



**Tennessee Valley Authority**  
**Energy Efficiency Potential Study**  
2012 Update

Report Number 1360.2

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## STUDY OBJECTIVE

On December 21, 2011, EnerNOC Utility Solutions<sup>1</sup> provided the Tennessee Valley Authority with an analysis containing estimates of energy efficiency (EE) potential in its service territory. Since then, TVA has developed updated forecasts for two key inputs to the analysis: the price of natural gas and overall electricity consumption in the Valley. This memo describes the results of updating the EE potential analysis with those new inputs and compares the new 2012 results with those from the 2011 study.

## CHANGES TO KEY INPUTS

The two changes TVA wished to reflect in the 2012 update of the EE potential study results were a new **natural gas price forecast** and **overall electricity consumption forecast**.

### Natural Gas Price

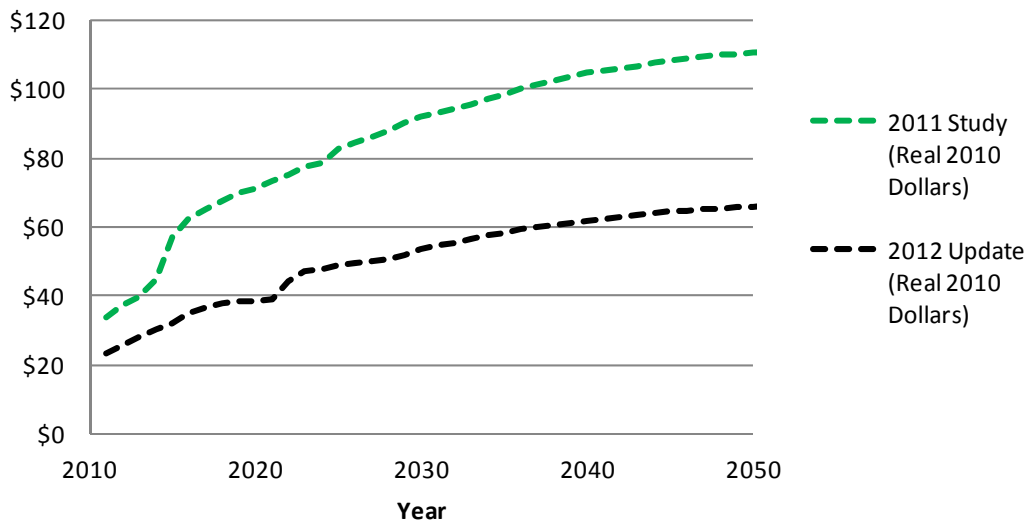
With fundamental changes in the economics of natural gas supply, there have been relatively abrupt long-term price decreases. This is mostly due to the inexpensive and transformative technology of fracking, the use of pressurized fluid to harvest the abundant natural gas resources in shale rock deposits within the United States.

Downward natural gas price fluctuations affect energy efficiency potential by offering a cheaper fuel for electricity generation, thereby depressing the forecast market price of electricity. The value of energy efficiency savings is determined by market costs for energy that can be avoided. If the avoided energy costs decline, it is more difficult for energy efficiency measures to break even in an economic analysis. Marginally cost-effective measures (those with a benefit to cost ratio, i.e., Total Resource Cost ratio, just above 1.0) will therefore fall out of the economic and achievable potential.

Figure 1 below compares the 2011 and updated 2012 avoided cost forecast, each of which embeds natural gas prices in the outlook for electricity prices. The 2012 forecast is 41% below the 2011 forecast on average.

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<sup>1</sup> EnerNOC Utility Solutions was operating at the time under the name: Global Energy Partners, An EnerNOC Company

**Figure 1** *Avoided Electric Energy Cost (\$/MWh)*

## Electricity Consumption Forecast

EnerNOC's LoadMAP modeling approach builds its own unique load forecast using a bottom-up technique to enable the year-over-year stock accounting of equipment and efficiency measures. This forecast is compared, and calibrated if necessary, to the official TVA load forecast, but it is not necessary that they be identical. Small differences in the overall magnitude of the forecasts will have insignificant effect on the absolute amount of potential energy savings that are predicted by the model. In the 2011 study, the EnerNOC LoadMAP model was within an acceptable tolerance of the TVA official forecast, but in general was a couple percentage points below it.

With a slight decline in TVA's 2012 updated load forecast, the 2011 LoadMAP model forecast is actually in slightly better agreement. It was therefore determined that no changes were necessary to the baseline forecast used in the 2011 Potential Study.

The forecasts can be seen in

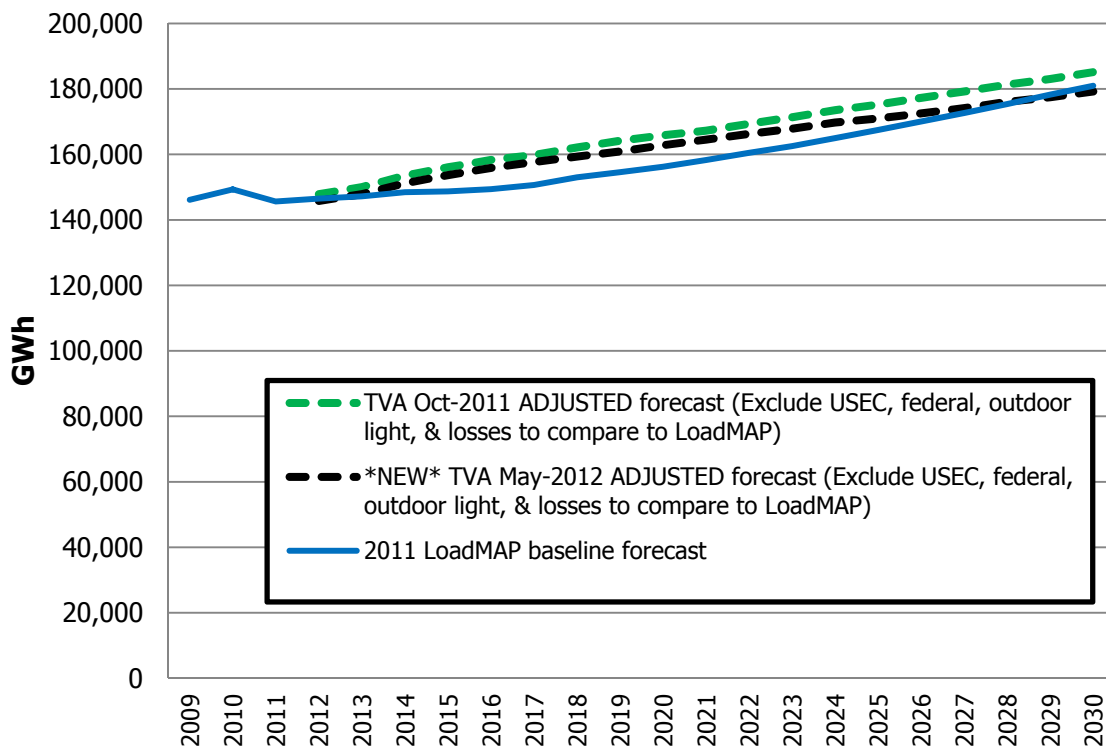


Figure 2 below.<sup>2</sup>

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<sup>2</sup> The potential analysis covers the residential, commercial, and industrial sectors; and excludes USEC, federal customers, & outdoor lighting.

