

APPENDIX 2

Residential Sector Data

APPENDIX 2.1
Measure Assumptions and Sources by EDC

Measure Assumptions - Duquesne

Measure	Measure Name	Home Type (SFA, SFD, MF)	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Incremental / Full Cost	Measure/End Use Description	Base Saturation	EE Saturation
718	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFA	ROB	10917	4.93%	538.0	0.000	0.700	0.100	0.700	12	\$822.00	Attached SF existing homes with heat pump	0.0%	14.3%
719	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFA	ROB	10917	6.66%	727.0	0.000	0.700	0.100	0.700	12	\$1,644.00	Attached SF existing homes with heat pump	0.0%	14.3%
720	GSHP w/ Desuperheater	SFA	ROB	14837	7.64%	1133.0	0.000	0.700	0.400	0.700	30	\$11,300.00	Attached SF existing homes with heat pump	0.0%	14.3%
721	Ductless Mini-Split Heat Pumps	SFA	ROB	10917	30.93%	3377.0	5.200	0.700	0.500	0.700	15	\$1,200.00	Attached SF existing homes with heat pump	0.0%	14.3%
722	Ground Source Heat Pumps (GSHP)	SFA	ROB	10917	5.56%	607.0	0.000	0.700	0.200	0.700	30	\$10,700.00	Attached SF existing homes with heat pump	0.0%	14.3%
723	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFA	ROB	1082	11.46%	124.0	0.000	0.000	0.000	0.700	14	\$1,333.00	Attached SF homes with Central AC	83.8%	14.3%
724	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFA	ROB	1082	16.08%	174.0	0.000	0.000	0.100	0.700	14	\$2,407.00	Attached SF homes with Central AC	83.8%	14.3%
725	HVAC Tune Up (Cooling Season Only Tune Up)	SFA	Retrofit	1514	9.97%	151.0	0.000	0.000	0.000	0.700	7	\$50.00	Attached SF homes with Central AC	83.8%	68.0%
726	Furnace High Efficiency Fan	SFA	Retrofit	1514	29.46%	446.0	0.114	1.000	0.114	1.000	18	\$200.00	Attached SF homes with non-electric furnace	83.8%	10.0%
727	Programmable Thermostat (CAC)	SFA	Retrofit	1514	1.39%	21.0	0.000	0.000	0.000	1.000	15	\$25.00	Attached SF homes with Central AC	83.8%	54.2%
728	Furnace Whistle	SFA	Retrofit	-	-	119.0	0.050	1.000	0.050	1.000	15	\$2.00	Attached SF homes with non-electric furnace	83.8%	10.0%
729	Room AC (RAC) Retirement with no replacement (per AC unit)	SFA	ROB	353	100.00%	353.0	0.000	0.000	1.103	0.580	4	\$60.00	Attached SF homes with room AC	36.0%	11.7%
730	Room AC (RAC) Retirement with replacement (per AC unit)	SFA	ROB	353	7.37%	26.0	0.000	0.000	0.000	0.580	4	\$60.00	Attached SF homes with room AC	36.0%	11.7%
731	Programmable Thermostat (ASHP)	MF	Retrofit	5358	1.03%	55.0	0.000	1.000	0.000	1.000	15	\$25.00	MF homes with heat pump	9.7%	54.2%
732	Air Source Heat Pump (Maintenance)	MF	Retrofit	5358	8.83%	473.0	0.000	0.700	0.000	0.700	7	\$100.00	MF homes with heat pump	9.7%	68.8%
733	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	MF	ROB	4380	5.21%	228.0	0.000	0.700	0.000	0.700	12	\$822.00	MF homes with heat pump	9.7%	14.3%
734	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	MF	ROB	4380	7.10%	311.0	0.000	0.700	0.000	0.700	12	\$1,644.00	MF homes with heat pump	9.7%	14.3%
735	GSHP w/ Desuperheater	MF	ROB	7628	-0.29%	-22.0	0.000	0.700	0.200	0.700	30	\$11,300.00	MF homes with heat pump	9.7%	14.3%
736	Ductless Mini-Split Heat Pumps	MF	ROB	4380	22.17%	971.0	2.000	0.700	0.100	0.700	15	\$1,200.00	MF homes with heat pump	9.7%	14.3%
737	Ground Source Heat Pumps (GSHP)	MF	ROB	4380	-9.32%	-408.0	0.000	0.700	0.100	0.700	30	\$10,700.00	MF homes with heat pump	9.7%	14.3%
738	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	MF	ROB	773	11.51%	89.0	0.000	0.000	0.100	0.700	14	\$1,333.00	MF homes with Central AC	63.1%	14.3%
739	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	MF	ROB	773	16.17%	125.0	0.000	0.000	0.100	0.700	14	\$2,407.00	MF homes with Central AC	63.1%	14.3%
740	HVAC Tune Up (Cooling Season Only Tune Up)	MF	Retrofit	1081	9.99%	108.0	0.000	0.000	0.000	0.700	7	\$50.00	MF homes with Central AC	63.1%	68.0%
741	Furnace High Efficiency Fan	MF	Retrofit	1081	41.26%	446.0	0.114	1.000	0.114	1.000	18	\$200.00	MF homes with non-electric furnace	77.5%	10.0%
742	Programmable Thermostat (CAC)	MF	Retrofit	1081	-0.46%	-5.0	0.000	0.000	0.000	0.700	15	\$25.00	MF existing homes with central AC	63.1%	54.2%
743	Furnace Whistle	SFD	Retrofit	-	-	119.0	0.050	1.000	0.050	1.000	15	\$2.00	MF homes with non-electric furnace	77.5%	10.0%
744	Room AC (RAC) Retirement with no replacement (per AC unit)	MF	ROB	353	100.00%	353.0	0.000	0.000	1.103	0.580	4	\$60.00	MF homes with room AC	103.7%	11.7%
745	Room AC (RAC) Retirement with replacement (per AC unit)	MF	ROB	353	7.37%	26.0	0.000	0.000	0.000	0.580	4	\$60.00	MF homes with room AC	103.7%	11.7%
800	Whole House														
801	Direct (Real Time) Feedback	SFD	Retrofit	30791	6.15%	1893.6	1.526	0.700	1.526	0.700	3	\$140.00	Detached SF existing homes with electric heat and Central AC	5.8%	28.0%
802	Indirect Feedback (O-Power)	SFD	Retrofit	30791	2.23%	686.6	0.553	0.700	0.553	0.700	2	\$22.50	Detached SF existing homes with electric heat and Central AC	5.8%	0.0%
803	Direct (Real Time) Feedback	SFD	Retrofit	7679	6.15%	472.3	0.381	0.700	0.381	0.700	3	\$140.00	Detached SF existing homes with non-electric heat and Central AC	76.1%	28.0%
804	Indirect Feedback (O-Power)	SFD	Retrofit	7679	2.23%	171.2	0.138	0.700	0.138	0.700	2	\$22.50	Detached SF existing homes with non-electric heat and Central AC	76.1%	0.0%
805	Direct (Real Time) Feedback	SFD	Retrofit	7511	6.15%	461.9	0.372	0.700	0.372	0.580	3	\$140.00	Detached SF existing homes with non-electric heat and room AC	14.2%	28.0%
806	Indirect Feedback	SFD	Retrofit	7511	2.23%	167.5	0.135	0.700	0.135	0.580	2	\$22.50	Detached SF existing homes with non-electric heat and room AC	14.2%	0.0%
807	Direct (Real Time) Feedback	SFA	Retrofit	23109	6.15%	1421.2	1.145	0.700	1.145	0.700	3	\$140.00	Attached SF existing homes with electric heat and Central AC	16.2%	28.0%
808	Indirect Feedback (O-Power)	SFA	Retrofit	23109	2.23%	515.3	0.415	0.700	0.415	0.700	2	\$22.50	Attached SF existing homes with electric heat and Central AC	16.2%	0.0%
809	Direct (Real Time) Feedback	SFA	Retrofit	6071	6.15%	373.4	0.301	0.700	0.301	0.700	3	\$140.00	Attached SF existing homes with non-electric heat and Central AC	67.5%	28.0%
810	Indirect Feedback (O-Power)	SFA	Retrofit	6071	2.23%	135.4	0.109	0.700	0.109	0.700	2	\$22.50	Attached SF existing homes with non-electric heat and Central AC	67.5%	0.0%
811	Direct (Real Time) Feedback	SFA	Retrofit	5944	6.15%	365.6	0.295	0.700	0.295	0.580	3	\$140.00	Attached SF existing homes with non-electric heat and room AC	16.2%	28.0%
812	Indirect Feedback (O-Power)	SFA	Retrofit	5944	2.23%	132.6	0.107	0.700	0.107	0.580	2	\$22.50	Attached SF existing homes with non-electric heat and room AC	16.2%	0.0%
813	Direct (Real Time) Feedback	MF	Retrofit	13694	6.15%	842.2	0.679	0.700	0.679	0.700	3	\$140.00	MF existing homes with electric heat and central AC	8.8%	28.0%
814	Indirect Feedback (O-Power)	MF	Retrofit	13694	2.23%	305.4	0.246	0.700	0.246	0.700	2	\$22.50	MF existing homes with electric heat and central AC	8.8%	0.0%
815	Direct (Real Time) Feedback	MF	Retrofit	4881	6.15%	300.2	0.242	0.700	0.242	0.700	3	\$140.00	MF existing homes with non-electric heat and central AC	54.3%	28.0%
816	Indirect Feedback (O-Power)	MF	Retrofit	4881	2.23%	108.8	0.088	0.700	0.088	0.700	2	\$22.50	MF existing homes with non-electric heat and central AC	54.3%	0.0%
817	Direct (Real Time) Feedback	MF	Retrofit	4981	6.15%	306.3	0.247	0.700	0.247	0.580	3	\$140.00	MF existing homes with non-electric heat and room AC	17.7%	28.0%
818	Indirect Feedback (O-Power)	MF	Retrofit	4981	2.23%	111.1	0.090	0.700	0.090	0.580	2	\$22.50	MF existing homes with non-electric heat and room AC	17.7%	0.0%
900	New Construction														
901	Residential New Construction-Tier 1	SFD	NC	20411	15.00%	3061.7	1.305	0.700	0.495	0.700	15	\$4,271.00	New construction detached SF homes w/ electric heat and Central AC	21.4%	0.0%
902	Residential New Construction-Tier 2	SFD	NC	20411	30.00%	6123.3	2.610	0.700	0.990	0.700	15	\$6,406.50	New construction detached SF homes w/ electric heat and Central AC	21.4%	0.0%
903	Residential New Construction-Tier 1	SFD	NC	8489	15.00%	1273.4	0.105	0.700	0.390	0.700	15	\$3,752.00	New construction detached SF homes w/ non-electric heat and Central AC	46.3%	0.0%
904	Residential New Construction-Tier 2	SFD	NC	8489	30.00%	2546.7	0.210	0.700	0.780	0.700	15	\$5,628.00	New construction detached SF homes w/ non-electric heat and Central AC	46.3%	0.0%
905	Residential New Construction Tier 1	MF	NC	11941	15.00%	1791.2	0.525	0.700	0.315	0.700	15	\$2,135.50	New construction MF homes with electric heat and central AC	21.4%	0.0%
906	Residential New Construction Tier 2	MF	NC	11941	30.00%	3582.3	1.050	0.700	0.630	0.700	15	\$3,203.25	New construction MF homes with electric heat and central AC	21.4%	0.0%
907	Residential New Construction Tier 1	MF	NC	5371	15.00%	805.7	0.060	0.700	0.120	0.700	15	\$1,876.00	New construction MF homes with non-electric heat and Central AC	46.3%	0.0%
908	Residential New Construction Tier 2	MF	NC	5371	30.00%	1611.3	0.120	0.700	0.420	0.700	15	\$2,814.00	New construction MF homes with non-electric heat and Central AC	46.3%	0.0%

Measure Assumptions Sources - Duquesne

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
100	Water Heating End Use														
101	Efficient Electric Water Heaters- 0.93 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PA Baseline	PA Baseline	CF Note 1: The coincidence factor for this energy efficiency measure was set to 1.0 because the kW demand impact for this measure was already on a coincident peak basis.
102	Efficient Electric Water Heaters- 0.94 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PA Baseline	PA Baseline	
103	Efficient Electric Water Heaters- 0.95 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PA Baseline	PA Baseline	
104	Solar Water Heaters	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	PA Baseline	PA Baseline	
105	Heat Pump Water Heaters- 2.0 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
106	Heat Pump Water Heaters- 2.3 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	PA Baseline	PA Baseline	costs uses the \$925 for a 2.0 water heater and adds \$50 premium for a 2.3
107	Electric Water Heater Pipe Insulation	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	costs uses \$3/foot from the Mid-Atlantic TRM and assumes average of 6 ft/home
108	Low Flow Showerheads- 1.5 GPM	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google.com	PA Baseline / PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
109	Low Flow Faucet Aerators	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PA Baseline / PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
110	Water Heater Tank Wrap	SFD	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	PA Baseline	PA Baseline	
111	Efficient Electric Water Heaters- 0.93 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PA Baseline	PA Baseline	
112	Efficient Electric Water Heaters- 0.94 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PA Baseline	PA Baseline	
113	Efficient Electric Water Heaters- 0.95 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PA Baseline	PA Baseline	
114	Solar Water Heaters	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	PA Baseline	PA Baseline	
115	Heat Pump Water Heaters- 2.0 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
116	Heat Pump Water Heaters- 2.3 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	PA Baseline	PA Baseline	
117	Electric Water Heater Pipe Insulation	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	\$3/ft at an estimated 6 LF total
118	Low Flow Showerheads- 1.5 GPM	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google.com	PA Baseline / PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
119	Low Flow Faucet Aerators	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PA Baseline / PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
120	Water Heater Tank Wrap	SFA	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	PA Baseline	PA Baseline	
121	Efficient Electric Water Heaters- 0.93 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PA Baseline	PA Baseline	
122	Efficient Electric Water Heaters- 0.94 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PA Baseline	PA Baseline	
123	Efficient Electric Water Heaters- 0.95 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PA Baseline	PA Baseline	
124	Solar Water Heaters	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	PA Baseline	PA Baseline	
125	Heat Pump Water Heaters- 2.0 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
126	Heat Pump Water Heaters- 2.3 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	PA Baseline	PA Baseline	
127	Electric Water Heater Pipe Insulation	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	\$3/ft at an estimated 6 LF total
128	Low Flow Showerheads- 1.5 GPM	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google.com	PA Baseline / PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
129	Low Flow Faucet Aerators	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PA Baseline / PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
130	Water Heater Tank Wrap	MF	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	PA Baseline	PA Baseline	
200	Lighting														
201	Ceiling Fan with ENERGY STAR Light Fixture	SFD	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
202	Electroluminescent Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	CF Note 1: The coincidence factor for this energy efficiency measure was set to 1.0 because the kW demand impact for this measure was already on a coincident peak basis.
203	LED Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Low's	PA Baseline	PA Baseline	
204	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
205	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
206	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
207	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	

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208	ENERGY STAR LEDs - General Service Lamps	SFD	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
209	ENERGY STAR LEDs - Reflector Lamp	SFD	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
210	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
211	ENERGY STAR Torchieres	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
212	ENERGY STAR Holiday Lights	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
213	Residential Occupancy Sensors- 14 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&Ippc=16
214	Residential Occupancy Sensors 19 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&Ippc=16
215	Residential Occupancy Sensors- 23 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&Ippc=16
216	Ceiling Fan with ENERGY STAR Light Fixture	SFA	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
217	Electroluminescent Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
218	LED Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
219	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
220	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
221	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
222	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
223	ENERGY STAR LEDs - General Service Lamps	SFA	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
224	ENERGY STAR LEDs - Reflector Lamp	SFA	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
225	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
226	ENERGY STAR Torchieres	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
227	ENERGY STAR Holiday Lights	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
228	Residential Occupancy Sensors- 14 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&Ippc=16
229	Residential Occupancy Sensors 19 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&Ippc=16
230	Residential Occupancy Sensors- 23 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&Ippc=16
231	Ceiling Fan with ENERGY STAR Light Fixture	MF	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
232	Electroluminescent Nightlight	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
233	LED Nightlight	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
234	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
235	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	

Measure Assumptions Sources - Duquesne

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
236	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
237	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
238	ENERGY STAR LEDs - General Service Lamps	MF	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
239	ENERGY STAR LEDs - Reflector Lamp	MF	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
240	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
241	ENERGY STAR Torchieres	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
242	ENERGY STAR Holiday Lights	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
243	Residential Occupancy Sensors- 14 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&lpcc=16
244	Residential Occupancy Sensors 19 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&lpcc=16
245	Residential Occupancy Sensors- 23 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&lpcc=16
300	Appliances														
301	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PA Baseline	PA Baseline	
302	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PA Baseline	PA Baseline	
303	Energy Star top mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
304	Energy Star side mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
305	Energy Star bottom mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
306	Energy Star top mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
307	Energy Star side mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
308	Energy Star upright with manual defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PA Baseline	PA Baseline	
309	Energy Star upright with automatic defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
310	Energy Star chest freezer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PA Baseline	PA Baseline	
311	Energy Star dehumidifiers (35-45 pints/day)	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	EnergyStar Market Penetration Summary	
312	Energy Star Electric Clothes Dryer with Moisture Sensor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PA Baseline	PECO 2011	
313	ENERGY STAR Clothes Washers- with Electric Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
314	ENERGY STAR Clothes Washers- with Gas Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
315	ENERGY STAR Dishwashers- with Electric Water Heating	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	PA Baseline	
316	ENERGY STAR Dishwashers- with Gas Heat	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	PA Baseline	
317	ENERGY STAR Room Air Conditioners	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	PA Baseline	
318	Energy Star Exhaust Fans	SFD	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*See CF Note 1	Vermont TRM	*See CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
319	Energy Star Residential Whole House Fans	SFD	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Bing.com	Duquesne	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&uq=whole+house+fan&aid=&cl=&cp=&qp=whole+house+fan&sp=&sr=Completions&tk=&spv=&sl=E&sc=&sl=&ast=AAAAAAAA&st0
320	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PA Baseline	PA Baseline	
321	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PA Baseline	PA Baseline	
322	Energy Star top mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
323	Energy Star side mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
324	Energy Star bottom mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators

Measure Assumptions Sources - Duquesne

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
325	Energy Star top mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
326	Energy Star side mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
327	Energy Star upright with manual defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PA Baseline	PA Baseline	
328	Energy Star upright with automatic defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
329	Energy Star chest freezer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PA Baseline	PA Baseline	
330	Energy Star dehumidifiers (35-45 pints/day)	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	Duquesne	EnergyStar Market Penetration Summary	
331	Energy Star Electric Clothes Dryer with Moisture Sensor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PA Baseline	PECO 2011	
332	ENERGY STAR Clothes Washers- with Electric Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
333	ENERGY STAR Clothes Washers- with Gas Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
334	ENERGY STAR Dishwashers- with Electric Water Heating	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	PA Baseline	
335	ENERGY STAR Dishwashers- with Gas Heat	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	PA Baseline	
336	ENERGY STAR Room Air Conditioners	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	PA Baseline	
337	Energy Star Exhaust Fans	SFA	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
338	Energy Star Residential Whole House Fans	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	Duquesne	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qs=n&pq=whole+house+fan&sp=&rt=Completions&tk=&spv=&sl=E&sc=&st=&ast=AAAAAAAA#sly0
339	Refrigerator / Freezer Recycling and Replacement With a New Unit	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PA Baseline	PA Baseline	
340	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PA Baseline	PA Baseline	
341	Energy Star top mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
342	Energy Star side mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
343	Energy Star bottom mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
344	Energy Star top mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
345	Energy Star side mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
346	Energy Star upright with manual defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PA Baseline	PA Baseline	
347	Energy Star upright with automatic defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
348	Energy Star chest freezer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PA Baseline	PA Baseline	
349	Energy Star dehumidifiers (35-45 pints/day)	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	Duquesne	EnergyStar Market Penetration Summary	
350	Energy Star Electric Clothes Dryer with Moisture Sensor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PA Baseline	PECO 2011	
351	ENERGY STAR Clothes Washers- with Electric Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
352	ENERGY STAR Clothes Washers- with Gas Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
353	ENERGY STAR Dishwashers- with Electric Water Heating	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	PA Baseline	
354	ENERGY STAR Dishwashers- with Gas Heat	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	PA Baseline	
355	ENERGY STAR Room Air Conditioners	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	PA Baseline	
356	Energy Star Exhaust Fans	MF	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
357	Energy Star Residential Whole House Fans	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	Duquesne	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qs=n&pq=whole+house+fan&sp=&rt=Completions&tk=&spv=&sl=E&sc=&st=&ast=AAAAAAAA#sly0
400	Electronics														
401	ENERGY STAR Computer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report- Cited EnergyStar	PA Baseline	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
402	ENERGY STAR Copier	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
403	ENERGY STAR Fax Machine	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary	
404	ENERGY STAR Monitor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
405	ENERGY STAR Multifunction	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report- Cited EnergyStar	PPL	EnergyStar Market Penetration Summary	
406	ENERGY STAR Printer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
407	>50 in television	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	Codes and Standards Enhancement Initiative	

