

# Initial 2015 Energy-Efficiency Forecast 2018-2024 – Measure Data Analysis

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*Energy-Efficiency Working Group*

ISO Staff



# Questions please contact

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# Measure Data Analysis – Disclaimer

This presentation and data representation is solely intended for informational purposes only to assist the ISO in its analysis of EE program data and is not intended to be used as a cost-effectiveness measure for EE programs. Cost effectiveness of EE program is squarely in the hands of the states and the ISO has no position regarding cost effectiveness.



# Measure Data Analysis – Disclaimer (cont)

- Measure data is sourced from PA submissions over the past three EE Forecast data collection cycles
- Data set is not complete, particularly in area of dollars spent per measure type
- All assumptions and conclusions from these representations are preliminary and for informational purpose only



# Measure Data Background

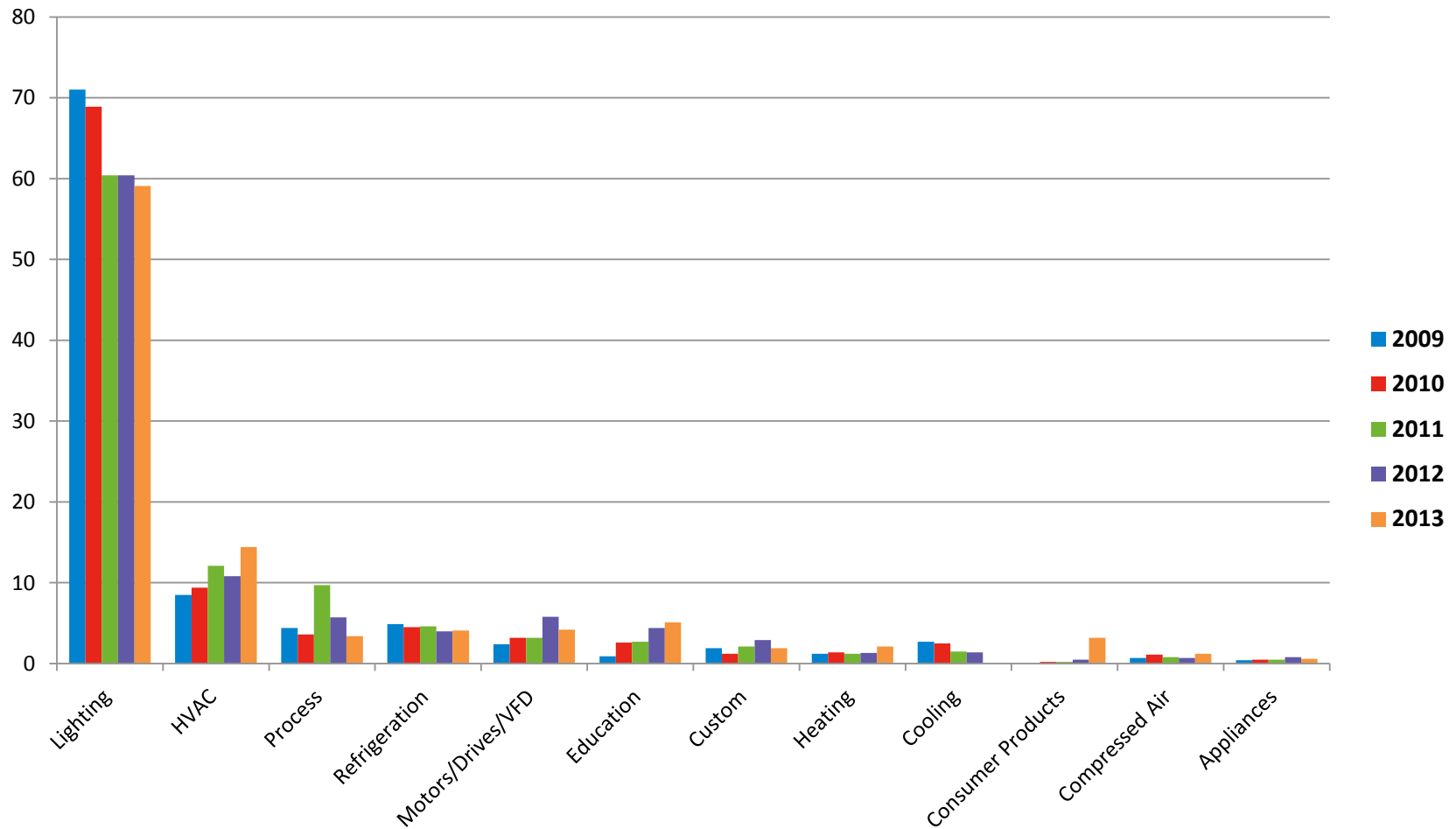
- 2012 Forecast - PA data collection process included a request to report the measures in each program for year 2008-2010, where available
- 2013 Forecast - PA data collection process included a request to report the relative percentage of energy savings for the 10 top measures in each program for program year 2011, where available
- 2014 Forecast - PA data collection process included a request to report the relative percentages of energy savings, demand savings and dollars spent for the 10 top measures in each program for year 2008-2012, where available
- 2015 Forecast – Data collection request same as 2014 Forecast for program year 2013
- This presentation is based on the 2015 Forecast data collection
- These data can be located under the 2015 Forecast/Materials page at: <http://www.iso-ne.com/eefwg>

# Data Collection Completeness

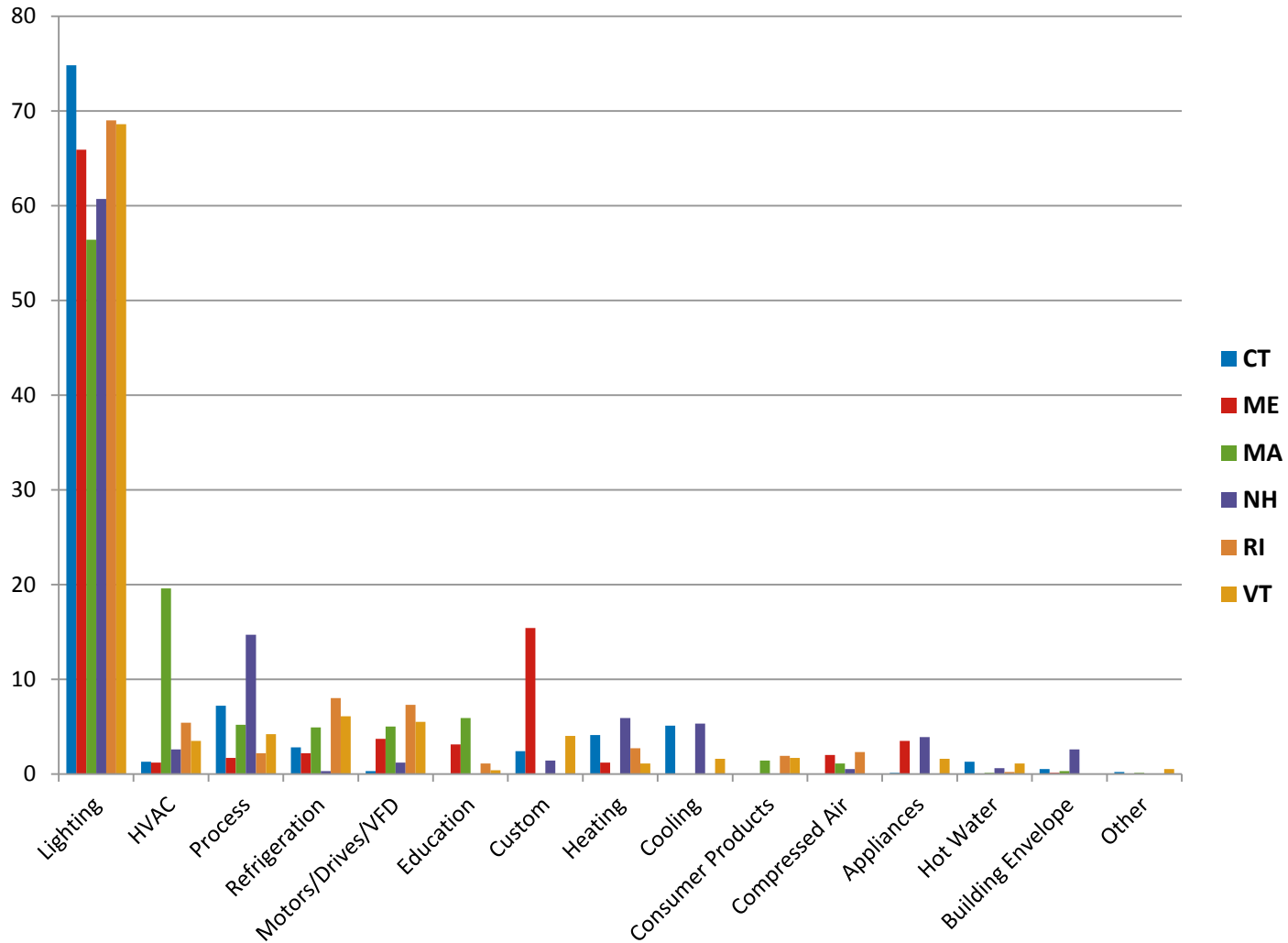
## Measures as Percent of Total

		CT	ME	MA	NH	RI	VT	NE
Energy	2009	100	115	100	100	100	95	100
	2010	100	113	100	98	100	96	100
	2011	100	100	100	100	100	96	100
	2012	100	100	100	97	100	100	100
	2013	100	100	100	100	100	100	100
Demand	2009	100	135	100	91	98	5	92
	2010	100	135	100	91	100	6	92
	2011	100	100	100	91	100	9	93
	2012	100	100	90	86	100	100	94
	2013	100	100	100	91	100	100	100
Dollars	2009	100	17	49	84	0	4	53
	2010	100	23	54	81	0	5	61
	2011	100	100	55	86	0	6	61
	2012	99	100	56	84	0	100	65
	2013	100	100	50	91	0	96	60

