

# WHERE ARE WE HEADED? A ROAD MAP FOR EFFICIENT PRODUCTS PROMOTION

IMPROVING TOMORROW *TODAY*



PREPARED BY:



146 Chestnut Street  
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ACEEE Energy Efficiency  
as Resource Conference  
Nashville, TN  
September 23, 2013

- **Lighting in Residential EE Programs**
- **EISA Impact Timeline**
- **Cost Effectiveness of Lighting – Next 10 years**
- **What Next?**
- **How Do We Use Energy?**
- **Where do we Focus?**
- **An Example**
- **Enhanced Program Designs**
- **It's a Work in Progress**

# RESIDENTIAL PORTFOLIO ANALYSIS



## How Much Savings from lighting (CFLs and LEDs)?

Residential Programs	Total Pgm Costs (1,000 \$)	Energy Saved (GWh)	% Costs	% Energy Savings	Cost/Energy Saved (\$/kWh)	% Savings from CFLs/LEDs
Products	6,016	130	23%	55%	\$0.046	98.6%
Appliance Recycling	2,289	24	9%	10%	\$0.095	0.0%
In-Home Retrofit	1,832	5	7%	2%	\$0.366	51.1%
Low Income	12,458	14	48%	6%	\$0.890	45.5%
New Construction	822	1	3%	0%	\$0.822	0.0%
E3 Smart Kits	996	5	4%	2%	\$0.199	76.7%
Behavioral	1,506	57	6%	24%	\$0.026	0.0%
<b>TOTAL:</b>	<b>25,919</b>	<b>236</b>				<b>59.7%</b>

Source: AEP Ohio (2012). "2011 Portfolio Status Report of the Energy Efficiency and Peak Demand Response Programs of Ohio Power Company." Case No. 12-1537-EL-EEC. Vols. I and II. May 15, 2012.



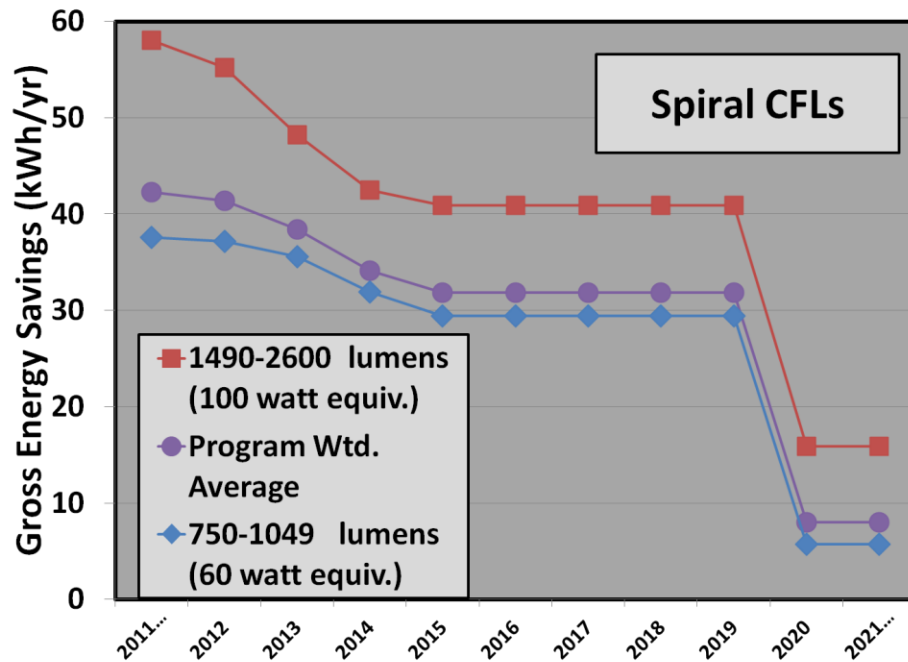
- **Lighting has been a huge energy savings opportunity**
- **Lighting makes up a significant part of many different programs (e.g. retail, home energy audit, low-income direct install, kits, giveaways, etc...)**
- **First tier standards (2012-2014) don't have a large impact**
- **Second tier standard (2020) at 45 lpw – much more substantial impact – opens other opportunities**

