

Federal Implications for Energy Efficiency in Virginia

Dan Bresette, Alliance to Save Energy

Richard Caperton, Oracle

Tom Nicholas, City of Virginia Beach (moderator)



Using less. Doing more.

Opportunities in the Midst of Change

Federal Energy Efficiency Policies and Programs - Implications for the Commonwealth of Virginia -

Daniel Bresette

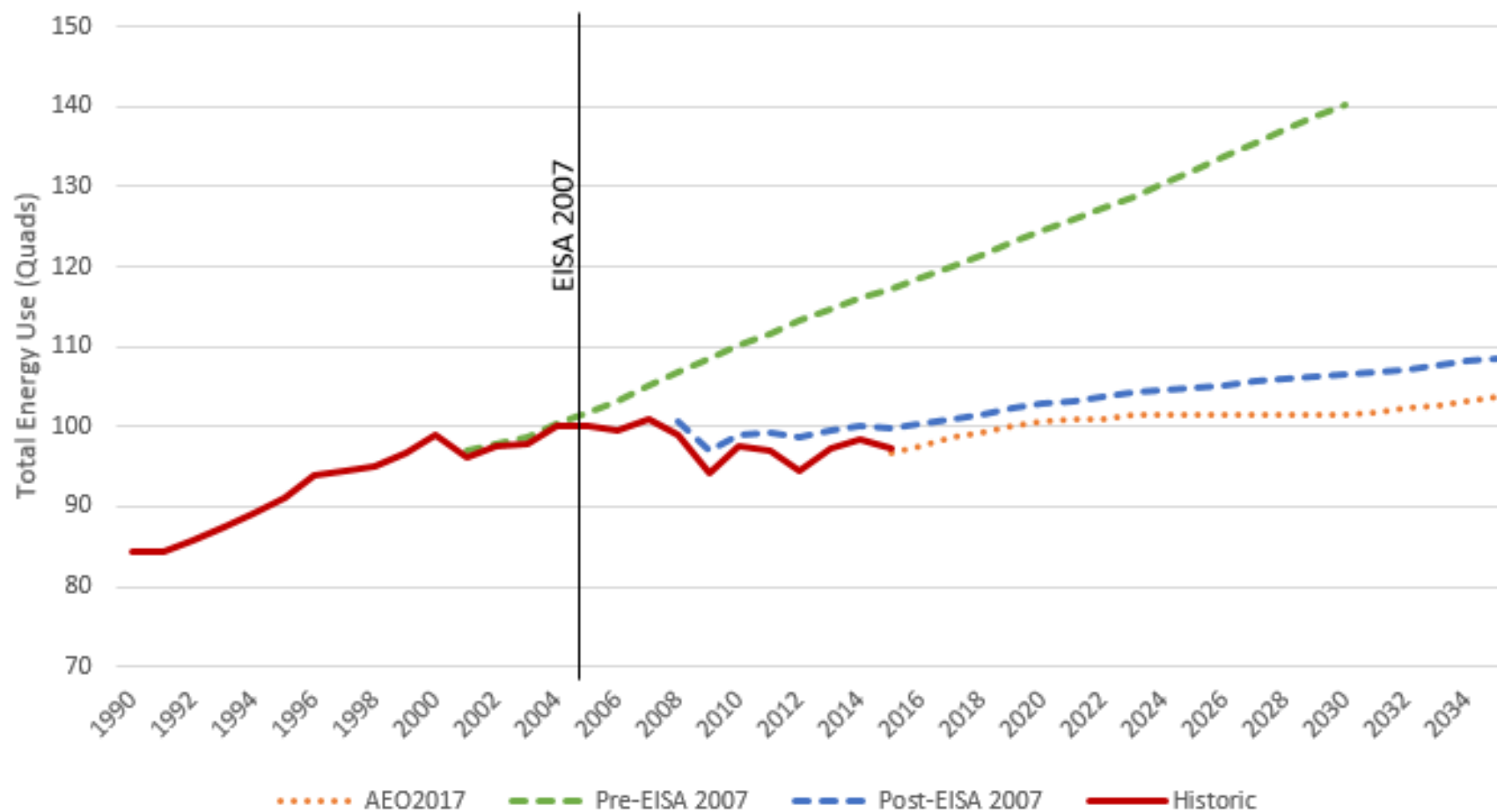
Vice President for Policy and Research, Alliance to Save Energy