# NEW ENGLAND Total Measures as Percent of Total Energy (%)

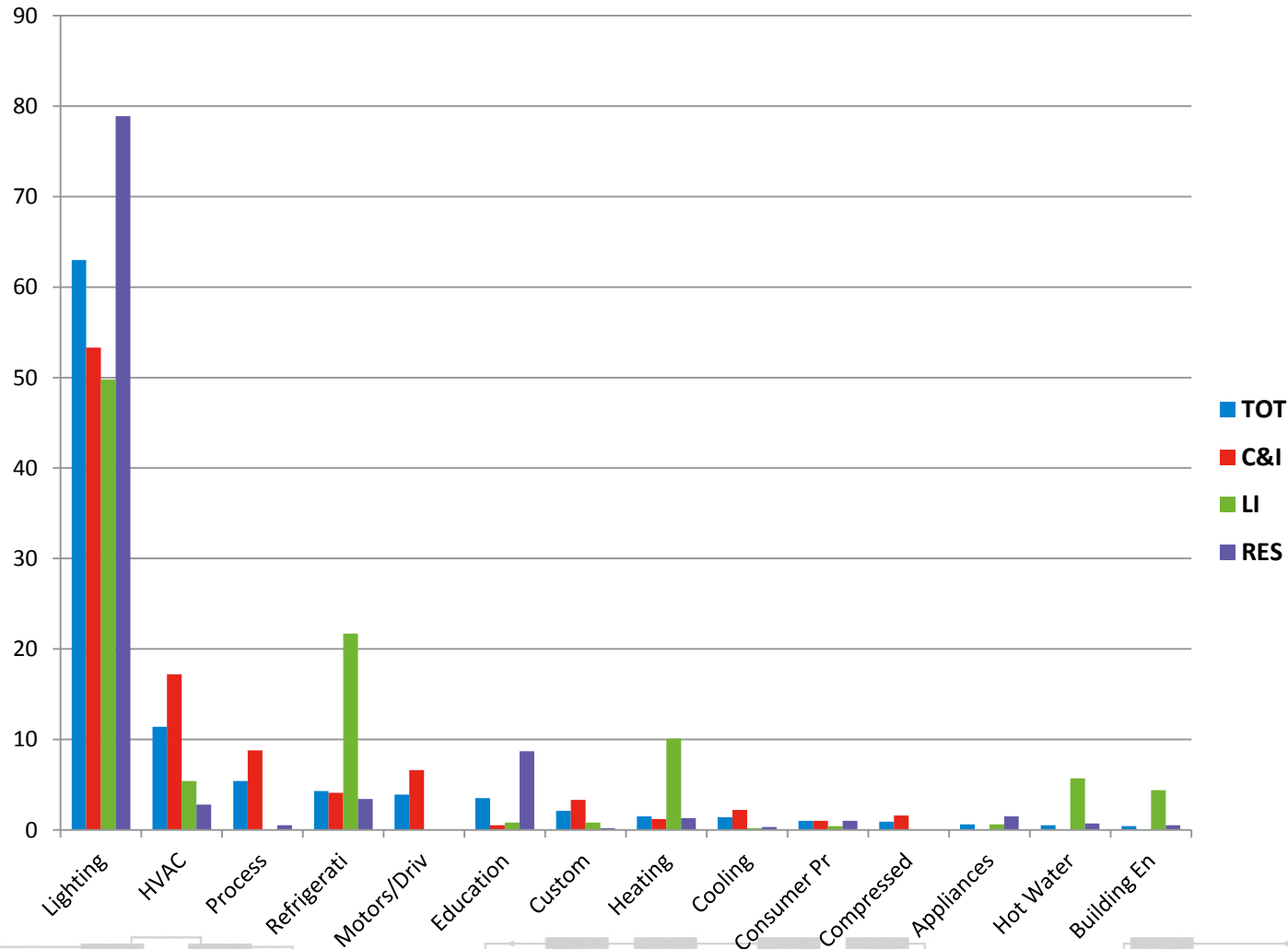


# New England EE Measures as Percent of Total Energy (%) by State – All Years

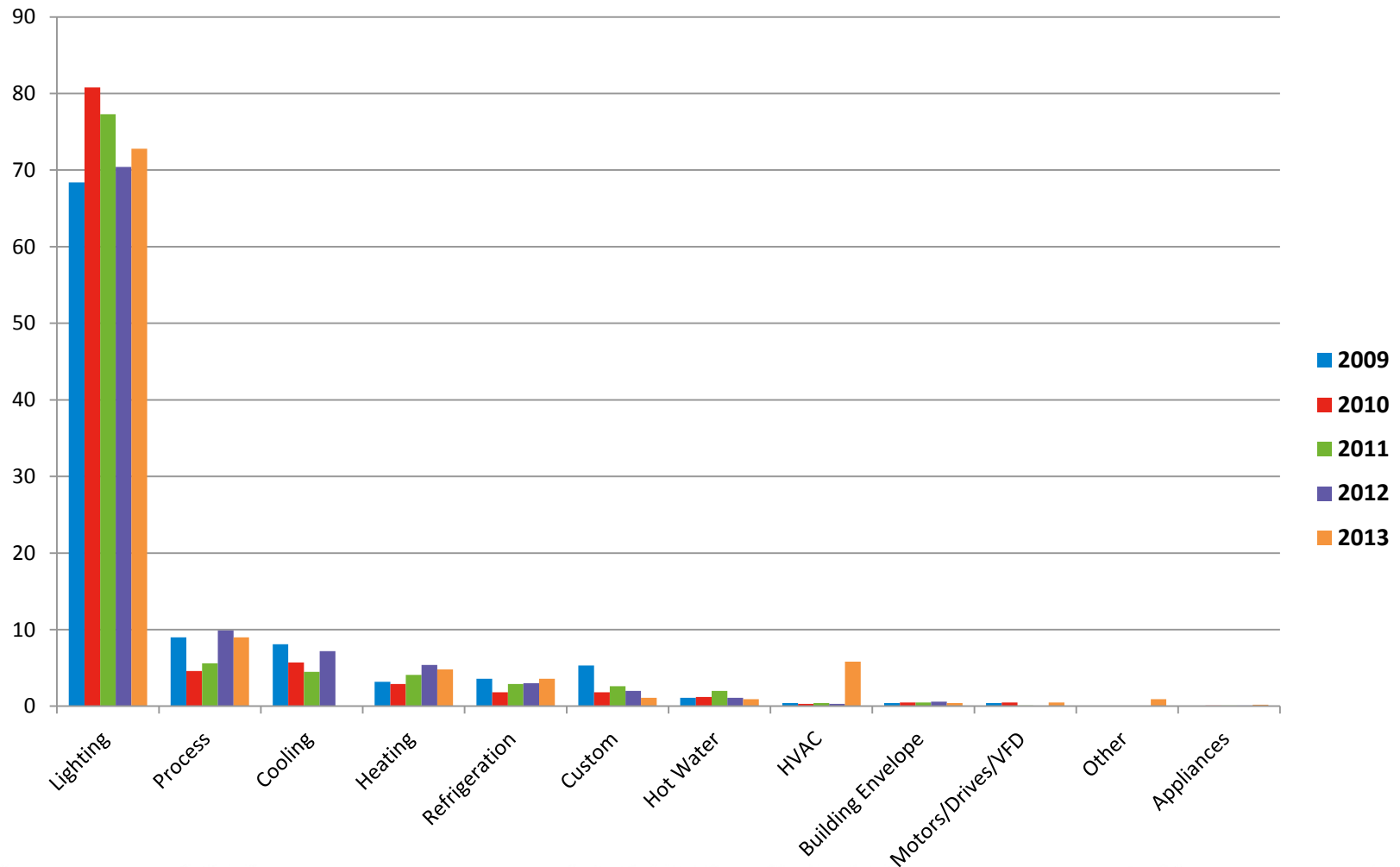




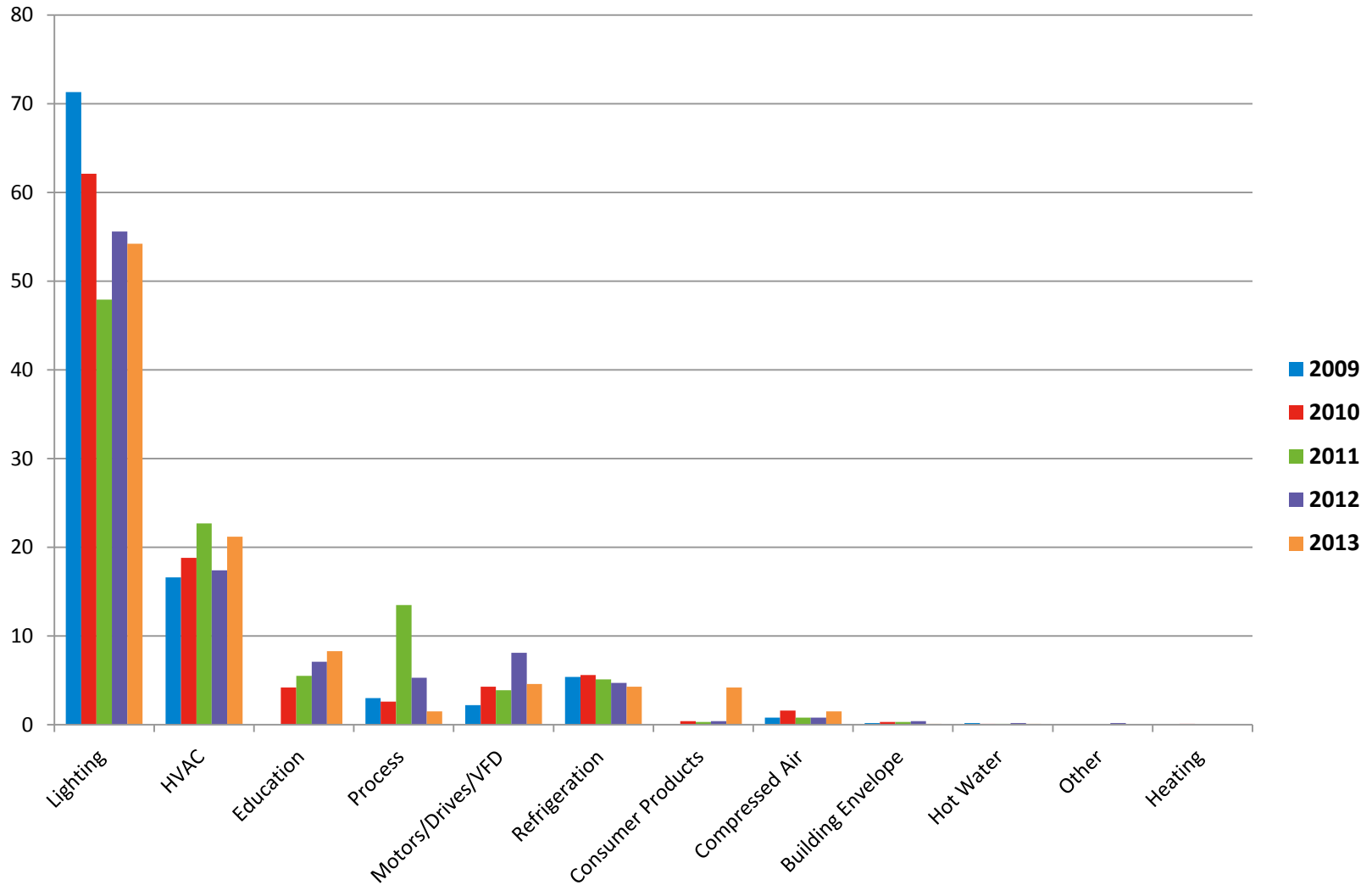
# New England EE Measures as Percent of Total Energy (%) by Class – All Years



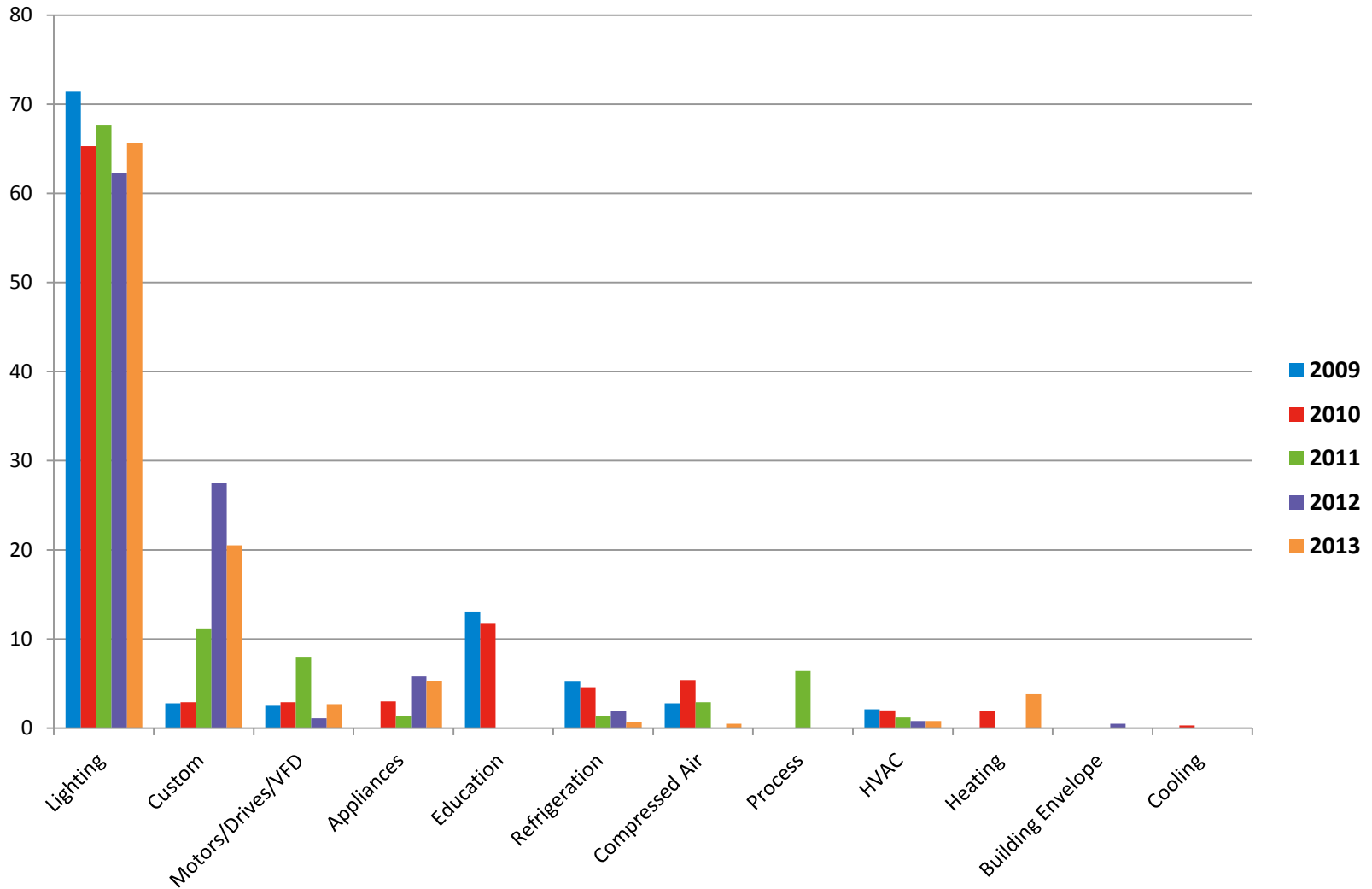
# Connecticut EE Measures as Percent of Total Energy (%) by Program Year



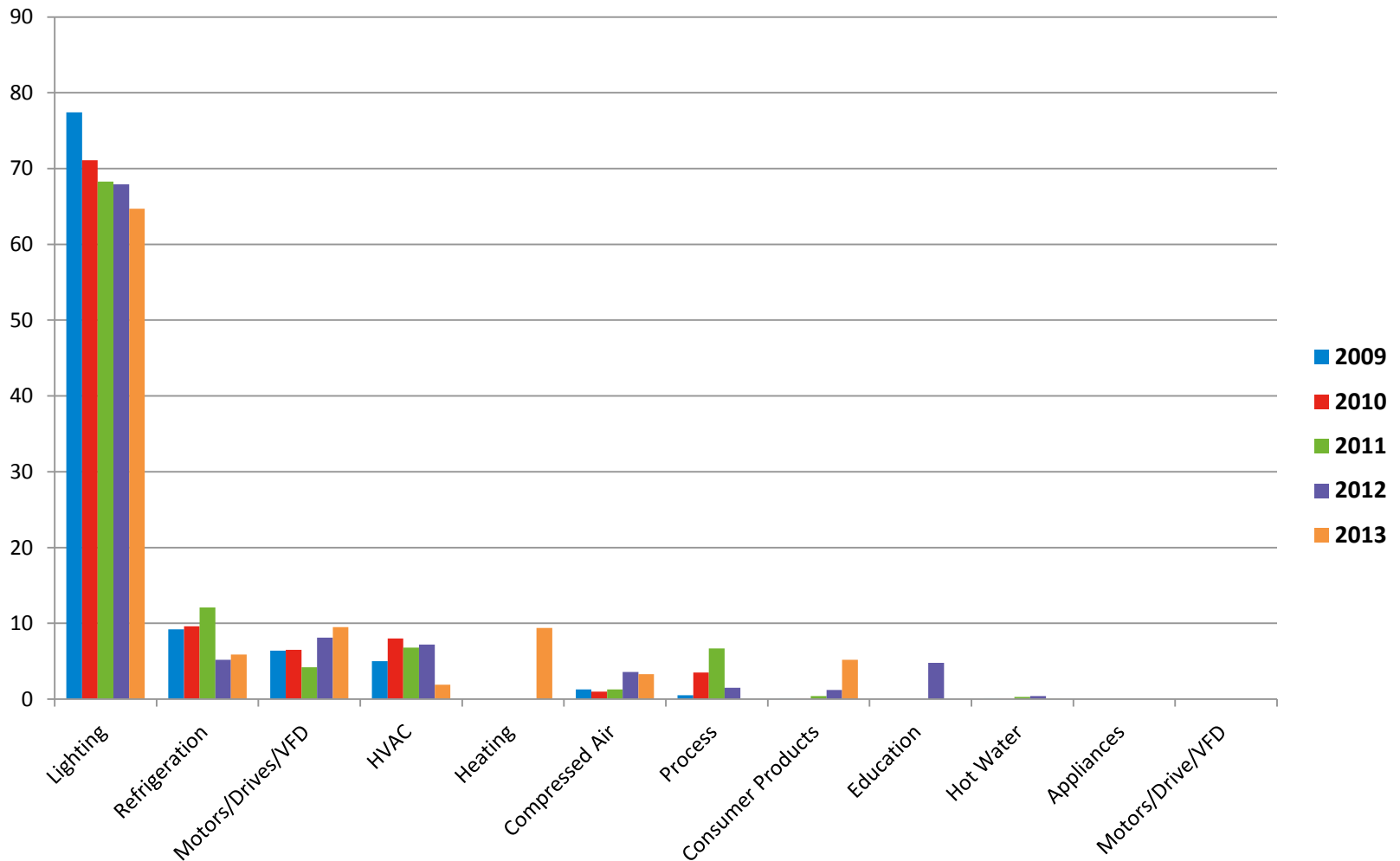
# Massachusetts EE Measures as Percent of Total Energy (%) by Program Year



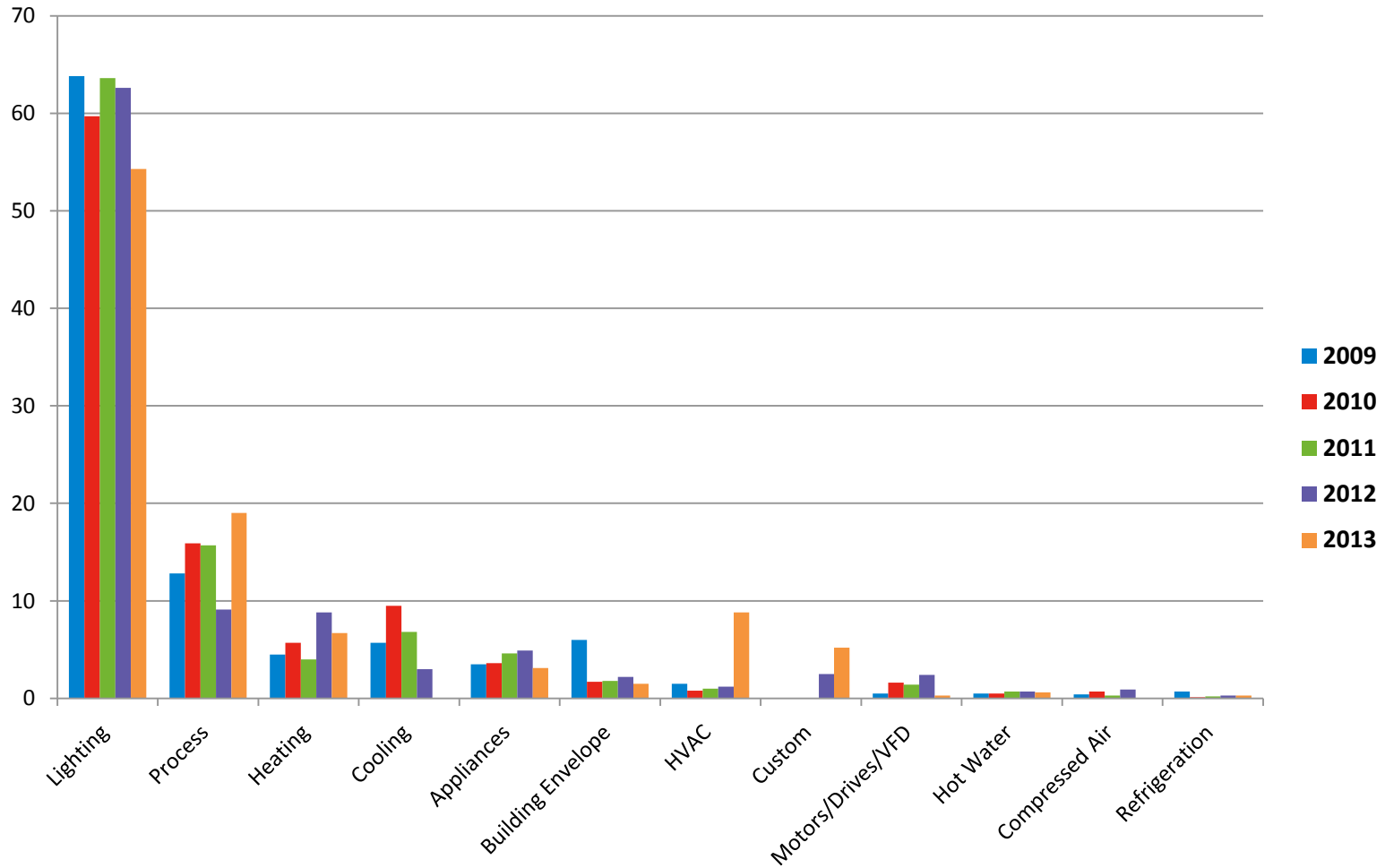
# Maine EE Measures as Percent of Total Energy (%) by Program Year