# REMAINING LIGHTING OPPORTUNITY

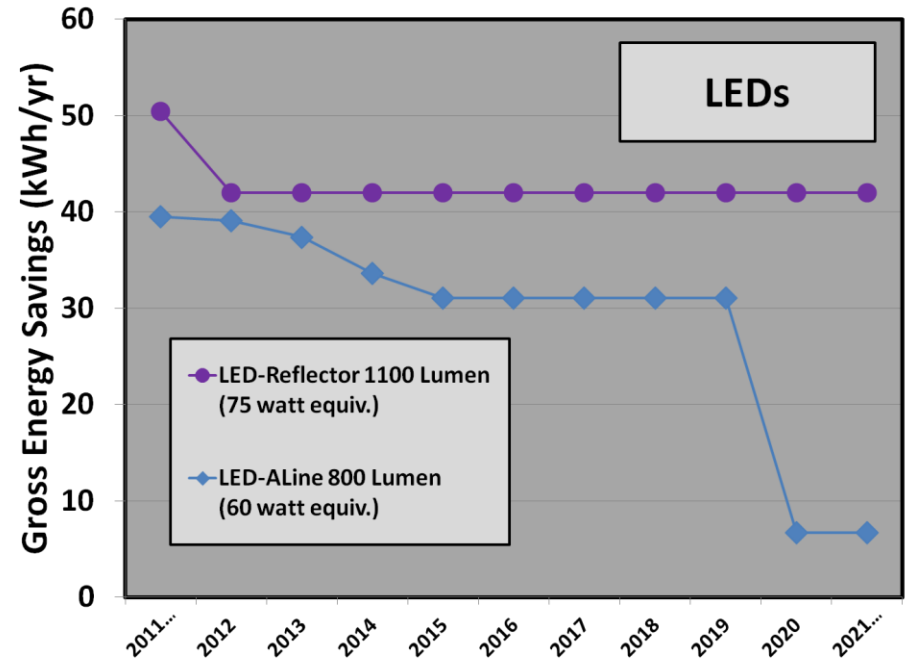


## ENERGY SAVINGS

### CFLs



### LEDs

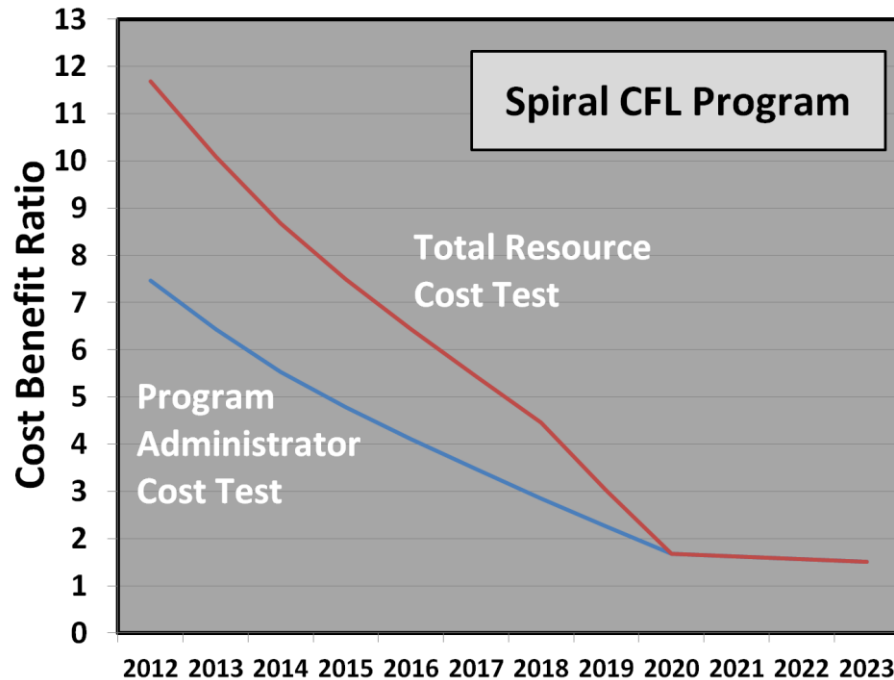


Source: Craigo-Snell, Seth (2013). "Is it Still Cost Effective to Promote Light Bulbs? Should We?" International Energy Program Evaluation Conference. Chicago: August, 2013.

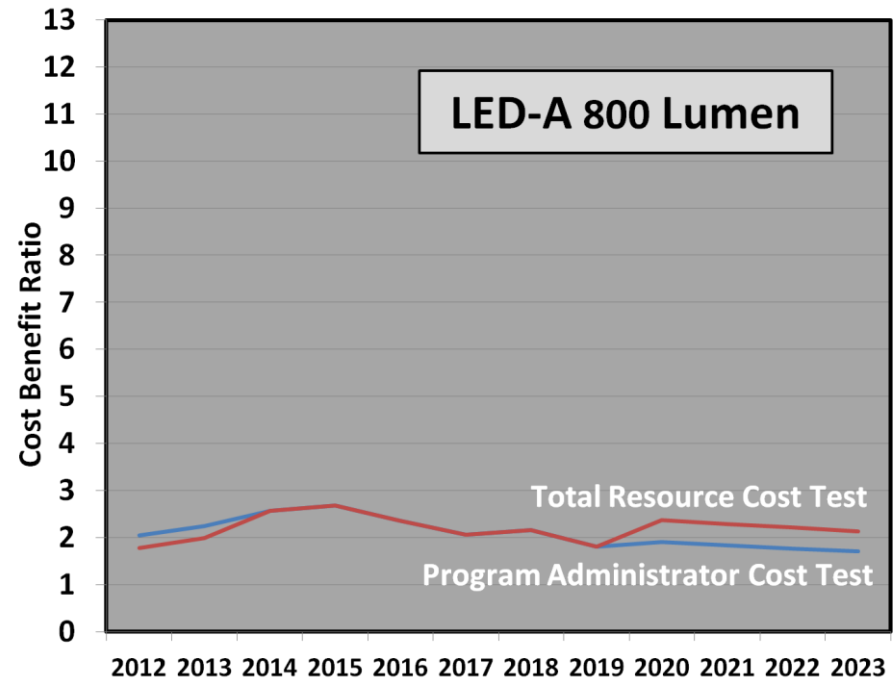
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## COST EFFECTIVENESS