**Figure 2 Load Forecast for the Tennessee Valley – Residential, Commercial, & Industrial (GWh)**



## RESULTS

Given the discussion above, the LoadMAP models from the previous study were simply updated with the new stream of avoided energy costs from TVA and re-run. The results, as anticipated, show a decrease in achievable EE savings potential.

In 2020, the Achievable Low potential decreases by 921 GWh, from 5.1% of the baseline forecast to 4.5%. The Achievable High potential decreases by 1,963 GWh, from 9.8% of the baseline forecast to 8.6%. The residential sector is hit the hardest, as it has more marginally cost-effective measures; then commercial; then industrial. Comparisons for 2020 achievable potential are available in Table 1 and Table 2 below.

**Table 1 2020 Achievable Low Potential**

Sector	2011 Analysis		2012 Analysis Update	
	GWh Savings	Savings as % of Baseline	GWh Savings	Savings as % of Baseline
Residential	3,216	4.8%	2,512	3.8%
Commercial	2,613	6.7%	2,408	6.2%
Industrial	2,134	4.2%	2,123	4.2%
<b>TOTAL</b>	<b>7,963</b>	<b>5.1%</b>	<b>7,042</b>	<b>4.5%</b>

**Table 2 2020 Achievable High Potential**

Sector	2011 Analysis		2012 Analysis Update	
	GWh Savings	Savings as % of Baseline	GWh Savings	Savings as % of Baseline
Residential	6,445	9.7%	4,868	7.3%
Commercial	4,693	12.0%	4,329	11.1%
Industrial	4,199	8.3%	4,177	8.2%
<b>TOTAL</b>	<b>15,337</b>	<b>9.8%</b>	<b>13,374</b>	<b>8.6%</b>

At the end of the study time horizon in 2030, the changes to the avoided costs decrease the Achievable Low potential by 1,750 GWh, from 10.6% of the baseline forecast to 9.6%. The Achievable High potential decreases by 3,307 GWh, from 19.8% of the baseline forecast to 17.9%. Comparisons for 2030 achievable potential are available in Table 3 and Table 4 below. Figure 3 and Figure 4 show the percent savings visually in a bar chart.

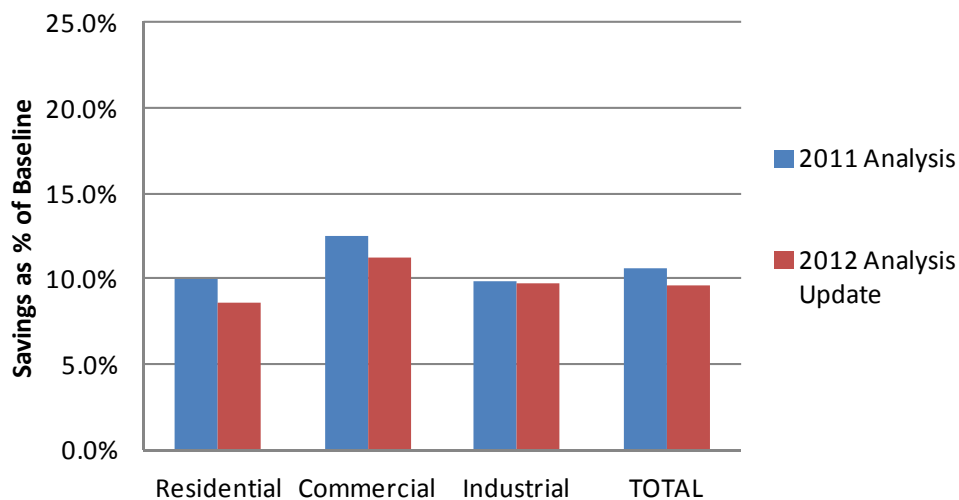
**Table 3 2030 Achievable Low Potential**

Sector	2011 Analysis		2012 Analysis Update	
	GWh Savings	Savings as % of Baseline	GWh Savings	Savings as % of Baseline
Residential	8,307	10.0%	7,150	8.6%
Commercial	5,557	12.4%	5,023	11.2%
Industrial	5,229	9.8%	5,170	9.7%
<b>TOTAL</b>	<b>19,093</b>	<b>10.6%</b>	<b>17,343</b>	<b>9.6%</b>

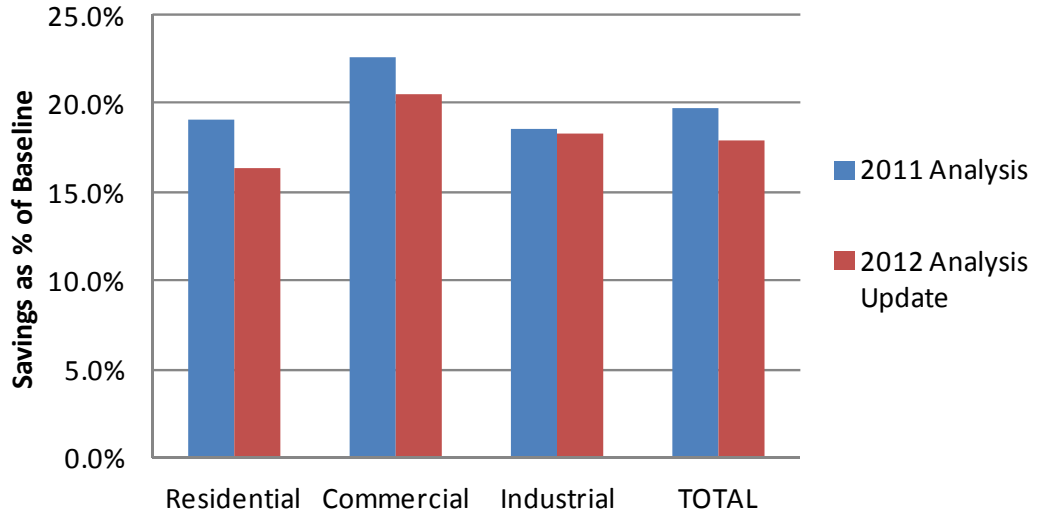
**Table 4 2030 Achievable High Potential**

Sector	2011 Analysis		2012 Analysis Update	
	GWh Savings	Savings as % of Baseline	GWh Savings	Savings as % of Baseline
Residential	15,759	19.0%	13,519	16.3%
Commercial	10,130	22.7%	9,170	20.5%
Industrial	9,892	18.5%	9,785	18.3%
<b>TOTAL</b>	<b>35,781</b>	<b>19.8%</b>	<b>32,474</b>	<b>17.9%</b>

**Figure 3 2030 Achievable Low Potential**



**Figure 4**



## Affected Measures

The reductions in potential savings are not a constant reduction across all efforts, but due to specific measures that are no longer cost-effective in some or all segments and applications. This may result in the complete loss of savings for that measure, or a ratcheting down effect to a less efficient option, but one which is still better than the baseline. The affected measures, along with the magnitude of their potential reductions, are given below for each sector in Table 5 through Table 7.