Virginia Energy Efficiency Council

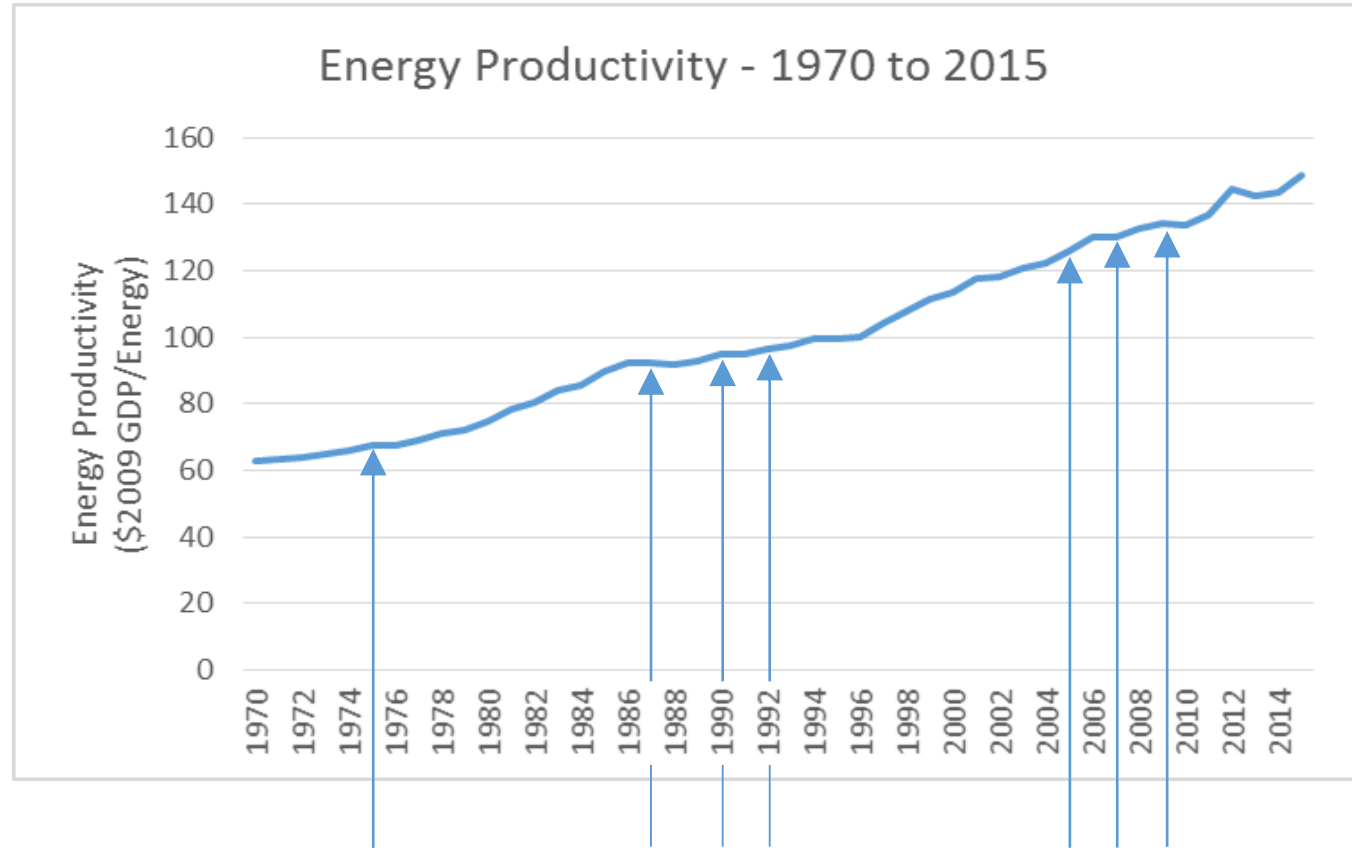
May 19, 2017

U.S. Energy Consumption Projections:

Policy's Role in Decreasing Energy Use Over Time



Energy Efficiency Policies Drive Energy Productivity



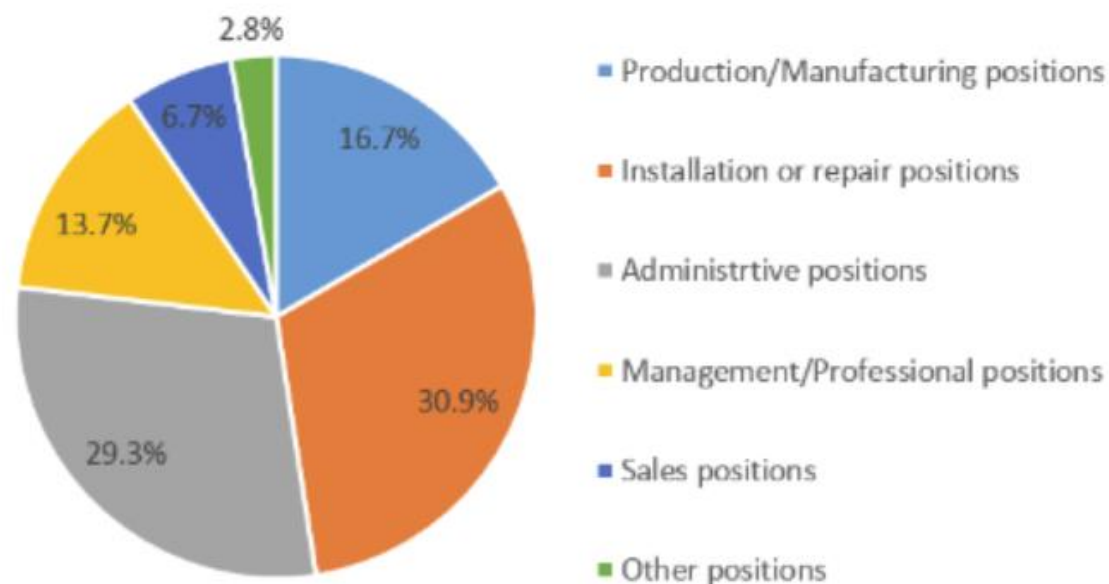
- Between 1970 and 2016...
 - GDP Skyrockets
 - 1970: \$1.1 Trillion
 - 2016: \$18.6 Trillion
 - Energy Consumption Up Only 43%
 - 1970: 67.8 Quads
 - 2016: 97.4 Quads
 - Doubling of Energy Productivity Between 1980 and 2014

Energy Efficiency Jobs

2.2. Million Employed in Energy Efficiency Sector

- According to U.S. DOE, over 2.2 Million Americans are Employed by Energy Efficiency
 - Over one-third of entire U.S. energy workforce
 - Grew by 133,000 in 2016 (6% increase)
 - About 70% employed by small businesses
- As Demand Grows, Experts Predict 9% Growth Rate in 2017
 - Projected increase of 198,000
 - Total by year's end of 2.4 million jobs

Occupational Distribution - Energy Efficiency, Q4 2016



Energy Efficiency Jobs

Top 10 States (by Number of Jobs)