### CFLs



### LEDs

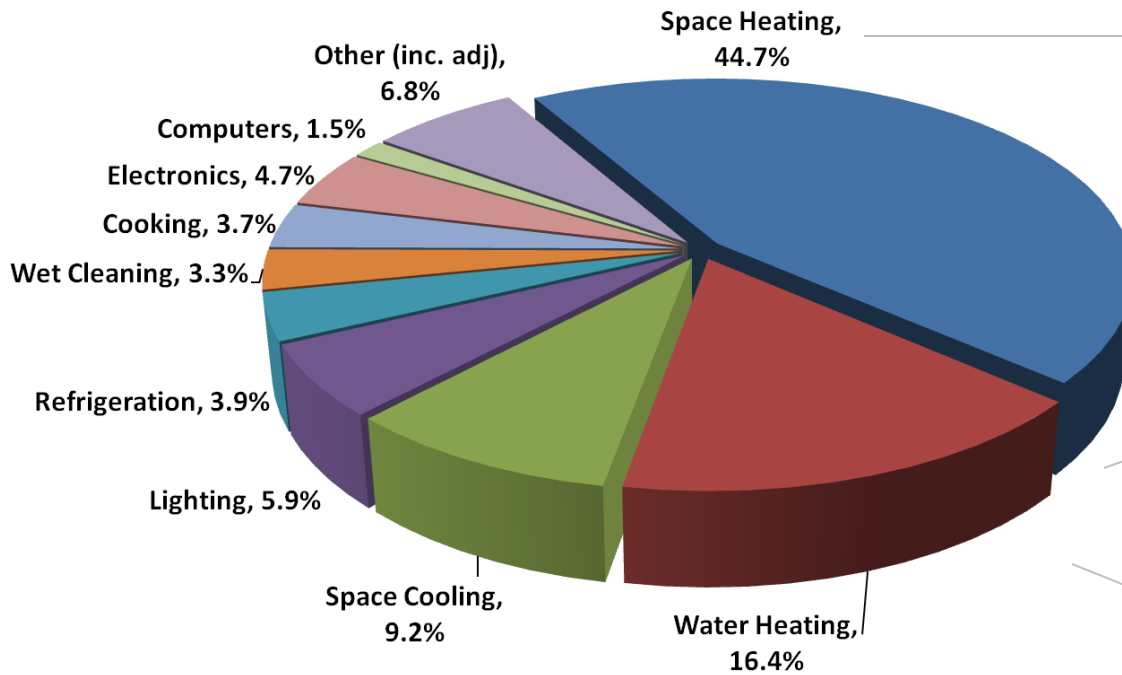


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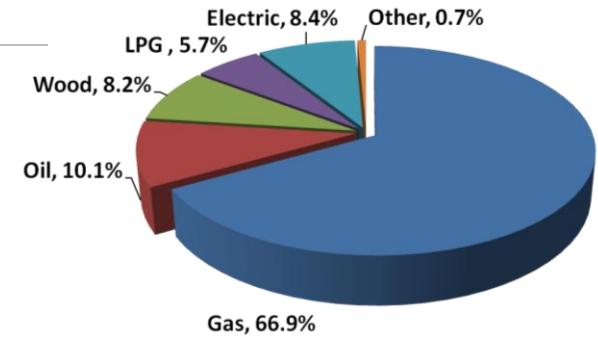
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# HOW DO WE USE ENERGY?