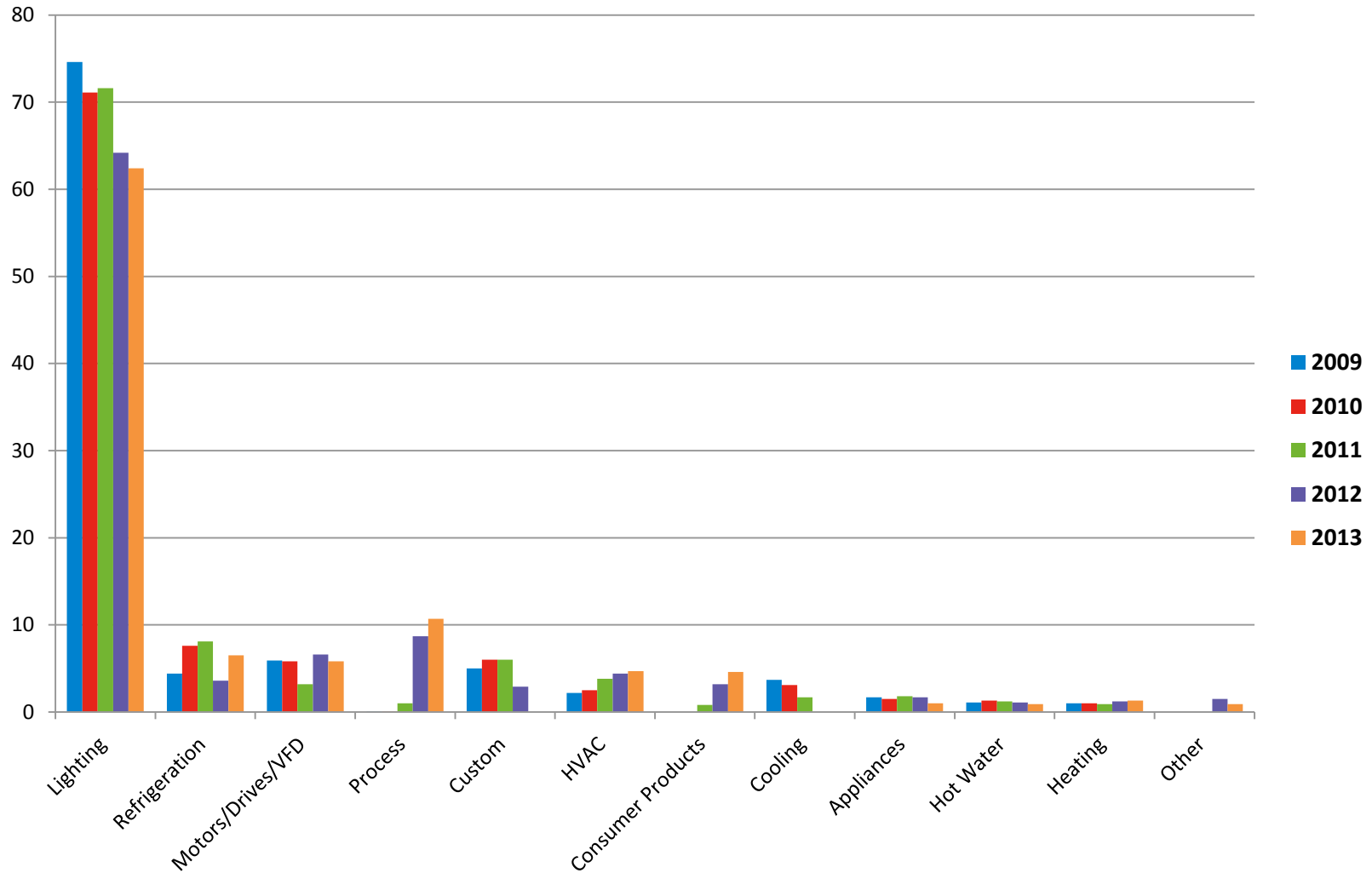
# Rhode Island EE Measures as Percent of Total Energy (%) by Program Year



# New Hampshire EE Measures as Percent of Total Energy (%) by Program Year



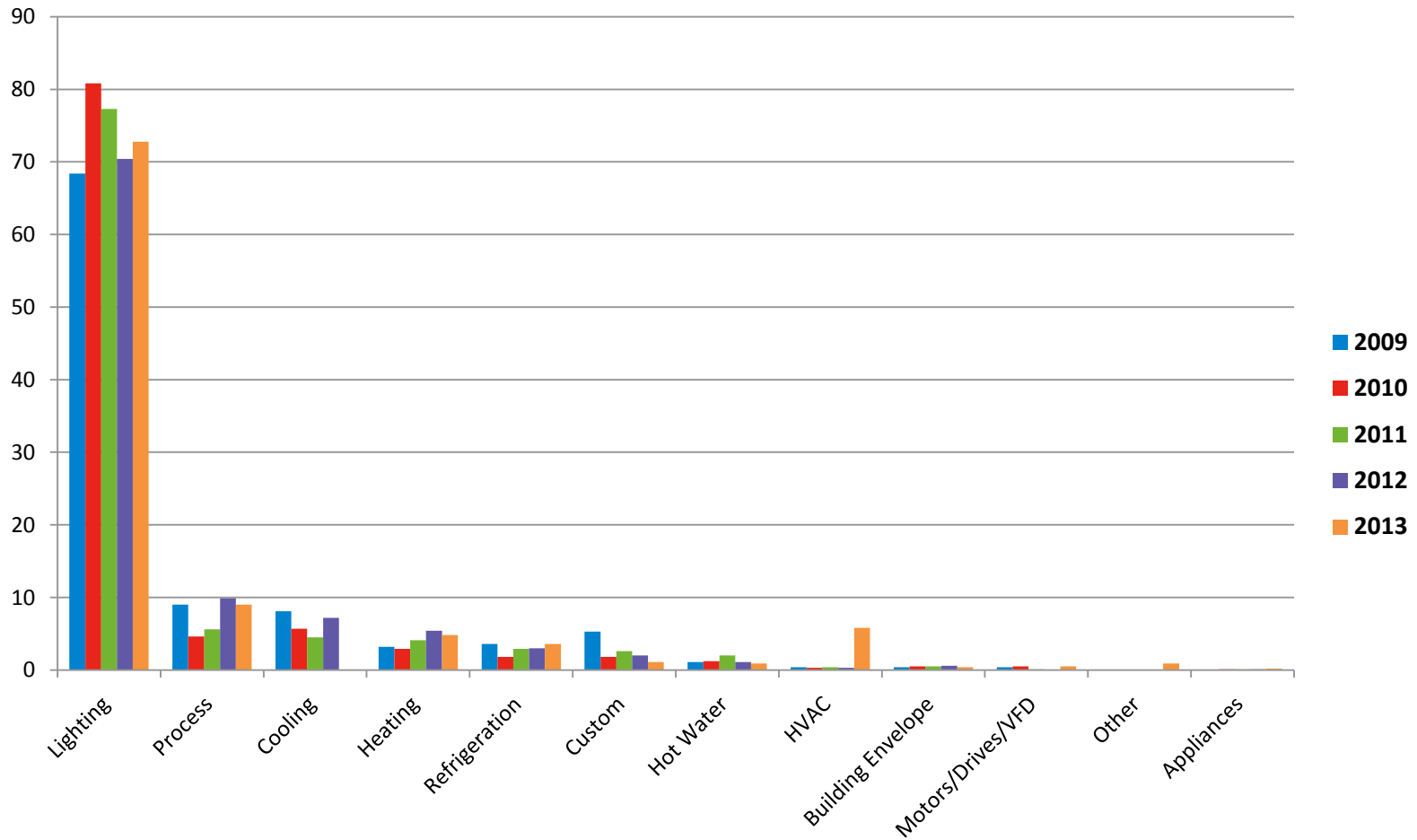
# Vermont EE Measures as Percent of Total Energy (%) by Program Year



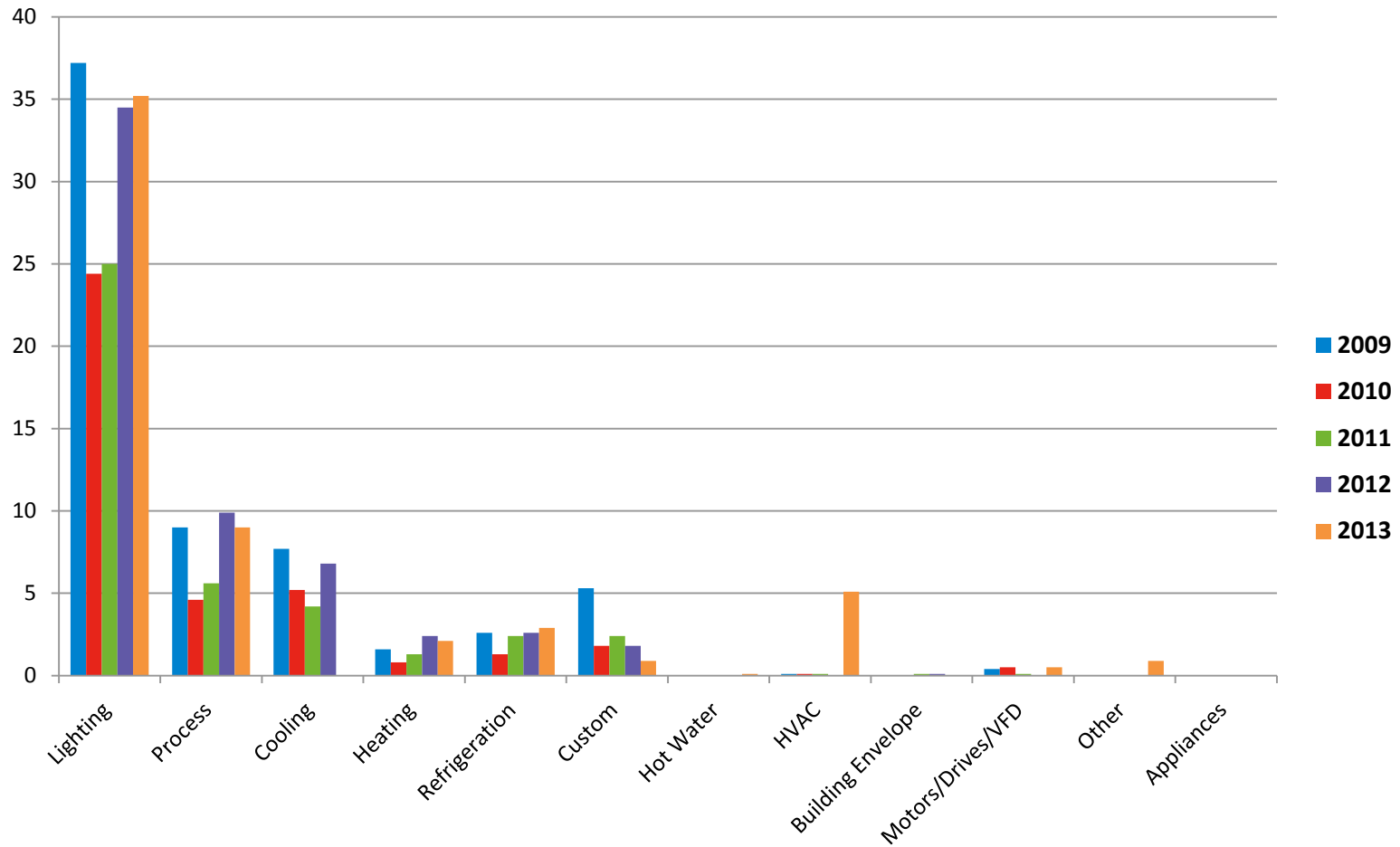
# STATE DETAIL - CONNECTICUT



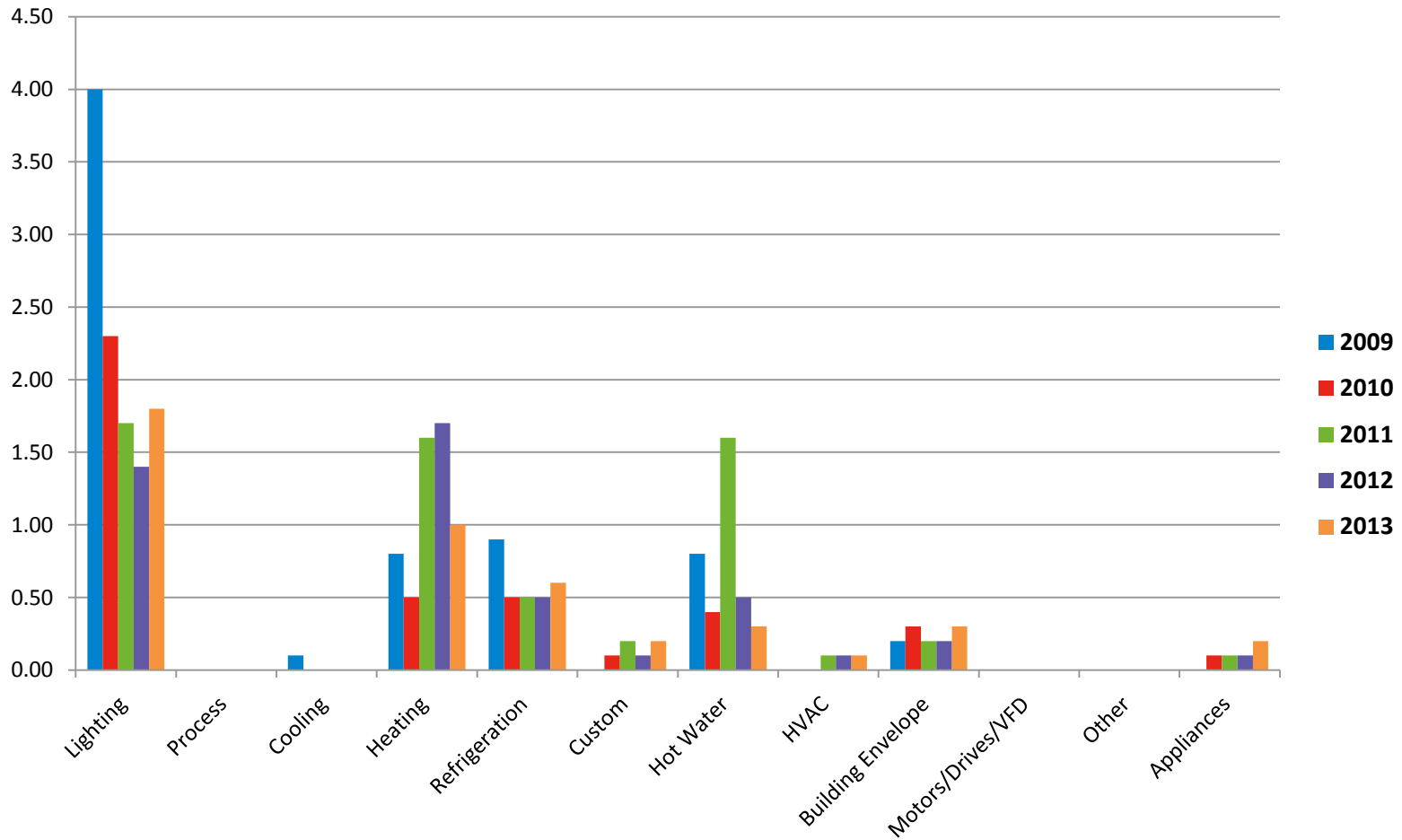
# Connecticut Total Measures as Percent of State Total Energy (%)