California – 321,177

Florida – 106,491

Illinois – 89,830

Massachusetts – 82,848

Ohio – 78,202

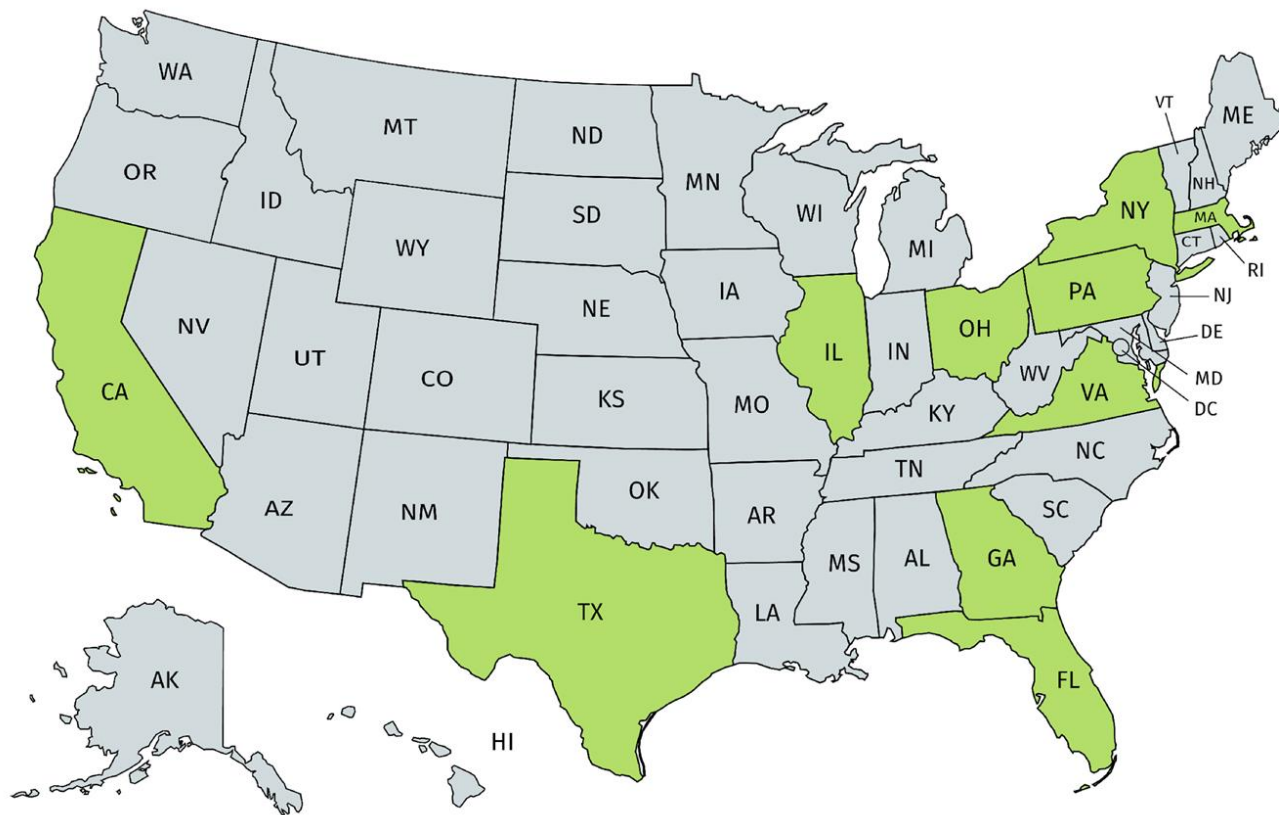
Texas – 72,783

New York – 69,704

Georgia – 66,212

Virginia – 61,397

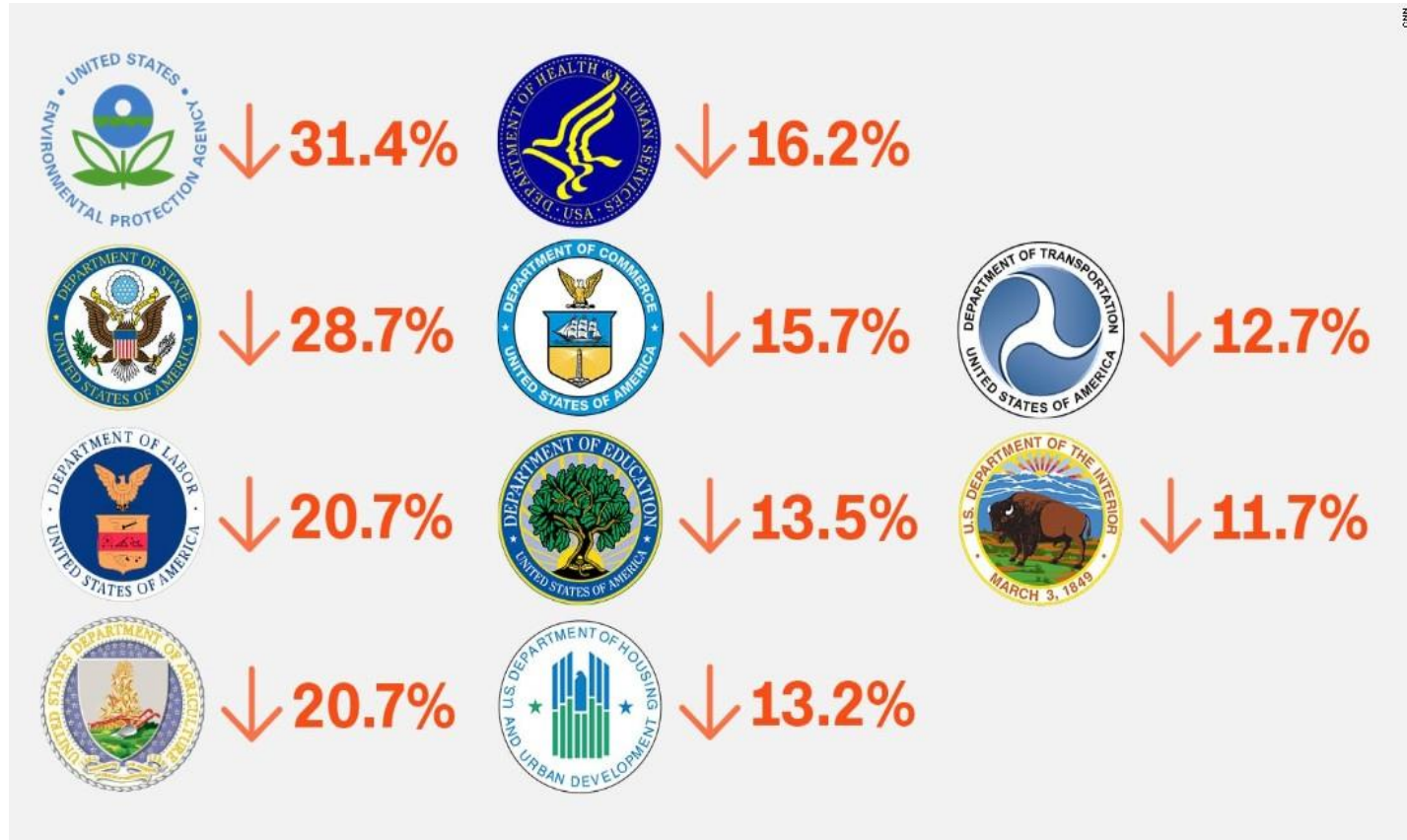
Pennsylvania – 53,175



FY2018 Budget Uncertainty

Budget Proposal Includes Severe Cuts

- Most Concerned about:
 - DOE (Non-nuclear): Cut 18%
 - EPA: Cut 31%
- Slated for Elimination:
 - ENERGY STAR
 - Weatherization
 - State Energy Program
 - ARPA-E



FY2018 Budget Uncertainty

FY2017-18 Budget Snapshot—Energy Efficiency Programs

Department/Agency/Program	FY2017-CR	FY1017-Omnibus	FY2018-Proposed
U.S. DOE EERE	\$200,500,000	\$199,141,000	?
• Equipment and Building Standards	-	\$54,000,000	?
• State Energy Program	\$50,000,000	\$50,000,000	\$0
• Weatherization Assistance Program	\$215,000,000	\$225,000,000	\$0
U.S. HUD	\$38,310,625,000	\$38,823,209,000	\$33,253,622,500 (-13.2%)
• Choice Neighborhoods Program	\$125,000,000	\$137,500,000	?