Measure Assumptions Sources - Duquesne

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
408	<50 in television	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	Codes and Standards Enhancement Initiative	
409	Smart Strip Plug Outlets	SFD	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
410	ENERGY STAR Computer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PA Baseline	EnergyStar Market Penetration Summary	
411	ENERGY STAR Copier	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
412	ENERGY STAR Fax Machine	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary	
413	ENERGY STAR Monitor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary	
414	ENERGY STAR Multifunction	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL	EnergyStar Market Penetration Summary	
415	ENERGY STAR Printer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
416	>50 in television	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	Codes and Standards Enhancement Initiative	
417	<50 in television	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	Codes and Standards Enhancement Initiative	
418	Smart Strip Plug Outlets	SFA	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
419	ENERGY STAR Computer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PA Baseline	EnergyStar Market Penetration Summary	
420	ENERGY STAR Copier	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
421	ENERGY STAR Fax Machine	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary	
422	ENERGY STAR Monitor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary	
423	ENERGY STAR Multifunction	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL	EnergyStar Market Penetration Summary	
424	ENERGY STAR Printer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
425	>50 in television	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	Codes and Standards Enhancement Initiative	
426	<50 in television	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PA Baseline	Codes and Standards Enhancement Initiative	
427	Smart Strip Plug Outlets	MF	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
500	Pool														
501	High Efficiency Two-Speed Pool Pump	SFD	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; savings-PA and Mid Atlantic TRMs
502	Variable Speed Pool Pumps	SFD	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{sa} and kW _{sp} parameters taken from Ohio TRM
503	High Efficiency Two-Speed Pool Pump	SFA	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool
504	Variable Speed Pool Pumps	SFA	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{sa} and kW _{sp} parameters taken from Ohio TRM
505	High Efficiency Two-Speed Pool Pump	MF	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool
506	Variable Speed Pool Pumps	MF	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	Duquesne	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{sa} and kW _{sp} parameters taken from Ohio TRM
600	HVAC (Invelopers)														
601	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report Duquesne	PA Baseline	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
602	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report Duquesne	PA Baseline	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
603	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report Duquesne	PA Baseline	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
604	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report Duquesne	PA Baseline	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
605	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report Duquesne	PA Baseline	PA Baseline	\$2.09/sq ft (from Navigant) multiplied by square footage estimate
606	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate; ** wall insulation = area of walls - area of windows * price per sq ft

Measure Assumptions Sources - Duquesne

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
607	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate
608	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from
609	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate
610	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate
611	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PA Baseline	PA Baseline	
612	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
613	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
614	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
615	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
616	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$2.09/sq ft (from Navigant) multiplied by square footage estimate
617	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate
618	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate
619	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from
620	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate
621	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate
622	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PA Baseline	PA Baseline	
623	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
624	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
625	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
626	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
627	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$2.09/sq ft (from Navigant) multiplied by square footage estimate
628	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate
629	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate
630	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from
631	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate
632	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, Duquesne	PA Baseline	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate
633	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PA Baseline	PA Baseline	

Measure Assumptions Sources - Duquesne

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
634	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
635	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
636	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
637	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
638	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$2.09/sq ft (from Navigant) multiplied by square footage estimate
639	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate
640	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate
641	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from
642	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate
643	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate
644	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PA Baseline	PA Baseline	
645	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
646	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
647	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
648	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
649	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$2.09/sq ft (from Navigant) multiplied by square footage estimate
650	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate
651	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate
652	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from
653	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate
654	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate
655	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PA Baseline	PA Baseline	
656	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
657	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, Duquesne	PA Baseline	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation

Measure Assumptions Sources - Duquesne

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
658	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$1.82/sq ft (from Navigator) multiplied by square footage estimate; EE saturation based on homes with insulation
659	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$2.29/sq ft (from Navigator) multiplied by square footage estimate; EE saturation based on homes with insulation
660	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$2.09/sq ft (from Navigator) multiplied by square footage estimate
661	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$1.56/sq ft (from Navigator) multiplied by square footage estimate
662	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$1.51/sq ft (from Navigator) multiplied by square footage estimate
663	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from
664	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$1.55/sq ft (from Navigator) multiplied by square footage estimate
665	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$1.86/sq ft (from Navigator) multiplied by square footage estimate
666	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PA Baseline	PA Baseline	
667	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$0.42/sq ft (from Navigator) multiplied by square footage estimate
668	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$1.41/sq ft (from Navigator) multiplied by square footage estimate
669	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$1.82/sq ft (from Navigator) multiplied by square footage estimate
670	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from
671	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PA Baseline	PA Baseline	
672	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$0.42/sq ft (from Navigator) multiplied by square footage estimate
673	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$1.51/sq ft (from Navigator) multiplied by square footage estimate
674	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, Duquesne	PA Baseline	PA Baseline	
675	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from
676	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PA Baseline	PA Baseline	
677	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$0.42/sq ft (from Navigator) multiplied by square footage estimate
678	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$1.41/sq ft (from Navigator) multiplied by square footage estimate
679	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, Duquesne	PA Baseline	PA Baseline	\$1.82/sq ft (from Navigator) multiplied by square footage estimate
680	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from
681	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PA Baseline	PA Baseline	
700	HVAC (Equipment/Controls)														
701	Programmable Thermostat (ASHP)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	PA Baseline	PA Baseline	
702	Air Source Heat Pump (Maintenance)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	
703	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PA Baseline	PA Baseline	Measure cost is from Navigator. Navigator cited the 2008 DEER database as the source
704	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PA Baseline	PA Baseline	Measure cost is from Navigator. Navigator cited the 2008 DEER database as the source
705	GSHP w/ Desuperheater	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	PA Baseline	PA Baseline	http://www.gsthermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater

Measure Assumptions Sources - Duquesne

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
706	Ductless Mini-Split Heat Pumps	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	PA Baseline	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
707	Ground Source Heat Pumps (GSHP)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	PA Baseline	PA Baseline	
708	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigator 2011	PA Baseline	PA Baseline	
709	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigator 2011	PA Baseline	PA Baseline	
710	HVAC Tune Up (Cooling Season Only Tune Up)	SFD	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	
711	Furnace High Efficiency Fan	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	Home Depot	PA Baseline	GDS Estimate	
712	Programmable Thermostat (CAC)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	
713	Furnace Whistle	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	PA Baseline	GDS Estimate	
714	Room AC (RAC) Retirement with no replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	EDC average	PA Baseline	PA Baseline	Measure cost is an average of the other 6 EDCs
715	Room AC (RAC) Retirement with replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	EDC average	PA Baseline	PA Baseline	Measure cost is an average of the other 6 EDCs
716	Programmable Thermostat (ASHP)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	PA Baseline	PA Baseline	
717	Air Source Heat Pump (Maintenance)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	
718	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PA Baseline	PA Baseline	Measure cost is from Navigator. Navigator cited the 2008 DEER database as the source
719	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PA Baseline	PA Baseline	Measure cost is from Navigator. Navigator cited the 2008 DEER database as the source
720	GSHP w/ Desuperheater	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	PA Baseline	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
721	Ductless Mini-Split Heat Pumps	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	PA Baseline	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
722	Ground Source Heat Pumps (GSHP)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	PA Baseline	PA Baseline	
723	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigator 2011	PA Baseline	PA Baseline	
724	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigator 2011	PA Baseline	PA Baseline	
725	HVAC Tune Up (Cooling Season Only Tune Up)	SFA	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	
726	Furnace High Efficiency Fan	SFA	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	PA Baseline	GDS Estimate	
727	Programmable Thermostat (CAC)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	
728	Furnace Whistle	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	PA Baseline	GDS Estimate	
729	Room AC (RAC) Retirement with no replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	EDC average	PA Baseline	PA Baseline	Measure cost is an average of the other 6 EDCs
730	Room AC (RAC) Retirement with replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	EDC average	PA Baseline	PA Baseline	Measure cost is an average of the other 6 EDCs
731	Programmable Thermostat (ASHP)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	PA Baseline	PA Baseline	
732	Air Source Heat Pump (Maintenance)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate/TRM	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	
733	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate/TRM	PA TRM	PA TRM	DEER database	PA Baseline	PA Baseline	Measure cost is from Navigator. Navigator cited the 2008 DEER database as the source
734	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate/TRM	PA TRM	PA TRM	DEER database	PA Baseline	PA Baseline	Measure cost is from Navigator. Navigator cited the 2008 DEER database as the source
735	GSHP w/ Desuperheater	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate/TRM	PA TRM	PA TRM	PPL (email)	PA Baseline	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
736	Ductless Mini-Split Heat Pumps	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate/TRM	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	PA Baseline	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
737	Ground Source Heat Pumps (GSHP)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate/TRM	PA TRM	PA TRM	PPL(email)	PA Baseline	PA Baseline	
738	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate/TRM	PA TRM	PA TRM	Navigator 2011	PA Baseline	PA Baseline	
739	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate/TRM	PA TRM	PA TRM	Navigator 2011	PA Baseline	PA Baseline	

Measure Assumptions Sources - Duquesne

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
740	HVAC Tune Up (Cooling Season Only Tune Up)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate/TRM	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	
741	Furnace High Efficiency Fan	MF	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	PA Baseline	GDS Estimate	
742	Programmable Thermostat (CAC)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	PA Baseline	PA Baseline	
743	Furnace Whistle	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	PA Baseline	GDS Estimate	
744	Room AC (RAC) Retirement with no replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	EDC average	PA Baseline	PA Baseline	Measure cost is an average of the other 6 EDCs
745	Room AC (RAC) Retirement with replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	EDC average	PA Baseline	PA Baseline	Measure cost is an average of the other 6 EDCs
800	Whole House														
801	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PA Baseline	Duquesne	
802	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PA Baseline	Duquesne	
803	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PA Baseline	Duquesne	
804	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PA Baseline	Duquesne	
805	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PA Baseline	Duquesne	
806	Indirect Feedback	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PA Baseline	Duquesne	
807	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PA Baseline	Duquesne	
808	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PA Baseline	Duquesne	
809	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PA Baseline	Duquesne	
810	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PA Baseline	Duquesne	
811	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PA Baseline	Duquesne	
812	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PA Baseline	Duquesne	
813	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PA Baseline	Duquesne	
814	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PA Baseline	Duquesne	
815	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PA Baseline	Duquesne	
816	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PA Baseline	Duquesne	
817	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PA Baseline	Duquesne	
818	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PA Baseline	Duquesne	
900	New Construction														
901	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
902	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
903	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
904	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
905	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
906	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	

Measure Assumptions Sources - Duquesne

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
907	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
908	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	

Amazon: Retail prices derived from Amazon's website
 Bellomy 2010 Residential Saturation Study: PPL's 2010 Residential Final Saturation Report
 Best Buy: Retail prices derived from Best Buy's website
 Bing.com: Retail prices derived from Bing Shopping
 Codes and Standards Enhancement Initiative
 CT Lighting CF Report: Connecticut Lighting Coincidence Factor Report
 DEER database: California database of Energy Efficiency Resources
 Duquesne: Duquesne saturation data
 EnergyStar: government-backed website that helps protect the environment through superior energy efficiency
 EnergyStar 2011 Savings and Costs
 EnergyStar Calculator: service provided by EnergyStar to help estimate savings, useful life, and cost
 EnergyStar Homes Report
 EnergyStar Penetration Market Summary: shipment data collected by EnergyStar, used in calculating Energy Efficient Saturations (average of penetrations for 2008-2010)
 GDS: GDS Associates Calculation/Assumption. See measure-specific notes.
 GDS Estimate: Relyed on industry experience and professional judgement due to lack of available primary research at the state/regional level.
 GDS Measure Life Report: SPWG and GDS's document of a set of measure life values for selected measures
 Google.com: Retail prices derived from Google Shopping
 Home Depot: Retail prices derived from Home Depot's website
 LOWES: Retail prices derived from Lowe's website.
 MID-ATL TRM: Mid-Atlantic Technical Reference Manual, Version 2.0
 Navigant 2011: describes methods and results of ICS, commissioned by the EM&V Forum Research Subcommittee to update incremental costs for measures
 Opower: information used for calculating indirect feedback
 Ohio TRM: Ohio Technical Reference Manual
 PA Baseline: Pennsylvania Baseline study, conducted by GDS
 PA TRM: Pennsylvania Technical Reference Manual
 PA TRM / Ohio TRM: Pennsylvania Technical Reference Manual / Ohio Technical Reference Manual
 PECO 2011: data calculated from PECO's residential survey
 PECO email: correspondence with representative(s) at PECO
 PPL email: correspondence with representative(s) at PPL
 PPL Quarterly Report: documents progress and effectiveness of EE&C accomplishments for PPL through end of PY3, Quarter 2
 REM/Rate: Building Energy Modeling Software. Prototype homes were modeled based on average characteristics using the PECO Energy Baseline Study, February 2011
 The American Council for an Energy-Efficient Economy: Report on technical and policy issues relating to energy efficiency
 Vermont TRM: Vermont Technical Reference Manual

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
100	Water Heating End Use														
101	Efficient Electric Water Heaters- 0.93 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	CF Note 1: The coincidence factor for this energy efficiency measure was set to 1.0 because the kW demand impact for this measure was already on a coincident peak basis.
102	Efficient Electric Water Heaters- 0.94 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
103	Efficient Electric Water Heaters- 0.95 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
104	Solar Water Heaters	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	First Energy	PA Baseline	
105	Heat Pump Water Heaters- 2.0 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
106	Heat Pump Water Heaters- 2.3 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	First Energy	PA Baseline	costs uses the \$925 for a 2.0 water heater and adds \$50 premium for a 2.3
107	Electric Water Heater Pipe Insulation	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	costs uses \$3/foot from the Mid-Atlantic TRM and assumes average of 6 ft/home
108	Low Flow Showerheads- 1.5 GPM	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	First Energy / PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
109	Low Flow Faucet Aerators	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy / PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
110	Water Heater Tank Wrap	SFD	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	First Energy	PA Baseline	
111	Efficient Electric Water Heaters- 0.93 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
112	Efficient Electric Water Heaters- 0.94 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
113	Efficient Electric Water Heaters- 0.95 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
114	Solar Water Heaters	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	First Energy	PA Baseline	
115	Heat Pump Water Heaters- 2.0 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
116	Heat Pump Water Heaters- 2.3 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	First Energy	PA Baseline	
117	Electric Water Heater Pipe Insulation	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$3/ft at an estimated 6 LF total
118	Low Flow Showerheads- 1.5 GPM	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	First Energy	PA Baseline	
119	Low Flow Faucet Aerators	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy / PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
120	Water Heater Tank Wrap	SFA	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	First Energy / PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
121	Efficient Electric Water Heaters- 0.93 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
122	Efficient Electric Water Heaters- 0.94 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
123	Efficient Electric Water Heaters- 0.95 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
124	Solar Water Heaters	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	First Energy	PA Baseline	
125	Heat Pump Water Heaters- 2.0 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
126	Heat Pump Water Heaters- 2.3 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	First Energy	PA Baseline	
127	Electric Water Heater Pipe Insulation	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$3/ft at an estimated 6 LF total
128	Low Flow Showerheads- 1.5 GPM	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	First Energy / PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
129	Low Flow Faucet Aerators	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy / PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
130	Water Heater Tank Wrap	MF	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	First Energy	PA Baseline	
200	Lighting														
201	Ceiling Fan with ENERGY STAR Light Fixture	SFD	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
202	Electroluminescent Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
203	LED Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
204	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
205	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
206	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
207	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	*Sec CF Note 1	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
208	ENERGY STAR LEDs - General Service Lamps	SFD	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
209	ENERGY STAR LEDs - Reflector Lamp	SFD	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
210	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
211	ENERGY STAR Torchieres	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
212	ENERGY STAR Holiday Lights	SFD	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
213	Residential Occupancy Sensors - 14 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1w-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC.A&dppe=16
214	Residential Occupancy Sensors 19 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1w-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC.A&dppe=16
215	Residential Occupancy Sensors - 23 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1w-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC.A&dppe=16
216	Ceiling Fan with ENERGY STAR Light Fixture	SFA	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
217	Electroluminescent Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
218	LED Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
219	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
220	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
221	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
222	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
223	ENERGY STAR LEDs - General Service Lamps	SFA	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
224	ENERGY STAR LEDs - Reflector Lamp	SFA	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
225	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
226	ENERGY STAR Torchieres	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
227	ENERGY STAR Holiday Lights	SFA	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
228	Residential Occupancy Sensors - 14 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1w-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC.A&dppe=16
229	Residential Occupancy Sensors 19 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1w-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC.A&dppe=16
230	Residential Occupancy Sensors - 23 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1w-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC.A&dppe=16
231	Ceiling Fan with ENERGY STAR Light Fixture	MF	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
232	Electroluminescent Nightlight	MF	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
233	LED Nightlight	MF	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
234	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
235	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
236	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
237	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
238	ENERGY STAR LEDs - General Service Lamps	MF	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
239	ENERGY STAR LEDs - Reflector Lamp	MF	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
240	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
241	ENERGY STAR Torchieres	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
242	ENERGY STAR Holiday Lights	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
243	Residential Occupancy Sensors- 14 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC.A&lppe=16
244	Residential Occupancy Sensors 19 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC.A&lppe=16
245	Residential Occupancy Sensors- 23 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC.A&lppe=16
300	Appliances														
301	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
302	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
303	Energy Star top mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
304	Energy Star side mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
305	Energy Star bottom mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
306	Energy Star top mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
307	Energy Star side mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
308	Energy Star upright with manual defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
309	Energy Star upright with automatic defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	First Energy, PA Baseline	PA Baseline	
310	Energy Star chest freezer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
311	Energy Star dehumidifiers (35-45 pints/day)	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHHO TRM	EnergyStar Calculator	First Energy	EnergyStar Market Penetration Summary	
312	Energy Star Electric Clothes Drier with Moisture Sensor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	First Energy	PECO 2011	
313	ENERGY STAR Clothes Washers- with Electric Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
314	ENERGY STAR Clothes Washers- with Gas Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
315	ENERGY STAR Dishwashers- with Electric Water Heating	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
316	ENERGY STAR Dishwashers- with Gas Heat	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
317	ENERGY STAR Room Air Conditioners	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
318	Energy Star Exhaust Fans	SFD	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
319	Energy Star Residential Whole House Fans	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&aq=whole+house+fan&aid=3&ct=&cs=n&pq=whole+house+fan&sp=&rt=Completions&tk=&spv=3&l=Ed&sc=&st=AAAAAAA#st(y)
320	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
321	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
322	Energy Star top mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
323	Energy Star side mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
324	Energy Star bottom mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
325	Energy Star top mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
326	Energy Star side mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
327	Energy Star upright with manual defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
328	Energy Star upright with automatic defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	First Energy, PA Baseline	PA Baseline	
329	Energy Star chest freezer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
330	Energy Star dehumidifiers (35-45 pints/day)	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	First Energy	EnergyStar Market Penetration Summary
331	Energy Star Electric Clothes Dryer with Moisture Sensor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	First Energy	PECCO 2011	
332	ENERGY STAR Clothes Washers- with Electric Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
333	ENERGY STAR Clothes Washers- with Gas Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
334	ENERGY STAR Dishwashers- with Electric Water Heating	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
335	ENERGY STAR Dishwashers- with Gas Heat	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
336	ENERGY STAR Room Air Conditioners	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
337	Energy Star Exhaust Fans	SFA	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
338	Energy Star Residential Whole House Fans	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qz=&sp=whole+house+fan&sp=&rt=Completions&tk=&spv=&sl=E&sc=&st=&ast=AAAAAAAAA#st/y0
339	Refrigerator / Freezer Recycling and Replacement With a New Unit	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
340	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
341	Energy Star top mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
342	Energy Star side mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
343	Energy Star bottom mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
344	Energy Star top mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
345	Energy Star side mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
346	Energy Star upright with manual defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
347	Energy Star upright with automatic defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	First Energy, PA Baseline	PA Baseline	
348	Energy Star chest freezer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
349	Energy Star dehumidifiers (35-45 pints/day)	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	First Energy	EnergyStar Market Penetration Summary
350	Energy Star Electric Clothes Dryer with Moisture Sensor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	First Energy	PECCO 2011	
351	ENERGY STAR Clothes Washers- with Electric Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
352	ENERGY STAR Clothes Washers- with Gas Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
353	ENERGY STAR Dishwashers- with Electric Water Heating	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
354	ENERGY STAR Dishwashers- with Gas Heat	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
355	ENERGY STAR Room Air Conditioners	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
356	Energy Star Exhaust Fans	MF	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
357	Energy Star Residential Whole House Fans	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qz=&sp=whole+house+fan&sp=&rt=Completions&tk=&spv=&sl=E&sc=&st=&ast=AAAAAAAAA#st/y0
400	Electronics														
401	ENERGY STAR Computer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	First Energy	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
402	ENERGY STAR Copier	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
403	ENERGY STAR Fax Machine	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary	
404	ENERGY STAR Monitor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	First Energy, PA Baseline	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
405	ENERGY STAR Multifunction	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP, GDS Estimate	EnergyStar Market Penetration Summary	

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
406	ENERGY STAR Printer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	ME, GDS Estimate	EnergyStar Market Penetration Summary	
407	>50 in television	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative	
408	<50 in television	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative	
409	Smart Strip Plug Outlets	SFD	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
410	ENERGY STAR Computer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	First Energy	EnergyStar Market Penetration Summary	
411	ENERGY STAR Copier	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
412	ENERGY STAR Fax Machine	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary	
413	ENERGY STAR Monitor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	First Energy, PA Baseline	EnergyStar Market Penetration Summary	
414	ENERGY STAR Multifunction	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
415	ENERGY STAR Printer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	ME, GDS Estimate	EnergyStar Market Penetration Summary	
416	>50 in television	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative	
417	<50 in television	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative	
418	Smart Strip Plug Outlets	SFA	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
419	ENERGY STAR Computer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	First Energy	EnergyStar Market Penetration Summary	
420	ENERGY STAR Copier	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
421	ENERGY STAR Fax Machine	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary	
422	ENERGY STAR Monitor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	First Energy, PA Baseline	EnergyStar Market Penetration Summary	
423	ENERGY STAR Multifunction	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
424	ENERGY STAR Printer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	ME, GDS Estimate	EnergyStar Market Penetration Summary	
425	>50 in television	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative	
426	<50 in television	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative	
427	Smart Strip Plug Outlets	MF	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
500	Pool														
501	High Efficiency Two-Speed Pool Pump	SFD	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; savings-PA and Mid Atlantic TRMs
502	Variable Speed Pool Pumps	SFD	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{av} and kW _{vd} parameters taken from Ohio TRM
503	High Efficiency Two-Speed Pool Pump	SFA	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool
504	Variable Speed Pool Pumps	SFA	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{av} and kW _{vd} parameters taken from Ohio TRM
505	High Efficiency Two-Speed Pool Pump	MF	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool
506	Variable Speed Pool Pumps	MF	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{av} and kW _{vd} parameters taken from Ohio TRM
600	HVAC (Envelope)														
601	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM		GDS Measure Life Report Navigator 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
602	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM		GDS Measure Life Report Navigator 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigator) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
603	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM		GDS Measure Life Report Navigator 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigator) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
604	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM		GDS Measure Life Report Navigator 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigator) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
605	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
606	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from First Energy); ** wall insulation = area of walls - area of windows * price per sq ft
607	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
608	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
609	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
610	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
611	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	
612	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
613	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
614	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
615	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
616	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
617	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
618	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
619	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
620	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
621	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
622	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	
623	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
624	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
625	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
626	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
627	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
628	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
629	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
630	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
631	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
632	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
633	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
634	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
635	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigator) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
636	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigator) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
637	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigator) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
638	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
639	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.56/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
640	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
641	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
642	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
643	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
644	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
645	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
646	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigator) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
647	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigator) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
648	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigator) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
649	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
650	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.56/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
651	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
652	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
653	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)
654	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigator) multiplied by square footage estimate (from First Energy)