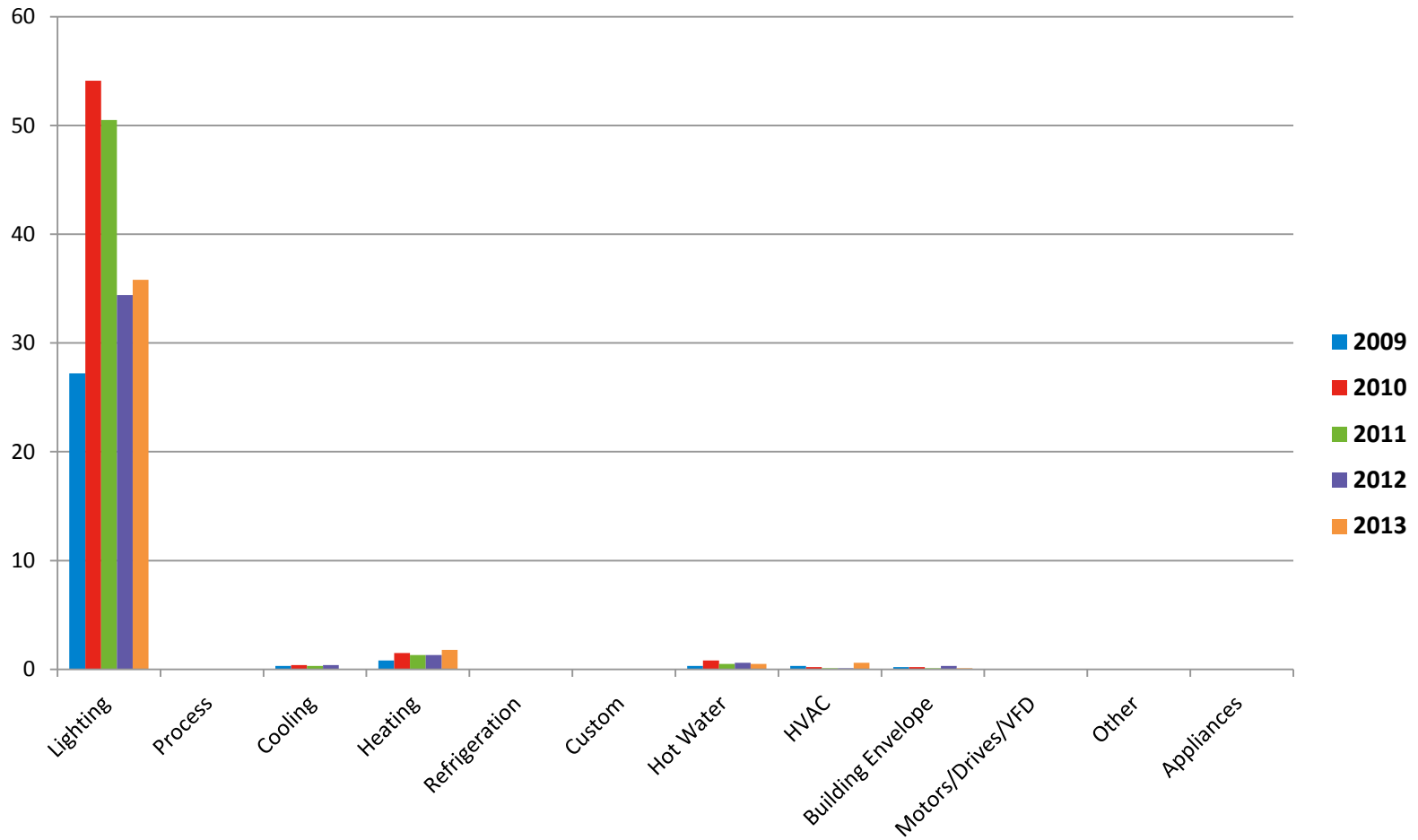
# Connecticut C&I Measures as Percent of State Total Energy (%)



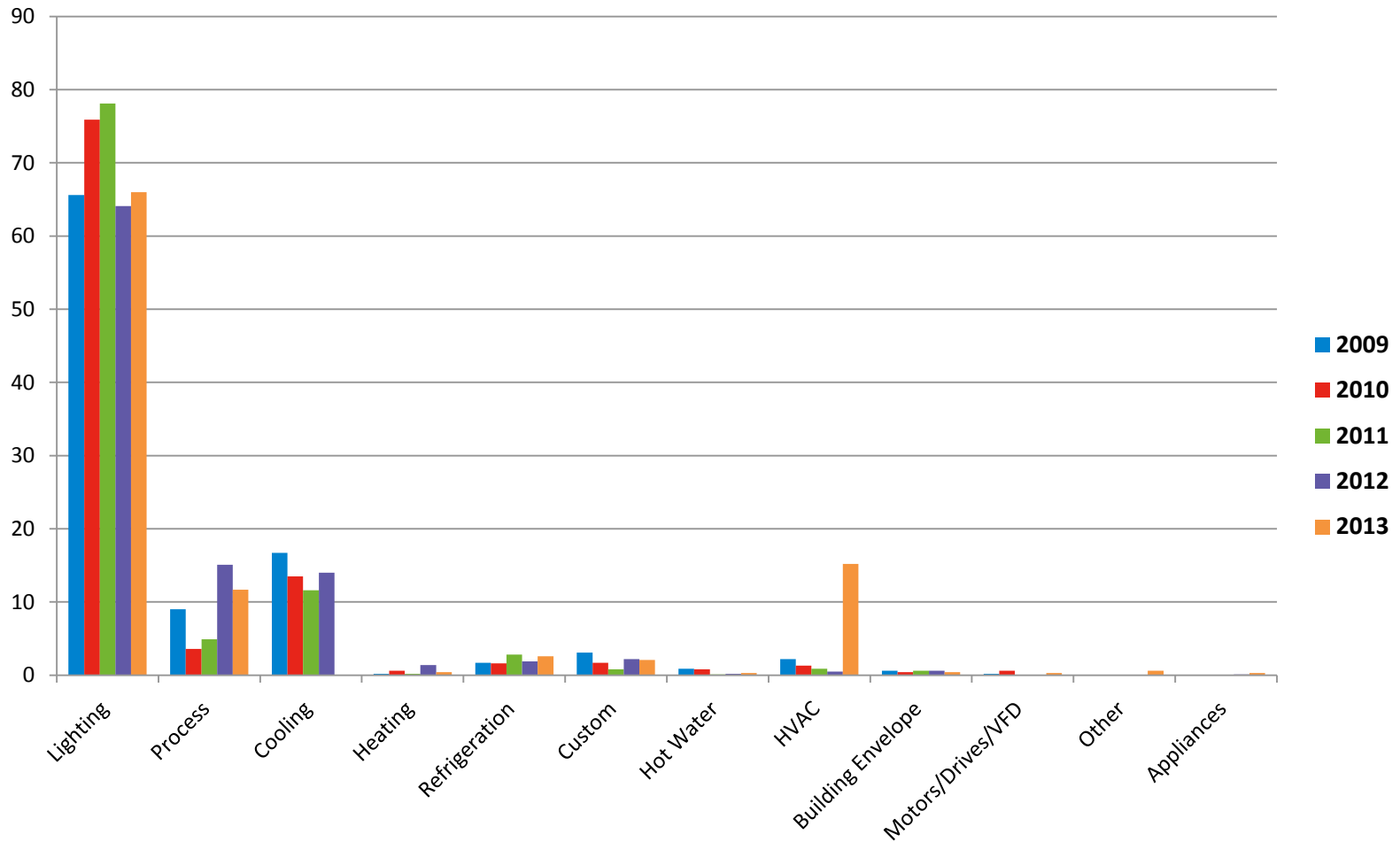
# Connecticut Low Income Measures as Percent of State Total Energy (%)



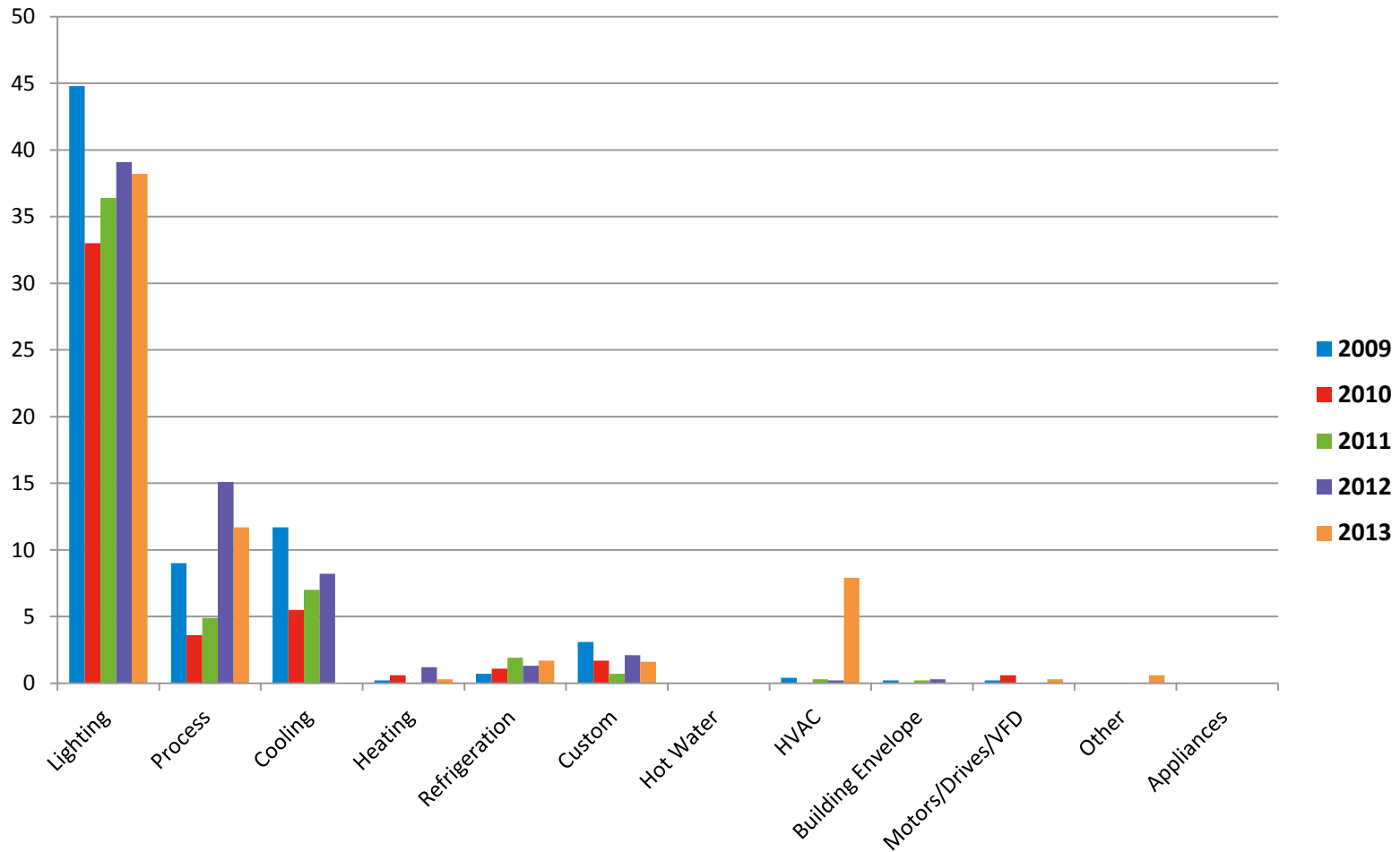
# Connecticut Residential Measures as Percent of State Total Energy (%)



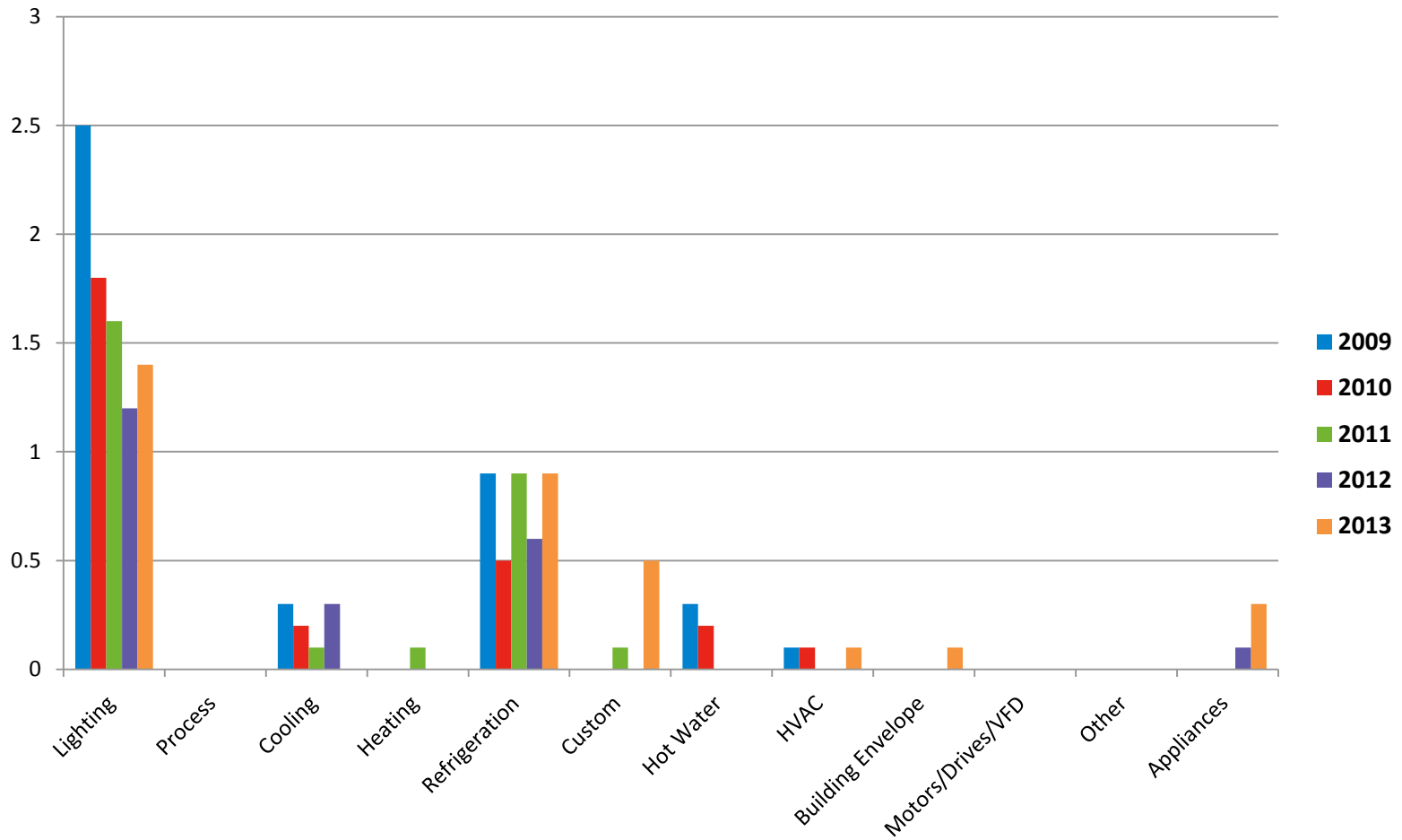
# Connecticut Total Measures as Percent of State Total Demand (%)