**Table 5 Residential Measures Affected by Update**

Measure	Change in Savings - 2030 Achievable Low (GWh)
Water Heater	-637.19
Windows - ENERGY STAR	-115.31
Insulation - Infiltration Control	-102.19
Screw-in Lighting	-97.98
Insulation - Wall Cavity	-75.71
Screw-in Exterior Lighting	-61.71
Pool - Pump Timer	-24.09
Linear Fluorescent	-17.46
Home Energy Management System	-11.01
Freezer - Remove Second Unit	-9.01
Central Heat Pump - Maintenance	-6.97
Ceiling Fan - Installation	-6.15
Air-Source Heat Pump	-4.55
Water Heater - Thermostat Setback	-4.16
Insulation - Foundation	-3.65
Insulation - Ducting	-2.11
Whole-House Fan - Installation	-1.91
Insulation - Ceiling	-0.89
Insulation - Wall Sheathing	-0.81
Windows - Install reflective film	-0.67
Second Refrigerator	-0.35
Central AC - Maintenance	-0.32
Room AC	-0.01
Interior Lighting - Occupancy Sensor	-0.01

**Table 6 Commercial Measures Affected by Update**

Measure	Change in Savings - 2030 Achievable Low (GWh)
Other Cooling	-64.71
Screw-in Lighting	-62.51
Energy Management System	-59.88
Interior Lighting - Fluorescent Delamp and Install Reflectors	-57.91
HVAC - Duct Repair and Sealing	-48.93
Open Display Case	-36.37
Windows - High Efficiency	-25.80
Roof Top Heat Pump	-15.89
Insulation - Ceiling	-15.26
Water-Cooled Chiller	-13.81
Refrigerator - Decommissioning and Recycling	-13.68
Water-Cooled Chiller - Condenser Water Temperature Reset	-11.59
Ventilation	-11.41
Walk-in Refrigerator	-11.26
Lighting Retrocommissioning	-11.06
Interior Fluorescent - Photocell-Controlled Dimming Ballasts	-10.92
Roof Top AC	-9.11
Air-Cooled Chiller	-9.00
Chiller - VSD	-7.57
RTU - Maintenance	-6.72
Water Heating - Thermostat Setback	-5.89
Screw-in Exterior Lighting	-5.20
Chiller - Condenser Water Temperature Reset	-4.94
Refrigerator - Door Gasket Replacement	-4.35
Roofs - Cool Roof	-4.20
Indoor Lighting - Daylighting Controls	-3.62
Insulation - Ducting	-2.41
Water Heating - Faucet Aerators and Low Flow Nozzles	-2.36
Water Heating - Hot Water Saver	-1.65
Water Heating - Tank Blanket	-1.55
Interior Lighting - Time Clocks and Timers (lighting)	-0.43
Water Heating - Pipe Insulation	-0.36
Icemaker	-0.36
Pool Heater	-0.17
Interior Fluorescent - Bi-Level Fixture w/Occupancy Sensor	-0.12
Pool Pump	-0.05

**Table 7 Industrial Measures Affected by Update**

Measures	Change in Savings - 2030 Achievable Low (GWh)
Other Cooling	-21.32
Lighting Occupancy Sensors	-16.85
Refrigeration System Maintenance	-12.28
Central Chiller - Chiller Water Reset	-4.50
Fan System Optimization	-2.95
Energy Management System	-2.84
LED Exit Lighting	-2.29
Integrated Plant Energy Management	-1.23
Paper: Premium Control Large Material	-1.03
Material Handling VFD	-0.69
Grocery Distribution Tune-up	-0.68
Fan Energy Management	-0.58
Custom Utility Programs - Motors	-0.53
Ventilation - CO2 Controls	-0.38
Motors: Rewind 20-50 HP	-0.29
Efficient Centrifugal Fan	-0.20
Pump Energy Management	-0.16
Fan Equipment Upgrade	-0.14
Refrigeration System Optimization	-0.14
Transformers-New	-0.14
Cold Storage Retrofit	-0.12
Grocery Distribution Retrofit	-0.05
Motors: Rewind 51-100 HP	-0.03
Transformers-Retrofit	-0.03
Screw-in Lighting	-0.02
Motors: Rewind 201-500 HP	-0.01

## Annual Energy and Peak Demand Savings

This section presents the estimates of annual savings. Table 8 shows the overall annual energy savings for the 2012 Update, while Table 9 through Table 11 show the annual savings by sector. The corresponding tables for peak demand savings are included in Table 12 through



	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Baseline Forecast</b>	6,162	6,228	6,321	6,411	6,512	6,617	6,720	6,827	6,934	7,044	7,157
<b>Cumulative Savings (MW)</b>											
Achievable - Low	382	430	474	516	553	592	632	670	707	742	775
Achievable - High	696	776	846	916	984	1,059	1,135	1,207	1,277	1,341	1,405
Economic	930	1,019	1,087	1,158	1,235	1,321	1,403	1,477	1,550	1,620	1,691
Technical	1,141	1,262	1,365	1,470	1,582	1,706	1,828	1,945	2,060	2,170	2,278
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	6.2%	6.9%	7.5%	8.0%	8.5%	9.0%	9.4%	9.8%	10.2%	10.5%	10.8%
Achievable - High	11.3%	12.5%	13.4%	14.3%	15.1%	16.0%	16.9%	17.7%	18.4%	19.0%	19.6%
Economic	15.1%	16.4%	17.2%	18.1%	19.0%	20.0%	20.9%	21.6%	22.4%	23.0%	23.6%
Technical	18.5%	20.3%	21.6%	22.9%	24.3%	25.8%	27.2%	28.5%	29.7%	30.8%	31.8%
<b>Incremental Savings (MW)</b>											
Achievable - Low	59	48	44	42	37	39	40	38	37	35	33
Achievable - High	95	80	70	70	68	75	75	72	70	64	64
Economic	100	90	67	72	77	86	82	74	74	69	72
Technical	126	121	103	105	112	123	123	117	115	110	108
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.9%	0.7%	0.6%	0.5%	0.4%	0.5%	0.5%	0.4%	0.4%	0.3%	0.3%
Achievable - High	1.5%	1.2%	0.9%	0.9%	0.8%	0.9%	0.9%	0.8%	0.7%	0.6%	0.6%
Economic	1.5%	1.3%	0.8%	0.9%	0.9%	1.0%	0.9%	0.8%	0.7%	0.6%	0.6%
Technical	1.9%	1.8%	1.3%	1.3%	1.4%	1.5%	1.4%	1.3%	1.2%	1.1%	1.0%

Table 15.