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
655	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
656	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
657	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
658	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
659	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from First Energy); EE saturation based on 7.3% of homes without insulations
660	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
661	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
662	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
663	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
664	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
665	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
666	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
667	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
668	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
669	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
670	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
671	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
672	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
673	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
674	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
675	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
676	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
677	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
678	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
679	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from First Energy)
680	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
681	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
700	HVAC (Equipment/Controls)														

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
701	Programmable Thermostat (ASHP)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	First Energy	PA Baseline	
702	Air Source Heat Pump (Maintenance)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
703	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	
704	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	
705	GSHP w/ Desuperheater	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	First Energy	PA Baseline	
706	Ductless Mini-Split Heat Pumps	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Stacenergy.com	First Energy	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
707	Ground Source Heat Pumps (GSHP)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	First Energy	PA Baseline	
708	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
709	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
710	HVAC Tune Up (Cooling Season Only Tune Up)	SFD	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
711	Furnace High Efficiency Fan	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	First Energy	GDS Estimate	
712	Programmable Thermostat (CAC)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	EnergyStar 2011 Savings and Costs Report	First Energy	PA Baseline	
713	Furnace Whistle	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	First Energy	GDS Estimate	
714	Room AC (RAC) Retirement with no replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline
715	Room AC (RAC) Retirement with replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline
716	Programmable Thermostat (ASHP)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	First Energy	PA Baseline	
717	Air Source Heat Pump (Maintenance)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
718	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	
719	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	
720	GSHP w/ Desuperheater	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	First Energy	PA Baseline	
721	Ductless Mini-Split Heat Pumps	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Stacenergy.com	First Energy	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
722	Ground Source Heat Pumps (GSHP)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	First Energy	PA Baseline	
723	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
724	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
725	HVAC Tune Up (Cooling Season Only Tune Up)	SFA	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
726	Furnace High Efficiency Fan	SFA	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	First Energy	GDS Estimate	
727	Programmable Thermostat (CAC)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	EnergyStar 2011 Savings and Costs Report	First Energy	PA Baseline	
728	Furnace Whistle	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	First Energy	GDS Estimate	
729	Room AC (RAC) Retirement with no replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline
730	Room AC (RAC) Retirement with replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline
731	Programmable Thermostat (ASHP)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	First Energy	PA Baseline	
732	Air Source Heat Pump (Maintenance)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
733	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	
734	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	
735	GSHP w/ Desuperheater	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	First Energy	PA Baseline	
736	Ductless Mini-Split Heat Pumps	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Stacenergy.com	First Energy	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
737	Ground Source Heat Pumps (GSHP)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	First Energy	PA Baseline	
738	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
739	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
740	HVAC Tune Up (Cooling Season Only Tune Up)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
741	Furnace High Efficiency Fan	MF	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	First Energy	GDS Estimate	
742	Programmable Thermostat (CAC)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	EnergyStar 2011 Savings and Costs Report	First Energy	PA Baseline	
743	Furnace Whistle	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note-1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	First Energy	GDS Estimate	
744	Room AC (RAC) Retirement with no replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline
745	Room AC (RAC) Retirement with replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline
801	Whole House														
801	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
802	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
803	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
804	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
805	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
806	Indirect Feedback	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
807	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
808	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
809	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
810	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
811	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
812	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
813	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
814	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
815	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
816	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
817	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
818	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
901	New Construction														
901	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
902	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
903	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
904	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
905	Residential New Construction-Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
906	Residential New Construction-Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	

Measure Assumptions Sources - Met Ed

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
907	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
908	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	

Amazon: Retail prices derived from Amazon's website
 Bellomy 2010 Residential Saturation Study: PPL's 2010 Residential Final Saturation Report
 Best Buy: Retail prices derived from Best Buy's website
 Bing.com: Retail prices derived from bing.com search results
 Codes and Standards Enhancement Initiative
 CT Lighting CF Report: Connecticut Lighting Coincidence Factor Report
 DEER database: California database of Energy Efficiency Resources
 EnergyStar: government-backed website that helps protect the environment through superior energy efficiency
 EnergyStar 2011 Savings and Costs
 EnergyStar Calculator: service provided by EnergyStar to help estimate savings, useful life, and cost
 EnergyStar Homes Report
 EnergyStar Penetration Market Summary: shipment data collected by EnergyStar, used in calculating Energy Efficient Saturations (average of penetrations for 2008-2010)
 First Energy: First Energy Saturation Study
 GDS: GDS Associates Calculation/ Assumption. See measure-specific notes.
 GDS Estimate: Relied on industry experience and professional judgement due to lack of available primary research at the state/regional level.
 GDS Measure Life Report: SPWG and GDS's document of a set of measure life values for selected measures
 Google.com: Retail prices derived from Google Shopping
 Home Depot: Retail prices derived from Home Depot's website
 LOWES: Retail prices derived from Lowe's website.
 MID-ATL TRM: Mid-Atlantic Technical Reference Manual, Version 2.0
 Navigant 2011: describes methods and results of ICS, commissioned by the EM&V Forum Research Subcommittee to update incremental costs for measures
 Opower: information used for calculating indirect feedback
 Ohio TRM: Ohio Technical Reference Manual
 PA Baseline: Pennsylvania Baseline study, conducted by GDS
 PA TRM: Pennsylvania Technical Reference Manual
 PA TRM / Ohio TRM: Pennsylvania Technical Reference Manual / Ohio Technical Reference Manual
 PECO 2011: data calculated from PECO's residential survey
 PECO email: correspondence with representative(s) at PECO
 PPL email: correspondence with representative(s) at PPL
 PPL Quarterly Report: documents progress and effectiveness of EE&C accomplishments for PPL through end of PY3, Quarter 2
 REM/Rate: Building Energy Modeling Software. Prototype homes were modeled based on average characteristics using the PECO Energy Baseline Study, February 2011
 Stacenergy.org: Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships
 The American Council for an Energy-Efficient Economy: Report on technical and policy issues relating to energy efficiency
 Vermont TRM: Vermont Technical Reference Manual
 WPP: West Penn Power Saturation Survey

Measure Assumptions - PECO

Measure	Measure Name	Home Type (SFA, SFD, MF)	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Incremental /Full Cost	Measure/End Use Description	Base Saturation	EE Saturation
812	Indirect Feedback (O-Power)	SFA	Retrofit	4354	2.23%	97.1	0.078	0.700	0.078	0.580	2	\$22.50	Attached SF existing homes with non-electric heat and room AC	29.2%	2.0%
813	Direct (Real Time) Feedback	MF	Retrofit	10975	6.15%	675.0	0.544	0.700	0.544	0.700	3	\$140.00	MF existing homes with electric heat and central AC	8.3%	2.0%
814	Indirect Feedback (O-Power)	MF	Retrofit	10975	2.23%	244.7	0.197	0.700	0.197	0.700	2	\$22.50	MF existing homes with electric heat and central AC	8.3%	2.0%
815	Direct (Real Time) Feedback	MF	Retrofit	3434	6.15%	211.2	0.170	0.700	0.170	0.700	3	\$140.00	MF existing homes with non-electric heat and central AC	33.3%	2.0%
816	Indirect Feedback (O-Power)	MF	Retrofit	3434	2.23%	76.6	0.062	0.700	0.062	0.700	2	\$22.50	MF existing homes with non-electric heat and central AC	33.3%	2.0%
817	Direct (Real Time) Feedback	MF	Retrofit	3651	6.15%	224.5	0.181	0.700	0.181	0.580	3	\$140.00	MF existing homes with non-electric heat and room AC	29.2%	2.0%
818	Indirect Feedback (O-Power)	MF	Retrofit	3651	2.23%	81.4	0.066	0.700	0.066	0.580	2	\$22.50	MF existing homes with non-electric heat and room AC	29.2%	2.0%
900	New Construction														
901	Residential New Construction-Tier 1	SFD	NC	19183	15.00%	2877.5	1.275	0.700	0.510	0.700	15	\$4,271.00	New construction detached SF homes w/ electric heat and Central AC	25.0%	0.0%
902	Residential New Construction-Tier 2	SFD	NC	19183	30.00%	5754.9	2.550	0.700	1.020	0.700	15	\$6,406.50	New construction detached SF homes w/ electric heat and Central AC	25.0%	0.0%
903	Residential New Construction-Tier 1	SFD	NC	8529	15.00%	1279.4	0.105	0.700	0.405	0.700	15	\$3,752.00	New construction detached SF homes w/ non-electric heat and Central AC	75.0%	0.0%
904	Residential New Construction-Tier 2	SFD	NC	8529	30.00%	2558.7	0.210	0.700	0.810	0.700	15	\$5,628.00	New construction detached SF homes w/ non-electric heat and Central AC	75.0%	0.0%
905	Residential New Construction Tier 1	MF	NC	10044	15.00%	1506.6	0.345	0.700	0.270	0.700	15	\$2,135.50	New construction MF homes with electric heat and central AC	10.0%	0.0%
906	Residential New Construction Tier 2	MF	NC	10044	30.00%	3013.2	0.690	0.700	0.540	0.700	15	\$3,203.25	New construction MF homes with electric heat and central AC	10.0%	0.0%
907	Residential New Construction Tier 1	MF	NC	4456	15.00%	668.4	0.060	0.700	0.165	0.700	15	\$1,876.00	New construction MF homes with gas heat and Central AC	90.0%	0.0%
908	Residential New Construction Tier 2	MF	NC	4456	30.00%	1336.8	0.120	0.700	0.330	0.700	15	\$2,814.00	New construction MF homes with gas heat and Central AC	90.0%	0.0%

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
100	Water Heating End Use														
101	Efficient Electric Water Heaters- 0.93 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PECO 2011	GDS estimate	CF Note 1: The coincidence factor for this energy efficiency measure was set to 1.0 because the kW demand impact for this measure was already on a coincident peak basis.
102	Efficient Electric Water Heaters- 0.94 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PECO 2011	GDS estimate	
103	Efficient Electric Water Heaters- 0.95 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PECO 2011	GDS estimate	
104	Solar Water Heaters	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	The American Council for an Energy-Efficient Economy	PECO 2011	PECO 2011	
105	Heat Pump Water Heaters- 2.0 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PECO 2011	GDS estimate	
106	Heat Pump Water Heaters- 2.3 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	PECO 2011	GDS estimate	costs uses the \$925 for a 2.0 water heater and adds \$50 premium for a 2.3
107	Electric Water Heater Pipe Insulation	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	costs uses \$3/foot for the Mid-Atlantic TRM and assumes average of 6 ft/home
108	Low Flow Showerheads- 1.5 GPM	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google.com	PECO 2011/PA TRM	PECO 2011	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
109	Low Flow Faucet Aerators	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PECO 2011/PA TRM	PECO 2011	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
110	Water Heater Tank Wrap	SFD	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	PECO 2011	PECO 2011	
111	Efficient Electric Water Heaters- 0.93 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PECO 2011	GDS estimate	
112	Efficient Electric Water Heaters- 0.94 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PECO 2011	GDS estimate	
113	Efficient Electric Water Heaters- 0.95 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PECO 2011	GDS estimate	
114	Solar Water Heaters	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	OHIO TRM	PECO 2011	PECO 2011	
115	Heat Pump Water Heaters- 2.0 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PECO 2011	GDS estimate	
116	Heat Pump Water Heaters- 2.3 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	PECO 2011	GDS estimate	
117	Electric Water Heater Pipe Insulation	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	\$3/ft at an estimated 6 LF total
118	Low Flow Showerheads- 1.5 GPM	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google.com	PECO 2011/PA TRM	PECO 2011	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
119	Low Flow Faucet Aerators	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PECO 2011/PA TRM	PECO 2011	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
120	Water Heater Tank Wrap	SFA	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	PECO 2011	PECO 2011	
121	Efficient Electric Water Heaters- 0.93 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PECO 2011	GDS estimate	
122	Efficient Electric Water Heaters- 0.94 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PECO 2011	GDS estimate	
123	Efficient Electric Water Heaters- 0.95 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	PECO 2011	GDS estimate	
124	Solar Water Heaters	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	The American Council for an Energy-Efficient Economy	PECO 2011	PECO 2011	
125	Heat Pump Water Heaters- 2.0 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PECO 2011	GDS estimate	
126	Heat Pump Water Heaters- 2.3 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	PECO 2011	GDS estimate	
127	Electric Water Heater Pipe Insulation	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	\$3/ft at an estimated 6 LF total
128	Low Flow Showerheads- 1.5 GPM	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google.com	PECO 2011/PA TRM	PECO 2011	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
129	Low Flow Faucet Aerators	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	PECO 2011/PA TRM	PECO 2011	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
130	Water Heater Tank Wrap	MF	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	PECO 2011	PECO 2011	
201	Lighting														
201	Ceiling Fan with ENERGY STAR Light Fixture	SFD	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PECO 2011 / GDS	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
202	Electroluminescent Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
203	LED Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
204	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
205	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
206	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
207	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS estimate	PA Baseline	
208	ENERGY STAR LEDs - General Service Lamps	SFD	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS estimate	PA Baseline	
209	ENERGY STAR LEDs - Reflector Lamp	SFD	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
210	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	Base saturation is an approximate value from baseline study
211	ENERGY STAR Torchieres	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS estimate	PA Baseline	
212	ENERGY STAR Holiday Lights	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	GDS estimate	EnergyStar Market Penetration Summary	
213	Residential Occupancy Sensors- 14 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PECO 2011 / GDS estimate	EnergyStar Market Penetration Summary	No occupancy sensors were identified in PECO survey; http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&rpj=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
214	Residential Occupancy Sensors 19 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PECO 2011 / GDS estimate	EnergyStar Market Penetration Summary	No occupancy sensors were identified in PECO survey; http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&rpj=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
215	Residential Occupancy Sensors- 23 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PECO 2011 / GDS estimate	EnergyStar Market Penetration Summary	No occupancy sensors were identified in PECO survey; http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&rpj=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
216	Ceiling Fan with ENERGY STAR Light Fixture	SFA	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PECO 2011	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
217	Electroluminescent Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
218	LED Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
219	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
220	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
221	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
222	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS estimate	PA Baseline	
223	ENERGY STAR LEDs - General Service Lamps	SFA	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS estimate	PA Baseline	
224	ENERGY STAR LEDs - Reflector Lamp	SFA	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
225	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS estimate	PA Baseline	Base saturation is a GDS estimate that the average number of outdoor fixtures per home is 1
226	ENERGY STAR Torchieres	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS estimate	PA Baseline	
227	ENERGY STAR Holiday Lights	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	GDS estimate	EnergyStar Market Penetration Summary	
228	Residential Occupancy Sensors- 14 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PECO 2011	EnergyStar Market Penetration Summary	No occupancy sensors were identified in PECO survey; http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&rpj=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
229	Residential Occupancy Sensors 19 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PECO 2011	EnergyStar Market Penetration Summary	No occupancy sensors were identified in PECO survey; http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
230	Residential Occupancy Sensors- 23 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PECO 2011	EnergyStar Market Penetration Summary	No occupancy sensors were identified in PECO survey; http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
231	Ceiling Fan with ENERGY STAR Light Fixture	MF	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PECO 2011	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
232	Electroluminescent Nightlight	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline		
233	LED Nightlight	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline		
234	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
235	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
236	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
237	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS estimate	PA Baseline	
238	ENERGY STAR LEDs - General Service Lamps	MF	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS estimate	PA Baseline	
239	ENERGY STAR LEDs -Reflector Lamp	MF	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS estimate	PA Baseline	
240	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS estimate	PA Baseline	Base saturation is a GDS estimate that the average number of outdoor fixtures per home is 1
241	ENERGY STAR Torchieres	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS estimate	PA Baseline	
242	ENERGY STAR Holiday Lights	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	GDS estimate	EnergyStar Market Penetration Summary	
243	Residential Occupancy Sensors- 14 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PECO 2011	EnergyStar Market Penetration Summary	No occupancy sensors were identified in PECO survey; http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
244	Residential Occupancy Sensors 19 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PECO 2011	EnergyStar Market Penetration Summary	No occupancy sensors were identified in PECO survey; http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
245	Residential Occupancy Sensors- 23 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PECO 2011	EnergyStar Market Penetration Summary	No occupancy sensors were identified in PECO survey; http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
300	Appliances														
301	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PECO 2011	PECO 2011	
302	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PECO 2011	PECO 2011	
303	Energy Star top mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
304	Energy Star side mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
305	Energy Star bottom mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
306	Energy Star top mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
307	Energy Star side mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
308	Energy Star upright with manual defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PECO 2011	PECO 2011	

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes	
309	Energy Star upright with automatic defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PECO 2011	PECO 2011		
310	Energy Star chest freezer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PECO 2011	PECO 2011		
311	Energy Star dehumidifiers (35-45 pints/day)	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	PECO 2011	PECO 2011		
312	Energy Star Electric Clothes Dryer with Moisture Sensor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011		
313	ENERGY STAR Clothes Washers- with Electric Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011		
314	ENERGY STAR Clothes Washers- with Gas Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011		
315	ENERGY STAR Dishwashers- with Electric Water Heating	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011		
316	ENERGY STAR Dishwashers- with Gas Heat	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011		
317	ENERGY STAR Room Air Conditioners	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	EnergyStar Market Penetration Summary		
318	Energy Star Exhaust Fans	SFD	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS estimate	GDS estimate		
319	Energy Star Residential Whole House Fans	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	PECO 2011	PECO 2011	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qs=n&pq=whole+house+fan&sp=&rt=Completions&rk=&spv=&sl=E&sc=&st=&ast=AAAAAAAA#x0y0	
320	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO	PECO 2011	PECO 2011		
321	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO	PECO 2011	PECO 2011		
322	Energy Star top mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators	
323	Energy Star side mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators	
324	Energy Star bottom mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators	
325	Energy Star top mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators	
326	Energy Star side mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators	
327	Energy Star upright with manual defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PECO 2011	PECO 2011		
328	Energy Star upright with automatic defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PECO 2011	PECO 2011		
329	Energy Star chest freezer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PECO 2011	PECO 2011		
330	Energy Star dehumidifiers (35-45 pints/day)	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	PECO 2011	PECO 2011	
331	Energy Star Electric Clothes Dryer with Moisture Sensor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011		
332	ENERGY STAR Clothes Washers- with Electric Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011		
333	ENERGY STAR Clothes Washers- with Gas Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011		
334	ENERGY STAR Dishwashers- with Electric Water Heating	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011		
335	ENERGY STAR Dishwashers- with Gas Heat	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011		
336	ENERGY STAR Room Air Conditioners	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	EnergyStar Market Penetration Summary		
337	Energy Star Exhaust Fans	SFA	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS estimate	GDS estimate		
338	Energy Star Residential Whole House Fans	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	PECO 2011	PECO 2011	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qs=n&pq=whole+house+fan&sp=&rt=Completions&rk=&spv=&sl=E&sc=&st=&ast=AAAAAAAA#x0y0	
339	Refrigerator / Freezer Recycling and Replacement With a New Unit	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO	PECO 2011	PECO 2011		
340	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO	PECO 2011	PECO 2011		
341	Energy Star top mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators	
342	Energy Star side mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators	
343	Energy Star bottom mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators	
344	Energy Star top mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators	
345	Energy Star side mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators	