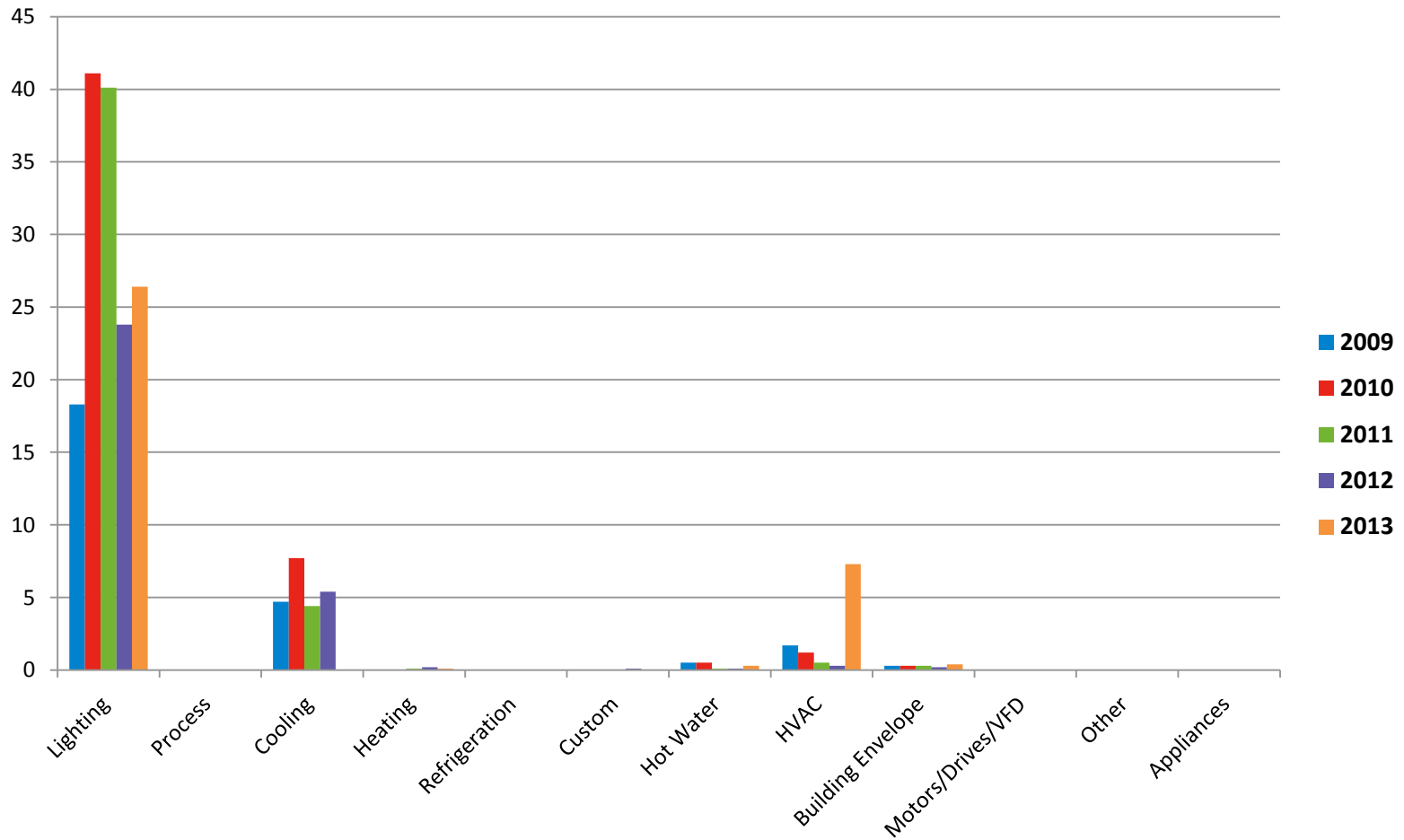
# Connecticut C&I Measures as Percent of State Total Demand (%)



# Connecticut Low Income Measures as Percent of State Total Demand (%)

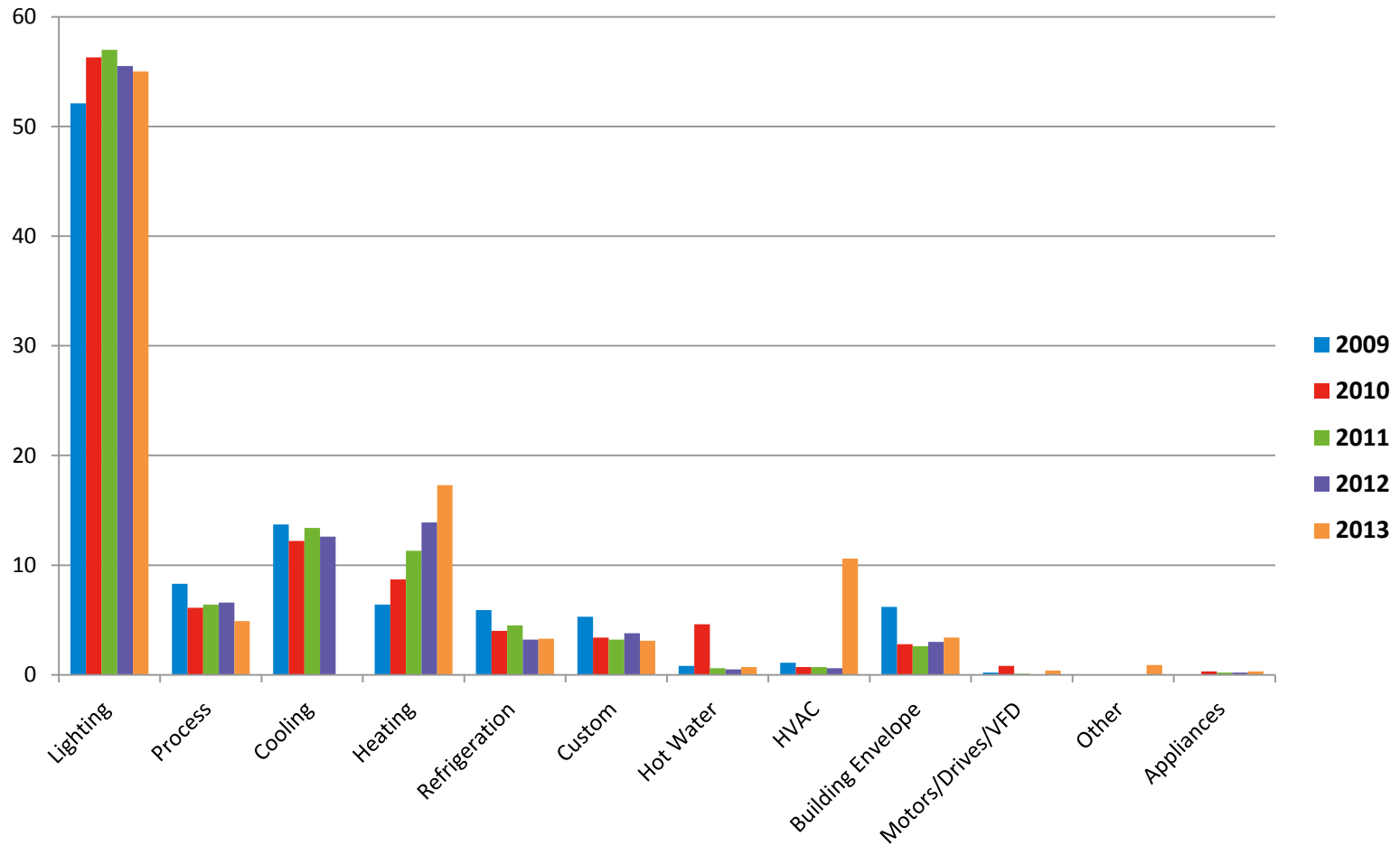


# Connecticut Residential Measures as Percent of State Total Demand (%)

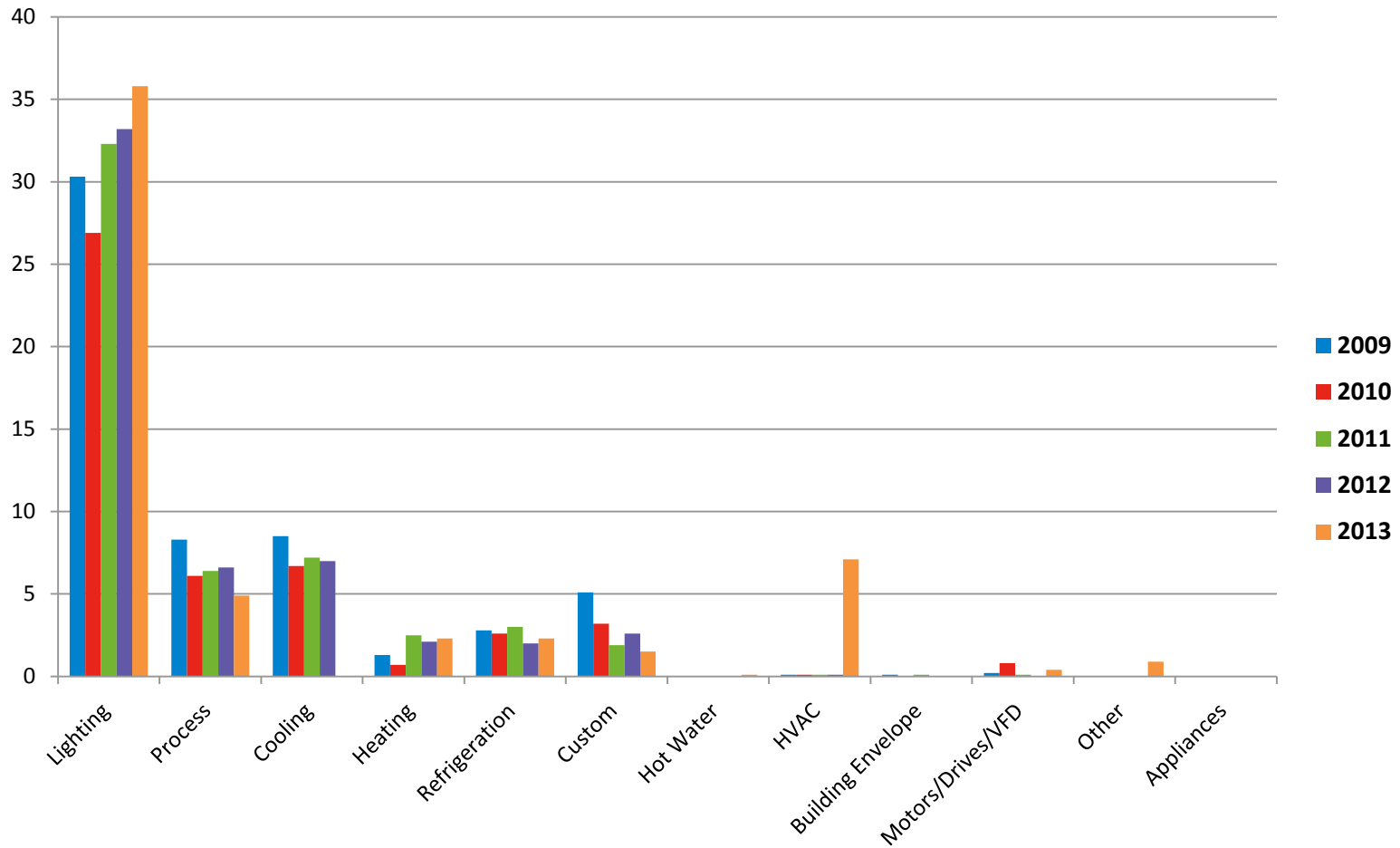




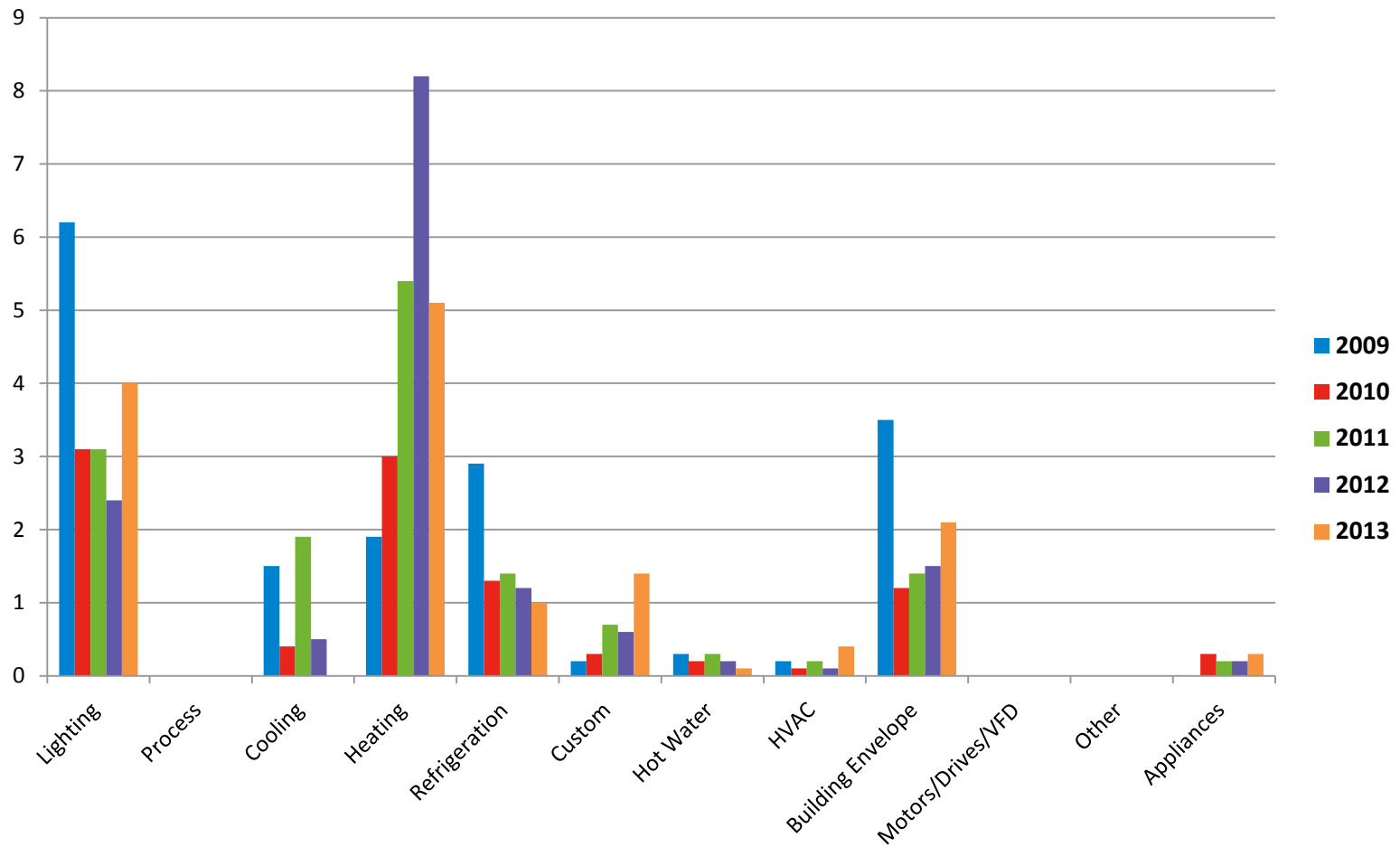
# Connecticut Total Measures as Percent of State Total Dollars (%)