• HOME Program	\$950,000,000	\$950,000,000	?
U.S. Department of Agriculture	\$141,202,731,000	\$153,907,888,000	\$111,973,765,683 (-20.7%)
• Rural Development	\$2,770,977,000	\$2,937,153,000	?
U.S. EPA	\$8,139,887,000	\$8,058,488,000	\$5,583,962,482 (-31.2%)
• ENERGY STAR	-	-	\$0

FY2018 Budget Uncertainty

FY2017-18 Budget—Virginia Impacts

Program	Benefits		
WAP (FY2015)	DOE	LIHEAP	903 units weatherized
	\$3,169,635	\$12,214,846	
SEP (FY2016)	\$877,340		Commonwealth Energy Fund <ul style="list-style-type: none"> • Leveraged \$12 million of private financing • Loans to high-growth potential early stage VA companies capable of creating jobs and reducing energy usage
Appliance Standards	\$56,800,000,000 savings from 1987-2035		
ENERGY STAR	# Homes		# Buildings
	25,967		1,456
USDA (FY2015)	Renewable Energy		Electric
	\$2,212,222		\$254,238,000
HUD	2,866 healthy and energy efficient homes		

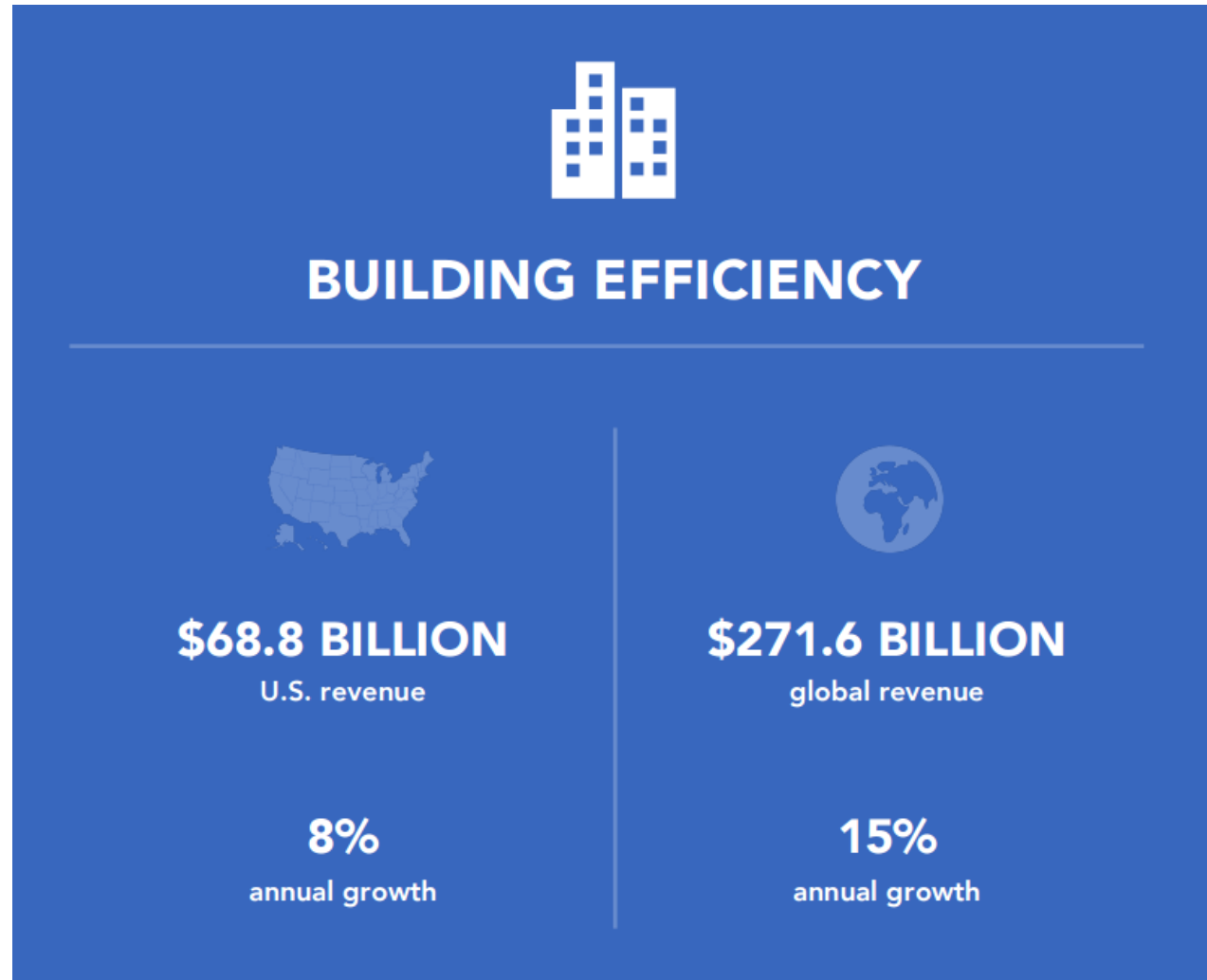
Thank You!