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
346	Energy Star upright with manual defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PECO 2011	PECO 2011	
347	Energy Star upright with automatic defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PECO 2011	PECO 2011	
348	Energy Star chest freezer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PECO 2011	PECO 2011	
349	Energy Star dehumidifiers (35-45 pints/day)	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011	
350	Energy Star Electric Clothes Dryer with Moisture Sensor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	
351	ENERGY STAR Clothes Washers- with Electric Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	
352	ENERGY STAR Clothes Washers- with Gas Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	
353	ENERGY STAR Dishwashers- with Electric Water Heating	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011	
354	ENERGY STAR Dishwashers- with Gas Heat	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011	
355	ENERGY STAR Room Air Conditioners	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	EnergyStar Market Penetration Summary	
356	Energy Star Exhaust Fans	MF	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS estimate	GDS estimate	
357	Energy Star Residential Whole House Fans	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	PECO 2011	PECO 2011	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qs=n&pq=whole+house+fan&sp=&rt=Completions&rk=&spv=&sl=E&sc=&st=&ast=AAAAAAAA#x0y0
400	Electronics														
401	ENERGY STAR Computer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PECO 2011	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
402	ENERGY STAR Copier	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	
403	ENERGY STAR Fax Machine	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	
404	ENERGY STAR Monitor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
405	ENERGY STAR Multifunction	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	GDS estimate	EnergyStar Market Penetration Summary	
406	ENERGY STAR Printer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	
407	>50 in	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011	
408	<50 in	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011	
409	Smart Strip Plug Outlets	SFD	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS estimate	GDS estimate	
410	ENERGY STAR Computer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PECO 2011	EnergyStar Market Penetration Summary	
411	ENERGY STAR Copier	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	
412	ENERGY STAR Fax Machine	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	
413	ENERGY STAR Monitor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	
414	ENERGY STAR Multifunction	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	GDS estimate	EnergyStar Market Penetration Summary	
415	ENERGY STAR Printer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	
416	>50 in	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011	
417	<50 in	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011	PECO 2011	
418	Smart Strip Plug Outlets	SFA	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS estimate	GDS estimate	
419	ENERGY STAR Computer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PECO 2011	EnergyStar Market Penetration Summary	
420	ENERGY STAR Copier	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
421	ENERGY STAR Fax Machine	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	
422	ENERGY STAR Monitor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	
423	ENERGY STAR Multifunction	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	GDS estimate	EnergyStar Market Penetration Summary	
424	ENERGY STAR Printer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	GDS estimate	EnergyStar Market Penetration Summary	
425	>50 in	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011 / GDS estimate	PECO 2011	
426	<50 in	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PECO 2011 / GDS estimate	PECO 2011	
427	Smart Strip Plug Outlets	MF	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS estimate	GDS estimate	
500	Pool														
501	High Efficiency Two-Speed Pool Pump	SFD	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011 / GDS estimate	GDS estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; savings-PA and Mid Atlantic TRMs
502	Variable Speed Pool Pumps	SFD	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011 / GDS estimate	GDS estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{in} and kW _{sp} parameters taken from Ohio TRM
503	High Efficiency Two-Speed Pool Pump	SFA	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011 / GDS estimate	GDS estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool
504	Variable Speed Pool Pumps	SFA	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011 / GDS estimate	GDS estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{in} and kW _{sp} parameters taken from Ohio TRM
505	High Efficiency Two-Speed Pool Pump	MF	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011 / GDS estimate	GDS estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool
506	Variable Speed Pool Pumps	MF	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	PECO 2011 / GDS estimate	GDS estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{in} and kW _{sp} parameters taken from Ohio TRM
600	HVAC (Envelope)														
601	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	GDS estimate	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
602	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	PECO 2011	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
603	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	PECO 2011	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
604	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	PECO 2011	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
605	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	PECO 2011	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
606	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	PECO 2011	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from PECO); ** wall insulation = area of walls - area of windows * price per sq ft
607	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	PECO 2011	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
608	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	\$325 per 100 square feet of windows multiplied by square footage
609	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	PECO 2011	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 11.36*90.91% (90.91% = homes w/out slab found.)
610	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	PECO 2011	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 11.36*90.91% (90.91% = homes w/out slab found.)
611	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PECO 2011	GDS estimate	
612	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	GDS estimate	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
613	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	PECO 2011	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
614	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PECO	PECO 2011	PECO 2011	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
615	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
616	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
617	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from PECO)
618	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
619	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	\$325 per 100 square feet of windows multiplied by square footage
620	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 68.18*90.91% (90.91% = homes w/out slab found.)
621	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 68.18*90.91% (90.91% = homes w/out slab found.)
622	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PECO 2011	GDS estimate	
623	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	GDS estimate	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
624	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
625	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
626	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
627	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
628	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from PECO)
629	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
630	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	\$325 per 100 square feet of windows multiplied by square footage
631	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 6.82*90.91% (90.91% = homes w/out slab found.)
632	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 6.82*90.91% (90.91% = homes w/out slab found.)
633	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PECO 2011	GDS estimate	
634	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	GDS estimate	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
635	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
636	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
637	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
638	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
639	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from PECO)

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes	
640	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
641	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	\$325 per 100 square feet of windows multiplied by square footage	
642	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 8.33*90.91% (90.91% = homes w/out slab found.)
643	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 8.33*90.91% (90.91% = homes w/out slab found.)
644	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PECO 2011	GDS estimate	
645	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	GDS estimate	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
646	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
647	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
648	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
649	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
650	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from PECO)
651	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
652	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	\$325 per 100 square feet of windows multiplied by square footage
653	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 33.33*90.91% (90.91% = homes w/out slab found.)
654	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 33.33*90.91% (90.91% = homes w/out slab found.)
655	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PECO 2011	GDS estimate	
656	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	GDS estimate	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
657	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
658	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
659	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey - 88.52% of all homes have attic insulation
660	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
661	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from PECO)
662	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
663	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	\$325 per 100 square feet of windows multiplied by square footage
664	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 29.17*90.91% (90.91% = homes w/out slab found.)

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kWh)	Winter CF	Per Unit Summer Demand Savings (kWh)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
665	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO); base sat. = 29.17*90.91% (90.91% = homes w/out slab found.)
666	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PECO 2011		GDS estimate
667	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011		GDS estimate
668	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from PECO)
669	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
670	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	\$325 per 100 square feet of windows multiplied by square footage
671	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PECO 2011		GDS estimate
672	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011		GDS estimate
673	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from PECO)
674	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	PECO 2011	PECO 2011	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
675	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	\$325 per 100 square feet of windows multiplied by square footage
676	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PECO 2011		GDS estimate
677	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, PECO	PECO 2011		GDS estimate
678	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from PECO)
679	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, PECO	PECO 2011	PECO 2011	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
680	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	\$325 per 100 square feet of windows multiplied by square footage
681	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PECO 2011		GDS estimate
700	HVAC (Equipment/Controls)														
701	Programmable Thermostat (ASHP)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	PECO 2011	PECO 2011	
702	Air Source Heat Pump (Maintenance)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	
703	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PECO 2011	PECO 2011	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source.
704	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PECO 2011	PECO 2011	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source.
705	GSHP w/ Desuperheater	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Ultra-geothermal, Inc. Basington, NH	PECO 2011	PECO 2011	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
706	Ductless Mini-Split Heat Pumps	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	PECO 2011	PECO 2011	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
707	Ground Source Heat Pumps (GSHP)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton)	PECO 2011	PECO 2011	
708	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	PECO 2011	PECO 2011	
709	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	PECO 2011	PECO 2011	
710	HVAC Tune Up (Cooling Season Only Tune Up)	SFD	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	
711	Furnace High Efficiency Fan	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	PECO 2011		GDS estimate
712	Programmable Thermostat (CAC)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	
713	Furnace Whistle	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	PECO 2011		GDS estimate

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
714	Room AC (RAC) Retirement with no replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	PECO (email from Nicholas DeDominicis)	PECO 2011	GDS estimate	Base saturation is from PECO baseline study; adjusted for units that are already EnergyStar rated
715	Room AC (RAC) Retirement with replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	PECO (email from Nicholas DeDominicis)	PECO 2011	GDS estimate	Base saturation is from PECO baseline study; adjusted for units that are already EnergyStar rated
716	Programmable Thermostat (ASHP)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	*See CF Note 1	REMRate/TRM	*See CF Note 1	PA TRM	Home Depot	PECO 2011	PECO 2011	
717	Air Source Heat Pump (Maintenance)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	
718	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PECO 2011	PECO 2011	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
719	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PECO 2011	PECO 2011	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
720	GSHP w/ Desuperheater	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Ultra-geothermal, Inc. Barrington, NH	PECO 2011	PECO 2011	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
721	Ductless Mini-Split Heat Pumps	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	PECO 2011	PECO 2011	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
722	Ground Source Heat Pumps (GSHP)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton)	PECO 2011	PECO 2011	
723	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	PECO 2011	PECO 2011	
724	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	PECO 2011	PECO 2011	
725	HVAC Tune Up (Cooling Season Only Tune Up)	SFA	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	
726	Furnace High Efficiency Fan	SFA	Retrofit	RemRate	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	MID-ATL TRM	MID-ATL TRM	PECO 2011	GDS estimate	
727	Programmable Thermostat (CAC)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	
728	Furnace Whistle	SFA	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Amazon	PECO 2011	GDS estimate	
729	Room AC (RAC) Retirement with no replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	PECO (email from Nicholas DeDominicis)	PECO 2011	GDS estimate	
730	Room AC (RAC) Retirement with replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	PECO (email from Nicholas DeDominicis)	PECO 2011	GDS estimate	
731	Programmable Thermostat (ASHP)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	*See CF Note 1	REMRate/TRM	*See CF Note 1	PA TRM	Home Depot	PECO 2011	PECO 2011	
732	Air Source Heat Pump (Maintenance)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	
733	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PECO 2011	PECO 2011	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
734	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	PECO 2011	PECO 2011	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
735	GSHP w/ Desuperheater	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Ultra-geothermal, Inc. Barrington, NH	PECO 2011	PECO 2011	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
736	Ductless Mini-Split Heat Pumps	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	PECO 2011	PECO 2011	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
737	Ground Source Heat Pumps (GSHP)	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton)	PECO 2011	PECO 2011	
738	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	PECO 2011	PECO 2011	
739	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	PECO 2011	PECO 2011	
740	HVAC Tune Up (Cooling Season Only Tune Up)	MF	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	
741	Furnace High Efficiency Fan	MF	Retrofit	RemRate	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	MID-ATL TRM	MID-ATL TRM	PECO 2011	GDS estimate	
742	Programmable Thermostat (CAC)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	PECO 2011	PECO 2011	
743	Furnace Whistle	MF	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Amazon	PECO 2011	GDS estimate	

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
744	Room AC (RAC) Retirement with no replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	PECO (email from Nicholas DeDominicis)	PECO 2011	GDS estimate	
745	Room AC (RAC) Retirement with replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	PECO (email from Nicholas DeDominicis)	PECO 2011	GDS estimate	
800	Whole House														
801	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PECO 2011	GDS estimate	
802	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PECO 2011	PECO / GDS estimate	Data from the PECO Smart Home E-Audit from March 2010-January 2012 was used to generate an EE estimate; cost is \$15 (from Opower), half is an annual fee that must be paid twice over a 2 year measure life so cost=15*1.5=22.5
803	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PECO 2011	GDS estimate	
804	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PECO 2011	PECO / GDS estimate	Data from the PECO Smart Home E-Audit from March 2010-January 2012 was used to generate an EE estimate; cost is \$15 (from Opower), half is an annual fee that must be paid twice over a 2 year measure life so cost=15*1.5=22.5
805	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PECO 2011	GDS estimate	
806	Indirect Feedback	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PECO 2011	PECO / GDS estimate	Data from the PECO Smart Home E-Audit from March 2010-January 2012 was used to generate an EE estimate; cost is \$15 (from Opower), half is an annual fee that must be paid twice over a 2 year measure life so cost=15*1.5=22.5
807	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PECO 2011	GDS estimate	
808	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PECO 2011	PECO / GDS estimate	Data from the PECO Smart Home E-Audit from March 2010-January 2012 was used to generate an EE estimate; cost is \$15 (from Opower), half is an annual fee that must be paid twice over a 2 year measure life so cost=15*1.5=22.5
809	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PECO 2011	GDS estimate	
810	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PECO 2011	PECO / GDS estimate	Data from the PECO Smart Home E-Audit from March 2010-January 2012 was used to generate an EE estimate; cost is \$15 (from Opower), half is an annual fee that must be paid twice over a 2 year measure life so cost=15*1.5=22.5
811	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PECO 2011	GDS estimate	
812	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PECO 2011	PECO / GDS estimate	Data from the PECO Smart Home E-Audit from March 2010-January 2012 was used to generate an EE estimate; cost is \$15 (from Opower), half is an annual fee that must be paid twice over a 2 year measure life so cost=15*1.5=22.5
813	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PECO 2011	GDS estimate	
814	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PECO 2011	PECO / GDS estimate	Data from the PECO Smart Home E-Audit from March 2010-January 2012 was used to generate an EE estimate; cost is \$15 (from Opower), half is an annual fee that must be paid twice over a 2 year measure life so cost=15*1.5=22.5
815	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PECO 2011	GDS estimate	
816	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PECO 2011	PECO / GDS estimate	Data from the PECO Smart Home E-Audit from March 2010-January 2012 was used to generate an EE estimate; cost is \$15 (from Opower), half is an annual fee that must be paid twice over a 2 year measure life so cost=15*1.5=22.5
817	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PECO 2011	GDS estimate	
818	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PECO 2011	PECO / GDS estimate	Data from the PECO Smart Home E-Audit from March 2010-January 2012 was used to generate an EE estimate; cost is \$15 (from Opower), half is an annual fee that must be paid twice over a 2 year measure life so cost=15*1.5=22.5
900	New Construction														
901	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
902	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
903	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
904	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
905	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
906	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
907	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
908	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	

Amazon: Retail prices derived from Amazon's website
 Best Buy: Retail prices derived from Best Buy's website
 Bing.com: Retail prices derived from Bing Shopping
 CT Lighting CF Report: Connecticut Lighting Coincidence Factor Report
 DEER database: California database of Energy Efficiency Resources

Measure Assumptions Sources - PECO

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
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EnergyStar: government-backed website that helps protect the environment through superior energy efficiency
 EnergyStar 2011 Savings and Costs
 EnergyStar Calculator: service provided by EnergyStar to help estimate savings, useful life, and cost
 EnergyStar Homes Report
 EnergyStar Penetration Market Summary: shipment data collected by EnergyStar, used in calculating Energy Efficient Saturations
 GDS: GDS Associates Calculation/Assumption. See measure-specific notes.
 GDS Estimate: Relied on industry experience and professional judgement due to lack of available primary research at the state/regional level.
 GDS Measure Life Report: SPWG and GDS's document of a set of measure life values for selected measures
 Google.com: Retail prices derived from Google Shopping
 Home Depot: Retail prices derived from Home Depot's website
 LOWES: Retail prices derived from Lowe's website.
 MID-ATL TRM: Mid-Atlantic Technical Reference Manual Version 2.0
 Navigant 2011: describes methods and results of ICS, commissioned by the EM&V Forum Research Subcommittee to update incremental costs for measures
 Opower: information used for calculating indirect feedback
 Ohio TRM: Ohio Technical Reference Manual
 PA Baseline: Pennsylvania Baseline study, conducted by GDS
 PA TRM: Pennsylvania Technical Reference Manual
 PA TRM / Ohio TRM: Pennsylvania Technical Reference Manual / Ohio Technical Reference Manual
 PECO 2011: data calculated from PECO's residential survey
 REM/Rate: Building Energy Modeling Software. Prototype homes were modeled based on average characteristics using the PECO Energy Baseline Study, February 2011
 The American Council for an Energy-Efficient Economy: Report on technical and policy issues relating to energy efficiency
 Vermont TRM: Vermont Technical Reference Manual

Measure Assumptions Sources - Penclec

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
100	Water Heating End Use														
101	Efficient Electric Water Heaters- 0.93 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	CF Note 1: The coincidence factor for this energy efficiency measure was set to 1.0 because the kW demand impact for this measure was already on a coincident peak basis.
102	Efficient Electric Water Heaters- 0.94 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
103	Efficient Electric Water Heaters- 0.95 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
104	Solar Water Heaters	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	First Energy	PA Baseline	
105	Heat Pump Water Heaters- 2.0 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
106	Heat Pump Water Heaters- 2.3 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	First Energy	PA Baseline	
107	Electric Water Heater Pipe Insulation	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
108	Low Flow Showerheads- 1.5 GPM	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	First Energy / PA TRM	PA Baseline	
109	Low Flow Faucet Aerators	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy / PA TRM	PA Baseline	
110	Water Heater Tank Wrap	SFD	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	First Energy	PA Baseline	
111	Efficient Electric Water Heaters- 0.93 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
112	Efficient Electric Water Heaters- 0.94 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
113	Efficient Electric Water Heaters- 0.95 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
114	Solar Water Heaters	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	First Energy	PA Baseline	
115	Heat Pump Water Heaters- 2.0 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
116	Heat Pump Water Heaters- 2.3 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	First Energy	PA Baseline	
117	Electric Water Heater Pipe Insulation	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
118	Low Flow Showerheads- 1.5 GPM	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	First Energy / PA TRM	PA Baseline	
119	Low Flow Faucet Aerators	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy / PA TRM	PA Baseline	
120	Water Heater Tank Wrap	SFA	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	First Energy	PA Baseline	
121	Efficient Electric Water Heaters- 0.93 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
122	Efficient Electric Water Heaters- 0.94 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
123	Efficient Electric Water Heaters- 0.95 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
124	Solar Water Heaters	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	First Energy	PA Baseline	
125	Heat Pump Water Heaters- 2.0 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
126	Heat Pump Water Heaters- 2.3 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	First Energy	PA Baseline	
127	Electric Water Heater Pipe Insulation	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
128	Low Flow Showerheads- 1.5 GPM	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	First Energy / PA TRM	PA Baseline	
129	Low Flow Faucet Aerators	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy / PA TRM	PA Baseline	
130	Water Heater Tank Wrap	MF	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	First Energy	PA Baseline	
200	Lighting														
201	Ceiling Fan with ENERGY STAR Light Fixture	SFD	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CF Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
202	Electroluminescent Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	GDS estimate	PA TRM	GDS estimate	PA TRM	Amazon.com	PA Baseline	PA Baseline	
203	LED Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	GDS estimate	PA TRM	GDS estimate	PA TRM	Low's	PA Baseline	PA Baseline	
204	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFD	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
205	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFD	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CF Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
206	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFD	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
207	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	

Measure Assumptions Sources - Penclev

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
208	ENERGY STAR LEDs - General Service Lamps	SFD	ROB	-	-	GDS calculation	GDS calculation	CT Lighting CF Report	GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
209	ENERGY STAR LEDs -Reflector Lamp	SFD	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
210	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
211	ENERGY STAR Torchieres	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
212	ENERGY STAR Holiday Lights	SFD	ROB	-	-	PA TRM	PA TRM	GDS estimate	PA TRM	GDS estimate	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
213	Residential Occupancy Sensors- 14 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&pf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
214	Residential Occupancy Sensors 19 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&pf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
215	Residential Occupancy Sensors- 23 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&pf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
216	Ceiling Fan with ENERGY STAR Light Fixture	SFA	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
217	Electroluminescent Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	GDS estimate	PA TRM	GDS estimate	PA TRM	Amazon.com	PA Baseline	PA Baseline	
218	LED Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	GDS estimate	PA TRM	GDS estimate	PA TRM	Lowe's	PA Baseline	PA Baseline	
219	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFA	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
220	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFA	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
221	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
222	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
223	ENERGY STAR LEDs - General Service Lamps	SFA	ROB	-	-	GDS calculation	GDS calculation	CT Lighting CF Report	GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
224	ENERGY STAR LEDs -Reflector Lamp	SFA	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
225	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
226	ENERGY STAR Torchieres	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
227	ENERGY STAR Holiday Lights	SFA	ROB	-	-	PA TRM	PA TRM	GDS estimate	PA TRM	GDS estimate	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
228	Residential Occupancy Sensors- 14 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&pf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
229	Residential Occupancy Sensors 19 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&pf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
230	Residential Occupancy Sensors- 23 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&pf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPC&lppc=16
231	Ceiling Fan with ENERGY STAR Light Fixture	MF	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
232	Electroluminescent Nightlight	MF	ROB	-	-	PA TRM	PA TRM	GDS estimate	PA TRM	GDS estimate	PA TRM	Amazon.com	PA Baseline	PA Baseline	
233	LED Nightlight	MF	ROB	-	-	PA TRM	PA TRM	GDS estimate	PA TRM	GDS estimate	PA TRM	Lowe's	PA Baseline	PA Baseline	
234	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	MF	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	

Measure Assumptions Sources - Penelco

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
235	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	MF	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
236	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
237	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
238	ENERGY STAR LEDs - General Service Lamps	MF	ROB	-	-	GDS calculation	GDS calculation	CT Lighting CF Report	GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
239	ENERGY STAR LEDs - Reflector Lamp	MF	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
240	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
241	ENERGY STAR Torchieres	MF	ROB	GDS estimate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
242	ENERGY STAR Holiday Lights	MF	ROB	-	-	PA TRM	PA TRM	GDS estimate	PA TRM	GDS estimate	PA TRM	Low's	GDS Estimate	EnergyStar Market Penetration Summary	
243	Residential Occupancy Sensors- 14 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPCA&lpgc=16
244	Residential Occupancy Sensors 19 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPCA&lpgc=16
245	Residential Occupancy Sensors- 23 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&lpg=Residential%2bOccupancy%2bSensors&FORM=CPCA&lpgc=16
300	Appliances														
301	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
302	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
303	Energy Star top mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
304	Energy Star side mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
305	Energy Star bottom mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
306	Energy Star top mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
307	Energy Star side mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
308	Energy Star upright with manual defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/ Lowe's	First Energy, PA Baseline	PA Baseline	
309	Energy Star upright with automatic defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Low's	First Energy, PA Baseline	PA Baseline	
310	Energy Star chest freezer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/ Lowe's	First Energy, PA Baseline	PA Baseline	
311	Energy Star dehumidifiers (35-45 pints/day)	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	First Energy	EnergyStar Market Penetration Summary	
312	Energy Star Electric Clothes Dryer with Moisture Sensor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	First Energy	PECO 2011	
313	ENERGY STAR Clothes Washers- with Electric Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
314	ENERGY STAR Clothes Washers- with Gas Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
315	ENERGY STAR Dishwashers- with Electric Water Heating	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
316	ENERGY STAR Dishwashers- with Gas Heat	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
317	ENERGY STAR Room Air Conditioners	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
318	Energy Star Exhaust Fans	SFD	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
319	Energy Star Residential Whole House Fans	SFD	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&et=&sp=&rp=&w=&h=&f=&g=&v=&cat=&ast=AAAAAAA#d0
320	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
321	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	