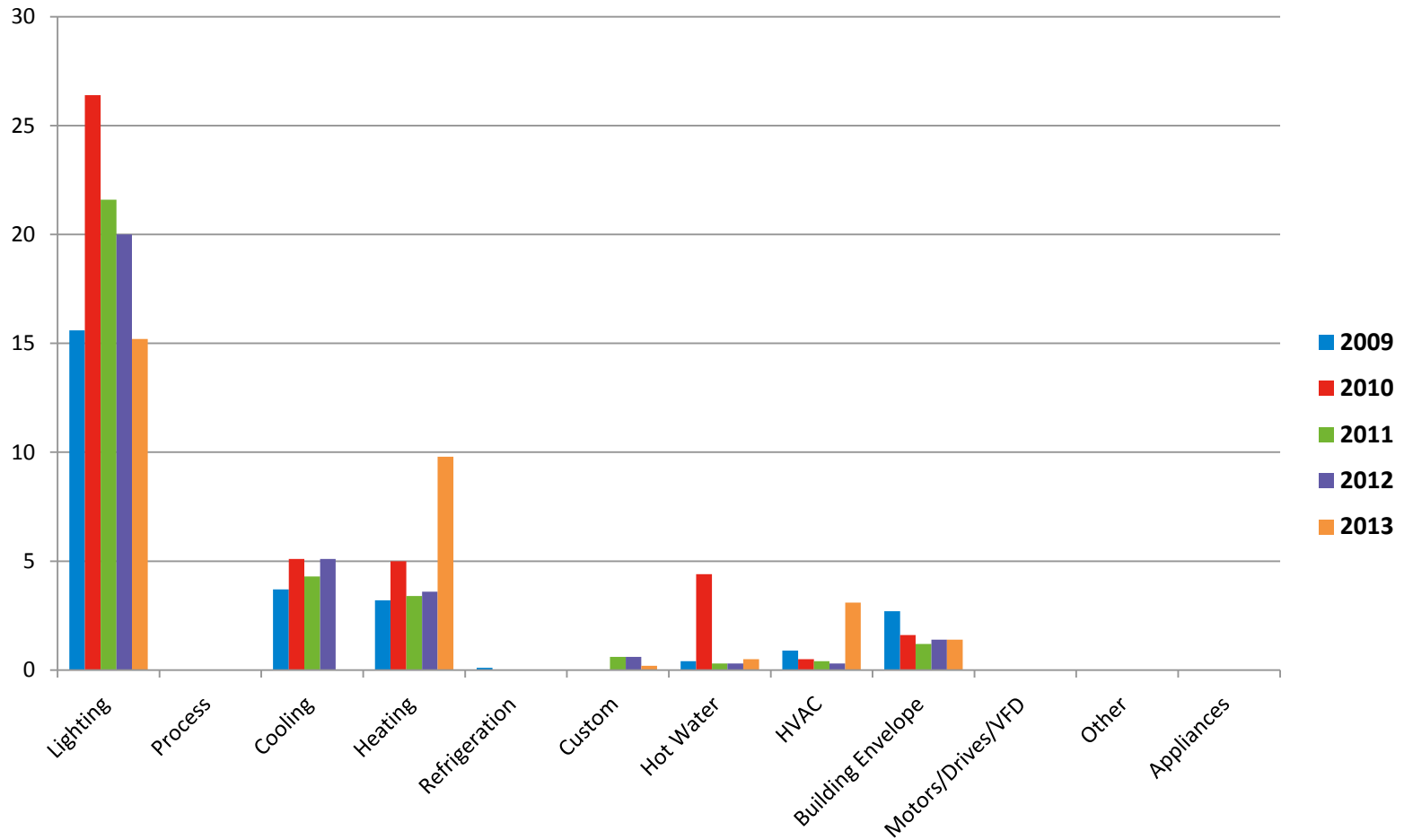
# Connecticut C&I Measures as Percent of Total State Dollars (%)



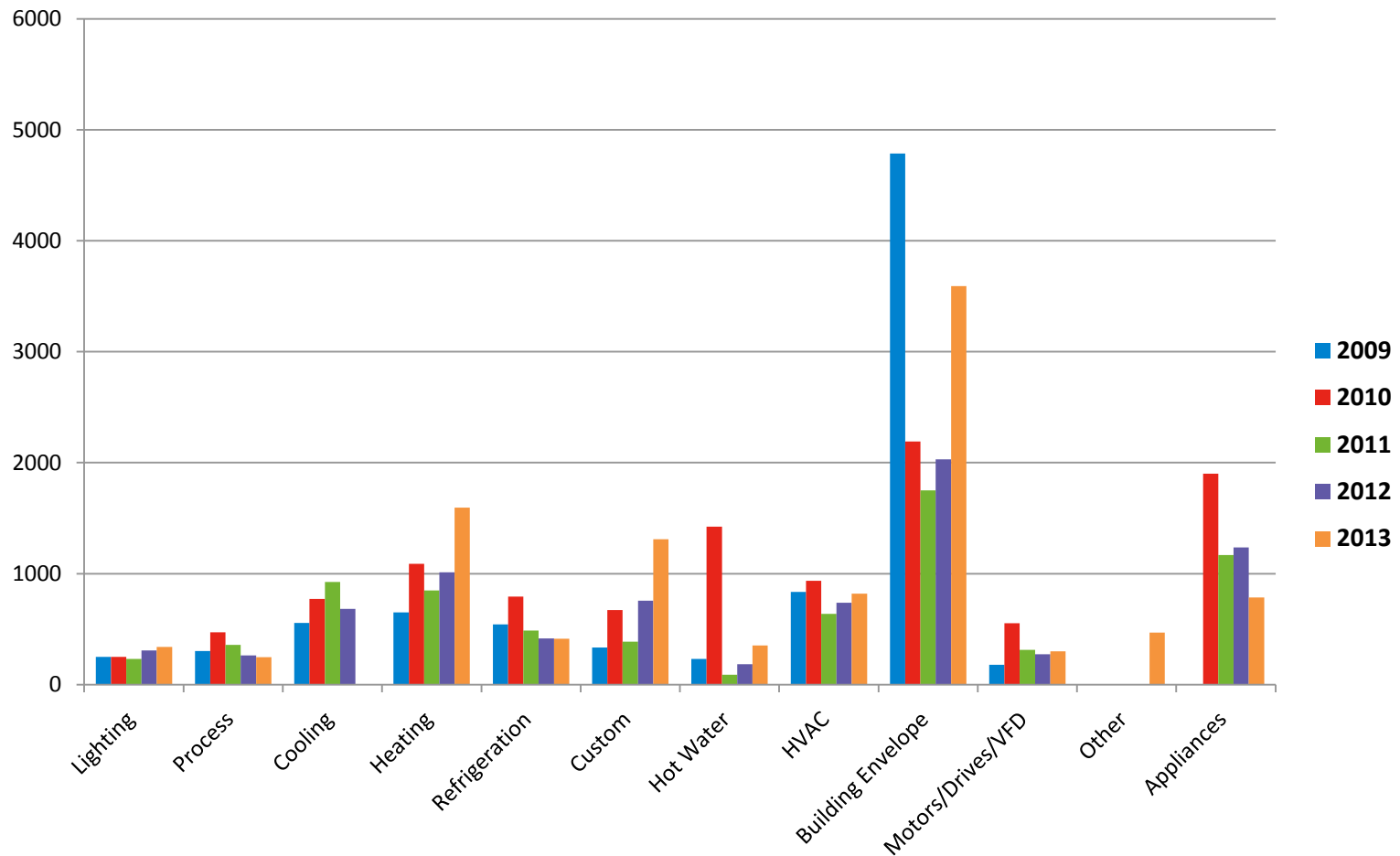
# Connecticut Low Income Measures as Percent of State Total Dollars (%)



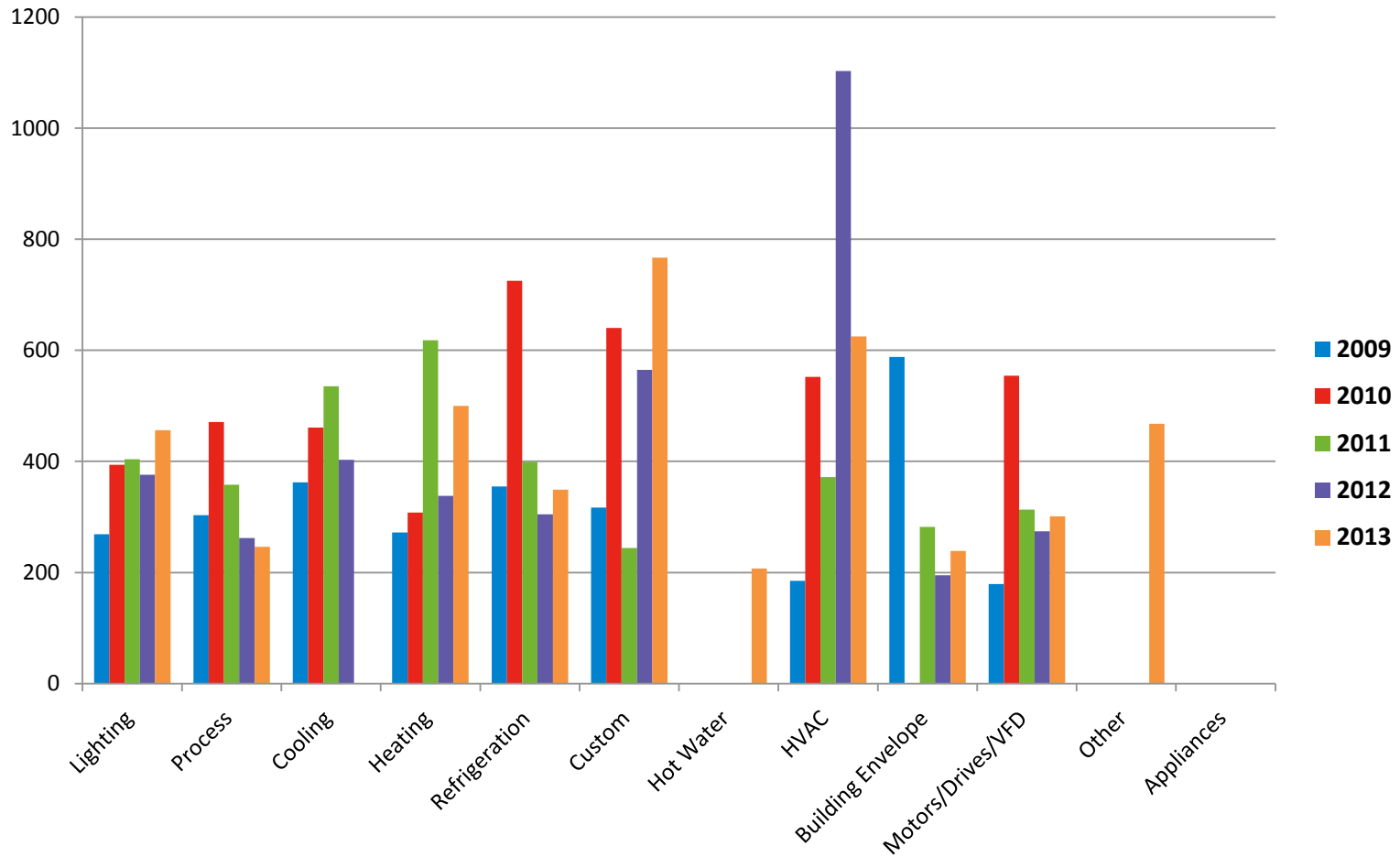
# Connecticut Residential Measures as Percent of State Total Dollars (%)



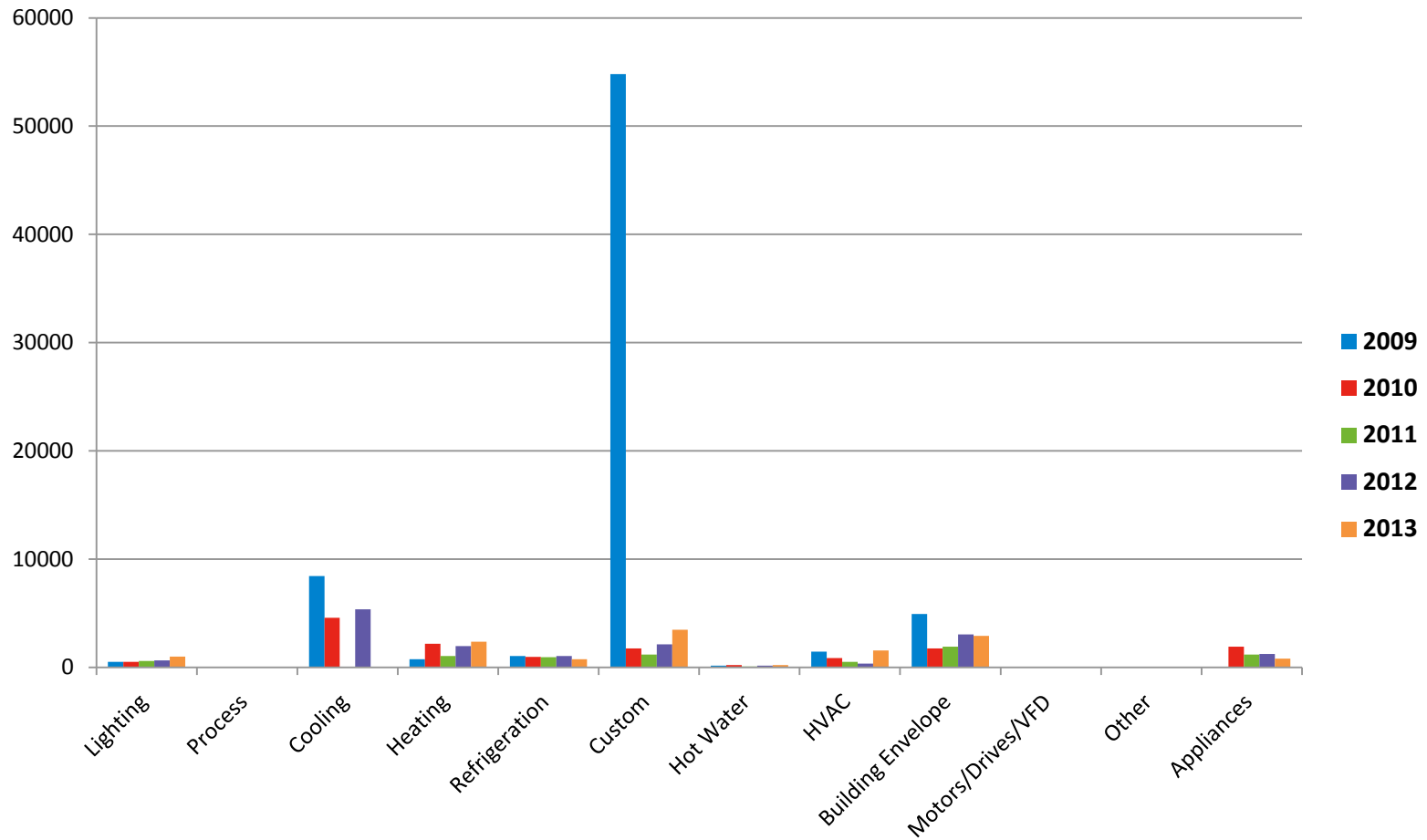
# Connecticut Total Production Cost by Measure (\$/MWh)