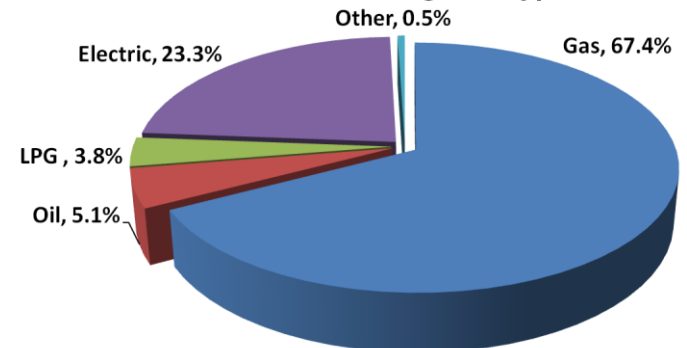
## 2010 Residential End Uses



## Space Heating Fuel Types



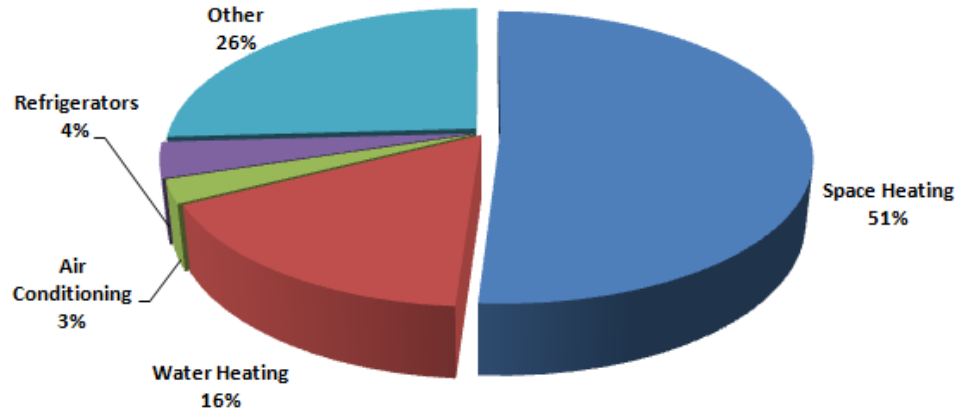
## Water Heating Fuel Types



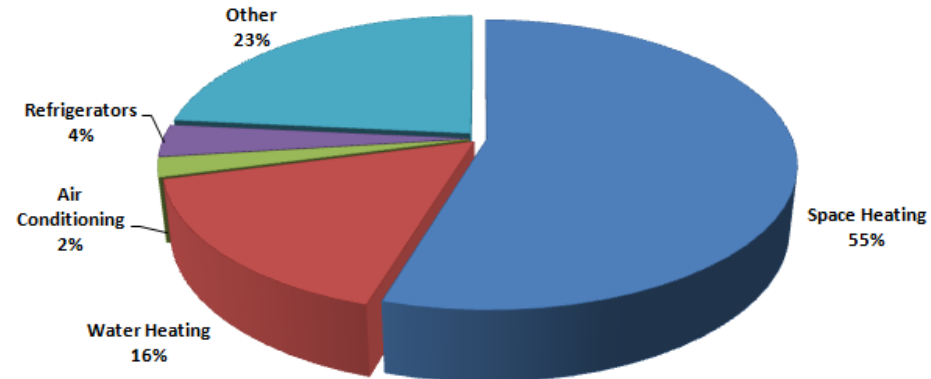
Source: DOE (2012). "Buildings Energy Data Book." EERE. Buildings Technologies Program. March 2012. Table 2.1.5. <http://buildingsdatabook.eren.doe.gov/ChapterIntro2.aspx>

# REGIONAL DIFFERENCES

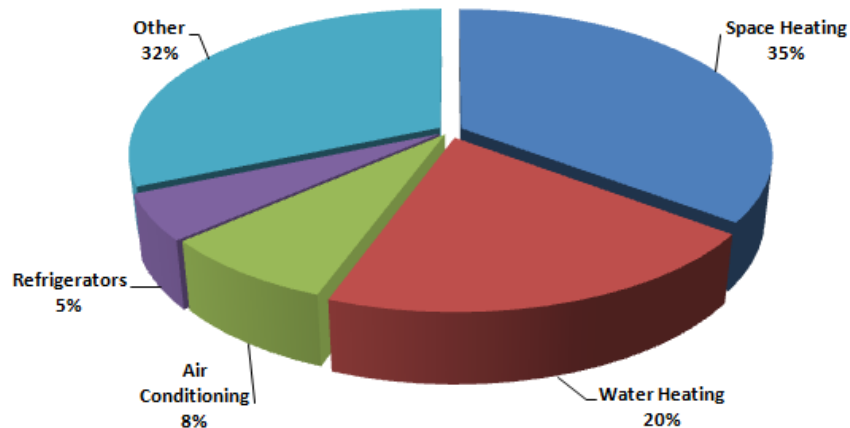
## Midwest



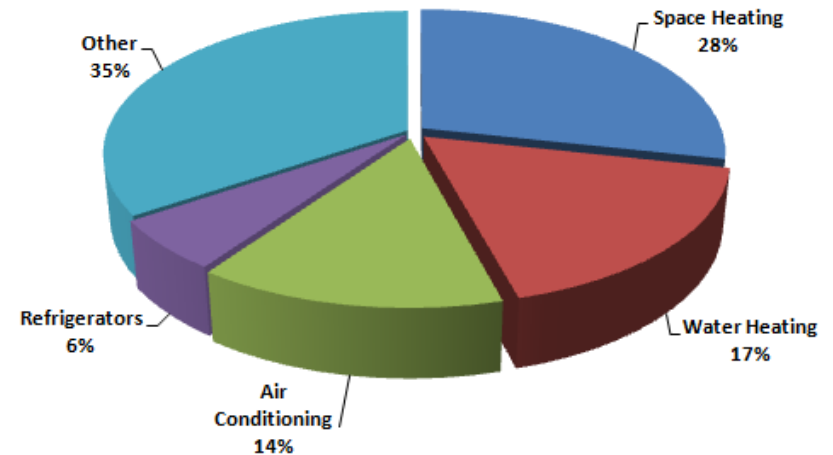
## Northeast



## West



## South



Source: United States. DOE. EIA. Residential Energy Consumption Survey (RECS). (2009) Tables CE3.2, CE3.3, CE3.4, CE3.5, 11 Jan. 2013.