**Table 8 Total Annual Energy Savings (GWh)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Baseline Forecast</b>	146,118	149,336	145,637	146,505	147,211	148,446	148,692	149,412	150,636	152,982	154,584
<b>Cumulative Savings (GWh)</b>											
Achievable - Low	-	-	-	773	1,676	2,422	3,061	3,722	4,412	5,168	5,971
Achievable - High	-	-	-	2,298	4,518	6,066	6,993	7,898	8,952	10,193	11,525
Economic	-	-	-	4,160	7,953	10,355	11,297	12,010	13,047	14,534	16,206
Technical	-	-	-	5,349	10,182	13,587	15,347	17,026	19,103	21,719	24,525
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.5%	1.1%	1.6%	2.1%	2.5%	2.9%	3.4%	3.9%
Achievable - High	0.0%	0.0%	0.0%	1.6%	3.1%	4.1%	4.7%	5.3%	5.9%	6.7%	7.5%
Economic	0.0%	0.0%	0.0%	2.8%	5.4%	7.0%	7.6%	8.0%	8.7%	9.5%	10.5%
Technical	0.0%	0.0%	0.0%	3.7%	6.9%	9.2%	10.3%	11.4%	12.7%	14.2%	15.9%
<b>Incremental Savings (GWh)</b>											
Achievable - Low	-	-	-	773	903	745	639	661	690	756	803
Achievable - High	-	-	-	2,298	2,220	1,548	927	905	1,054	1,241	1,332
Economic	-	-	-	4,160	3,792	2,402	942	713	1,037	1,487	1,672
Technical	-	-	-	5,349	4,833	3,405	1,759	1,679	2,077	2,617	2,806
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.5%	0.6%	0.5%	0.4%	0.4%	0.4%	0.4%	0.5%
Achievable - High	0.0%	0.0%	0.0%	1.6%	1.5%	1.0%	0.6%	0.6%	0.7%	0.7%	0.8%
Economic	0.0%	0.0%	0.0%	2.8%	2.6%	1.6%	0.6%	0.4%	0.6%	0.8%	1.0%
Technical	0.0%	0.0%	0.0%	3.7%	3.3%	2.2%	1.2%	1.1%	1.3%	1.5%	1.7%

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Baseline Forecast</b>	156,243	158,260	160,502	162,551	164,953	167,462	170,065	172,657	175,374	178,245	180,959
<b>Cumulative Savings (GWh)</b>											
Achievable - Low	7,042	8,082	9,084	10,038	11,040	12,040	13,078	14,119	15,204	16,290	17,343
Achievable - High	13,374	15,272	17,058	18,769	20,627	22,511	24,466	26,432	28,473	30,491	32,474
Economic	18,399	20,694	22,673	24,589	26,797	29,061	31,390	33,611	35,872	38,098	40,365
Technical	27,545	30,785	33,743	36,549	39,646	42,822	46,083	49,031	51,865	54,609	57,244
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	4.5%	5.1%	5.7%	6.2%	6.7%	7.2%	7.7%	8.2%	8.7%	9.1%	9.6%
Achievable - High	8.6%	9.7%	10.6%	11.5%	12.5%	13.4%	14.4%	15.3%	16.2%	17.1%	17.9%
Economic	11.8%	13.1%	14.1%	15.1%	16.2%	17.4%	18.5%	19.5%	20.5%	21.4%	22.3%
Technical	17.6%	19.5%	21.0%	22.5%	24.0%	25.6%	27.1%	28.4%	29.6%	30.6%	31.6%
<b>Incremental Savings (GWh)</b>											
Achievable - Low	1,071	1,040	1,002	954	1,002	1,001	1,038	1,041	1,085	1,087	1,053
Achievable - High	1,849	1,899	1,786	1,711	1,858	1,884	1,956	1,965	2,041	2,018	1,984
Economic	2,194	2,295	1,979	1,916	2,209	2,263	2,329	2,222	2,261	2,225	2,268
Technical	3,020	3,240	2,958	2,805	3,097	3,176	3,261	2,948	2,834	2,743	2,635
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%
Achievable - High	1.1%	1.1%	1.0%	0.9%	1.0%	0.9%	0.9%	0.9%	0.9%	0.9%	0.8%
Economic	1.3%	1.3%	1.1%	1.0%	1.1%	1.1%	1.1%	1.0%	1.0%	0.9%	0.9%
Technical	1.8%	1.8%	1.6%	1.5%	1.6%	1.5%	1.5%	1.3%	1.2%	1.1%	1.0%

**Table 9 Residential Annual Energy Savings (GWh)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Baseline Forecast</b>	62,246	63,888	61,140	61,936	62,400	63,109	62,932	63,106	63,565	64,807	65,682
<b>Cumulative Savings (GWh)</b>											
Achievable - Low	-	-	-	354	787	1,102	1,292	1,483	1,707	1,951	2,195
Achievable - High	-	-	-	1,013	2,071	2,755	2,953	3,118	3,417	3,815	4,263
Economic	-	-	-	1,778	3,671	4,874	5,007	4,996	5,272	5,856	6,575
Technical	-	-	-	2,562	5,233	7,144	7,795	8,431	9,419	10,799	12,322
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.6%	1.3%	1.7%	2.1%	2.3%	2.7%	3.0%	3.3%
Achievable - High	0.0%	0.0%	0.0%	1.6%	3.3%	4.4%	4.7%	4.9%	5.4%	5.9%	6.5%
Economic	0.0%	0.0%	0.0%	2.9%	5.9%	7.7%	8.0%	7.9%	8.3%	9.0%	10.0%
Technical	0.0%	0.0%	0.0%	4.1%	8.4%	11.3%	12.4%	13.4%	14.8%	16.7%	18.8%
<b>Incremental Savings (GWh)</b>											
Achievable - Low	-	-	-	354	433	315	191	190	225	243	244
Achievable - High	-	-	-	1,013	1,059	684	198	165	299	399	447
Economic	-	-	-	1,778	1,893	1,203	133	(11)	276	584	720
Technical	-	-	-	2,562	2,671	1,911	651	636	988	1,380	1,523
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.6%	0.7%	0.5%	0.3%	0.3%	0.3%	0.3%	0.3%
Achievable - High	0.0%	0.0%	0.0%	1.6%	1.7%	1.0%	0.3%	0.2%	0.4%	0.5%	0.6%
Economic	0.0%	0.0%	0.0%	2.9%	3.0%	1.8%	0.2%	0.0%	0.4%	0.7%	1.0%
Technical	0.0%	0.0%	0.0%	4.1%	4.2%	2.9%	1.1%	1.0%	1.5%	1.8%	2.1%