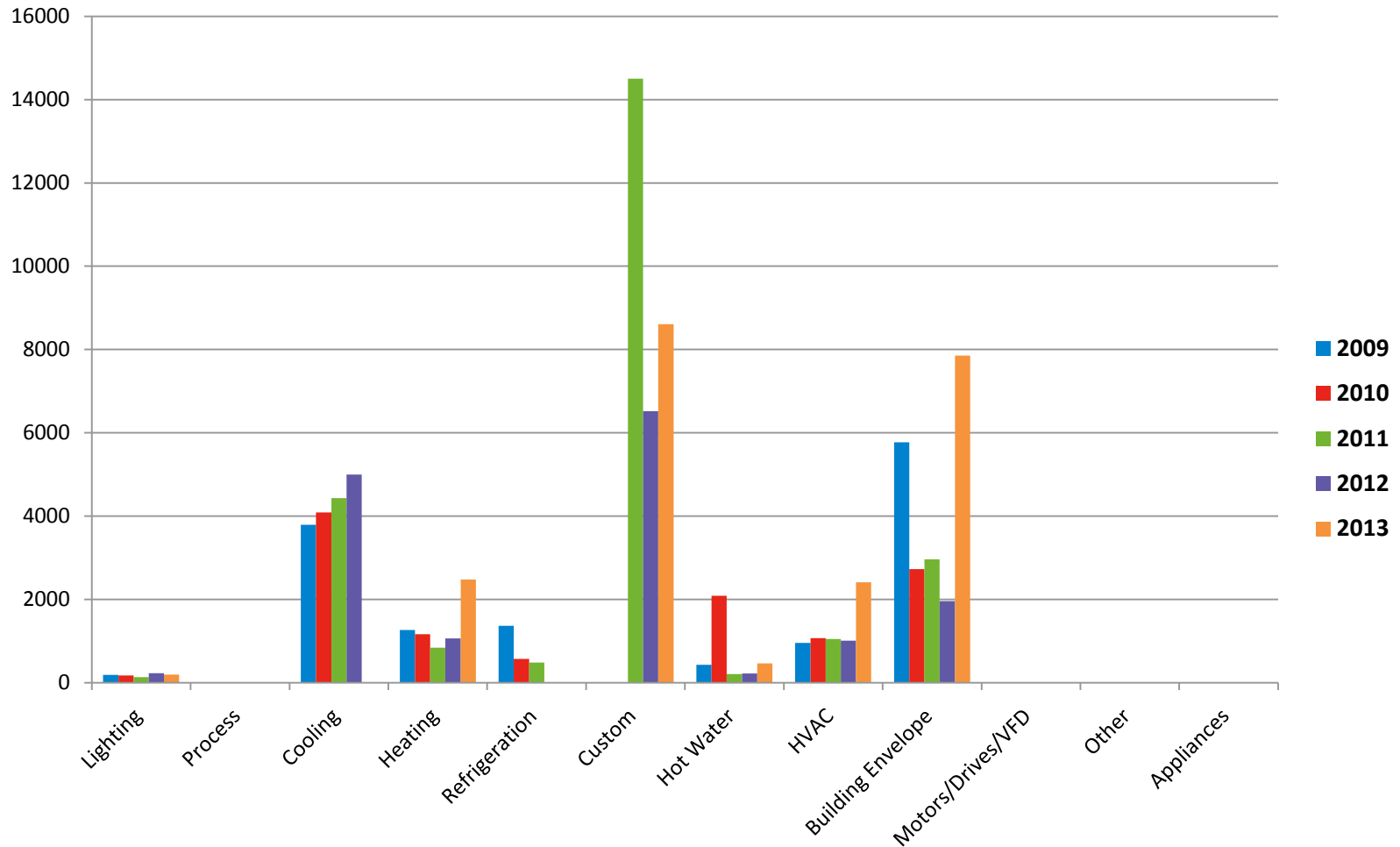
# Connecticut C&I Production Cost by Measure (\$/MWh)



# Connecticut Low Income Production Cost by Measure (\$/MWh)

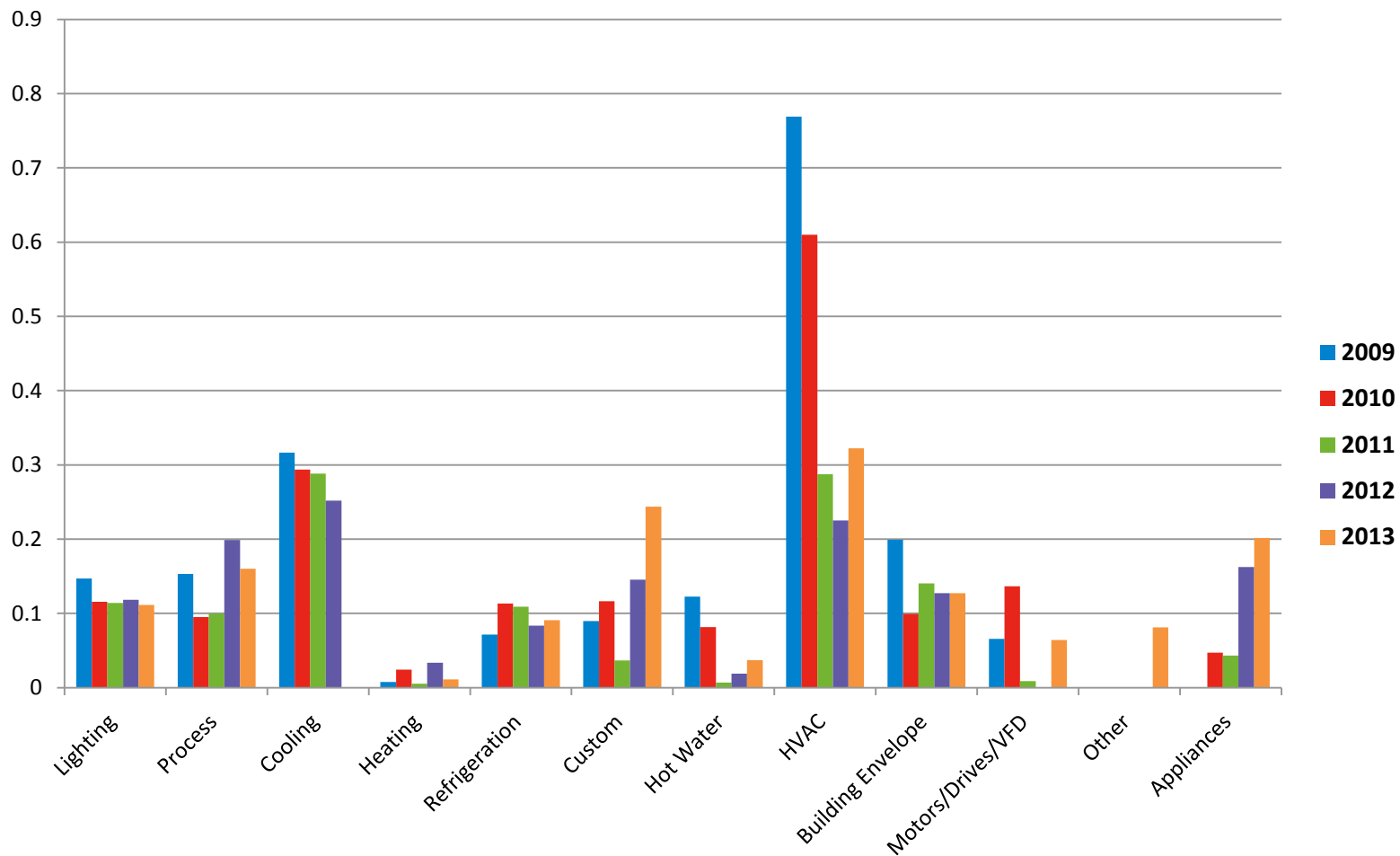


# Connecticut Residential Production Cost by Measure (\$/MWh)

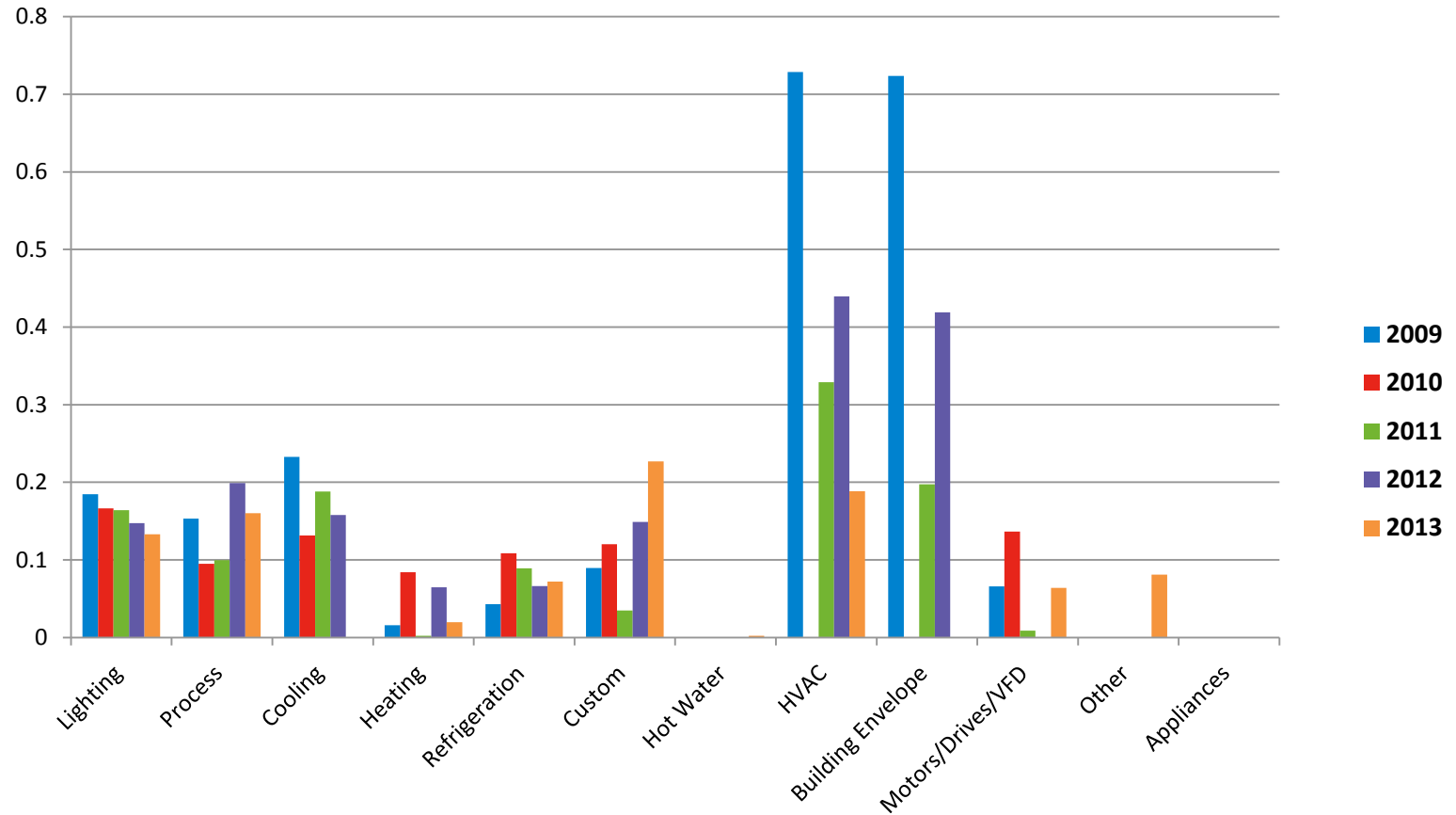




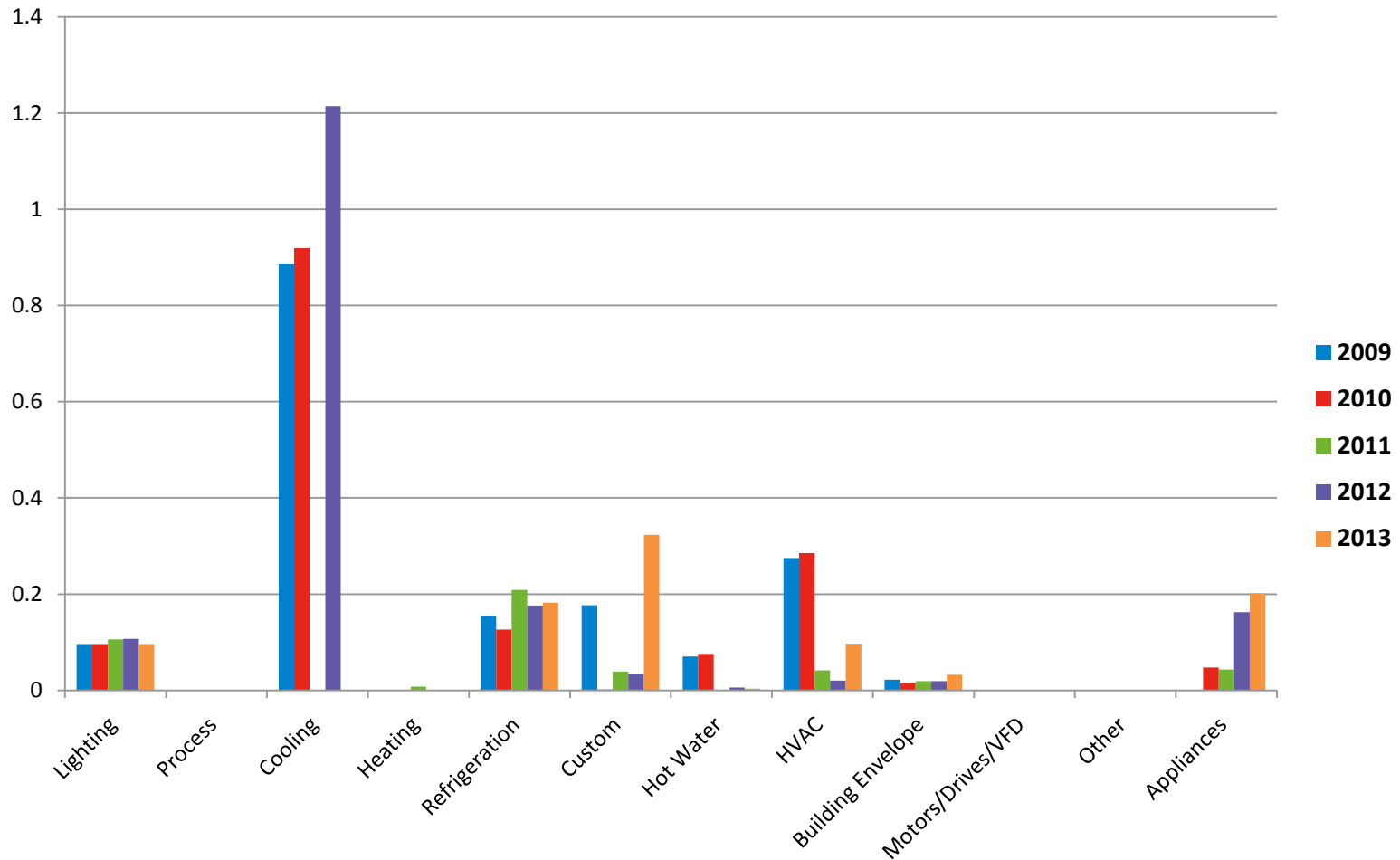
# Connecticut Total Peak-to-Energy Ratio (MW/GWh)