<http://www.eia.gov/consumption/residential/data/2009/index.cfm?view=consumption#end-use>



# NEW OPPORTUNITIES/PRODUCTS



**Energy Activity Logger**  
Display from: 20 Sep 2011 until: 21 Sep 2011 Today Last 2 days Last 7 days

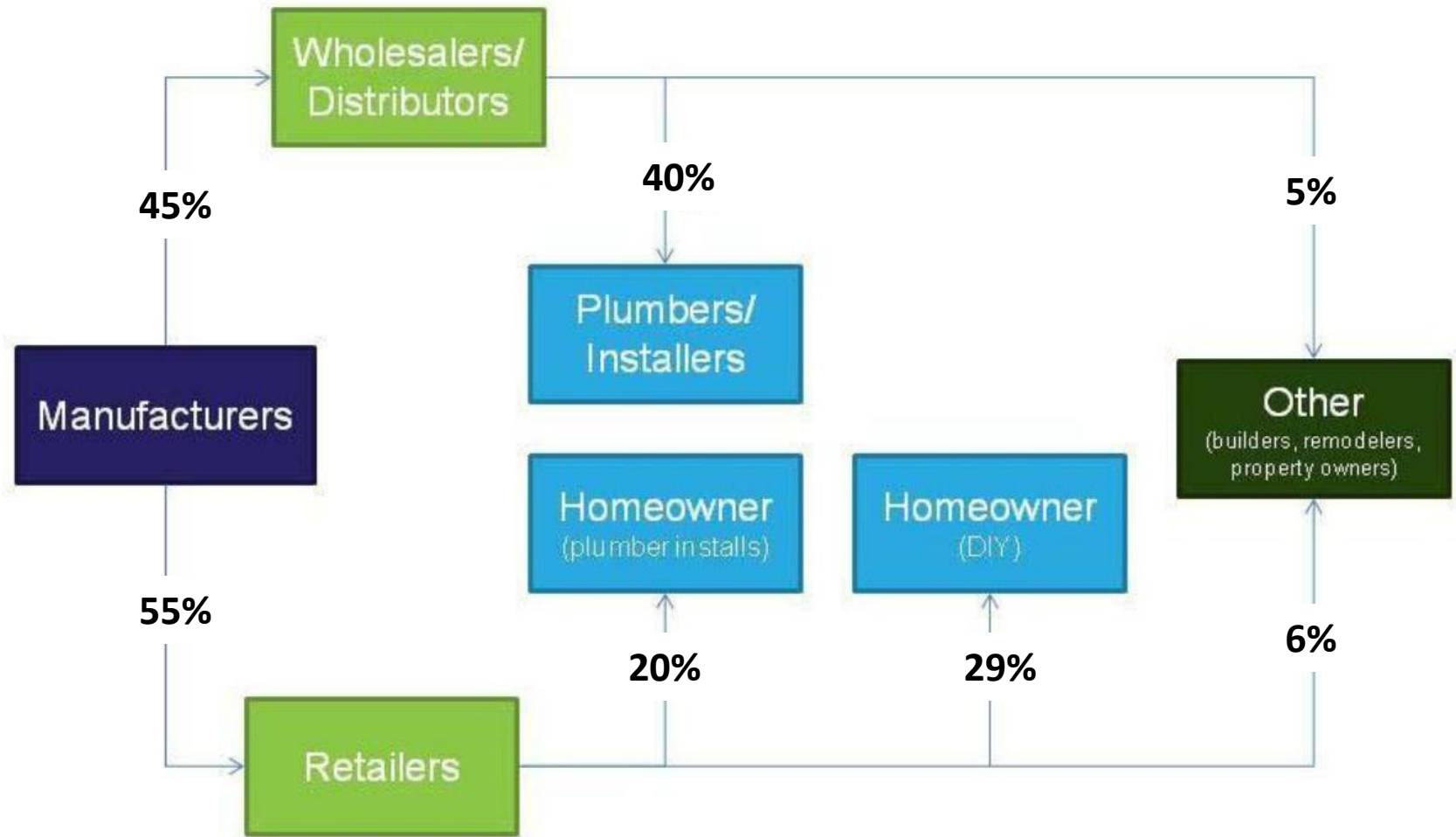
Time	Energy Activity (kWh)
8:00 (20 Sep)	0.15
10:00 (20 Sep)	0.10
20:00 (20 Sep)	0.50
8:00 (21 Sep)	0.30