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Opportunities to grow EE in Virginia

Richard W. Caperton
May 19, 2017

Efficiency is big, growing rapidly, and far bigger than just federal spending

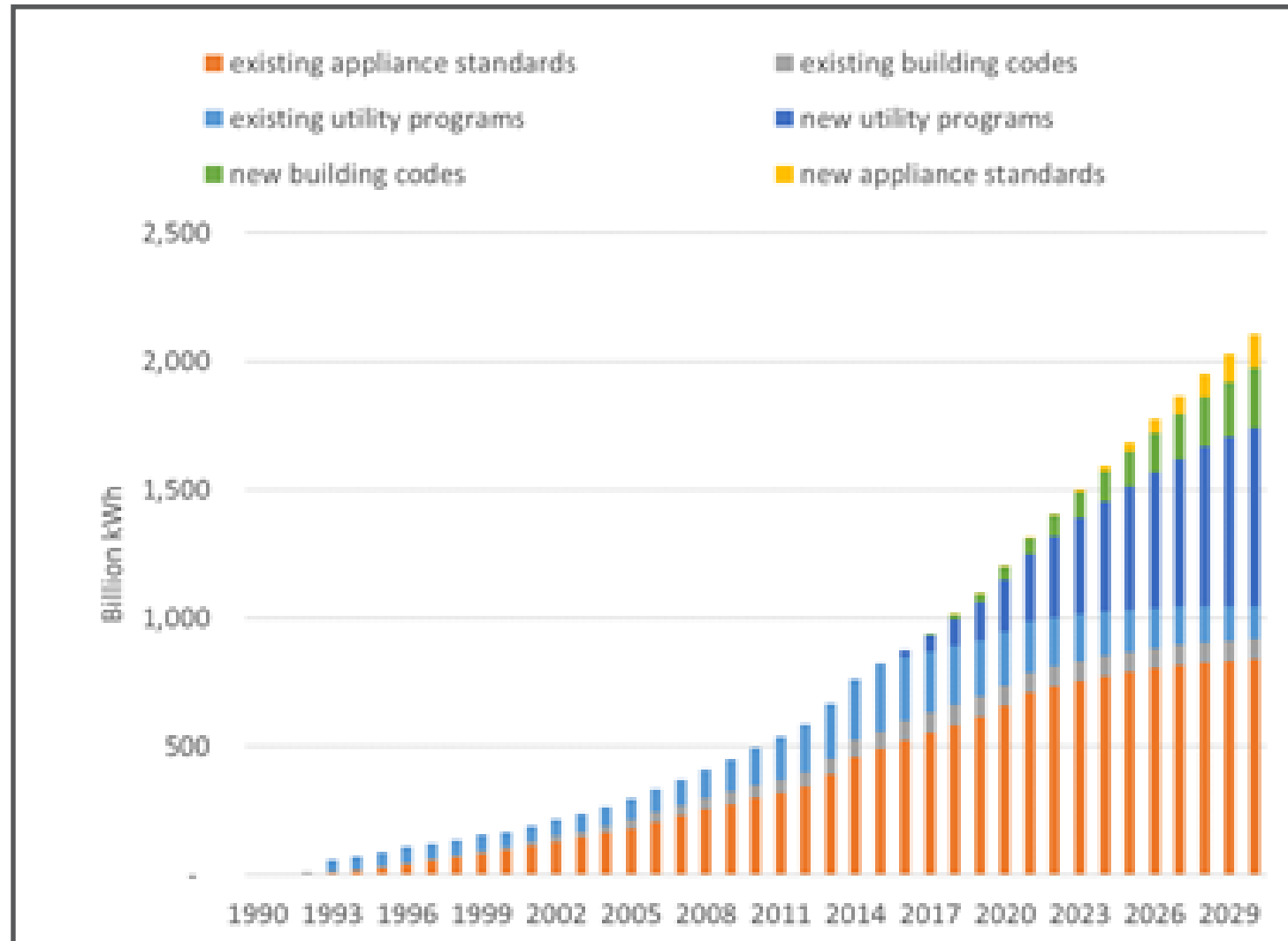


Efficiency technology is diverse

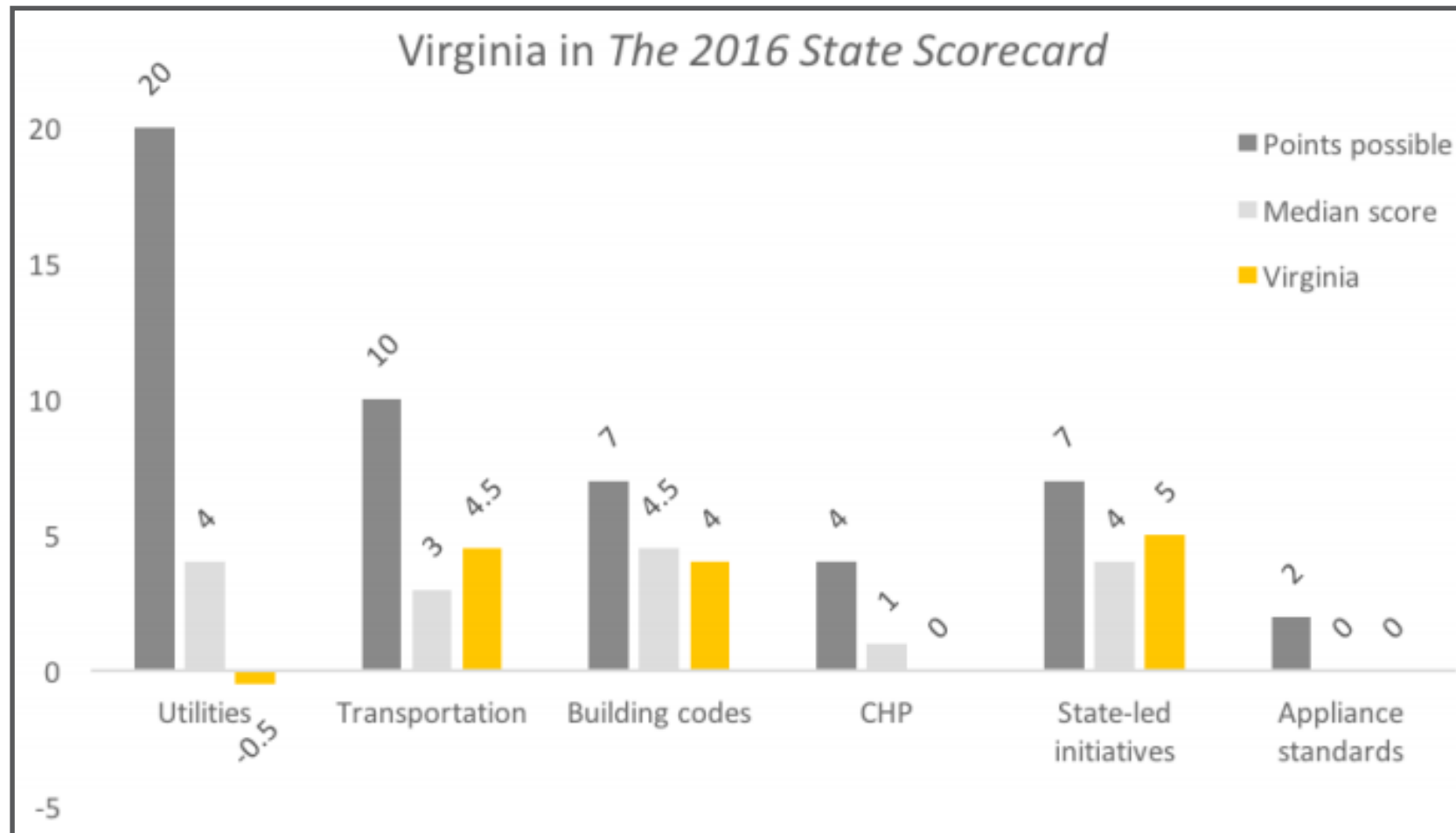
U.S. Building Efficiency Revenue (million \$)

Subsegment	2011	2012	2013	2014	2015	2016 estimate
Building Design	2,819	3,128	3,351	3,850	4,336	4,711
Building Envelope	8,720	9,645	11,919	12,766	14,127	14,920
HVAC	10,522	11,532	12,306	13,184	14,140	15,233
District Energy and CCHP	814	925	1,189	850	925	1,055
Water Heating	1,133	1,197	1,357	1,490	1,639	1,711
Lighting	9,139	9,992	10,701	22,024	24,666	26,351
Appliances and Electronic Equipment	105	148	208	227	472	887
Demand Response & Enabling IT	2,068	2,748	2,748	3,356	3,431	3,959
Total	35,319	39,314	43,781	57,746	63,736	68,826