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Baseline Forecast</b>	66,440	67,563	69,022	70,302	71,910	73,613	75,419	77,232	79,150	81,112	82,830
<b>Cumulative Savings (GWh)</b>											
Achievable - Low	2,512	2,883	3,323	3,716	4,197	4,664	5,145	5,627	6,149	6,669	7,150
Achievable - High	4,868	5,596	6,447	7,194	8,087	8,940	9,829	10,725	11,689	12,640	13,519
Economic	7,416	8,343	9,331	10,179	11,258	12,299	13,397	14,407	15,429	16,412	17,368
Technical	13,629	15,066	16,583	17,941	19,522	21,078	22,665	23,957	25,165	26,295	27,274
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	3.8%	4.3%	4.8%	5.3%	5.8%	6.3%	6.8%	7.3%	7.8%	8.2%	8.6%
Achievable - High	7.3%	8.3%	9.3%	10.2%	11.2%	12.1%	13.0%	13.9%	14.8%	15.6%	16.3%
Economic	11.2%	12.3%	13.5%	14.5%	15.7%	16.7%	17.8%	18.7%	19.5%	20.2%	21.0%
Technical	20.5%	22.3%	24.0%	25.5%	27.1%	28.6%	30.1%	31.0%	31.8%	32.4%	32.9%
<b>Incremental Savings (GWh)</b>											
Achievable - Low	317	371	440	394	481	467	480	482	522	520	481
Achievable - High	606	727	851	747	893	853	889	897	964	951	879
Economic	841	927	988	848	1,079	1,041	1,099	1,010	1,022	983	956
Technical	1,306	1,437	1,517	1,358	1,581	1,557	1,587	1,292	1,208	1,130	979
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.4%	0.5%	0.5%	0.5%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%
Achievable - High	0.8%	1.0%	1.1%	0.9%	1.0%	0.9%	0.9%	0.9%	0.9%	0.8%	0.7%
Economic	1.2%	1.2%	1.2%	1.0%	1.2%	1.1%	1.1%	0.9%	0.8%	0.7%	0.7%
Technical	1.8%	1.8%	1.7%	1.5%	1.6%	1.5%	1.4%	1.0%	0.8%	0.6%	0.5%

**Table 10 Commercial Annual Energy Savings (GWh)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Baseline Forecast</b>	39,561	40,688	38,537	38,176	37,817	37,771	37,587	37,726	37,898	38,430	38,721
<b>Cumulative Savings (GWh)</b>											
Achievable - Low	-	-	-	220	499	722	944	1,205	1,438	1,710	2,025
Achievable - High	-	-	-	636	1,328	1,758	2,087	2,456	2,804	3,230	3,707
Economic	-	-	-	1,192	2,362	2,963	3,308	3,665	4,032	4,504	5,002
Technical	-	-	-	1,460	2,828	3,649	4,221	4,822	5,439	6,158	6,900
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.6%	1.3%	1.9%	2.5%	3.2%	3.8%	4.5%	5.2%
Achievable - High	0.0%	0.0%	0.0%	1.7%	3.5%	4.7%	5.6%	6.5%	7.4%	8.4%	9.6%
Economic	0.0%	0.0%	0.0%	3.1%	6.2%	7.8%	8.8%	9.7%	10.6%	11.7%	12.9%
Technical	0.0%	0.0%	0.0%	3.8%	7.5%	9.7%	11.2%	12.8%	14.4%	16.0%	17.8%
<b>Incremental Savings (GWh)</b>											
Achievable - Low	-	-	-	220	279	223	221	261	233	273	314
Achievable - High	-	-	-	636	692	430	329	369	347	426	478
Economic	-	-	-	1,192	1,170	601	345	358	366	472	498
Technical	-	-	-	1,460	1,368	822	572	601	617	718	742
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.6%	0.7%	0.6%	0.6%	0.7%	0.6%	0.7%	0.8%
Achievable - High	0.0%	0.0%	0.0%	1.7%	1.8%	1.1%	0.9%	1.0%	0.9%	1.0%	1.2%
Economic	0.0%	0.0%	0.0%	3.1%	3.1%	1.6%	1.0%	0.9%	0.9%	1.1%	1.2%
Technical	0.0%	0.0%	0.0%	3.8%	3.7%	2.2%	1.6%	1.6%	1.6%	1.7%	1.8%

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Baseline Forecast</b>	39,026	39,343	39,802	40,307	40,881	41,485	42,096	42,734	43,376	44,034	44,718
<b>Cumulative Savings (GWh)</b>											
Achievable - Low	2,408	2,719	3,004	3,287	3,541	3,802	4,065	4,319	4,565	4,798	5,023
Achievable - High	4,329	4,860	5,331	5,814	6,286	6,794	7,307	7,800	8,279	8,725	9,170
Economic	5,645	6,246	6,725	7,240	7,782	8,375	8,948	9,474	9,995	10,488	10,998
Technical	7,795	8,717	9,539	10,332	11,157	12,033	12,921	13,764	14,559	15,312	16,053
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	6.2%	6.9%	7.5%	8.2%	8.7%	9.2%	9.7%	10.1%	10.5%	10.9%	11.2%
Achievable - High	11.1%	12.4%	13.4%	14.4%	15.4%	16.4%	17.4%	18.3%	19.1%	19.8%	20.5%
Economic	14.5%	15.9%	16.9%	18.0%	19.0%	20.2%	21.3%	22.2%	23.0%	23.8%	24.6%
Technical	20.0%	22.2%	24.0%	25.6%	27.3%	29.0%	30.7%	32.2%	33.6%	34.8%	35.9%
<b>Incremental Savings (GWh)</b>											
Achievable - Low	383	311	285	283	254	261	263	254	246	233	225
Achievable - High	621	531	471	483	472	508	513	492	480	446	445
Economic	644	601	478	516	542	593	573	526	521	493	510
Technical	895	922	822	793	825	876	888	843	795	752	741
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.9%	0.7%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%	0.3%
Achievable - High	1.5%	1.3%	1.0%	1.0%	1.0%	1.0%	1.0%	0.9%	0.8%	0.7%	0.7%
Economic	1.5%	1.4%	1.0%	1.1%	1.1%	1.2%	1.1%	0.9%	0.9%	0.8%	0.8%
Technical	2.2%	2.2%	1.8%	1.7%	1.7%	1.7%	1.7%	1.5%	1.4%	1.2%	1.1%



**Table 11 Industrial Annual Energy Savings (GWh)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Baseline Forecast</b>	44,311	44,760	45,960	46,394	46,994	47,565	48,173	48,580	49,173	49,745	50,182
<b>Cumulative Savings (GWh)</b>											
Achievable - Low	-	-	-	199	390	598	824	1,035	1,267	1,507	1,752
Achievable - High	-	-	-	650	1,119	1,552	1,953	2,324	2,732	3,148	3,555
Economic	-	-	-	1,190	1,919	2,518	2,983	3,348	3,744	4,175	4,629
Technical	-	-	-	1,327	2,121	2,794	3,330	3,773	4,244	4,763	5,303
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.4%	0.8%	1.3%	1.7%	2.1%	2.6%	3.0%	3.5%
Achievable - High	0.0%	0.0%	0.0%	1.4%	2.4%	3.3%	4.1%	4.8%	5.6%	6.3%	7.1%
Economic	0.0%	0.0%	0.0%	2.6%	4.1%	5.3%	6.2%	6.9%	7.6%	8.4%	9.2%
Technical	0.0%	0.0%	0.0%	2.9%	4.5%	5.9%	6.9%	7.8%	8.6%	9.6%	10.6%
<b>Incremental Savings (GWh)</b>											
Achievable - Low	-	-	-	199	191	207	227	210	232	240	244
Achievable - High	-	-	-	650	469	433	401	371	408	416	407
Economic	-	-	-	1,190	729	599	465	366	395	431	454
Technical	-	-	-	1,327	794	672	536	442	472	518	541
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.4%	0.4%	0.4%	0.5%	0.4%	0.4%	0.5%	0.5%
Achievable - High	0.0%	0.0%	0.0%	1.4%	1.0%	0.9%	0.8%	0.7%	0.8%	0.8%	0.8%
Economic	0.0%	0.0%	0.0%	2.6%	1.5%	1.2%	0.9%	0.7%	0.7%	0.8%	0.8%
Technical	0.0%	0.0%	0.0%	2.9%	1.7%	1.4%	1.0%	0.9%	0.9%	0.9%	1.0%

