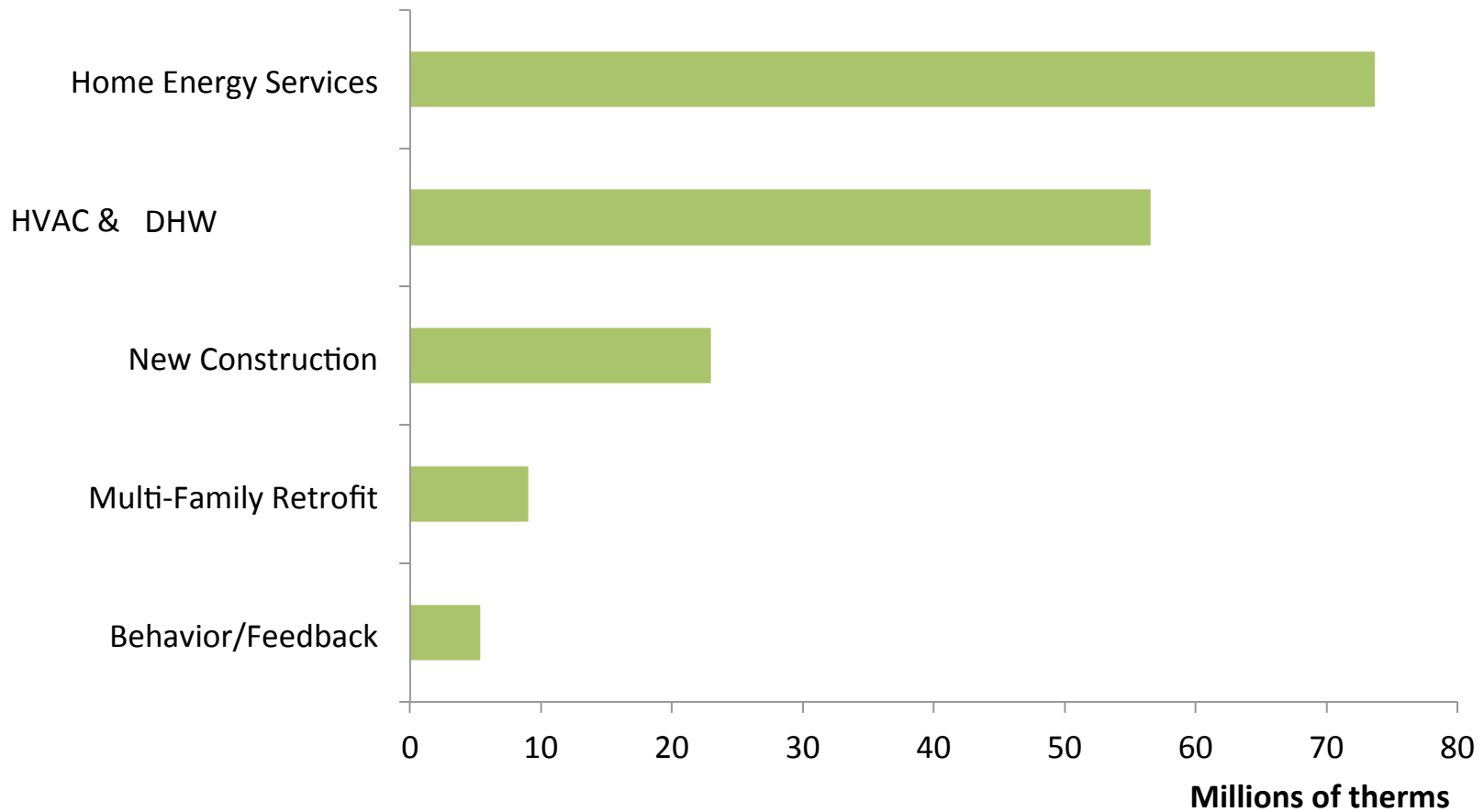


ADDITIONAL RESOURCE SLIDES

2013 RESIDENTIAL LIFETIME ELECTRIC SAVINGS



2013 RESIDENTIAL LIFETIME GAS SAVINGS



2013 RESIDENTIAL LIFETIME OIL AND PROPANE SAVINGS