# e.g.: HEAT PUMP WATER HEATERS

- **Annual Savings:**  
**≈ 2,000-3,000 kWh/yr**
- **Lifetime:**  
**10-15 years**
- **Lifetime Savings:**  
 $2,100 \text{ kWh} \times 13 \text{ yrs} =$   
**27,300 kWh**
- **Product Cost:**  
**≈ \$1,200**
- **Incremental Cost:**  
**≈ \$700**



# WATER HEATER SUPPLY CHAIN



- **Wider variety of products → more/different strategies**
- **Still going to want to be at retail**
- **Engagement with more and varied market actors**
- **Focused, targeted promotional strategies → e.g. segmentation, customer analytics**
- **Deeper, sustained customer engagement**

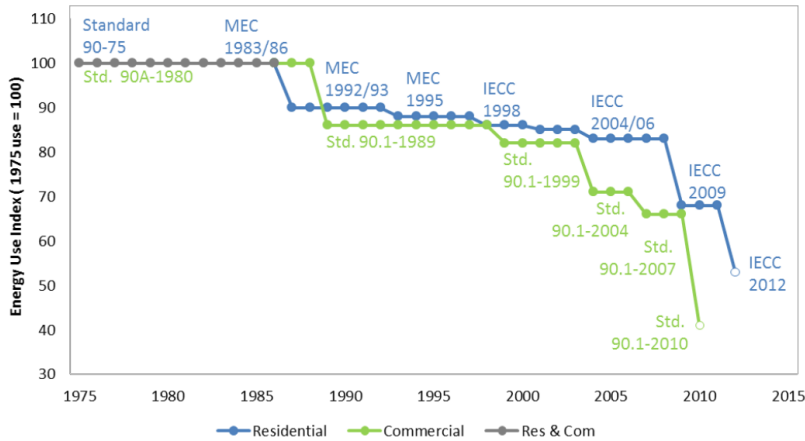
- **EISA standards are bringing change**
- **“Keep on keeping on” for a while (esp. w/ lighting measures)**
- **New opportunities/products**
- **Value in maintaining product promotions**
- **Enhanced program designs**
- **Stay Tuned. More details to come:**

***24<sup>th</sup> National AESP conference in January***

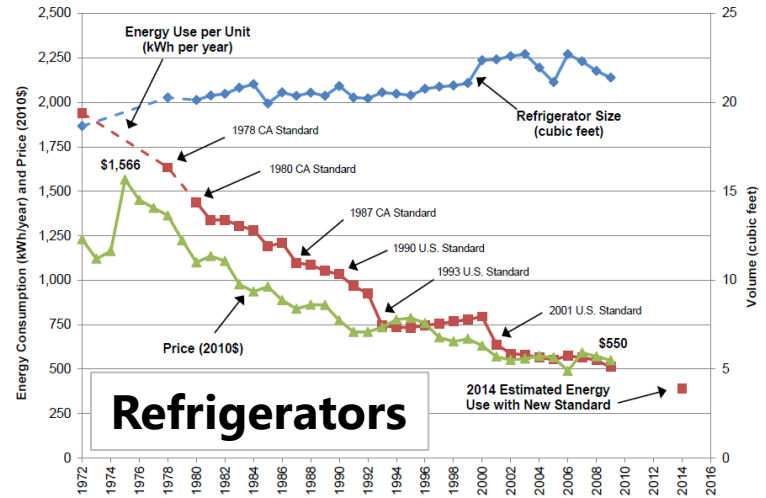
# QUESTIONS?

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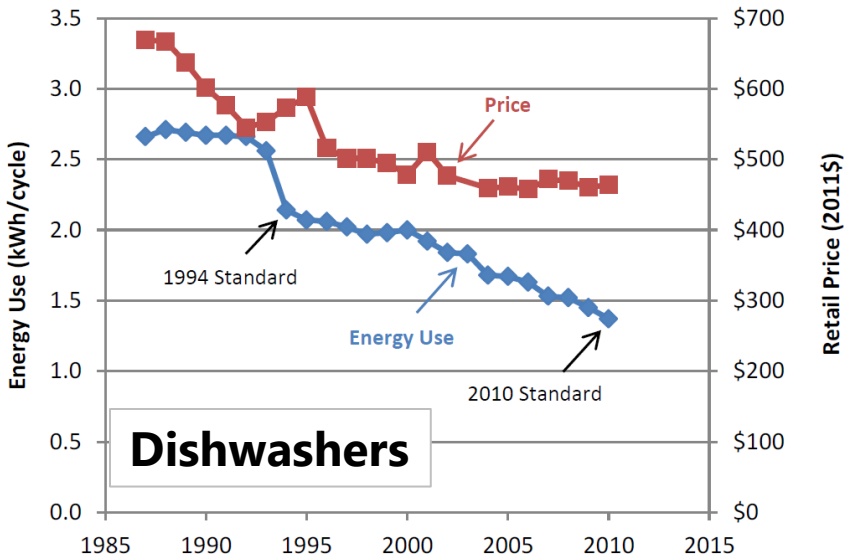
# CODES AND STANDARDS