Measure Assumptions Sources - Penelco

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
322	Energy Star top mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
323	Energy Star side mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
324	Energy Star bottom mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
325	Energy Star top mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
326	Energy Star side mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
327	Energy Star upright with manual defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
328	Energy Star upright with automatic defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	First Energy, PA Baseline	PA Baseline	
329	Energy Star chest freezer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
330	Energy Star dehumidifiers (35-45 pints/day)	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	First Energy	EnergyStar Market Penetration Summary
331	Energy Star Electric Clothes Dryer with Moisture Sensor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	First Energy	PECO 2011	
332	ENERGY STAR Clothes Washers- with Electric Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
333	ENERGY STAR Clothes Washers- with Gas Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
334	ENERGY STAR Dishwashers- with Electric Water Heating	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
335	ENERGY STAR Dishwashers- with Gas Heat	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
336	ENERGY STAR Room Air Conditioners	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
337	Energy Star Exhaust Fans	SFA	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
338	Energy Star Residential Whole House Fans	SFA	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRI&q=whole+house+fan&aid=&ci=&qs=&pq=whole+house+fan&sp=&rt=Completions&rk=&pv=&sl=L&sc=&st=&ast=AAAAAAAA#dly0
339	Refrigerator / Freezer Recycling and Replacement With a New Unit	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
340	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	
341	Energy Star top mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
342	Energy Star side mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
343	Energy Star bottom mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
344	Energy Star top mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
345	Energy Star side mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
346	Energy Star upright with manual defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
347	Energy Star upright with automatic defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	First Energy, PA Baseline	PA Baseline	
348	Energy Star chest freezer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
349	Energy Star dehumidifiers (35-45 pints/day)	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	First Energy	EnergyStar Market Penetration Summary
350	Energy Star Electric Clothes Dryer with Moisture Sensor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	First Energy	PECO 2011	
351	ENERGY STAR Clothes Washers- with Electric Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
352	ENERGY STAR Clothes Washers- with Gas Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
353	ENERGY STAR Dishwashers- with Electric Water Heating	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
354	ENERGY STAR Dishwashers- with Gas Heat	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
355	ENERGY STAR Room Air Conditioners	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
356	Energy Star Exhaust Fans	MF	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
357	Energy Star Residential Whole House Fans	MF	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRI&q=whole+house+fan&aid=&ci=&qs=&pq=whole+house+fan&sp=&rt=Completions&rk=&pv=&sl=L&sc=&st=&ast=AAAAAAAA#dly0
400	Electronics														
401	ENERGY STAR Computer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PV2 Report-Cited EnergyStar	First Energy	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
402	ENERGY STAR Copier	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
403	ENERGY STAR Fax Machine	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary	

Measure Assumptions Sources - Penclec

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes	
404	ENERGY STAR Monitor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	First Energy, PA Baseline	EnergyStar Market Penetration Summary	Savings - PA TRM p.122	
405	ENERGY STAR Multifunction	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL	EnergyStar Market Penetration Summary		
406	ENERGY STAR Printer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	Penclec, GDS estimate	EnergyStar Market Penetration Summary		
407	>50 in television	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
408	<50 in television	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
409	Smart Strip Plug Outlets	SFD	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate		
410	ENERGY STAR Computer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	First Energy	EnergyStar Market Penetration Summary		
411	ENERGY STAR Copier	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary		
412	ENERGY STAR Fax Machine	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary		
413	ENERGY STAR Monitor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	First Energy, PA Baseline	EnergyStar Market Penetration Summary		
414	ENERGY STAR Multifunction	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL	EnergyStar Market Penetration Summary		
415	ENERGY STAR Printer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	Penclec, GDS estimate	EnergyStar Market Penetration Summary		
416	>50 in television	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
417	<50 in television	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
418	Smart Strip Plug Outlets	SFA	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate		
419	ENERGY STAR Computer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	First Energy	EnergyStar Market Penetration Summary		
420	ENERGY STAR Copier	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary		
421	ENERGY STAR Fax Machine	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary		
422	ENERGY STAR Monitor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	First Energy, PA Baseline	EnergyStar Market Penetration Summary		
423	ENERGY STAR Multifunction	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL	EnergyStar Market Penetration Summary		
424	ENERGY STAR Printer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	Penclec, GDS estimate	EnergyStar Market Penetration Summary		
425	>50 in television	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
426	<50 in television	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
427	Smart Strip Plug Outlets	MF	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate		
500	Pool															
501	High Efficiency Two-Speed Pool Pump	SFD	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; savings-PA and Mid Atlantic TRMs	
502	Variable Speed Pool Pumps	SFD	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{sp} and kW _{vp} parameters taken from Ohio TRM	
503	High Efficiency Two-Speed Pool Pump	SFA	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool	
504	Variable Speed Pool Pumps	SFA	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{sp} and kW _{vp} parameters taken from Ohio TRM	
505	High Efficiency Two-Speed Pool Pump	MF	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool	
506	Variable Speed Pool Pumps	MF	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _{sp} and kW _{vp} parameters taken from Ohio TRM	
600	HVAC (Envelope)															
601	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
602	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
603	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation

Measure Assumptions Sources - Penclee

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
604	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
605	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate
606	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate; ** wall insulation = area of walls - area of windows * price per sq ft
607	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate
608	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from West Penn Power
609	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate
610	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate
611	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	
612	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
613	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
614	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
615	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
616	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate
617	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate
618	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate
619	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from West Penn Power
620	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate
621	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate
622	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	
623	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
624	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
625	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
626	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
627	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate
628	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate
629	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate

Measure Assumptions Sources - Penclev

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
630	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from West Penn Power
631	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate
632	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate
633	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
634	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
635	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
636	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
637	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
638	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate
639	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate
640	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate
641	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from West Penn Power
642	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate
643	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate
644	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
645	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
646	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
647	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
648	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate; EE saturation based on homes with insulation
649	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate
650	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate
651	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate
652	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from West Penn Power
653	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate

Measure Assumptions Sources - Penclec

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
654	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigator) multiplied by square footage estimate
655	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
656	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigator) multiplied by square footage estimate
657	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigator) multiplied by square footage estimate; EE saturation based on homes with insulation
658	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigator) multiplied by square footage estimate; EE saturation based on homes with insulation
659	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigator) multiplied by square footage estimate; EE saturation based on homes with insulation
660	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigator) multiplied by square footage estimate
661	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.56/sq ft (from Navigator) multiplied by square footage estimate
662	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigator) multiplied by square footage estimate
663	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from West Penn Power
664	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigator) multiplied by square footage estimate
665	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigator) multiplied by square footage estimate
666	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
667	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigator) multiplied by square footage estimate
668	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigator) multiplied by square footage estimate
669	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigator) multiplied by square footage estimate
670	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from West Penn Power
671	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
672	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigator) multiplied by square footage estimate
673	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigator) multiplied by square footage estimate
674	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	
675	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from West Penn Power
676	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
677	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigator) multiplied by square footage estimate
678	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigator) multiplied by square footage estimate
679	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigator) multiplied by square footage estimate
680	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage from West Penn Power

Measure Assumptions Sources - Penclev

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
681	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline	
701	HVAC (Equipment/Controls)														
701	Programmable Thermostat (ASHP)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	First Energy	PA Baseline	
702	Air Source Heat Pump (Maintenance)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
703	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
704	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
705	GSHP w/ Desuperheater	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	First Energy	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
706	Ductless Mini-Split Heat Pumps	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	First Energy	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20FINAL%20.pdf
707	Ground Source Heat Pumps (GSHP)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	First Energy	PA Baseline	
708	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
709	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
710	HVAC Tune Up (Cooling Season Only Tune Up)	SFD	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
711	Furnace High Efficiency Fan	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	First Energy	GDS Estimate	
712	Programmable Thermostat (CAC)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
713	Furnace Whistle	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Amazon	First Energy	GDS Estimate	
714	Room AC (RAC) Retirement with no replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline	
715	Room AC (RAC) Retirement with replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline	
716	Programmable Thermostat (ASHP)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	EnergyStar 2011 Savings and Costs Report	First Energy	PA Baseline	
717	Air Source Heat Pump (Maintenance)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
718	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
719	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
720	GSHP w/ Desuperheater	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	First Energy	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
721	Ductless Mini-Split Heat Pumps	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	First Energy	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20FINAL%20.pdf
722	Ground Source Heat Pumps (GSHP)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	First Energy	PA Baseline	
723	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
724	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
725	HVAC Tune Up (Cooling Season Only Tune Up)	SFA	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
726	Furnace High Efficiency Fan	SFA	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	First Energy	GDS Estimate	
727	Programmable Thermostat (CAC)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
728	Furnace Whistle	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Amazon	First Energy	GDS Estimate	
729	Room AC (RAC) Retirement with no replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline	
730	Room AC (RAC) Retirement with replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline	
731	Programmable Thermostat (ASHP)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	First Energy	PA Baseline	
732	Air Source Heat Pump (Maintenance)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
733	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
734	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
735	GSHP w/ Desuperheater	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	First Energy	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater

Measure Assumptions Sources - Penelco

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Usc (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
736	Ductless Mini-Split Heat Pumps	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	First Energy	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20FINAL%20.pdf
737	Ground Source Heat Pumps (GSHP)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	First Energy	PA Baseline	
738	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
739	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
740	HVAC Tune Up (Cooling Season Only Tune Up)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
741	Furnace High Efficiency Fan	MF	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	First Energy	GDS Estimate	
742	Programmable Thermostat (CAC)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
743	Furnace Whistle	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Amazon	First Energy	GDS Estimate	
744	Room AC (RAC) Retirement with no replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline
745	Room AC (RAC) Retirement with replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline
800	Whole House														
801	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
802	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
803	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
804	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
805	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
806	Indirect Feedback	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
807	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
808	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
809	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
810	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
811	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
812	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
813	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
814	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
815	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
816	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
817	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
818	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
900	New Construction														
901	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
902	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
903	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
904	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	

Measure Assumptions Sources - Penelac

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
905	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
906	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
907	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	
908	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS estimate	

Amazon: Retail prices derived from Amazon's website
 Bellomy 2010 Residential Saturation Study: PPL's 2010 Residential Final Saturation Report
 Best Buy: Retail prices derived from Best Buy's website
 Bing.com: Retail prices derived from bing.com search results
 Codes and Standards Enhancement Initiative
 CT Lighting CF Report: Connecticut Lighting Coincidence Factor Report
 DEER database: California database of Energy Efficiency Resources
 EnergyStar: government-backed website that helps protect the environment through superior energy efficiency
 EnergyStar 2011 Savings and Costs
 EnergyStar Calculator: service provided by EnergyStar to help estimate savings, useful life, and cost
 EnergyStar Homes Report
 EnergyStar Penetration Market Summary: shipment data collected by EnergyStar, used in calculating Energy Efficient Saturations (average of penetrations for 2008-2010)
 First Energy: First Energy Saturation Study
 GDS: GDS Associates Calculation/Assumption. See measure-specific notes.
 GDS Estimate: Relied on industry experience and professional judgement due to lack of available primary research at the state/regional level.
 GDS Measure Life Report: SPWG and GDS's document of a set of measure life values for selected measures
 Google.com: Retail prices derived from Google Shopping
 Home Depot: Retail prices derived from Home Depot's website
 LOWES: Retail prices derived from Lowe's website.
 MID-ATL TRM: Mid-Atlantic Technical Reference Manual, Version 2.0
 Navigant 2011: describes methods and results of ICS, commissioned by the EM&V Forum Research Subcommittee to update incremental costs for measures
 Opower: information used for calculating indirect feedback
 Ohio TRM: Ohio Technical Reference Manual
 PA Baseline: Pennsylvania Baseline study, conducted by GDS
 PA TRM: Pennsylvania Technical Reference Manual
 PA TRM / Ohio TRM: Pennsylvania Technical Reference Manual / Ohio Technical Reference Manual
 PECO 2011: data calculated from PECO's residential survey
 PECO email: correspondence with representative(s) at PECO
 PPL email: correspondence with representative(s) at PPL
 PPL Quarterly Report: documents progress and effectiveness of EE&C accomplishments for PPL through end of PY3, Quarter 2
 REM/Rate: Building Energy Modeling Software. Prototype homes were modeled based on average characteristics using the PECO Energy Baseline Study, February 2011
 Siaeenergy.org: Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships
 The American Council for an Energy-Efficient Economy: Report on technical and policy issues relating to energy efficiency
 Vermont TRM: Vermont Technical Reference Manual
 WPP: West Penn Power Saturation Survey

Measure Assumptions Sources - Penn Power

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
100	Water Heating End Use														
101	Efficient Electric Water Heaters- 0.93 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	CF Note 1: The coincidence factor for this energy efficiency measure was set to 1.0 because the kW demand impact for this measure was already on a coincident peak basis.
102	Efficient Electric Water Heaters- 0.94 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
103	Efficient Electric Water Heaters- 0.95 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
104	Solar Water Heaters	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	First Energy	PA Baseline	
105	Heat Pump Water Heaters- 2.0 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
106	Heat Pump Water Heaters- 2.3 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	First Energy	PA Baseline	costs uses the \$925 for a 2.0 water heater and adds \$50 premium for a 2.3
107	Electric Water Heater Pipe Insulation	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	costs uses \$3/foot from the Mid-Atlantic TRM and assumes average of 6 ft/home
108	Low Flow Showerheads- 1.5 GPM	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	First Energy / PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
109	Low Flow Faucet Aerators	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy / PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
110	Water Heater Tank Wrap	SFD	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	First Energy	PA Baseline	
111	Efficient Electric Water Heaters- 0.93 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
112	Efficient Electric Water Heaters- 0.94 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
113	Efficient Electric Water Heaters- 0.95 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
114	Solar Water Heaters	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	First Energy	PA Baseline	
115	Heat Pump Water Heaters- 2.0 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
116	Heat Pump Water Heaters- 2.3 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	First Energy	PA Baseline	
117	Electric Water Heater Pipe Insulation	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$3/ft at an estimated 6 LF total
118	Low Flow Showerheads- 1.5 GPM	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	First Energy / PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
119	Low Flow Faucet Aerators	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy / PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
120	Water Heater Tank Wrap	SFA	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	First Energy	PA Baseline	
121	Efficient Electric Water Heaters- 0.93 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
122	Efficient Electric Water Heaters- 0.94 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
123	Efficient Electric Water Heaters- 0.95 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	First Energy	PA Baseline	
124	Solar Water Heaters	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	First Energy	PA Baseline	
125	Heat Pump Water Heaters- 2.0 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
126	Heat Pump Water Heaters- 2.3 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	First Energy	PA Baseline	
127	Electric Water Heater Pipe Insulation	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$3/ft at an estimated 6 LF total
128	Low Flow Showerheads- 1.5 GPM	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	First Energy / PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
129	Low Flow Faucet Aerators	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy / PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
130	Water Heater Tank Wrap	MF	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	First Energy	PA Baseline	
200	Lighting														
201	Ceiling Fan with ENERGY STAR Light Fixture	SFD	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
202	Electroluminescent Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
203	LED Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Low's	PA Baseline	PA Baseline	
204	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFD	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
205	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFD	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
206	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
207	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
208	ENERGY STAR LEDs - General Service Lamps	SFD	ROB	-	-	GDS calculation	GDS calculation	CT Lighting CF Report	GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	

209	ENERGY STAR LEDs -Reflector Lamp	SFD	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
210	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
211	ENERGY STAR Torchieres	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
212	ENERGY STAR Holiday Lights	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Low's	GDS Estimate	EnergyStar Market Penetration Summary	
213	Residential Occupancy Sensors- 14 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lppc=16
214	Residential Occupancy Sensors 19 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lppc=16
215	Residential Occupancy Sensors- 23 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lppc=16
216	Ceiling Fan with ENERGY STAR Light Fixture	SFA	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
217	Electroluminescent Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
218	LED Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Low's	PA Baseline	PA Baseline	
219	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFA	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
220	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFA	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
221	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
222	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
223	ENERGY STAR LEDs - General Service Lamps	SFA	ROB	-	-	GDS calculation	GDS calculation	CT Lighting CF Report	GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
224	ENERGY STAR LEDs -Reflector Lamp	SFA	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
225	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
226	ENERGY STAR Torchieres	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
227	ENERGY STAR Holiday Lights	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Low's	GDS Estimate	EnergyStar Market Penetration Summary	
228	Residential Occupancy Sensors- 14 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lppc=16
229	Residential Occupancy Sensors 19 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lppc=16
230	Residential Occupancy Sensors- 23 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dp=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lppc=16
231	Ceiling Fan with ENERGY STAR Light Fixture	MF	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
232	Electroluminescent Nightlight	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
233	LED Nightlight	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Low's	PA Baseline	PA Baseline	
234	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	MF	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
235	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	MF	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
236	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
237	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
238	ENERGY STAR LEDs - General Service Lamps	MF	ROB	-	-	GDS calculation	GDS calculation	CT Lighting CF Report	GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	

239	ENERGY STAR LEDs -Reflector Lamp	MF	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
240	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
241	ENERGY STAR Torchieres	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
242	ENERGY STAR Holiday Lights	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
243	Residential Occupancy Sensors- 14 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/p/180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&ippc=16
244	Residential Occupancy Sensors 19 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/p/180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&ippc=16
245	Residential Occupancy Sensors- 23 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/p/180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&dpf=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&ippc=16
300	Appliances														
301	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	Used statewide for EE sat (Penn Power was 0%)
302	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	Used statewide for EE sat (Penn Power was 0%)
303	Energy Star top mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators
304	Energy Star side mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators
305	Energy Star bottom mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators
306	Energy Star top mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators
307	Energy Star side mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators
308	Energy Star upright with manual defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
309	Energy Star upright with automatic defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	First Energy, PA Baseline	PA Baseline	
310	Energy Star chest freezer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline	
311	Energy Star dehumidifiers (35-45 pints/day)	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	First Energy	EnergyStar Market Penetration Summary	
312	Energy Star Electric Clothes Dryer with Moisture Sensor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	First Energy	PECO 2011	
313	ENERGY STAR Clothes Washers- with Electric Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
314	ENERGY STAR Clothes Washers- with Gas Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	
315	ENERGY STAR Dishwashers- with Electric Water Heating	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
316	ENERGY STAR Dishwashers- with Gas Heat	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
317	ENERGY STAR Room Air Conditioners	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline	
318	Energy Star Exhaust Fans	SFD	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*See CF Note 1	Vermont TRM	*See CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
319	Energy Star Residential Whole House Fans	SFD	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qs=n&qp=whole+house+fan&sp=&rt=Completions&tk=&spv=&sl=E&sc=&st=AAAAAAAA&ty0
320	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	Used statewide for EE sat (Penn Power was 0%)
321	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	Used statewide for EE sat (Penn Power was 0%)
322	Energy Star top mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators
323	Energy Star side mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators
324	Energy Star bottom mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators
325	Energy Star top mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators
326	Energy Star side mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators
327	Energy Star upright with manual defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, GDS estimate	PA Baseline	
328	Energy Star upright with automatic defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	First Energy, GDS estimate	PA Baseline	
329	Energy Star chest freezer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, GDS estimate	PA Baseline	
330	Energy Star dehumidifiers (35-45 pints/day)	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	First Energy	EnergyStar Market Penetration Summary	
331	Energy Star Electric Clothes Dryer with Moisture Sensor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	First Energy	PECO 2011	

332	ENERGY STAR Clothes Washers- with Electric Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline		
333	ENERGY STAR Clothes Washers- with Gas Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline		
334	ENERGY STAR Dishwashers- with Electric Water Heating	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline		
335	ENERGY STAR Dishwashers- with Gas Heat	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline		
336	ENERGY STAR Room Air Conditioners	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline		
337	Energy Star Exhaust Fans	SFA	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM		*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
338	Energy Star Residential Whole House Fans	SFA	Retrofit	-	-	PA TRM	PA TRM		*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&sp=0&pq=whole+house+fan&exp=&rt=Completions&tk=&spv=&sl=E&sc=&st=&ast=AAAAAAAA#xly0
339	Refrigerator / Freezer Recycling and Replacement With a New Unit	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	Used statewide for EE sat (Penn Power was 0%)	
340	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	First Energy	PA Baseline	Used statewide for EE sat (Penn Power was 0%)	
341	Energy Star top mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators	
342	Energy Star side mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators	
343	Energy Star bottom mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators	
344	Energy Star top mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators	
345	Energy Star side mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy, PA Baseline	PA Baseline	Base sat. of this type of refrigerator, EE sat. of all primary refrigerators	
346	Energy Star upright with manual defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline		
347	Energy Star upright with automatic defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	First Energy, PA Baseline	PA Baseline		
348	Energy Star chest freezer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	First Energy, PA Baseline	PA Baseline		
349	Energy Star dehumidifiers (35-45 pints/day)	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	First Energy	EnergyStar Market Penetration Summary	
350	Energy Star Electric Clothes Dryer with Moisture Sensor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	First Energy	PECO 2011		
351	ENERGY STAR Clothes Washers- with Electric Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline		
352	ENERGY STAR Clothes Washers- with Gas Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline		
353	ENERGY STAR Dishwashers- with Electric Water Heating	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline		
354	ENERGY STAR Dishwashers- with Gas Heat	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline		
355	ENERGY STAR Room Air Conditioners	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	PA Baseline		
356	Energy Star Exhaust Fans	MF	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM		*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
357	Energy Star Residential Whole House Fans	MF	Retrofit	-	-	PA TRM	PA TRM		*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&sp=0&pq=whole+house+fan&exp=&rt=Completions&tk=&spv=&sl=E&sc=&st=&ast=AAAAAAAA#xly0
400	Electronics															
401	ENERGY STAR Computer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	First Energy	EnergyStar Market Penetration Summary	Savings - PA TRM p.122	
402	ENERGY STAR Copier	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP	EnergyStar Market Penetration Summary		
403	ENERGY STAR Fax Machine	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary		
404	ENERGY STAR Monitor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	First Energy, PA Baseline	EnergyStar Market Penetration Summary	Savings - PA TRM p.122	
405	ENERGY STAR Multifunction	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP	EnergyStar Market Penetration Summary		
406	ENERGY STAR Printer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	Penn Power, GDS estimate	EnergyStar Market Penetration Summary		
407	>50 in television	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
408	<50 in television	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
409	Smart Strip Plug Outlets	SFD	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate		
410	ENERGY STAR Computer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	First Energy	EnergyStar Market Penetration Summary		
411	ENERGY STAR Copier	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP	EnergyStar Market Penetration Summary		
412	ENERGY STAR Fax Machine	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary		
413	ENERGY STAR Monitor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	First Energy, PA Baseline	EnergyStar Market Penetration Summary		
414	ENERGY STAR Multifunction	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP	EnergyStar Market Penetration Summary		
415	ENERGY STAR Printer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	Penn Power, GDS estimate	EnergyStar Market Penetration Summary		