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Baseline Forecast</b>	50,777	51,354	51,678	51,941	52,162	52,364	52,550	52,691	52,849	53,100	53,412
<b>Cumulative Savings (GWh)</b>											
Achievable - Low	2,123	2,480	2,757	3,035	3,301	3,574	3,868	4,173	4,490	4,823	5,170
Achievable - High	4,177	4,816	5,280	5,762	6,254	6,777	7,331	7,907	8,504	9,125	9,785
Economic	5,338	6,105	6,618	7,169	7,758	8,387	9,044	9,730	10,449	11,198	11,999
Technical	6,121	7,002	7,622	8,277	8,968	9,712	10,498	11,310	12,141	13,002	13,917
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	4.2%	4.8%	5.3%	5.8%	6.3%	6.8%	7.4%	7.9%	8.5%	9.1%	9.7%
Achievable - High	8.2%	9.4%	10.2%	11.1%	12.0%	12.9%	13.9%	15.0%	16.1%	17.2%	18.3%
Economic	10.5%	11.9%	12.8%	13.8%	14.9%	16.0%	17.2%	18.5%	19.8%	21.1%	22.5%
Technical	12.1%	13.6%	14.7%	15.9%	17.2%	18.5%	20.0%	21.5%	23.0%	24.5%	26.1%
<b>Incremental Savings (GWh)</b>											
Achievable - Low	371	358	276	278	266	273	294	305	318	333	346
Achievable - High	622	640	464	482	492	523	553	576	598	621	659
Economic	709	767	512	552	588	629	657	686	719	749	801
Technical	818	881	619	655	692	743	786	812	831	862	915
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.7%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%
Achievable - High	1.1%	1.2%	0.8%	0.9%	0.9%	1.0%	1.0%	1.1%	1.1%	1.1%	1.1%
Economic	1.3%	1.4%	0.9%	1.0%	1.1%	1.1%	1.2%	1.3%	1.3%	1.3%	1.4%
Technical	1.5%	1.6%	1.1%	1.2%	1.3%	1.4%	1.4%	1.5%	1.5%	1.5%	1.6%

**Table 12 Total Annual Peak Demand Savings (MW)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Baseline Forecast</b>	36,403	37,482	36,636	37,069	37,480	38,006	38,275	38,630	39,066	39,746	40,201
<b>Cumulative Savings (MW)</b>											
Achievable - Low	-	-	-	157	332	492	638	791	960	1,152	1,361
Achievable - High	-	-	-	469	901	1,230	1,463	1,700	1,979	2,308	2,665
Economic	-	-	-	892	1,651	2,180	2,465	2,729	3,062	3,492	3,964
Technical	-	-	-	1,093	2,031	2,730	3,159	3,605	4,139	4,794	5,497
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.4%	0.9%	1.3%	1.7%	2.0%	2.5%	2.9%	3.4%
Achievable - High	0.0%	0.0%	0.0%	1.3%	2.4%	3.2%	3.8%	4.4%	5.1%	5.8%	6.6%
Economic	0.0%	0.0%	0.0%	2.4%	4.4%	5.7%	6.4%	7.1%	7.8%	8.8%	9.9%
Technical	0.0%	0.0%	0.0%	2.9%	5.4%	7.2%	8.3%	9.3%	10.6%	12.1%	13.7%
<b>Incremental Savings (MW)</b>											
Achievable - Low	-	-	-	157	175	159	146	153	169	193	209
Achievable - High	-	-	-	469	431	330	232	238	279	329	357
Economic	-	-	-	892	759	529	286	264	333	430	472
Technical	-	-	-	1,093	937	699	430	446	533	655	703
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.5%
Achievable - High	0.0%	0.0%	0.0%	1.3%	1.1%	0.8%	0.6%	0.6%	0.7%	0.7%	0.8%
Economic	0.0%	0.0%	0.0%	2.4%	2.0%	1.3%	0.7%	0.6%	0.8%	0.9%	1.1%
Technical	0.0%	0.0%	0.0%	2.9%	2.5%	1.8%	1.1%	1.1%	1.3%	1.5%	1.6%

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Baseline Forecast</b>	40,696	41,276	41,882	42,411	42,987	43,575	44,164	44,729	45,321	45,942	46,521
<b>Cumulative Savings (MW)</b>											
Achievable - Low	1,667	1,970	2,258	2,534	2,810	3,087	3,370	3,646	3,924	4,197	4,460
Achievable - High	3,200	3,753	4,264	4,757	5,267	5,784	6,309	6,818	7,330	7,829	8,320
Economic	4,633	5,323	5,914	6,484	7,085	7,690	8,305	8,858	9,406	9,940	10,479
Technical	6,304	7,158	7,929	8,683	9,475	10,283	11,104	11,820	12,513	13,181	13,817
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	4.1%	4.8%	5.4%	6.0%	6.5%	7.1%	7.6%	8.2%	8.7%	9.1%	9.6%
Achievable - High	7.9%	9.1%	10.2%	11.2%	12.3%	13.3%	14.3%	15.2%	16.2%	17.0%	17.9%
Economic	11.4%	12.9%	14.1%	15.3%	16.5%	17.6%	18.8%	19.8%	20.8%	21.6%	22.5%
Technical	15.5%	17.3%	18.9%	20.5%	22.0%	23.6%	25.1%	26.4%	27.6%	28.7%	29.7%
<b>Incremental Savings (MW)</b>											
Achievable - Low	306	303	288	275	277	277	283	276	278	273	263
Achievable - High	535	553	511	493	510	517	525	509	511	500	490
Economic	669	691	591	570	602	605	615	552	548	534	539
Technical	808	853	771	754	793	808	821	716	693	668	636
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.7%	0.7%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Achievable - High	1.2%	1.2%	1.1%	1.0%	1.0%	1.0%	1.0%	1.0%	0.9%	0.9%	0.8%
Economic	1.5%	1.5%	1.2%	1.2%	1.2%	1.2%	1.2%	1.0%	1.0%	0.9%	0.9%
Technical	1.8%	1.8%	1.6%	1.5%	1.6%	1.6%	1.5%	1.3%	1.2%	1.1%	1.0%