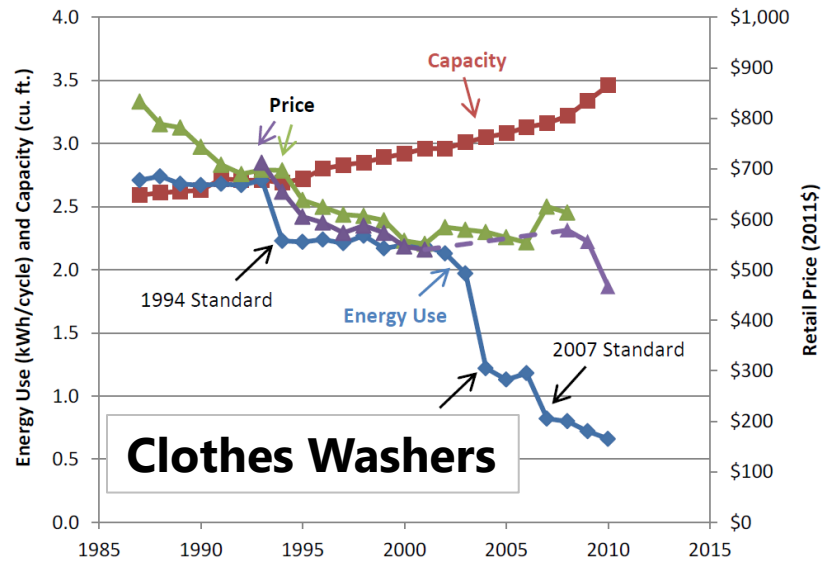
Source: Hayes, et. al. (2012). "The ACEEE 2012 International Energy Efficiency Scorecard." ACEEE Report Number: E12A. p.45.