416	>50 in television	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
417	<50 in television	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
418	Smart Strip Plug Outlets	SFA	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate		
419	ENERGY STAR Computer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	First Energy	EnergyStar Market Penetration Summary		
420	ENERGY STAR Copier	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP	EnergyStar Market Penetration Summary		
421	ENERGY STAR Fax Machine	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PA Baseline	EnergyStar Market Penetration Summary		
422	ENERGY STAR Monitor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	First Energy, PA Baseline	EnergyStar Market Penetration Summary		
423	ENERGY STAR Multifunction	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP	EnergyStar Market Penetration Summary		
424	ENERGY STAR Printer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	Penn Power, GDS estimate	EnergyStar Market Penetration Summary		
425	>50 in television	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
426	<50 in television	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	First Energy	Codes and Standards Enhancement Initiative		
427	Smart Strip Plug Outlets	MF	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate		
500	Pool															
501	High Efficiency Two-Speed Pool Pump	SFD	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; savings-PA and Mid Atlantic TRMs	
502	Variable Speed Pool Pumps	SFD	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kWss and kWVFD parameters taken from Ohio TRM	
503	High Efficiency Two-Speed Pool Pump	SFA	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool	
504	Variable Speed Pool Pumps	SFA	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kWss and kWVFD parameters taken from Ohio TRM	
505	High Efficiency Two-Speed Pool Pump	MF	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool	
506	Variable Speed Pool Pumps	MF	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	First Energy	GDS Estimate	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kWss and kWVFD parameters taken from Ohio TRM	
600	HVAC (Envelope)															
601	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
602	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate ; EE saturation based on homes with insulation
603	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate ; EE saturation based on homes with insulation
604	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate ; EE saturation based on homes with insulation
605	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate
606	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate	
607	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate	
608	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage	
609	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate
610	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate
611	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline		
612	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
613	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	Navigant 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate ; EE saturation based on homes with insulation

668	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate	
669	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate	
670	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage	
671	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline		
672	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	NAVIGANT 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
673	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, First Energy	First Energy	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate	
674	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, First Energy	First Energy	PA Baseline		
675	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage	
676	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline		
677	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	GDS Measure Life Report	NAVIGANT 2011, First Energy	First Energy	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate
678	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, First Energy	First Energy	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate	
679	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, First Energy	First Energy	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate	
680	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	First Energy	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage	
681	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	First Energy	PA Baseline		
700	HVAC (Equipment/Controls)															
701	Programmable Thermostat (ASHP)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/T	*Sec CF Note 1	PA TRM	Home Depot	First Energy	PA Baseline		
702	Air Source Heat Pump (Maintenance)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline		
703	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source.	
704	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source.	
705	GSHP w/ Desuperheater	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	First Energy	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater	
706	Ductless Mini-Split Heat Pumps	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	First Energy	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf	
707	Ground Source Heat Pumps (GSHP)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	First Energy	PA Baseline		
708	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	NAVIGANT 2011	First Energy	PA Baseline		
709	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	NAVIGANT 2011	First Energy	PA Baseline		
710	HVAC Tune Up (Cooling Season Only Tune Up)	SFD	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline		
711	Furnace High Efficiency Fan	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	First Energy	GDS Estimate		
712	Programmable Thermostat (CAC)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/T	*Sec CF Note 1	PA TRM	Home Depot	First Energy	PA Baseline		
713	Furnace Whistle	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	First Energy	GDS Estimate		
714	Room AC (RAC) Retirement with no replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline	
715	Room AC (RAC) Retirement with replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline	
716	Programmable Thermostat (ASHP)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/T	*Sec CF Note 1	PA TRM	EnergyStar 2011 Savings and Costs Report	First Energy	PA Baseline		
717	Air Source Heat Pump (Maintenance)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline		
718	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source.	
719	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source.	
720	GSHP w/ Desuperheater	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	First Energy	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater	
721	Ductless Mini-Split Heat Pumps	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	First Energy	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf	
722	Ground Source Heat Pumps (GSHP)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	First Energy	PA Baseline		

723	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
724	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
725	HVAC Tune Up (Cooling Season Only Tune Up)	SFA	Retirof	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
726	Furnace High Efficiency Fan	SFA	Retirof	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	First Energy	GDS Estimate	
727	Programmable Thermostat (CAC)	SFA	Retirof	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	First Energy	PA Baseline	
728	Furnace Whistle	SFA	Retirof	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	First Energy	GDS Estimate	
729	Room AC (RAC) Retirement with no replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline	
730	Room AC (RAC) Retirement with replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline	
731	Programmable Thermostat (ASHP)	MF	Retirof	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	EnergyStar 2011 Savings and Costs Report	First Energy	PA Baseline	
732	Air Source Heat Pump (Maintenance)	MF	Retirof	RemRate	-	REMRate	REMRate/TRM	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
733	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source.
734	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	RemRate	PA TRM	PA TRM	DEER database	First Energy	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source.
735	GSHP w/ Desuperheater	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	First Energy	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
736	Ductless Mini-Split Heat Pumps	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	First Energy	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
737	Ground Source Heat Pumps (GSHP)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	First Energy	PA Baseline	
738	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
739	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	First Energy	PA Baseline	
740	HVAC Tune Up (Cooling Season Only Tune Up)	MF	Retirof	RemRate	-	REMRate	REMRate/TRM	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	First Energy	PA Baseline	
741	Furnace High Efficiency Fan	MF	Retirof	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	First Energy	GDS Estimate	
742	Programmable Thermostat (CAC)	MF	Retirof	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	First Energy	PA Baseline	
743	Furnace Whistle	SFD	Retirof	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	First Energy	GDS Estimate	
744	Room AC (RAC) Retirement with no replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline	
745	Room AC (RAC) Retirement with replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	First Energy	First Energy	PA Baseline	
800	Whole House														
801	Direct (Real Time) Feedback	SFD	Retirof	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
802	Indirect Feedback (O-Power)	SFD	Retirof	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
803	Direct (Real Time) Feedback	SFD	Retirof	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
804	Indirect Feedback (O-Power)	SFD	Retirof	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
805	Direct (Real Time) Feedback	SFD	Retirof	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
806	Indirect Feedback	SFD	Retirof	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
807	Direct (Real Time) Feedback	SFA	Retirof	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
808	Indirect Feedback (O-Power)	SFA	Retirof	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
809	Direct (Real Time) Feedback	SFA	Retirof	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
810	Indirect Feedback (O-Power)	SFA	Retirof	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
811	Direct (Real Time) Feedback	SFA	Retirof	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
812	Indirect Feedback (O-Power)	SFA	Retirof	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
813	Direct (Real Time) Feedback	MF	Retirof	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
814	Indirect Feedback (O-Power)	MF	Retirof	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
815	Direct (Real Time) Feedback	MF	Retirof	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	
816	Indirect Feedback (O-Power)	MF	Retirof	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
817	Direct (Real Time) Feedback	MF	Retirof	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	First Energy	GDS Estimate	

818	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	First Energy	GDS Estimate	
900	New Construction														
901	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS Estimate	
902	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS Estimate	
903	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS Estimate	
904	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS Estimate	
905	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS Estimate	
906	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS Estimate	
907	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS Estimate	
908	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	Bellomy 2010 Residential Saturation Study / GDS Estimate	GDS Estimate	

Amazon: Retail prices derived from Amazon's website
Bellomy 2010 Residential Saturation Study: PPL's 2010 Residential Final Saturation Report
Best Buy: Retail prices derived from Best Buy's website
Bing.com: Retail prices derived from bing.com search results
Codes and Standards Enhancement Initiative
CT Lighting CF Report: Connecticut Lighting Coincidence Factor Report
DEER database: California database of Energy Efficiency Resources
EnergyStar: government-backed website that helps protect the environment through superior energy efficiency
EnergyStar 2011 Savings and Costs
EnergyStar Calculator: service provided by EnergyStar to help estimate savings, useful life, and cost
EnergyStar Homes Report
EnergyStar Penetration Market Summary: shipment data collected by EnergyStar, used in calculating Energy Efficient Saturations (average of penetrations for 2008-2010)
First Energy: First Energy Saturation Study
GDS: GDS Associates Calculation/Assumption. See measure-specific notes.
GDS Estimate: Relied on industry experience and professional judgement due to lack of available primary research at the state/regional level.
GDS Measure Life Report: SPWG and GDS's document of a set of measure life values for selected measures
Google.com: Retail prices derived from Google Shopping
Home Depot: Retail prices derived from Home Depot's website
LOWES: Retail prices derived from Lowe's website.
MID-ATL TRM: Mid-Atlantic Technical Reference Manual, Version 2.0
Navigator 2011: describes methods and results of ICS, commissioned by the EM&V Forum Research Subcommittee to update incremental costs for measures
Opower: information used for calculating indirect feedback
Ohio TRM: Ohio Technical Reference Manual
PA Baseline: Pennsylvania Baseline study, conducted by GDS
PA TRM: Pennsylvania Technical Reference Manual
PA TRM / Ohio TRM: Pennsylvania Technical Reference Manual / Ohio Technical Reference Manual
PECO 2011: data calculated from PECO's residential survey
PECO email: correspondence with representative(s) at PECO
PPL email: correspondence with representative(s) at PPL
PPL Quarterly Report: documents progress and effectiveness of EE&C accomplishments for PPL through end of PY3, Quarter 2
REM/Rate: Building Energy Modeling Software. Prototype homes were modeled based on average characteristics using the PECO Energy Baseline Study, February 2011
Stacenergy.org: Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships
The American Council for an Energy-Efficient Economy: Report on technical and policy issues relating to energy efficiency
Vermont TRM: Vermont Technical Reference Manual
WPP: West Penn Power Saturation Survey

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
100	Water Heating End Use														
101	Efficient Electric Water Heaters- 0.93 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS research	PPL	PA Baseline	CF Note 1: The coincidence factor for this energy efficiency measure was set to 1.0 because the kW demand impact for this measure was already on a coincident peak basis.
102	Efficient Electric Water Heaters- 0.94 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS research	PPL	PA Baseline	
103	Efficient Electric Water Heaters- 0.95 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS research	PPL	PA Baseline	
104	Solar Water Heaters	SFD	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	PPL (email)	PPL	PPL	
105	Heat Pump Water Heaters- 2.0 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	MID-ATL TRM	PPL	PA Baseline	
106	Heat Pump Water Heaters- 2.3 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS estimate	PPL	PA Baseline	costs uses the \$925 for a 2.0 water heater and adds \$50 premium for a 2.3
107	Electric Water Heater Pipe Insulation	SFD	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	MID-ATL TRM	PPL	PA Baseline	costs uses \$3/foot from the Mid-Atlantic TRM and assumes average of 6 ft/home
108	Low Flow Showerheads- 1.5 GPM	SFD	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Google.com	PPL/PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
109	Low Flow Faucet Aerators	SFD	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	MID-ATL TRM	PPL/PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
110	Water Heater Tank Wrap	SFD	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	PA TRM	PPL	PA Baseline	
111	Efficient Electric Water Heaters- 0.93 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS research	PPL	PA Baseline	
112	Efficient Electric Water Heaters- 0.94 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS research	PPL	PA Baseline	
113	Efficient Electric Water Heaters- 0.95 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS research	PPL	PA Baseline	
114	Solar Water Heaters	SFA	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	PPL (email)	PPL	PPL	
115	Heat Pump Water Heaters- 2.0 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	MID-ATL TRM	PPL	PA Baseline	
116	Heat Pump Water Heaters- 2.3 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS estimate	PPL	PA Baseline	
117	Electric Water Heater Pipe Insulation	SFA	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	MID-ATL TRM	PPL	PA Baseline	\$3/ft at an estimated 6 LP' total
118	Low Flow Showerheads- 1.5 GPM	SFA	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Google.com	PPL/PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
119	Low Flow Faucet Aerators	SFA	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	MID-ATL TRM	PPL/PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
120	Water Heater Tank Wrap	SFA	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	PA TRM	PPL	PA Baseline	
121	Efficient Electric Water Heaters- 0.93 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS research	PPL	PA Baseline	
122	Efficient Electric Water Heaters- 0.94 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS research	PPL	PA Baseline	
123	Efficient Electric Water Heaters- 0.95 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS research	PPL	PA Baseline	
124	Solar Water Heaters	MF	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	PPL (email)	PPL	PPL	
125	Heat Pump Water Heaters- 2.0 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	MID-ATL TRM	PPL	PA Baseline	
126	Heat Pump Water Heaters- 2.3 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	GDS estimate	PPL	PA Baseline	
127	Electric Water Heater Pipe Insulation	MF	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	MID-ATL TRM	PPL	PA Baseline	\$3/ft at an estimated 6 LP' total
128	Low Flow Showerheads- 1.5 GPM	MF	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Google.com	PPL/PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
129	Low Flow Faucet Aerators	MF	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	MID-ATL TRM	PPL/PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
130	Water Heater Tank Wrap	MF	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	PA TRM	PPL	PA Baseline	
200	Lighting														
201	Ceiling Fan with ENERGY STAR Light Fixture	SFD	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PPL	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
202	Electroluminescent Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
203	LED Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
204	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
205	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
206	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
207	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
208	ENERGY STAR LEDs - General Service Lamps	SFD	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
209	ENERGY STAR LEDs - Reflector Lamp	SFD	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
210	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	Base saturation is based on assumption of 2 bulbs per outdoor fixture from baseline study saturation data
211	ENERGY STAR Torchiere	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
212	ENERGY STAR Holiday Lights	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
213	Residential Occupancy Sensors- 14 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011q=Residential+Occupancy+Sensors&lpf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lpcc=16
214	Residential Occupancy Sensors 19 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011q=Residential+Occupancy+Sensors&lpf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lpcc=16
215	Residential Occupancy Sensors- 23 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011q=Residential+Occupancy+Sensors&lpf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lpcc=16
216	Ceiling Fan with ENERGY STAR Light Fixture	SFA	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PPL	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
217	Electroluminescent Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
218	LED Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
219	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
220	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
221	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
222	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
223	ENERGY STAR LEDs - General Service Lamps	SFA	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
224	ENERGY STAR LEDs - Reflector Lamp	SFA	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
225	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	Base saturation is based on assumption of 2 bulbs per outdoor fixture from baseline study saturation data
226	ENERGY STAR Torchiere	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
227	ENERGY STAR Holiday Lights	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
228	Residential Occupancy Sensors- 14 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011q=Residential+Occupancy+Sensors&lpf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lpcc=16
229	Residential Occupancy Sensors 19 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011q=Residential+Occupancy+Sensors&lpf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lpcc=16
230	Residential Occupancy Sensors- 23 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011q=Residential+Occupancy+Sensors&lpf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPCA&lpcc=16
231	Ceiling Fan with ENERGY STAR Light Fixture	MF	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PPL	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
232	Electroluminescent Nightlight	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Amazon.com	PA Baseline	PA Baseline	
233	LED Nightlight	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PA Baseline	PA Baseline	
234	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
235	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
236	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
237	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
238	ENERGY STAR LEDs - General Service Lamps	MF	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
239	ENERGY STAR LEDs - Reflector Lamp	MF	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
240	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	Base saturation is based on assumption of 2 bulbs per outdoor fixture from baseline study saturation data
241	ENERGY STAR Torchiere	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
242	ENERGY STAR Holiday Lights	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	GDS Estimate	EnergyStar Market Penetration Summary	
243	Residential Occupancy Sensors- 14 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB85350112q=Residential+Occupancy+Sensors&pf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPC&ppc=16
244	Residential Occupancy Sensors 19 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB85350112q=Residential+Occupancy+Sensors&pf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPC&ppc=16
245	Residential Occupancy Sensors- 23 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB85350112q=Residential+Occupancy+Sensors&pf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPC&ppc=16
300	Appliances														
301	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PPL	PA Baseline	
302	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PPL	PA Baseline	
303	Energy Star top mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
304	Energy Star side mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
305	Energy Star bottom mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
306	Energy Star top mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
307	Energy Star side mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
308	Energy Star upright with manual defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PPL, PA Baseline	PA Baseline	
309	Energy Star upright with automatic defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PPL, PA Baseline	PA Baseline	
310	Energy Star chest freezer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PPL, PA Baseline	PA Baseline	
311	Energy Star dehumidifiers (35-45 pints/day)	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	PPL	EnergyStar Market Penetration Summary	
312	Energy Star Electric Clothes Dryer with Moisture Sensor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PECO 2011	
313	ENERGY STAR Clothes Washers- with Electric Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL	PA Baseline	
314	ENERGY STAR Clothes Washers- with Gas Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL	PA Baseline	
315	ENERGY STAR Dishwashers- with Electric Water Heating	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	PA Baseline	
316	ENERGY STAR Dishwashers- with Gas Heat	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	PA Baseline	
317	ENERGY STAR Room Air Conditioners	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	PA Baseline	
318	Energy Star Exhaust Fans	SFD	ROB	-	-	EnergyStar Codes and Standards Enhancement Initiative	Vermont TRM	*See CF Note 1	Vermont TRM	*See CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
319	Energy Star Residential Whole House Fans	SFD	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Bing.com	PPL	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&aq=whole+house+fan&aid=&ct=&qs=n&ppq=whole+house+fan&sp=&rt=Completions&tk=&spv=&sl=E&sc=&st=&ast=AAAAAAAA&xl#0
320	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PPL	PA Baseline	

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
321	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PPL	PA Baseline	
322	Energy Star top mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
323	Energy Star side mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
324	Energy Star bottom mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
325	Energy Star top mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
326	Energy Star side mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
327	Energy Star upright with manual defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PPL, PA Baseline	PA Baseline	
328	Energy Star upright with automatic defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PPL, PA Baseline	PA Baseline	
329	Energy Star chest freezer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PPL, PA Baseline	PA Baseline	
330	Energy Star dehumidifiers (35-45 pints/day)	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	PPL	EnergyStar Market Penetration Summary	
331	Energy Star Electric Clothes Dryer with Moisture Sensor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PECO 2011	
332	ENERGY STAR Clothes Washers- with Electric Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL	PA Baseline	
333	ENERGY STAR Clothes Washers- with Gas Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL	PA Baseline	
334	ENERGY STAR Dishwashers- with Electric Water Heating	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	PA Baseline	
335	ENERGY STAR Dishwashers- with Gas Heat	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	PA Baseline	
336	ENERGY STAR Room Air Conditioners	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	PA Baseline	
337	Energy Star Exhaust Fans	SFA	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
338	Energy Star Residential Whole House Fans	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	PPL	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRI&aq=whole+house+fan&aid=&ci=&qs=n&qp=whole+house+fan&sp=&t=Completions&tk=&rpv=&sl=L&sc=&st=&ast=AAAAAAAA#sly0
339	Refrigerator / Freezer Recycling and Replacement With a New Unit	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PPL	PA Baseline	
340	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	PPL	PA Baseline	
341	Energy Star top mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
342	Energy Star side mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
343	Energy Star bottom mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
344	Energy Star top mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
345	Energy Star side mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL, PA Baseline	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
346	Energy Star upright with manual defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PPL, PA Baseline	PA Baseline	
347	Energy Star upright with automatic defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	PPL, PA Baseline	PA Baseline	
348	Energy Star chest freezer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	PPL, PA Baseline	PA Baseline	
349	Energy Star dehumidifiers (35-45 pints/day)	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	PPL	EnergyStar Market Penetration Summary	
350	Energy Star Electric Clothes Dryer with Moisture Sensor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PECO 2011	
351	ENERGY STAR Clothes Washers- with Electric Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL	PA Baseline	
352	ENERGY STAR Clothes Washers- with Gas Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	PPL	PA Baseline	
353	ENERGY STAR Dishwashers- with Electric Water Heating	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	PA Baseline	
354	ENERGY STAR Dishwashers- with Gas Heat	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	PA Baseline	

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
355	ENERGY STAR Room Air Conditioners	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	PA Baseline	
356	Energy Star Exhaust Fans	MF	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
357	Energy Star Residential Whole House Fans	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	PPL	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&aq=whole+house+fan&aid=&ct=&q&rs=n&pq=whole+house+fan&sp=&rt=Completions&rk=&spv=&sl=E&sc=&st=&ast=AAAAAAAA#sly0
400	Electronics														
401	ENERGY STAR Computer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
402	ENERGY STAR Copier	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
403	ENERGY STAR Fax Machine	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
404	ENERGY STAR Monitor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
405	ENERGY STAR Multifunction	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL	EnergyStar Market Penetration Summary	
406	ENERGY STAR Printer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
407	>50 in	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	Codes and Standards Enhancement Initiative	
408	<50 in	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	Codes and Standards Enhancement Initiative	
409	Smart Strip Plug Outlets	SFD	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
410	ENERGY STAR Computer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL	EnergyStar Market Penetration Summary	
411	ENERGY STAR Copier	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
412	ENERGY STAR Fax Machine	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
413	ENERGY STAR Monitor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
414	ENERGY STAR Multifunction	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL	EnergyStar Market Penetration Summary	
415	ENERGY STAR Printer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	
416	>50 in	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	Codes and Standards Enhancement Initiative	
417	<50 in	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL	Codes and Standards Enhancement Initiative	
418	Smart Strip Plug Outlets	SFA	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
419	ENERGY STAR Computer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL	EnergyStar Market Penetration Summary	
420	ENERGY STAR Copier	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL	EnergyStar Market Penetration Summary	

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
421	ENERGY STAR Fax Machine	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL		EnergyStar Market Penetration Summary
422	ENERGY STAR Monitor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL		EnergyStar Market Penetration Summary
423	ENERGY STAR Multifunction	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	PPL		EnergyStar Market Penetration Summary
424	ENERGY STAR Printer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	PPL		EnergyStar Market Penetration Summary
425	>50 in	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL		Codes and Standards Enhancement Initiative
426	<50 in	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	PPL		Codes and Standards Enhancement Initiative
427	Smart Strip Plug Outlets	MF	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
500	Pool														
501	High Efficiency Two-Speed Pool Pump	SFD	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	PPL		GDS Estimate Base sat. assumes that half of homes with a pool/spa pump have a pool; savings - PA and Mid Atlantic TRMs
502	Variable Speed Pool Pumps	SFD	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	PPL		GDS Estimate Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _g and kW _{sp} parameters taken from Ohio TRM
503	High Efficiency Two-Speed Pool Pump	SFA	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	PPL		GDS Estimate Base sat. assumes that half of homes with a pool/spa pump have a pool
504	Variable Speed Pool Pumps	SFA	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	PPL		GDS Estimate Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _g and kW _{sp} parameters taken from Ohio TRM
505	High Efficiency Two-Speed Pool Pump	MF	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	PPL		GDS Estimate Base sat. assumes that half of homes with a pool/spa pump have a pool
506	Variable Speed Pool Pumps	MF	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	PPL		GDS Estimate Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _g and kW _{sp} parameters taken from Ohio TRM
600	HVAC (Envelope)														
601	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
602	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey all SFD homes have insulation
603	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey all SFD homes have insulation
604	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey all SFD homes have insulation
605	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
606	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from PECO); ** wall insulation = area of walls - area of windows * price per sq ft
607	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
608	ENERGY STAR Windows	SFD	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL		PA Baseline \$150 per 100 square feet of windows multiplied by square footage from PECO
609	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$1.55/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
610	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
611	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database	PPL		PA Baseline
612	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
613	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey all SFD homes have insulation
614	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey all SFD homes have insulation
615	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey all SFD homes have insulation
616	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
617	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL		PA Baseline \$1.56/sq ft (from Navigant) multiplied by square footage estimate (from PECO)