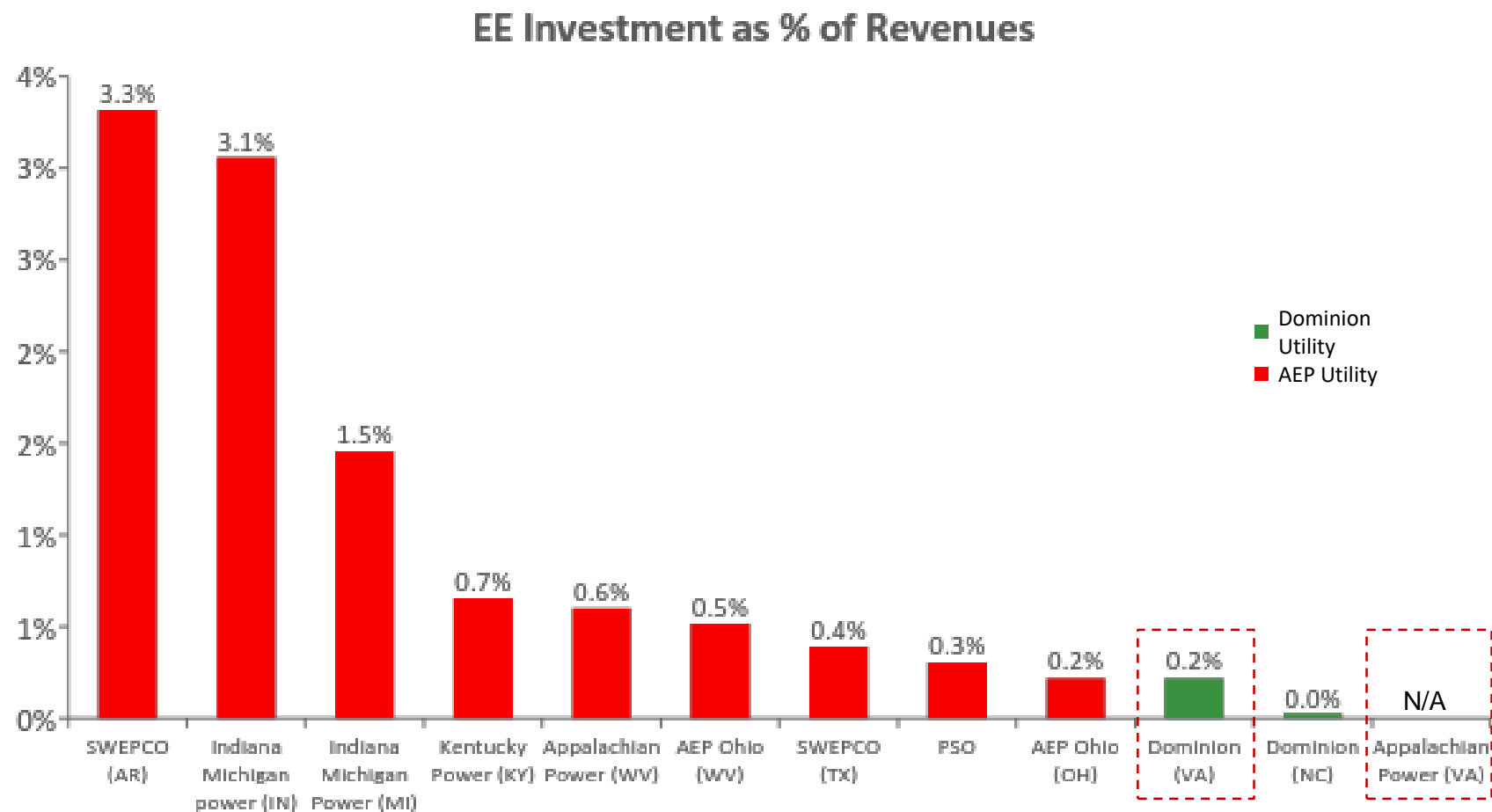
Efficiency delivery mechanisms are also diverse