**Table 13 Residential Annual Peak Demand Savings (MW)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Baseline Forecast</b>	17,495	18,496	17,381	17,739	18,024	18,395	18,488	18,687	18,903	19,318	19,578
<b>Cumulative Savings (MW)</b>											
Achievable - Low	-	-	-	60	131	192	235	287	352	434	529
Achievable - High	-	-	-	169	343	475	536	610	720	867	1,042
Economic	-	-	-	341	682	938	1,032	1,133	1,296	1,533	1,807
Technical	-	-	-	505	1,001	1,407	1,623	1,881	2,219	2,653	3,129
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.3%	0.7%	1.0%	1.3%	1.5%	1.9%	2.2%	2.7%
Achievable - High	0.0%	0.0%	0.0%	1.0%	1.9%	2.6%	2.9%	3.3%	3.8%	4.5%	5.3%
Economic	0.0%	0.0%	0.0%	1.9%	3.8%	5.1%	5.6%	6.1%	6.9%	7.9%	9.2%
Technical	0.0%	0.0%	0.0%	2.8%	5.6%	7.6%	8.8%	10.1%	11.7%	13.7%	16.0%
<b>Incremental Savings (MW)</b>											
Achievable - Low	-	-	-	60	71	61	43	51	66	82	95
Achievable - High	-	-	-	169	174	132	61	74	110	147	175
Economic	-	-	-	341	341	256	93	101	163	236	274
Technical	-	-	-	505	496	406	216	259	338	434	476
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.3%	0.4%	0.3%	0.2%	0.3%	0.3%	0.4%	0.5%
Achievable - High	0.0%	0.0%	0.0%	1.0%	0.9%	0.7%	0.3%	0.4%	0.5%	0.7%	0.8%
Economic	0.0%	0.0%	0.0%	1.9%	1.9%	1.3%	0.5%	0.5%	0.8%	1.1%	1.3%
Technical	0.0%	0.0%	0.0%	2.8%	2.7%	2.1%	1.1%	1.3%	1.7%	2.0%	2.2%

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Baseline Forecast</b>	19,832	20,170	20,590	20,956	21,372	21,802	22,242	22,667	23,113	23,559	23,943
<b>Cumulative Savings (MW)</b>											
Achievable - Low	669	822	990	1,149	1,319	1,486	1,653	1,813	1,972	2,126	2,268
Achievable - High	1,305	1,596	1,914	2,210	2,524	2,830	3,138	3,427	3,714	3,990	4,246
Economic	2,174	2,558	2,947	3,301	3,673	4,028	4,393	4,695	4,984	5,255	5,513
Technical	3,604	4,114	4,643	5,141	5,662	6,178	6,701	7,117	7,502	7,860	8,171
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	3.4%	4.1%	4.8%	5.5%	6.2%	6.8%	7.4%	8.0%	8.5%	9.0%	9.5%
Achievable - High	6.6%	7.9%	9.3%	10.5%	11.8%	13.0%	14.1%	15.1%	16.1%	16.9%	17.7%
Economic	11.0%	12.7%	14.3%	15.8%	17.2%	18.5%	19.8%	20.7%	21.6%	22.3%	23.0%
Technical	18.2%	20.4%	22.5%	24.5%	26.5%	28.3%	30.1%	31.4%	32.5%	33.4%	34.1%
<b>Incremental Savings (MW)</b>											
Achievable - Low	140	153	168	159	170	167	167	159	160	153	142
Achievable - High	263	291	317	297	314	306	308	289	288	276	256
Economic	367	384	389	354	372	355	365	302	289	271	257
Technical	475	509	529	499	521	515	523	416	386	358	310
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.7%	0.7%	0.7%	0.7%	0.7%	0.6%	0.6%	0.6%	0.5%	0.5%	0.4%
Achievable - High	1.3%	1.3%	1.4%	1.3%	1.3%	1.2%	1.1%	1.0%	1.0%	0.9%	0.8%
Economic	1.7%	1.7%	1.6%	1.4%	1.4%	1.3%	1.3%	1.0%	0.8%	0.7%	0.7%
Technical	2.2%	2.2%	2.2%	2.0%	2.0%	1.8%	1.8%	1.3%	1.1%	0.9%	0.8%

**Table 14 Commercial Annual Peak Demand Savings (MW)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Baseline Forecast</b>	6,246	6,308	6,056	5,989	5,926	5,916	5,890	5,919	5,954	6,049	6,105
<b>Cumulative Savings (MW)</b>											
Achievable - Low	-	-	-	40	85	122	158	199	235	278	324
Achievable - High	-	-	-	114	228	297	351	409	464	530	601
Economic	-	-	-	213	407	501	558	619	679	754	830
Technical	-	-	-	243	458	573	651	734	817	916	1,015
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.7%	1.4%	2.1%	2.7%	3.4%	4.0%	4.6%	5.3%
Achievable - High	0.0%	0.0%	0.0%	1.9%	3.8%	5.0%	6.0%	6.9%	7.8%	8.8%	9.8%
Economic	0.0%	0.0%	0.0%	3.6%	6.9%	8.5%	9.5%	10.5%	11.4%	12.5%	13.6%
Technical	0.0%	0.0%	0.0%	4.1%	7.7%	9.7%	11.0%	12.4%	13.7%	15.1%	16.6%
<b>Incremental Savings (MW)</b>											
Achievable - Low	-	-	-	40	46	37	37	41	36	43	46
Achievable - High	-	-	-	114	114	69	54	58	55	66	70
Economic	-	-	-	213	194	94	58	61	60	75	75
Technical	-	-	-	243	215	114	78	83	83	99	99
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.7%	0.8%	0.6%	0.6%	0.7%	0.6%	0.6%	0.7%
Achievable - High	0.0%	0.0%	0.0%	1.9%	1.9%	1.2%	0.9%	1.0%	0.9%	1.0%	1.1%
Economic	0.0%	0.0%	0.0%	3.6%	3.3%	1.6%	1.0%	1.0%	0.9%	1.1%	1.1%
Technical	0.0%	0.0%	0.0%	4.1%	3.7%	1.9%	1.4%	1.4%	1.3%	1.4%	1.5%

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Baseline Forecast</b>	6,162	6,228	6,321	6,411	6,512	6,617	6,720	6,827	6,934	7,044	7,157
<b>Cumulative Savings (MW)</b>											
Achievable - Low	382	430	474	516	553	592	632	670	707	742	775
Achievable - High	696	776	846	916	984	1,059	1,135	1,207	1,277	1,341	1,405
Economic	930	1,019	1,087	1,158	1,235	1,321	1,403	1,477	1,550	1,620	1,691
Technical	1,141	1,262	1,365	1,470	1,582	1,706	1,828	1,945	2,060	2,170	2,278
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	6.2%	6.9%	7.5%	8.0%	8.5%	9.0%	9.4%	9.8%	10.2%	10.5%	10.8%
Achievable - High	11.3%	12.5%	13.4%	14.3%	15.1%	16.0%	16.9%	17.7%	18.4%	19.0%	19.6%
Economic	15.1%	16.4%	17.2%	18.1%	19.0%	20.0%	20.9%	21.6%	22.4%	23.0%	23.6%
Technical	18.5%	20.3%	21.6%	22.9%	24.3%	25.8%	27.2%	28.5%	29.7%	30.8%	31.8%
<b>Incremental Savings (MW)</b>											
Achievable - Low	59	48	44	42	37	39	40	38	37	35	33
Achievable - High	95	80	70	70	68	75	75	72	70	64	64
Economic	100	90	67	72	77	86	82	74	74	69	72
Technical	126	121	103	105	112	123	123	117	115	110	108
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.9%	0.7%	0.6%	0.5%	0.4%	0.5%	0.5%	0.4%	0.4%	0.3%	0.3%
Achievable - High	1.5%	1.2%	0.9%	0.9%	0.8%	0.9%	0.9%	0.8%	0.7%	0.6%	0.6%
Economic	1.5%	1.3%	0.8%	0.9%	0.9%	1.0%	0.9%	0.8%	0.7%	0.6%	0.6%
Technical	1.9%	1.8%	1.3%	1.3%	1.4%	1.5%	1.4%	1.3%	1.2%	1.1%	1.0%