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
618	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
619	ENERGY STAR Windows	SFD	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
620	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
621	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
622	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database	PPL	PA Baseline	
623	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
624	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey all SFD homes have insulation
625	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey all SFD homes have insulation
626	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey all SFD homes have insulation
627	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
628	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
629	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
630	ENERGY STAR Windows	SFD	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
631	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
632	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
633	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PPL	PA Baseline	
634	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
635	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey (4.55% of homes w/ no attic insulation)
636	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey (4.55% of homes w/ no attic insulation)
637	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey (4.55% of homes w/ no attic insulation)
638	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
639	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
640	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
641	ENERGY STAR Windows	SFA	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
642	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
643	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
644	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PPL	PA Baseline	
645	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)
646	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey (4.55% of homes w/ no attic insulation)
647	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	NAVIGANT 2011, PPL	PPL	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey (4.55% of homes w/ no attic insulation)

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
648	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey (4.55% of homes w/ no attic insulation)	
649	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
650	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM Navigant 2011, PPL	PPL	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
651	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM Navigant 2011, PPL	PPL	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
652	ENERGY STAR Windows	SFA	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM Home Depot	PPL	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage	
653	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$1.53/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
654	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
655	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM DEER database, GDS Adjustment for house size	PPL	PA Baseline		
656	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
657	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey (4.55% of homes w/ no attic insulation)	
658	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey (4.55% of homes w/ no attic insulation)	
659	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from PECO); EE sat. based on survey (4.55% of homes w/ no attic insulation)	
660	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
661	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM Navigant 2011, PPL	PPL	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
662	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM Navigant 2011, PPL	PPL	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
663	ENERGY STAR Windows	SFA	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM Home Depot	PPL	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage	
664	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$1.53/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
665	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
666	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM DEER database, GDS Adjustment for house size	PPL	PA Baseline		
667	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
668	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM Navigant 2011, PPL	PPL	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
669	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM Navigant 2011, PPL	PPL	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
670	ENERGY STAR Windows	MF	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM Home Depot	PPL	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage	
671	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM Navigant 2011, PPL	PPL	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
672	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
673	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM Navigant 2011, PPL	PPL	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
674	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM MID-ATL TRM	PPL	PA Baseline		
675	ENERGY STAR Windows	MF	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM Home Depot	PPL	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage	
676	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM DEER database, GDS Adjustment for house size	PPL	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
677	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report Navigant 2011, PPL	PPL	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
678	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM Navigant 2011, PPL	PPL	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	
679	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM Navigant 2011, PPL	PPL	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from PECO)	

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
680	ENERGY STAR Windows	MF	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
681	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	PPL	PA Baseline	
700	HVAC (Equipment/Controls)														
701	Programmable Thermostat (ASHP)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	*See CF Note 1	REMRate/TRM	*See CF Note 1	PA TRM	Home Depot	PPL	PPL	
702	Air Source Heat Pump (Maintenance)	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PA Baseline	
703	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 13 (3.5 ton)	SFD	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database	PPL	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
704	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFD	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database	PPL	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
705	GSHP w/ Desuperheater	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	PPL	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
706	Ductless Mini-Split Heat Pumps	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	PPL	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
707	Ground Source Heat Pumps (GSHP)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	PPL	PA Baseline	
708	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Navigant 2011	PPL	PA Baseline	
709	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Navigant 2011	PPL	PA Baseline	
710	HVAC Tune Up (Cooling Season Only Tune Up)	SFD	Retrofit	RemRate	-	REMRate	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PPL	
711	Furnace High Efficiency Fan	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	MID-ATL TRM	MID-ATL TRM	PPL	GDS Estimate	
712	Programmable Thermostat (CAC)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	PPL	PPL	
713	Furnace Whistle	SFD	Retrofit	PA TRM	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Amazon	PPL	GDS Estimate	
714	Room AC (RAC) Retirement with no replacement (per AC unit)	SFD	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	PPL	PA Baseline	Base saturation is from PECO baseline study; adjusted for units that are already EnergyStar rated
715	Room AC (RAC) Retirement with replacement (per AC unit)	SFD	ROB	RemRate	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	PA TRM	GDS estimate	PPL	PA Baseline	Base saturation is from PECO baseline study; adjusted for units that are already EnergyStar rated
716	Programmable Thermostat (ASHP)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	*See CF Note 1	REMRate/TRM	*See CF Note 1	PA TRM	Home Depot	PPL	PPL	
717	Air Source Heat Pump (Maintenance)	SFA	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PA Baseline	
718	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFA	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database	PPL	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
719	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFA	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database	PPL	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
720	GSHP w/ Desuperheater	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	PPL	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
721	Ductless Mini-Split Heat Pumps	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	PPL	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
722	Ground Source Heat Pumps (GSHP)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	PPL	PA Baseline	
723	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Navigant 2011	PPL	PA Baseline	
724	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Navigant 2011	PPL	PA Baseline	
725	HVAC Tune Up (Cooling Season Only Tune Up)	SFA	Retrofit	RemRate	-	REMRate	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PPL	
726	Furnace High Efficiency Fan	SFA	Retrofit	RemRate	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	MID-ATL TRM	MID-ATL TRM	PPL	GDS Estimate	
727	Programmable Thermostat (CAC)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	PPL	PPL	
728	Furnace Whistle	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Amazon	PPL	GDS Estimate	
729	Room AC (RAC) Retirement with no replacement (per AC unit)	SFA	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	PPL	PA Baseline	
730	Room AC (RAC) Retirement with replacement (per AC unit)	SFA	ROB	RemRate	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	PA TRM	GDS estimate	PPL	PA Baseline	
731	Programmable Thermostat (ASHP)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	*See CF Note 1	REMRate/TRM	*See CF Note 1	PA TRM	Home Depot	PPL	PPL	
732	Air Source Heat Pump (Maintenance)	MF	Retrofit	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PA Baseline	
733	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	MF	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database	PPL	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
734	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	MF	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	DEER database	PPL	PA Baseline	Measure cost is from Navigant. Navigant cited the 2008 DEER database as the source
735	GSHP w/ Desuperheater	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	PPL	PA Baseline	http://www.geothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
736	Ductless Mini-Split Heat Pumps	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	PPL	PA Baseline	cost source: http://www.stacenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf
737	Ground Source Heat Pumps (GSHP)	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	PPL	PA Baseline	
738	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	MF	ROB	RemRate	-	REMRate	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Navigant 2011	PPL	PA Baseline	
739	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	MF	ROB	RemRate	-	REMRate	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Navigant 2011	PPL	PA Baseline	
740	HVAC Tune Up (Cooling Season Only Tune Up)	MF	Retrofit	RemRate	-	REMRate	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	PPL	PPL	
741	Furnace High Efficiency Fan	MF	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	PPL	GDS Estimate	
742	Programmable Thermostat (CAC)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	PPL	PPL	
743	Furnace Whistle	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	PPL	GDS Estimate	
744	Room AC (RAC) Retirement with no replacement (per AC unit)	MF	ROB	RemRate	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	PPL	PPL	PA Baseline	
745	Room AC (RAC) Retirement with replacement (per AC unit)	MF	ROB	RemRate	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	GDS estimate	PPL	PPL	PA Baseline	
800	Whole House														
801	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PPL	PPL (email)	
802	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PPL	PPL Quarterly Report	
803	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PPL	PPL (email)	
804	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PPL	PPL Quarterly Report	
805	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PPL	PPL (email)	
806	Indirect Feedback	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PPL	PPL Quarterly Report	
807	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PPL	PPL (email)	
808	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PPL	PPL Quarterly Report	
809	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PPL	PPL (email)	
810	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PPL	PPL Quarterly Report	
811	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PPL	PPL (email)	
812	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PPL	PPL Quarterly Report	
813	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PPL	PPL (email)	
814	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PPL	PPL Quarterly Report	
815	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PPL	PPL (email)	
816	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PPL	PPL Quarterly Report	
817	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	PPL	PPL (email)	
818	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	PPL	PPL Quarterly Report	
900	New Construction														
901	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	PPL	GDS estimate	p. 36 of PPL 2010 Residential Saturation Study states that 89% of new homes have central AC; 24% have heat pumps and 52% have electric central air
902	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	PPL	GDS estimate	
903	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	PPL	GDS estimate	
904	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	PPL	GDS estimate	
905	Residential New Construction-Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	PPL	GDS estimate	
906	Residential New Construction-Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	PPL	GDS estimate	
907	Residential New Construction-Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	PPL	GDS estimate	
908	Residential New Construction-Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	PPL	GDS estimate	

Amazon: Retail prices derived from Amazon's website
 Bellomy 2010 Residential Saturation Study: PPL's 2010 Residential Final Saturation Report
 Best Buy: Retail prices derived from Best Buy's website

Measure Assumptions Sources - PPL

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
	Bing.com: Retail prices derived from bing.com search results Codes and Standards Enhancement Initiative CT Lighting CF Report: Connecticut Lighting Coincidence Factor Report DEER database: California database of Energy Efficiency Resources EnergyStar: government-backed website that helps protect the environment through superior energy efficiency EnergyStar 2011 Savings and Costs EnergyStar Calculator: service provided by EnergyStar to help estimate savings, useful life, and cost EnergyStar Homes Report EnergyStar Penetration Market Summary: shipment data collected by EnergyStar, used in calculating Energy Efficient Saturations (average of penetrations for 2008-2010) GDS: GDS Associates Calculation/Assumption. See measure-specific notes. GDS Estimate: Relied on industry experience and professional judgement due to lack of available primary research at the state/regional level. GDS Measure Life Report: SPWG and GDS's document of a set of measure life values for selected measures Google.com: Retail prices derived from Google Shopping Home Depot: Retail prices derived from Home Depot's website LOWES: Retail prices derived from Lowe's website. MID-ATL TRM: Mid-Atlantic Technical Reference Manual, Version 2.0 Navigant 2011: describes methods and results of ICS, commissioned by the EM&V Forum Research Subcommittee to update incremental costs for measures Opower: information used for calculating indirect feedback Ohio TRM: Ohio Technical Reference Manual PA Baseline: Pennsylvania Baseline study, conducted by GDS PA TRM: Pennsylvania Technical Reference Manual PA TRM / Ohio TRM: Pennsylvania Technical Reference Manual / Ohio Technical Reference Manual PECO 2011: data calculated from PECO's residential survey PPL: data calculated from PPL's residential survey PPL Quarterly Report: documents progress and effectiveness of EE&C accomplishments for PPL through end of PY3, Quarter 2 REM/Rate: Building Energy Modeling Software. Prototype homes were modeled based on average characteristics using the PECO Energy Baseline Study, February 2011 The American Council for an Energy-Efficient Economy: Report on technical and policy issues relating to energy efficiency Vermont TRM: Vermont Technical Reference Manual														

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
100	Water Heating End Use														
101	Efficient Electric Water Heaters- 0.93 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	WPP	PA Baseline	CF Note 1: The coincidence factor for this energy efficiency measure was set to 1.0 because the kW demand impact for this measure was already on a coincident peak basis.
102	Efficient Electric Water Heaters- 0.94 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	WPP	PA Baseline	
103	Efficient Electric Water Heaters- 0.95 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	WPP	PA Baseline	
104	Solar Water Heaters	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	WPP	WPP	
105	Heat Pump Water Heaters- 2.0 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	WPP	PA Baseline	
106	Heat Pump Water Heaters- 2.3 Energy Factor	SFD	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	WPP	PA Baseline	costs uses the \$925 for a 2.0 water heater and adds \$50 premium for a 2.3
107	Electric Water Heater Pipe Insulation	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	WPP	PA Baseline	costs uses \$3/foot from the Mid-Atlantic TRM and assumes average of 6 ft/home
108	Low Flow Showerheads- 1.5 GPM	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	WPP/PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
109	Low Flow Faucet Aerators	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	WPP/PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
110	Water Heater Tank Wrap	SFD	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	WPP	PA Baseline	
111	Efficient Electric Water Heaters- 0.93 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	WPP	PA Baseline	
112	Efficient Electric Water Heaters- 0.94 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	WPP	PA Baseline	
113	Efficient Electric Water Heaters- 0.95 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	WPP	PA Baseline	
114	Solar Water Heaters	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	WPP	WPP	
115	Heat Pump Water Heaters- 2.0 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	WPP	PA Baseline	
116	Heat Pump Water Heaters- 2.3 Energy Factor	SFA	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	WPP	PA Baseline	
117	Electric Water Heater Pipe Insulation	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$3/ft at an estimated 6 LF total
118	Low Flow Showerheads- 1.5 GPM	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	WPP/PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
119	Low Flow Faucet Aerators	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	WPP/PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
120	Water Heater Tank Wrap	SFA	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	WPP	PA Baseline	
121	Efficient Electric Water Heaters- 0.93 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	WPP	PA Baseline	
122	Efficient Electric Water Heaters- 0.94 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	WPP	PA Baseline	
123	Efficient Electric Water Heaters- 0.95 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS research	WPP	PA Baseline	
124	Solar Water Heaters	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	PPL (email)	WPP	WPP	
125	Heat Pump Water Heaters- 2.0 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	WPP	PA Baseline	
126	Heat Pump Water Heaters- 2.3 Energy Factor	MF	ROB	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	GDS estimate	WPP	PA Baseline	
127	Electric Water Heater Pipe Insulation	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$3/ft at an estimated 6 LF total
128	Low Flow Showerheads- 1.5 GPM	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Google	WPP/PA TRM	PA Baseline	1.6 eligible showerheads per home is assumed from PA TRM and is factored into base saturation calculation
129	Low Flow Faucet Aerators	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	MID-ATL TRM	WPP/PA TRM	PA Baseline	3.5 eligible faucets per homes is assumed from PA TRM and is factored into base saturation calculation
130	Water Heater Tank Wrap	MF	Retrofit	-	-	PA TRM	PA TRM	OHIO TRM	PA TRM	OHIO TRM	PA TRM	Vermont TRM	WPP	PA Baseline	
200	Lighting														
201	Ceiling Fan with ENERGY STAR Light Fixture	SFD	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	PA TRM	Energy Star calculator / GDS calculation	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
202	Electroluminescent Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	GDS Estimate	PA TRM	GDS Estimate	PA TRM	Amazon.com	PA Baseline	PA Baseline	
203	LED Nightlight	SFD	ROB	-	-	PA TRM	PA TRM	GDS Estimate	PA TRM	GDS Estimate	PA TRM	Low's	PA Baseline	PA Baseline	
204	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
205	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
206	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFD	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
207	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
208	ENERGY STAR LEDs - General Service Lamps	SFD	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
209	ENERGY STAR LEDs - Reflector Lamp	SFD	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
210	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
211	ENERGY STAR Torchieres	SFD	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
212	ENERGY STAR Holiday Lights	SFD	ROB	-	-	PA TRM	PA TRM	GDS Estimate	PA TRM	GDS Estimate	PA TRM	Low's	GDS Estimate	EnergyStar Market Penetration Summary	
213	Residential Occupancy Sensors- 14 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&ppc=16
214	Residential Occupancy Sensors 19 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&ppc=16
215	Residential Occupancy Sensors- 23 W CFL	SFD	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&ppc=16
216	Ceiling Fan with ENERGY STAR Light Fixture	SFA	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
217	Electroluminescent Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	GDS Estimate	PA TRM	GDS Estimate	PA TRM	Amazon.com	PA Baseline	PA Baseline	
218	LED Nightlight	SFA	ROB	-	-	PA TRM	PA TRM	GDS Estimate	PA TRM	GDS Estimate	PA TRM	Low's	PA Baseline	PA Baseline	
219	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
220	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
221	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	SFA	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
222	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
223	ENERGY STAR LEDs - General Service Lamps	SFA	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
224	ENERGY STAR LEDs - Reflector Lamp	SFA	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
225	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
226	ENERGY STAR Torchieres	SFA	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
227	ENERGY STAR Holiday Lights	SFA	ROB	-	-	PA TRM	PA TRM	GDS Estimate	PA TRM	GDS Estimate	PA TRM	Low's	GDS Estimate	EnergyStar Market Penetration Summary	
228	Residential Occupancy Sensors- 14 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&ppc=16
229	Residential Occupancy Sensors 19 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&ppc=16
230	Residential Occupancy Sensors- 23 W CFL	SFA	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pr180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&lpf=0&pq=Residential%2bOccupancy%2bSensors&FORM=CPCA&ppc=16
231	Ceiling Fan with ENERGY STAR Light Fixture	MF	ROB	-	-	EnergyStar Calculator	Energy Star calculator / GDS calculation	CT Lighting CF Report	Energy Star calculator / GDS calculation	PA TRM	PA TRM	Energy Star calculator	PA Baseline	PA Baseline	Base saturation is determined from ceiling fans in survey and assumes only half of fans have a light fixture
232	Electroluminescent Nightlight	MF	ROB	-	-	PA TRM	PA TRM	GDS Estimate	PA TRM	GDS Estimate	PA TRM	Amazon.com	PA Baseline	PA Baseline	
233	LED Nightlight	MF	ROB	-	-	PA TRM	PA TRM	GDS Estimate	PA TRM	GDS Estimate	PA TRM	Low's	PA Baseline	PA Baseline	
234	ENERGY STAR CFL Bulbs (screw-in) 60 Watt Incan. To a 14 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
235	ENERGY STAR CFL Bulbs (screw-in) 75 Watt Incan. To a 19 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
236	ENERGY STAR CFL Bulbs (screw-in) 100 Watt Incan. To a 23 Watt CFL	MF	ROB	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
237	ENERGY STAR Indoor Fixture (hard-wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	GDS Estimate	PA Baseline	
238	ENERGY STAR LEDs - General Service Lamps	MF	ROB	-	-	PA TRM / GDS calculation	PA TRM / GDS calculation	CT Lighting CF Report	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
239	ENERGY STAR LEDs-Reflector Lamp	MF	ROB	-	-	MID-ATL TRM	MID-ATL TRM	CT Lighting CF Report	MID-ATL TRM	PA TRM	MID-ATL TRM	Home Depot	GDS Estimate	PA Baseline	
240	ENERGY STAR Outdoor Fixture (hard wired, pin-based)	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	MID-ATL TRM	PA Baseline	PA Baseline	
241	ENERGY STAR Torchieres	MF	ROB	GDS estimate	-	PA TRM / GDS calculation	PA TRM / GDS calculation	PA TRM	PA TRM / GDS calculation	PA TRM	PA TRM	Home Depot	GDS Estimate	PA Baseline	
242	ENERGY STAR Holiday Lights	MF	ROB	-	-	PA TRM	PA TRM	GDS Estimate	PA TRM	GDS Estimate	PA TRM	Low's	GDS Estimate	EnergyStar Market Penetration Summary	
243	Residential Occupancy Sensors- 14 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pf180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&pf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPC&ppc=16
244	Residential Occupancy Sensors 19 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pf180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&pf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPC&ppc=16
245	Residential Occupancy Sensors- 23 W CFL	MF	Retrofit	-	-	PA TRM	PA TRM	CT Lighting CF Report	PA TRM	PA TRM	PA TRM	Bing.com	PA Baseline	EnergyStar Market Penetration Summary	http://www.bing.com/shopping/pf180-1lw-decora-passive-infrared-wall-switch-occupancy-sensor/where-to-buy/A76D28E5A37AB8535011?q=Residential+Occupancy+Sensors&pf=0&lpq=Residential%2bOccupancy%2bSensors&FORM=CPC&ppc=16
300	Appliances														
301	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	WPP	PA Baseline	
302	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	WPP	PA Baseline	
303	Energy Star top mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
304	Energy Star side mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
305	Energy Star bottom mount freezer without door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
306	Energy Star top mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
307	Energy Star side mount freezer with door ice	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
308	Energy Star upright with manual defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Low's	WPP, PA Analysis	PA Baseline	
309	Energy Star upright with automatic defrost	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Low's	WPP, PA Analysis	PA Baseline	
310	Energy Star chest freezer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Low's	WPP	PA Baseline	
311	Energy Star dehumidifiers (35-45 pints/day)	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	WPP	EnergyStar Market Penetration Summary
312	Energy Star Electric Clothes Dryer with Moisture Sensor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	WPP	PECO 2011	
313	ENERGY STAR Clothes Washers- with Electric Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	
314	ENERGY STAR Clothes Washers- with Gas Heat	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	
315	ENERGY STAR Dishwashers- with Electric Water Heating	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	PA Baseline	
316	ENERGY STAR Dishwashers- with Gas Heat	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	PA Baseline	
317	ENERGY STAR Room Air Conditioners	SFD	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	PA Baseline	
318	Energy Star Exhaust Fans	SFD	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*See CF Note 1	Vermont TRM	*See CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
319	Energy Star Residential Whole House Fans	SFD	Retrofit	-	-	PA TRM	PA TRM	*See CF Note 1	PA TRM	*See CF Note 1	PA TRM	Bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qj=n&qp=whole+house+fan&sp=&rt=Completions&tk=&spv=&sl=&sc=&st=&ast=AAAAAAAA#tyt
320	Refrigerator / Freezer Recycling and Replacement With a New Unit	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	WPP	PA Baseline	
321	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDominicis)	WPP	PA Baseline	
322	Energy Star top mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
323	Energy Star side mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
324	Energy Star bottom mount freezer without door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
325	Energy Star top mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
326	Energy Star side mount freezer with door ice	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
327	Energy Star upright with manual defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	WPP, PA Analysis	PA Baseline	
328	Energy Star upright with automatic defrost	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	WPP, PA Analysis	PA Baseline	
329	Energy Star chest freezer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	WPP	PA Baseline	
330	Energy Star dehumidifiers (35-45 pints/day)	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	WPP	EnergyStar Market Penetration Summary	
331	Energy Star Electric Clothes Dryer with Moisture Sensor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	WPP	PECO 2011	
332	ENERGY STAR Clothes Washers- with Electric Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	
333	ENERGY STAR Clothes Washers- with Gas Heat	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	
334	ENERGY STAR Dishwashers- with Electric Water Heating	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	PA Baseline	
335	ENERGY STAR Dishwashers- with Gas Heat	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	PA Baseline	
336	ENERGY STAR Room Air Conditioners	SFA	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	PA Baseline	
337	Energy Star Exhaust Fans	SFA	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
338	Energy Star Residential Whole House Fans	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qs=n&qp=whole+house+fan&sp=&rt=Completions&tk=&spv=&sl=F&sc=&st=&ast=AAAAAAAA#x0y0
339	Refrigerator / Freezer Recycling and Replacement With a New Unit	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDomicinis)	WPP	PA Baseline	
340	Refrigerator / Freezer Retirement (and Recycling) - No Replacement	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PECO (email from Nicholas DeDomicinis)	WPP	PA Baseline	
341	Energy Star top mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
342	Energy Star side mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
343	Energy Star bottom mount freezer without door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
344	Energy Star top mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
345	Energy Star side mount freezer with door ice	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	Base sat. of this type of refrigerator; EE sat. of all primary refrigerators
346	Energy Star upright with manual defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	WPP, PA Analysis	PA Baseline	
347	Energy Star upright with automatic defrost	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Lowe's	WPP, PA Analysis	PA Baseline	
348	Energy Star chest freezer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot/Lowe's	WPP	PA Baseline	
349	Energy Star dehumidifiers (35-45 pints/day)	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	OHIO TRM	EnergyStar Calculator	WPP	EnergyStar Market Penetration Summary
350	Energy Star Electric Clothes Dryer with Moisture Sensor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Home Depot	WPP	PECO 2011	
351	ENERGY STAR Clothes Washers- with Electric Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	
352	ENERGY STAR Clothes Washers- with Gas Heat	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	
353	ENERGY STAR Dishwashers- with Electric Water Heating	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	PA Baseline	
354	ENERGY STAR Dishwashers- with Gas Heat	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	PA Baseline	
355	ENERGY STAR Room Air Conditioners	MF	ROB	-	-	EnergyStar Calculator	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	PA Baseline	
356	Energy Star Exhaust Fans	MF	ROB	-	-	Codes and Standards Enhancement Initiative	Vermont TRM	*Sec CF Note 1	Vermont TRM	*Sec CF Note 1	Vermont TRM	EnergyStar 2011 Savings and Costs report	GDS Estimate	GDS Estimate	
357	Energy Star Residential Whole House Fans	MF	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Bing.com	WPP	Codes and Standards Enhancement Initiative	http://www.bing.com/shopping/search?q=whole+house+fan&form=QBRE&q=whole+house+fan&aid=&ct=&qs=n&qp=whole+house+fan&sp=&rt=Completions&tk=&spv=&sl=F&sc=&st=&ast=AAAAAAAA#x0y0
400	Electronics														
401	ENERGY STAR Computer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
402	ENERGY STAR Copier	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
403	ENERGY STAR Fax Machine	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
404	ENERGY STAR Monitor	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, First Energy	EnergyStar Market Penetration Summary	Savings - PA TRM p.122
405	ENERGY STAR Multifunction	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
406	ENERGY STAR Printer	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
407	>50 in television	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	Codes and Standards Enhancement Initiative	
408	<50 in television	SFD	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	Codes and Standards Enhancement Initiative	
409	Smart Strip Plug Outlets	SFD	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
410	ENERGY STAR Computer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP	EnergyStar Market Penetration Summary	