## Refrigerators



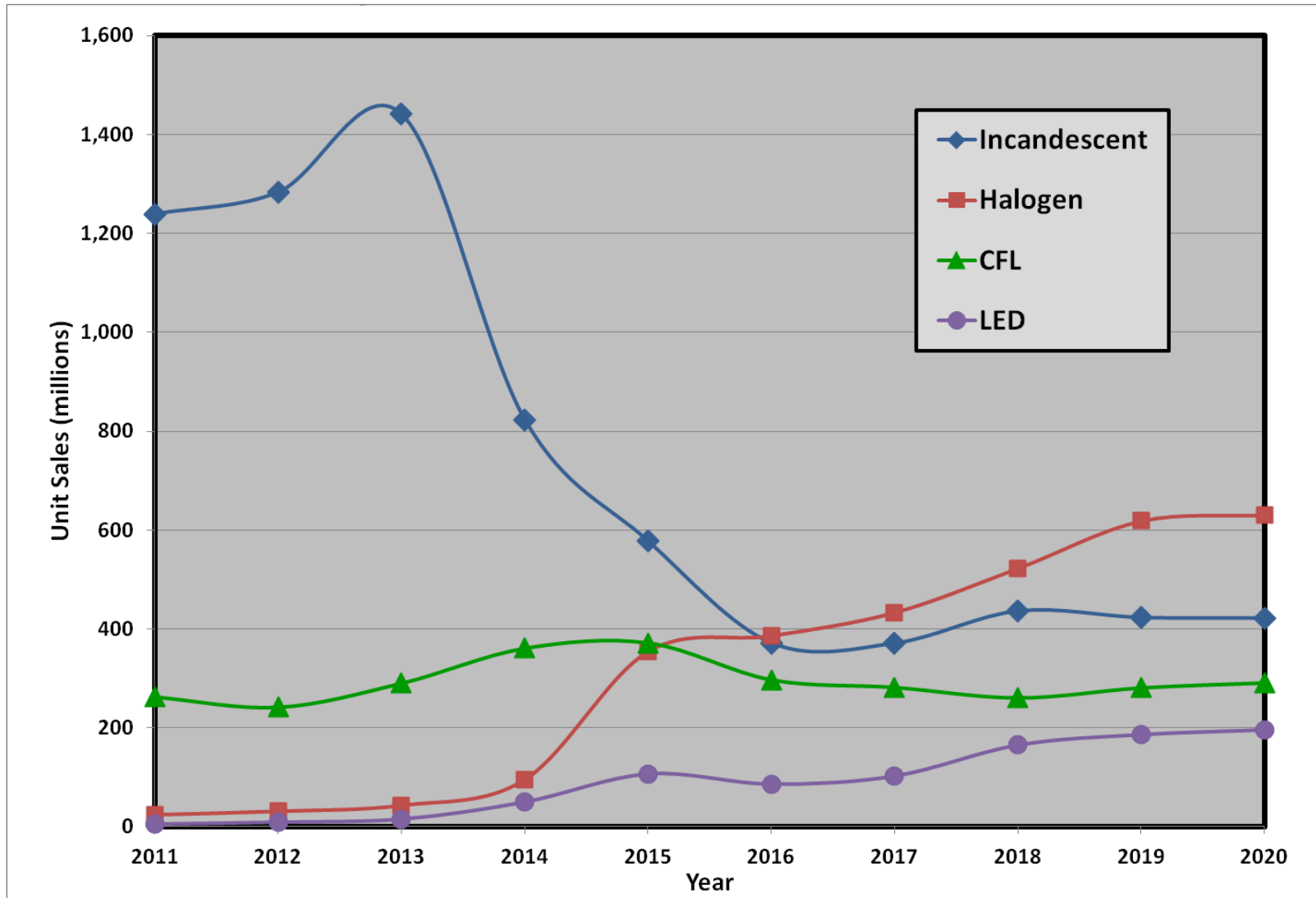
## Dishwashers



## Clothes Washers

Source for Appliances: Mauer, et. al. (2013). "Better Appliances: An Analysis of Performance, Features, and Price as Efficiency Has Improved." ACEEE Report Number: A132. May 2013.

# U.S. LAMP MARKET DYNAMICS

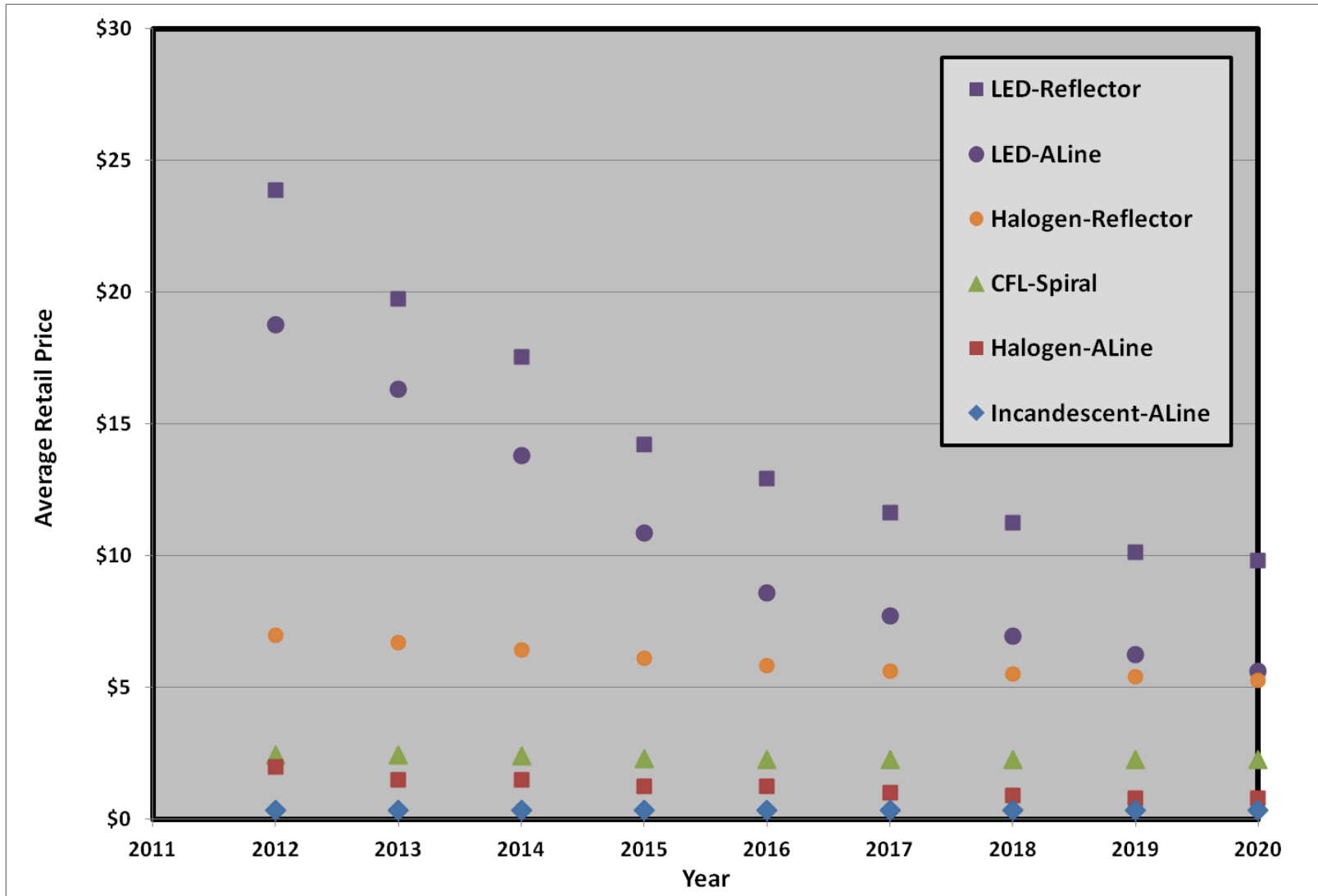


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# U.S. LAMP PRICES



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