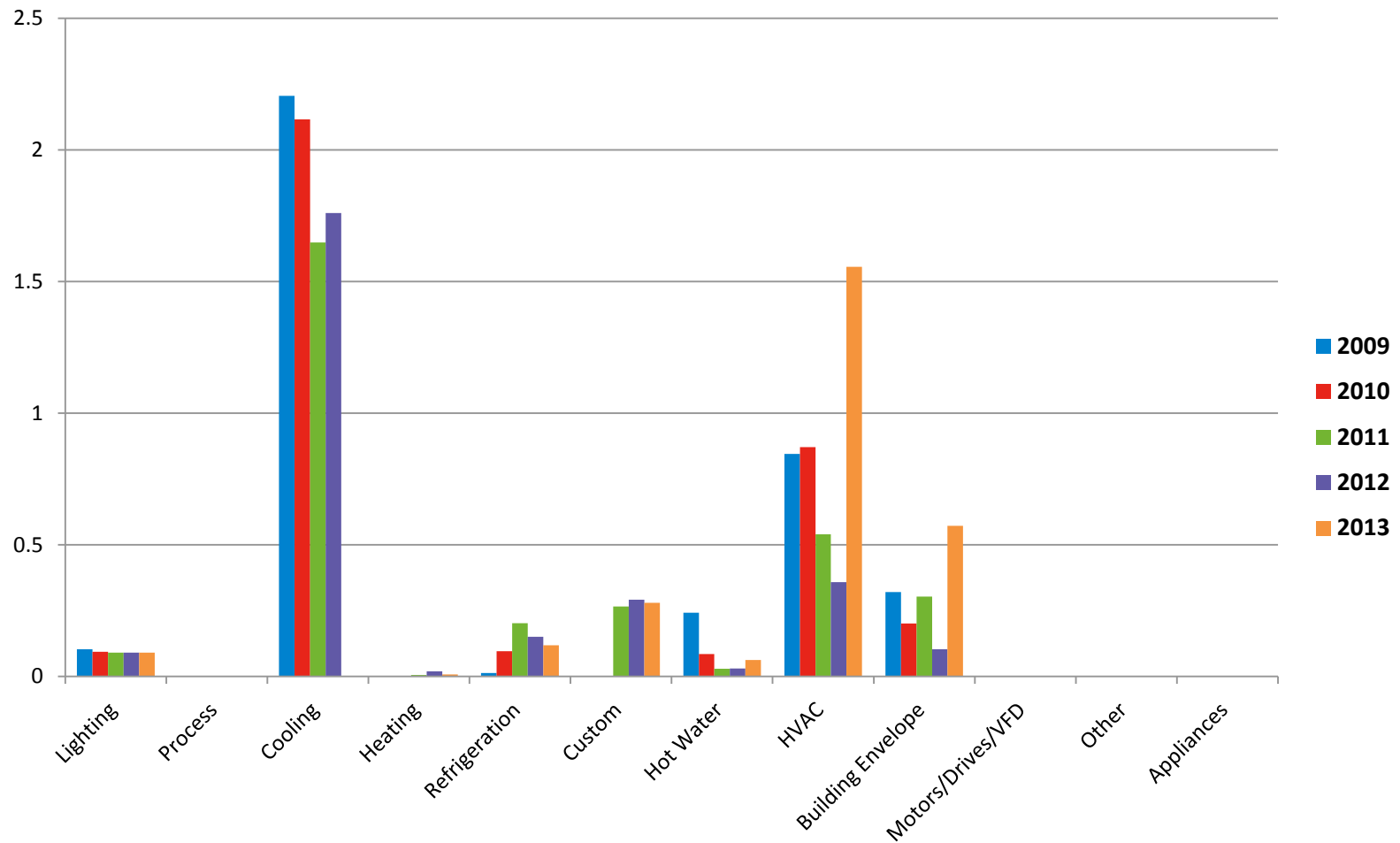
# Connecticut C&I Peak-to-Energy Ratio (MW/GWh)



# Connecticut Low Income Peak-to-Energy Ratio (MW/GWh)

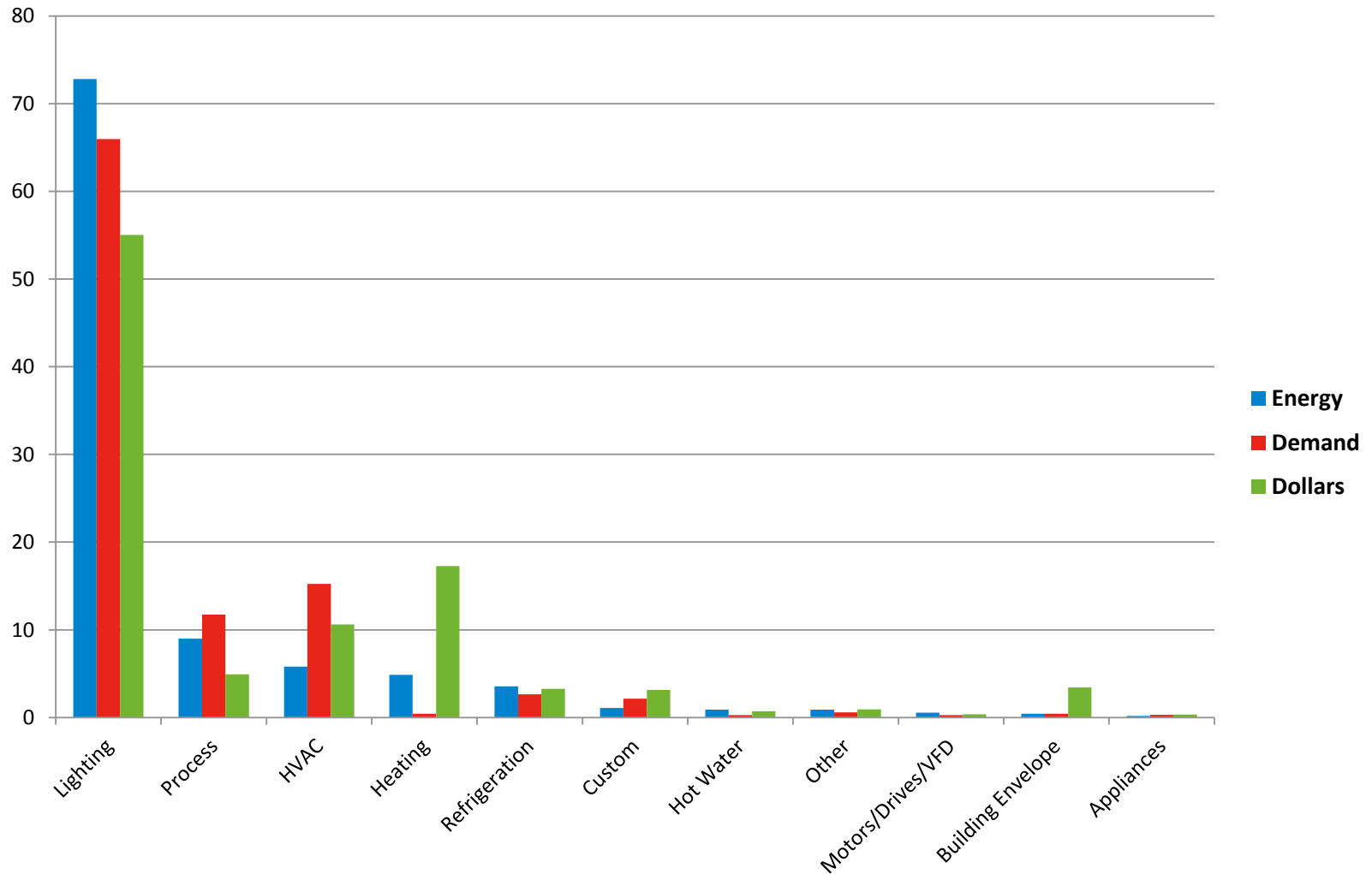


# Connecticut Residential Peak-to-Energy Ratio (MW/GWh)

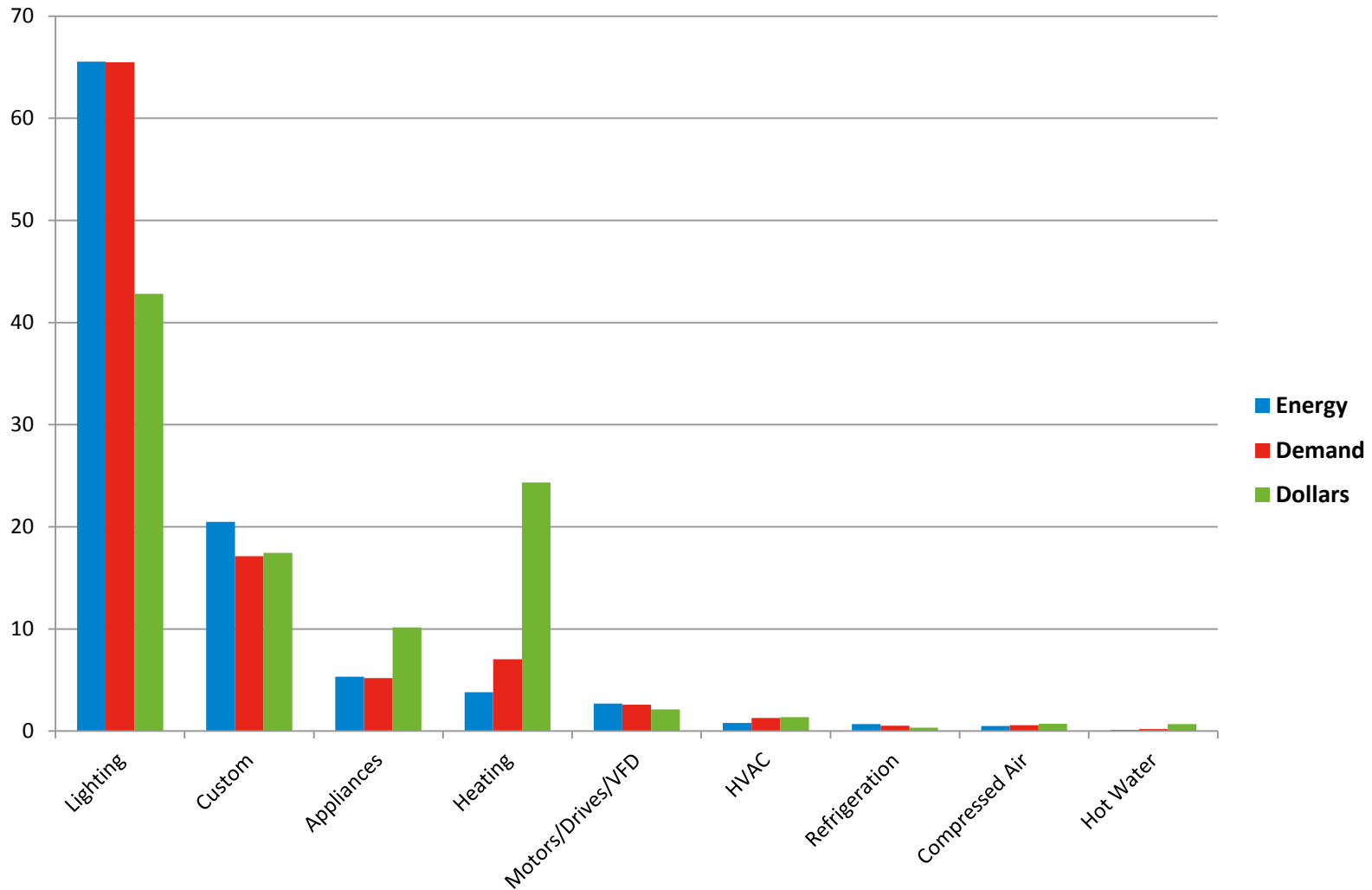


# ENERGY, DEMAND AND DOLLARS BY MEASURE

# Connecticut Detail – Comparison of Percent Energy, Demand and Cost by Measure Type – 2013 (%)



# Maine Detail – Comparison of Energy, Demand and Cost by Measure Type - 2013



# Measure Level Cost, Savings, Peak to Energy Ratio Connecticut – 2013<sup>†</sup>

Connecticut - 2013 Program Year

Measures	Dollars (1,000's)	Annualized MWh	MW	\$/MWh	\$/MW (1,000's)	MW/GWH
Appliances	395	504	0.102	784	3,889	0.2017
Building Envelope	4,184	1,165	0.148	3,592	28,235	0.1272
Custom	3,817	2,913	0.710	1310	5,373	0.2438
HVAC	12,895	15,747	5.075	819	2,541	0.3223
Heating	20,999	13,155	0.148	1,596	142,357	0.0112
Hot Water	850	2,419	0.090	352	9,486	0.0371
Lighting	66,909	197,632	21.985	339	3,043	0.1112
Motors/Drives/VFD	443	1,475	0.095	301	4,690	0.0641
Other	1,127	2,411	0.196	468	5,761	0.0812
Process	6,009	24,417	3.911	246	1,537	0.1602
Refrigeration	3,984	9,644	0.876	413	4,548	0.0908
<b>Grand Total</b>	<b>121,612</b>	<b>271,480</b>	<b>33.334</b>	<b>448</b>	<b>3,652</b>	<b>0.1228</b>

<sup>†</sup>Only states with complete data set from all PAs



# Measure Level Cost, Savings, Peak to Energy Ratio

## Maine – 2013<sup>†</sup>

Maine - 2013 Program Year

Measures	Dollars (1,000's)	Annualized MWh	MW	\$/MWh	\$/MW (1,000's)	MW/GWH
Appliances	2,463	7,554	0.785	326	3,136	0.1040
Compressed Air	171	731	0.087	234	1,967	0.1191
Custom	4,235	29,086	2.591	146	1,634	0.0891
HVAC	332	1,152	0.195	288	1,703	0.1691
Heating	5,911	5,424	1.064	1,090	5,556	0.1962
Hot Water	167	153	0.030	1,090	5,556	0.1962
Lighting	10,395	93,072	9.912	112	1,049	0.1065
Motors/Drives/VFD	519	3,822	0.394	136	1,318	0.1030
Refrigeration	86	984	0.079	87	1,087	0.0801
<b>Grand Total</b>	<b>24,279</b>	<b>141,978</b>	<b>15.137</b>	<b>171</b>	<b>1,608</b>	<b>0.1066</b>

<sup>†</sup>Only states with complete data set from all PAs

# Measure Level Cost, Savings, Peak to Energy Ratio Vermont – 2013<sup>†</sup>

Vermont - 2013 Program Year

Measures	Dollars (1,000s)	Annualized MWh	MW	\$/MWh	\$/MW (1,000's)	MW/GWH
Appliances	752	964	0.103	780	7294088	0.1069
Consumer Products	1050	4419	0.510	238	2060041	0.1153
Custom Lighting	94	424	0.091	222	1034063	0.2150
Education	882	813	0.047	1084	18942630	0.0573
HVAC	1797	4482	0.604	401	2972548	0.1349
Heating	1368	1221	0.056	1121	24512120	0.0457
Hot Water	678	841	0.112	807	6041686	0.1335
Lighting	19360	57013	8.177	340	2517518	0.1360
Motors/Drives/VFD	1362	5624	0.803	242	1695541	0.1429
Other	521	822	0.042	634	12382000	0.0512
Process	1457	9318	1.019	156	1723971	0.0989
Refrigeration	3441	6285	0.568	547	6061650	0.0903
<b>Grand Total</b>	<b>32761</b>	<b>92226</b>	<b>12.132</b>	<b>355</b>	<b>2856015</b>	<b>0.1260</b>

<sup>†</sup>Only states with complete data set from all PAs

# Measure Level Cost, Savings, Peak to Energy Ratio New Hampshire – 2013<sup>†</sup>

New Hampshire - 2013 Program Year

Measures	Dollars (1,000s)	Annualized MWh	MW	\$/MWh	\$/MW (1,000's)	MW/GWH
Appliances	2,453	1,846	0.585	1,328	4,195	0.3167
Building Envelope	4,466	855	0.068	5,225	655,577	0.0797
Education	421	0	0	0	0	0.0000
HVAC	1,808	5,159	1.614	350	15,120	0.3129
Heating	4,152	3,959	0.006	1,049	753,368	0.0014
Hot Water	72	375	0.039	193	15,850	0.1043
Lighting	7,393	31,939	3.885	231	15,903	0.1216
Motors/Drives/VFD	33	200	0.006	162	5,100	0.0318
Other	12	78	0	151	0	0.0000
Process	2,448	11,193	1.003	219	25,440	0.0896
Refrigeration	79	197	0.019	403	4,154	0.0971
<b>Grand Total</b>	<b>23,337</b>	<b>58,833</b>	<b>7.225</b>	<b>397</b>	<b>3,241</b>	<b>0.1228</b>

<sup>†</sup>Only states with complete data set from all PAs

# Questions