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
411	ENERGY STAR Copier	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
412	ENERGY STAR Fax Machine	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
413	ENERGY STAR Monitor	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, First Energy	EnergyStar Market Penetration Summary	
414	ENERGY STAR Multifunction	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
415	ENERGY STAR Printer	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
416	>50 in television	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	Codes and Standards Enhancement Initiative	
417	<50 in television	SFA	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	Codes and Standards Enhancement Initiative	
418	Smart Strip Plug Outlets	SFA	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
419	ENERGY STAR Computer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP	EnergyStar Market Penetration Summary	
420	ENERGY STAR Copier	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
421	ENERGY STAR Fax Machine	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
422	ENERGY STAR Monitor	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, First Energy	EnergyStar Market Penetration Summary	
423	ENERGY STAR Multifunction	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PPL PY2 Report-Cited EnergyStar	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
424	ENERGY STAR Printer	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	Best Buy	WPP, GDS Estimate	EnergyStar Market Penetration Summary	
425	>50 in television	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	Codes and Standards Enhancement Initiative	
426	<50 in television	MF	ROB	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	EnergyStar Calculator	WPP	Codes and Standards Enhancement Initiative	
427	Smart Strip Plug Outlets	MF	Retrofit	-	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	VERMONT TRM	GDS Estimate	GDS Estimate	
500	Pool														
501	High Efficiency Two-Speed Pool Pump	SFD	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	WPP	Base sat. assumes that half of homes with a pool/spa pump have a pool; savings- PA and Mid Atlantic TRMs
502	Variable Speed Pool Pumps	SFD	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	WPP	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _g and kW _{sp} parameters taken from Ohio TRM
503	High Efficiency Two-Speed Pool Pump	SFA	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	WPP	Base sat. assumes that half of homes with a pool/spa pump have a pool
504	Variable Speed Pool Pumps	SFA	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	WPP	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _g and kW _{sp} parameters taken from Ohio TRM
505	High Efficiency Two-Speed Pool Pump	MF	ROB	-	-	PA TRM	MID-ATL TRM	PA TRM	MID-ATL TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	WPP	Base sat. assumes that half of homes with a pool/spa pump have a pool
506	Variable Speed Pool Pumps	MF	ROB	-	-	PA TRM / Ohio TRM	PA TRM / Ohio TRM	PA TRM	PA TRM / Ohio TRM	PA TRM	PA TRM	MID-ATL TRM	WPP	WPP	Base sat. assumes that half of homes with a pool/spa pump have a pool; PA TRM algorithm for savings used - kW _g and kW _{sp} parameters taken from Ohio TRM
600	HVAC (Envelope)														
601	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
602	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
603	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
604	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
605	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
606	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.42/sq ft (adjusted from Navigant's R19 value) multiplied by square footage estimate (from West Penn Power)
607	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
608	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
609	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
610	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
611	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	WPP	PA Baseline	
612	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
613	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
614	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
615	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
616	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
617	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
618	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
619	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
620	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
621	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
622	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	WPP	PA Baseline	
623	Air Sealing (cost per sf of living space for a typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
624	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
625	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
626	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
627	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
628	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
629	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
630	ENERGY STAR Windows	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
631	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
632	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
633	HVAC Duct Sealing (Cost per typical single-family home)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	WPP	PA Baseline	
634	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
635	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
636	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
637	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
638	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
639	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, West Penn	WPP	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
640	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, West Penn	WPP	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
641	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
642	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
643	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
644	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	WPP	PA Baseline	
645	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
646	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
647	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
648	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
649	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
650	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, West Penn	WPP	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
651	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigator 2011, West Penn	WPP	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
652	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
653	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
654	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
655	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	WPP	PA Baseline	
656	Air Sealing (cost per sf of living space for a typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
657	Attic Insulation- R0 to R19 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
658	Attic Insulation- R0-R38 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigator 2011, West Penn	WPP	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kW)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
659	Attic Insulation R0 to R60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$2.29/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power); EE sat. based on survey (2.93% of homes w/ no attic insulation)
660	Attic Insulation - R19 to R-60 (Cost Per Square Foot installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$2.69/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
661	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.56/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
662	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
663	ENERGY STAR Windows	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
664	Floor Insulation - R0 to R-13 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.55/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
665	Floor Insulation - R0 to R-19 (Cost Per Square Foot Installed)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$1.86/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
666	HVAC Duct Sealing (Cost per typical single-family home)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	WPP	PA Baseline	
667	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
668	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
669	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
670	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
671	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	WPP	PA Baseline	
672	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
673	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.51/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
674	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
675	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
676	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	WPP	PA Baseline	
677	Air Sealing (cost per sf of living space for a typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	GDS Measure Life Report	Navigant 2011, West Penn	WPP	PA Baseline	\$0.42/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
678	Wall Insulation - R0 to R11 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.41/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
679	Wall Insulation - R0 to R19 (Cost Per Square Foot Installed)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Navigant 2011, West Penn	WPP	PA Baseline	\$1.82/sq ft (from Navigant) multiplied by square footage estimate (from West Penn Power)
680	ENERGY STAR Windows	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	MID-ATL TRM	WPP	PA Baseline	\$325 per 100 square feet of windows multiplied by square footage
681	HVAC Duct Sealing (Cost per typical multi-family home)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database, GDS Adjustment for house size	WPP	PA Baseline	
700	HVAC (Equipment/Controls)														
701	Programmable Thermostat (ASHP)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	*See CF Note 1	REMRate/TRM	*See CF Note 1	PA TRM	Home Depot	WPP	WPP	
702	Air Source Heat Pump (Maintenance)	SFD	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	WPP	PA Baseline	
703	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	WPP	PA Baseline	
704	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFD	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	WPP	PA Baseline	
705	GSHP w/ Desuperheater	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	WPP	PA Baseline	http://www.gsothermal-heat-pump-resource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater
706	Ductless Mini-Split Heat Pumps	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	WPP	PA Baseline	cost source: http://www.stacceng.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20%20FINAL%20.pdf

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes	
707	Ground Source Heat Pumps (GSHP)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	WPP	PA Baseline		
708	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	WPP	PA Baseline		
709	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFD	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	WPP	PA Baseline		
710	HVAC Tune Up (Cooling Season Only Tune Up)	SFD	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	WPP	PA Baseline		
711	Furnace High Efficiency Fan	SFD	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	WPP	GDS Estimate		
712	Programmable Thermostat (CAC)	SFD	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	WPP	WPP		
713	Furnace Whistle	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	WPP	GDS Estimate		
714	Room AC (RAC) Retirement with no replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	WPP	PA Baseline	
715	Room AC (RAC) Retirement with replacement (per AC unit)	SFD	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	PA TRM	GDS estimate	First Energy	WPP	PA Baseline	
716	Programmable Thermostat (ASHP)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	WPP	WPP		
717	Air Source Heat Pump (Maintenance)	SFA	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	WPP	PA Baseline		
718	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	WPP	PA Baseline		
719	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	SFA	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	WPP	PA Baseline		
720	GSHP w/ Desuperheater	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	WPP	PA Baseline	http://www.geothermal-heat-pump-rsource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater	
721	Ductless Mini-Split Heat Pumps	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	WPP	PA Baseline	cost source: http://www.staccenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20FINAL%20.pdf	
722	Ground Source Heat Pumps (GSHP)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	WPP	PA Baseline		
723	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	WPP	PA Baseline		
724	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	SFA	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	WPP	PA Baseline		
725	HVAC Tune Up (Cooling Season Only Tune Up)	SFA	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	WPP	PA Baseline		
726	Furnace High Efficiency Fan	SFA	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	WPP	GDS Estimate		
727	Programmable Thermostat (CAC)	SFA	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	WPP	WPP		
728	Furnace Whistle	SFA	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	WPP	GDS Estimate		
729	Room AC (RAC) Retirement with no replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	WPP	PA Baseline	
730	Room AC (RAC) Retirement with replacement (per AC unit)	SFA	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	PA TRM	GDS estimate	First Energy	WPP	PA Baseline	
731	Programmable Thermostat (ASHP)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	*Sec CF Note 1	REMRate/TRM	*Sec CF Note 1	PA TRM	Home Depot	WPP	WPP		
732	Air Source Heat Pump (Maintenance)	MF	Retrofit	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	Home Depot	WPP	PA Baseline		
733	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 15 (3.5 ton)	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	WPP	PA Baseline		
734	Air Source Heat Pump (Equipment Only) - SEER 13 to SEER 16 (3.5 ton)	MF	ROB	RemRate	-	RemRate	RemRate	PA TRM	RemRate	PA TRM	PA TRM	DEER database	WPP	PA Baseline		
735	GSHP w/ Desuperheater	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL (email)	WPP	PA Baseline	http://www.geothermal-heat-pump-rsource.org/ (incremental cost of \$3000 per ton) plus \$250 premium for desuperheater	
736	Ductless Mini-Split Heat Pumps	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships	WPP	PA Baseline	cost source: http://www.staccenergy.org/Closing%20Reports/Strategies%20to%20Increase%20Res%20HVAC%20Efficiency%20FINAL%20.pdf	
737	Ground Source Heat Pumps (GSHP)	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	PPL(email)	WPP	PA Baseline		
738	Central AC (Equipment Only) - SEER 13 to SEER 15 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	WPP	PA Baseline		
739	Central AC (Equipment Only) - SEER 13 to SEER 16 (3.5 tons)	MF	ROB	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Navigant 2011	WPP	PA Baseline		

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
740	HVAC Tune Up (Cooling Season Only Tune Up)	MF	Retrofit	RemRate	-	REMRate	REMRate	PA TRM	REMRate	PA TRM	PA TRM	Home Depot	WPP	PA Baseline	
741	Furnace High Efficiency Fan	MF	Retrofit	RemRate	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	MID-ATL TRM	MID-ATL TRM	WPP	GDS Estimate	
742	Programmable Thermostat (CAC)	MF	Retrofit	RemRate	-	REMRate	REMRate/TRM	GDS estimate	REMRate/TRM	PA TRM	PA TRM	Home Depot	WPP	WPP	
743	Furnace Whistle	SFD	Retrofit	-	-	PA TRM	PA TRM	*Sec CF Note 1	PA TRM	*Sec CF Note 1	PA TRM	Amazon	WPP	GDS Estimate	
744	Room AC (RAC) Retirement with no replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	PA TRM	GDS estimate	First Energy	WPP	PA Baseline
745	Room AC (RAC) Retirement with replacement (per AC unit)	MF	ROB	PA TRM	-	PA TRM / EnergyStar calc.	PA TRM / EnergyStar calc.	PA TRM	PA TRM / EnergyStar calc.	PA TRM	PA TRM	GDS estimate	First Energy	WPP	PA Baseline
800	Whole House														
801	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	WPP	GDS estimate	
802	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	WPP	GDS estimate	
803	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	WPP	GDS estimate	
804	Indirect Feedback (O-Power)	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	WPP	GDS estimate	
805	Direct (Real Time) Feedback	SFD	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	WPP	GDS estimate	
806	Indirect Feedback	SFD	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	WPP	GDS estimate	
807	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	WPP	GDS estimate	
808	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	WPP	GDS estimate	
809	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	WPP	GDS estimate	
810	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	WPP	GDS estimate	
811	Direct (Real Time) Feedback	SFA	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	WPP	GDS estimate	
812	Indirect Feedback (O-Power)	SFA	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	WPP	GDS estimate	
813	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	WPP	GDS estimate	
814	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	WPP	GDS estimate	
815	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	WPP	GDS estimate	
816	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	WPP	GDS estimate	
817	Direct (Real Time) Feedback	MF	Retrofit	RemRate	-	Vermont TRM	Vermont TRM	GDS estimate	Vermont TRM	GDS estimate	PA TRM	Vermont TRM	WPP	GDS estimate	
818	Indirect Feedback (O-Power)	MF	Retrofit	RemRate	-	Opower	Opower	GDS estimate	Opower	GDS estimate	PA TRM	Communication with Opower	WPP	GDS estimate	
900	New Construction														
901	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
902	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
903	Residential New Construction-Tier 1	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
904	Residential New Construction-Tier 2	SFD	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
905	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
906	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
907	Residential New Construction Tier 1	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	
908	Residential New Construction Tier 2	MF	NC	RemRate	-	RemRate	RemRate	GDS estimate	RemRate	GDS estimate	GDS estimate	EnergyStar Homes Report	GDS estimate	GDS estimate	

Amazon: Retail prices derived from Amazon's website
 Bellomy 2010 Residential Saturation Study; PPL's 2010 Residential Final Saturation Report
 Best Buy: Retail prices derived from Best Buy's website
 Bing.com: Retail prices derived from bing.com search results
 Codes and Standards Enhancement Initiative
 CT Lighting CF Report: Connecticut Lighting Coincidence Factor Report
 DEER database: California database of Energy Efficiency Resources
 EnergyStar: government-backed website that helps protect the environment through superior energy efficiency
 EnergyStar 2011 Savings and Costs
 EnergyStar Calculator: service provided by EnergyStar to help estimate savings, useful life, and cost
 EnergyStar Homes Report
 EnergyStar Penetration Market Summary: shipment data collected by EnergyStar, used in calculating Energy Efficient Saturations (average of penetrations for 2008-2010)
 First Energy: First Energy Saturation Study
 GDS: GDS Associates Calculation/Assumption. See measure-specific notes.
 GDS Estimate: Relied on industry experience and professional judgement due to lack of available primary research at the state/regional level.
 GDS Measure Life Report: SPWG and GDS's document of a set of measure life values for selected measures

Measure Assumptions Sources - West Penn

Measure	Measure Name	Home Type	ROB vs. Retrofit vs. NC	Base Elec. Use (kWh)	% Elec. Savings	Annual Elec. Savings (kWh)	Per Unit Winter Demand Savings (kW)	Winter CF	Per Unit Summer Demand Savings (kW)	Summer CF	Useful Life	Measure Cost	Base Saturation	EE Saturation	Notes
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Google.com: Retail prices derived from Google Shopping
 Home Depot: Retail prices derived from Home Depot's website
 LOWES: Retail prices derived from Lowe's website
 MID-ATL TRM: Mid-Atlantic Technical Reference Manual, Version 2.0
 Navigant 2011: describes methods and results of ICS, commissioned by the EM&V Forum Research Subcommittee to update incremental costs for measures
 Opower: information used for calculating indirect feedback
 Ohio TRM: Ohio Technical Reference Manual
 PA Baseline: Pennsylvania Baseline study, conducted by GDS
 PA TRM: Pennsylvania Technical Reference Manual
 PA TRM / Ohio TRM: Pennsylvania Technical Reference Manual / Ohio Technical Reference Manual
 PECO 2011: data calculated from PECO's residential survey
 PECO email: correspondence with representative(s) at PECO
 PPL email: correspondence with representative(s) at PPL
 PPL Quarterly Report: documents progress and effectiveness of EE&C accomplishments for PPL, through end of PY3, Quarter 2
 REM/Rate Building Energy Modeling Software: Prototype homes were modeled based on average characteristics using the PECO Energy Baseline Study, February 2011
 Saeenergy.org: Strategies to Increase Residential HVAC Efficiency in the Northeast prepared by Northeast Energy Efficiency Partnerships
 The American Council for an Energy-Efficient Economy: Report on technical and policy issues relating to energy efficiency
 Vermont TRM: Vermont Technical Reference Manual
 WPP: West Penn Power Saturation Survey

Residential Load Shapes (listed by measure type)

Measure Type		Allocation of Annual Energy Savings by Season				
		Load Reduction Factor (kW/kWh)	Winter		Summer	
			Peak	OffPeak	Peak	OffPeak
A- Avg. Residential	0.000222	35%	35%	18%	12%	
B- Clothes Washer - Residential	0.000222	42%	21%	25%	13%	
C- Clothes Dryer - Residential	0.000222	37%	26%	21%	15%	
D - Cooling - Residential	0.002673	0%	0%	65%	35%	
D2 - Cooling - Residential 58%	0.002673	0%	0%	65%	35%	
D3 - Cooling - Residential 20%	0.002673	0%	0%	65%	35%	
D4 - Cooling - Residential 70%	0.002673	0%	0%	65%	35%	
D5 - Cooling - Residential 0/58	0.002673	0%	0%	65%	35%	
D6 - Cooling - Residential 70/58	0.002673	0%	0%	65%	35%	
E - Heat Pump - Residential	0.001958	35%	35%	18%	12%	
F - Heating - Residential	0.001242	38%	48%	8%	6%	
G - Heating-Water	0.001605	37%	32%	16%	15%	
H - Dishwasher - Residential	0.000222	28%	31%	20%	22%	
I - Lighting - Residential	0.001014	41%	55%	1%	3%	
I2 - Lighting - Residential 5%	0.001014	41%	55%	1%	3%	
I3 - Lighting - Residential 11%	0.001014	41%	55%	1%	3%	
I4 - Lighting - Residential CFL and LED 30/8	0.001014	41%	55%	1%	3%	
J - Television - Residential	0.000222	41%	17%	29%	13%	
J2 - Television - Residential 28%	0.000222	41%	17%	29%	13%	
J3 - Television - Residential 50%	0.000222	41%	17%	29%	13%	
K - Freezer - Residential	0.000262	18%	31%	18%	33%	
L - Refrigeration - Residential	0.000262	28%	29%	21%	22%	
L2 - Refrigeration - Residential 62%	0.000262	28%	29%	21%	22%	
M - Shell Measures (Heat & Cool) - Multi-family	0.001958	35%	35%	18%	12%	
M2 - Shell Measures (Heat & Cool) - MF 70/70	0.001958	35%	35%	18%	12%	
M3 - Shell Measures (Heat & Cool) - MF 70/58	0.001958	35%	35%	18%	12%	
M4 - Shell Measures (Heat & Cool) - MF 0/100	0.001958	35%	35%	18%	12%	
N - Shell Measures (Heat & Cool) - Single family	0.001958	35%	35%	18%	12%	
N2 - Shell Measures (Heat & Cool) - SF 70/70	0.001958	35%	35%	18%	12%	
N3 - Shell Measures (Heat & Cool) - SF 70/58	0.001958	35%	35%	18%	12%	
N4 - Shell Measures (Heat & Cool) - SF 0/100	0.001958	35%	35%	18%	12%	