**Table 15 Industrial Annual Peak Demand Savings (MW)**

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Baseline Forecast</b>	12,661	12,678	13,199	13,341	13,530	13,695	13,896	14,024	14,210	14,379	14,518
<b>Cumulative Savings (MW)</b>											
Achievable - Low	-	-	-	58	116	177	244	305	372	440	509
Achievable - High	-	-	-	186	330	458	575	681	795	911	1,022
Economic	-	-	-	337	563	740	875	977	1,086	1,204	1,327
Technical	-	-	-	345	571	750	886	990	1,103	1,225	1,353
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.4%	0.9%	1.3%	1.8%	2.2%	2.6%	3.1%	3.5%
Achievable - High	0.0%	0.0%	0.0%	1.4%	2.4%	3.3%	4.1%	4.9%	5.6%	6.3%	7.0%
Economic	0.0%	0.0%	0.0%	2.5%	4.2%	5.4%	6.3%	7.0%	7.6%	8.4%	9.1%
Technical	0.0%	0.0%	0.0%	2.6%	4.2%	5.5%	6.4%	7.1%	7.8%	8.5%	9.3%
<b>Incremental Savings (MW)</b>											
Achievable - Low	-	-	-	58	58	62	66	61	67	68	68
Achievable - High	-	-	-	186	144	129	117	106	115	116	111
Economic	-	-	-	337	225	178	135	102	109	119	123
Technical	-	-	-	345	226	179	136	104	112	123	128
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.0%	0.0%	0.0%	0.4%	0.4%	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%
Achievable - High	0.0%	0.0%	0.0%	1.4%	1.0%	0.9%	0.8%	0.7%	0.7%	0.7%	0.7%
Economic	0.0%	0.0%	0.0%	2.5%	1.6%	1.2%	0.9%	0.7%	0.7%	0.7%	0.8%
Technical	0.0%	0.0%	0.0%	2.6%	1.6%	1.3%	0.9%	0.7%	0.7%	0.8%	0.8%

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Baseline Forecast</b>	14,702	14,879	14,971	15,044	15,104	15,156	15,202	15,236	15,274	15,339	15,421
<b>Cumulative Savings (MW)</b>											
Achievable - Low	615	718	794	869	939	1,009	1,085	1,163	1,244	1,329	1,417
Achievable - High	1,198	1,380	1,504	1,631	1,759	1,894	2,037	2,185	2,339	2,498	2,669
Economic	1,529	1,746	1,880	2,024	2,177	2,340	2,509	2,686	2,872	3,066	3,275
Technical	1,559	1,782	1,921	2,072	2,231	2,400	2,575	2,759	2,951	3,152	3,368
<b>Cumulative Savings (% of Baseline)</b>											
Achievable - Low	4.2%	4.8%	5.3%	5.8%	6.2%	6.7%	7.1%	7.6%	8.1%	8.7%	9.2%
Achievable - High	8.2%	9.3%	10.0%	10.8%	11.6%	12.5%	13.4%	14.3%	15.3%	16.3%	17.3%
Economic	10.4%	11.7%	12.6%	13.5%	14.4%	15.4%	16.5%	17.6%	18.8%	20.0%	21.2%
Technical	10.6%	12.0%	12.8%	13.8%	14.8%	15.8%	16.9%	18.1%	19.3%	20.5%	21.8%
<b>Incremental Savings (MW)</b>											
Achievable - Low	107	103	76	75	70	70	76	78	81	85	88
Achievable - High	176	182	123	127	128	135	143	148	154	159	171
Economic	201	217	134	144	153	163	169	177	186	194	210
Technical	207	223	140	150	159	169	175	183	192	201	217
<b>Incremental Savings (% of Baseline)</b>											
Achievable - Low	0.7%	0.6%	0.5%	0.5%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%
Achievable - High	1.1%	1.1%	0.8%	0.8%	0.8%	0.9%	0.9%	0.9%	1.0%	1.0%	1.0%
Economic	1.3%	1.3%	0.8%	0.9%	1.0%	1.0%	1.1%	1.1%	1.2%	1.2%	1.3%
Technical	1.3%	1.4%	0.9%	0.9%	1.0%	1.1%	1.1%	1.2%	1.2%	1.2%	1.3%



### **About EnerNOC Utility Solutions Consulting**

EnerNOC Utility Solutions Consulting is part of EnerNOC Utility Solutions group, which provides a comprehensive suite of demand-side management (DSM) services to utilities and grid operators worldwide. Hundreds of utilities have leveraged our technology, our people, and our proven processes to make their energy efficiency (EE) and demand response (DR) initiatives a success. Utilities trust EnerNOC to work with them at every stage of the DSM program lifecycle – assessing market potential, designing effective programs, implementing those programs, and measuring program results.

EnerNOC Utility Solutions delivers value to our utility clients through two separate practice areas – Program Implementation and EnerNOC Utility Solutions Consulting.

- Our Program Implementation team leverages EnerNOC’s deep “behind-the-meter expertise” and world-class technology platform to help utilities create and manage DR and EE programs that deliver reliable and cost-effective energy savings. We focus exclusively on the commercial and industrial (C&I) customer segments, with a track record of successful partnerships that spans more than a decade. Through a focus on high quality, measurable savings, EnerNOC has successfully delivered hundreds of thousands of MWh of energy efficiency for our utility clients, and we have thousands of MW of demand response capacity under management.
- The EnerNOC Utility Solutions Consulting team provides expertise and analysis to support a broad range of utility DSM activities, including: potential assessments; end-use forecasts; integrated resource planning; EE, DR, and smart grid pilot and program design and administration; load research; technology assessments and demonstrations; evaluation, measurement and verification; and regulatory support.

The EnerNOC Utility Solutions Consulting team has decades of combined experience in the utility DSM industry. The staff is comprised of professional electrical, mechanical, chemical, civil, industrial, and environmental engineers as well as economists, business planners, project managers, market researchers, load research professionals, and statisticians. Utilities view our experts as trusted advisors, and we work together collaboratively to make any DSM initiative a success.