Virginia is lagging behind in certain areas

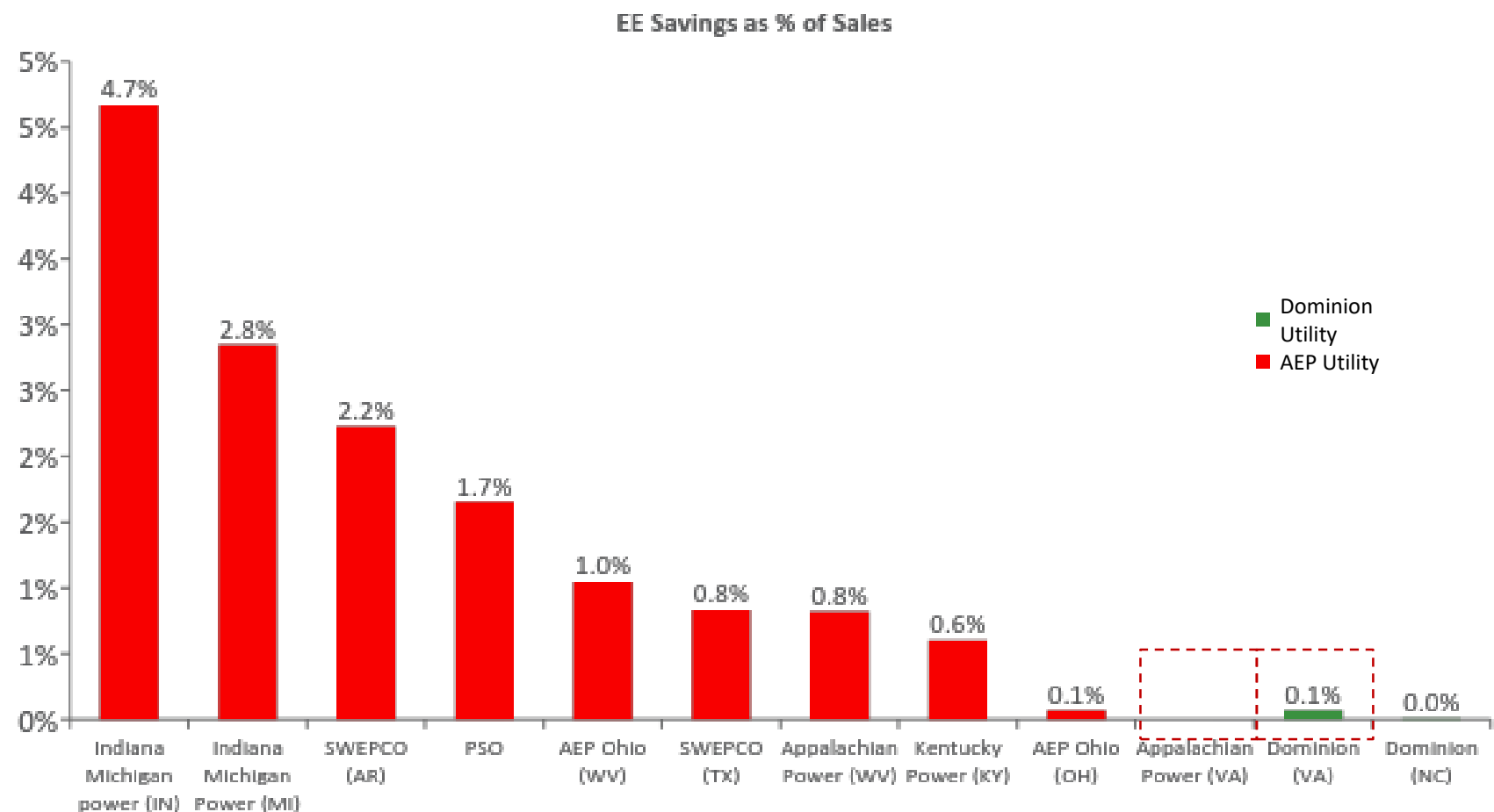


Virginia's utilities spend more on efficiency in other states



Source: EIA Form 861 (2013)
Note: Appalachian Power (VA) was not approved to run EE programs in 2013. An application to run a portfolio of EE programs is currently before the VA SCC (PUE-2014-00039)

Virginia's utilities save more in other states



Source: EIA Form 861 (2013)

Note: Appalachian Power (VA) was not approved to run EE programs in 2013. An application to run a portfolio of EE programs is currently before the VA SCC (PUE-2014-00039)



There are straightforward fixes to increasing utility programs

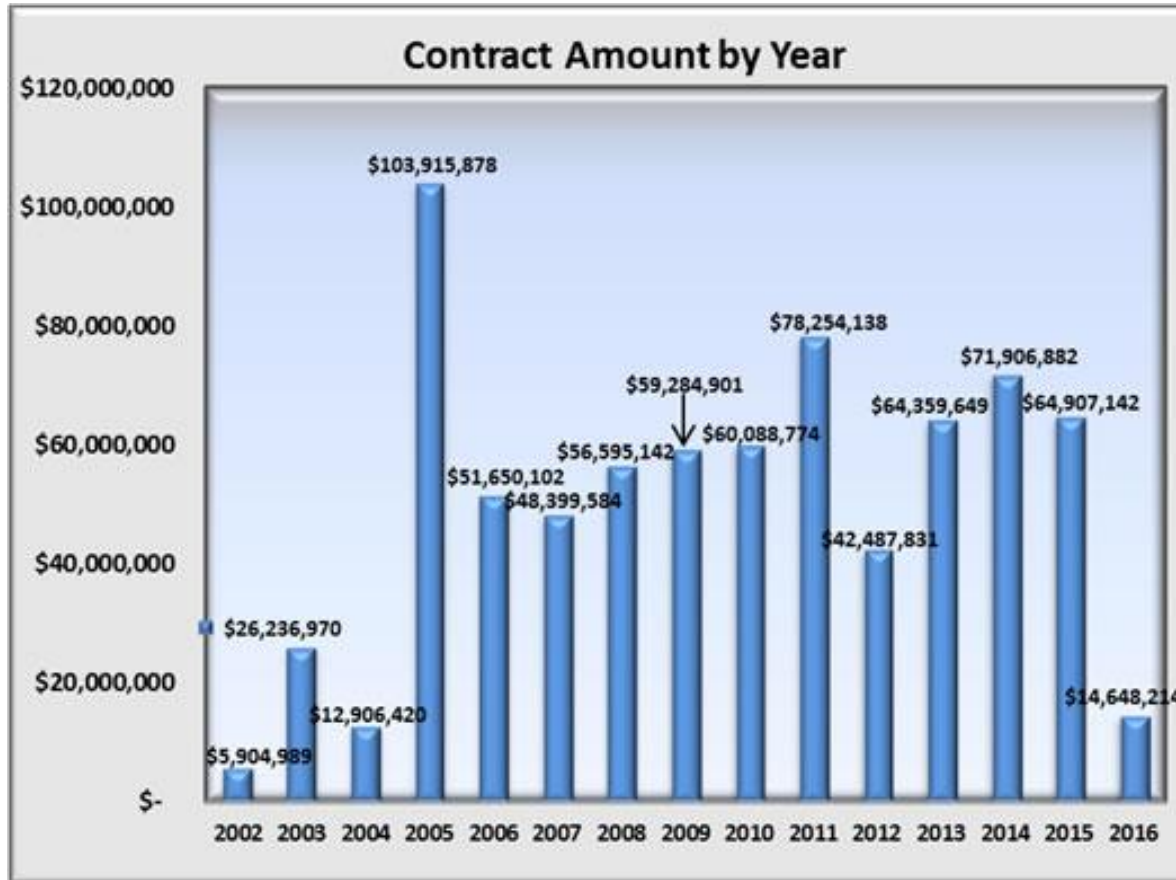
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Finding 1: Combined EERS and decoupling policies are associated with 10 percent lower residential electricity consumption, over two times that of combined EERS and LRAM policies.

Finding 2: In isolation, having either decoupling or LRAM policies in place is associated with 4 and 3 percent lower residential energy consumption, respectively.

”

Virginia can do more with energy performance contracting



Public Higher Education Institution	Estimated Deferred Maintenance Backlog (\$M)	Replacement Value (\$M)
VT	\$274.5	\$1,764.0
JMU	225.0	683.5
UVA	195.8	2,093.8
VSU	168.8	255.3
VCU	153.8	727.0
GMU	90.5	363.3
ODU	83.3	260.0
CWM	54.1	197.4
LU	43.3	189.8
UMW	42.5	134.4
NSU	38.1	307.1
VMI	31.5	112.0
RU	29.8	235.2
UVA-W	5.4	174.2
CNU	0.5	225.9
Statewide	\$1,436.9	\$7,722.9

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