



## ***Appendix G***

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### **Industrial - Electric**

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### **Industrial – Non Electric**

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		% kWh Sales by Industry & End Use												
2018 kWh Sales	New Hampshire Specific Industry	Conventional Boiler Use	CHP and/or Cogeneration Process	Process Heating	Process Cooling and Refrigeration	Machine Drive	Electro-Chemical Processes	Other Process Use	Facility HVAC	Facility Lighting	Other Facility Support	Onsite Transportation	Compressed Air	End Use Not Reported
4,841,139	Apparel And Other Finished Products Made From Fabrics And Similar Materials	0%	0%	4%	4%	36%	0%	0%	23%	15%	3%	0%	14%	2%
20,537,715	Chemicals And Allied Products	0%	0%	4%	9%	57%	14%	0%	6%	5%	1%	0%	2%	0%
327,660,088	Electronic And Other Electrical Equipment And Components, Except Computer Equipment	0%	0%	19%	4%	36%	3%	1%	17%	13%	3%	0%	4%	0%
120,602,372	Fabricated Metal Products, Except Machinery And Transportation Equipment	0%	0%	23%	3%	44%	1%	0%	10%	9%	2%	0%	7%	1%
186,807,201	Food And Kindred Products	0%	0%	3%	27%	48%	0%	0%	7%	7%	1%	0%	6%	1%
11,827,540	Furniture And Fixtures	1%	0%	6%	3%	53%	0%	0%	8%	18%	0%	0%	10%	1%
215,000,038	Industrial And Commercial Machinery And Computer Equipment	0%	0%	7%	3%	49%	1%	1%	18%	14%	3%	0%	4%	0%
14,208,070	Leather And Leather Products	0%	0%	3%	27%	38%	0%	0%	11%	12%	2%	0%	7%	1%
84,834,419	Lumber And Wood Products, Except Furniture	0%	0%	5%	1%	72%	0%	0%	8%	9%	0%	0%	5%	0%
127,539,458	Measuring, Analyzing, And Controlling Instruments: Photographic, Medical, And Optical Goods: Watches And Clocks	0%	0%	12%	7%	50%	9%	0%	9%	7%	2%	0%	3%	0%
78,459,698	Miscellaneous Manufacturing Industries	0%	0%	9%	6%	36%	0%	0%	20%	14%	4%	0%	8%	1%
140,041,116	Paper And Allied Products	0%	1%	2%	2%	82%	1%	0%	4%	4%	1%	0%	2%	0%
19,849,417	Petroleum Refining And Related Industries	1%	0%	8%	4%	81%	0%	0%	3%	3%	0%	0%	0%	0%
208,709,932	Primary Metal Industries	0%	0%	29%	1%	30%	32%	0%	4%	3%	1%	0%	1%	0%
66,122,451	Printing, Publishing, And Allied Industries	0%	0%	2%	4%	49%	0%	0%	18%	11%	3%	0%	11%	1%
299,645,250	Rubber And Miscellaneous Plastics Products	0%	0%	14%	8%	52%	0%	1%	10%	8%	3%	0%	3%	0%
83,769,711	Stone, Clay, Glass, And Concrete Products	0%	0%	20%	4%	59%	0%	1%	6%	5%	1%	0%	3%	0%
45,780,294	Textile Mill Products	0%	0%	10%	9%	58%	0%	0%	8%	7%	2%	0%	5%	1%
761,224	Tobacco Products	0%	0%	3%	14%	44%	0%	1%	27%	9%	0%	0%	2%	0%
45,732,822	Transportation Equipment	0%	0.0000%	9%	4%	43%	1%	1%	19%	15%	3%	1%	3%	0%
2,102,729,959	Source: 2002 Manufacturing Energy Consumption Survey (MECS) Data ( <a href="http://www.eia.doe.gov/emeu/mecs/mecs2002/">http://www.eia.doe.gov/emeu/mecs/mecs2002/</a> )													

		kWh Sales by Industry & End Use												
2018 kWh Sales	New Hampshire Specific Industry	Conventional Boiler Use	CHP and/or Cogeneration Process	Process Heating	Process Cooling and Refrigeration	Machine Drive	Electro-Chemical Processes	Other Process Use	Facility HVAC	Facility Lighting	Other Facility Support	Onsite Transportation	Compressed Air	End Use Not Reported
4,841,139	Apparel And Other Finished Products Made From Fabrics And Similar Materials	0	0	188,896	174,054	1,751,337	0	0	1,107,741	712,408	153,815	2,699	675,169	75,019
20,537,715	Chemicals And Allied Products	98,058	8,317	771,989	1,916,088	11,803,176	2,900,290	30,987	1,322,106	958,983	228,310	28,706	425,513	26,413
327,660,088	Electronic And Other Electrical Equipment And Components, Except Computer Equipment	919,268	0	61,190,244	14,449,006	117,359,872	8,650,547	1,979,962	55,886,776	42,380,608	8,249,840	824,984	14,364,151	0
120,602,372	Fabricated Metal Products, Except Machinery And Transportation Equipment	38,390	0	27,794,108	4,197,269	53,146,635	693,573	225,219	12,182,316	11,363,337	2,121,668	89,576	7,898,543	618,841
186,807,201	Food And Kindred Products	0	199,199	6,280,303	49,700,161	89,387,803	0	517,364	13,492,968	12,859,405	2,058,390	409,465	10,722,442	1,074,568
11,827,540	Furniture And Fixtures	95,464	18,423	711,796	331,613	6,270,505	0	0	963,018	2,123,665	0	31,821	1,153,110	128,123
215,000,038	Industrial And Commercial Machinery And Computer Equipment	0	0	16,000,491	7,072,427	104,729,693	1,986,932	1,172,903	39,581,084	29,383,835	5,435,616	490,168	8,260,210	606,583
14,208,070	Leather And Leather Products	0	0	416,136	3,784,856	5,350,319	0	0	1,605,096	1,743,808	277,424	0	927,389	103,043
84,834,419	Lumber And Wood Products, Except Furniture	0	0	4,588,376	586,180	60,724,223	16,170	153,620	6,771,392	7,547,575	0	40,426	3,992,089	151,598
127,539,458	Measuring, Analyzing, And Controlling Instruments: Photographic, Medical, And Optical Goods: Watches And Clocks	382,500	159,835	15,407,434	8,692,532	64,056,221	10,887,311	581,259	11,775,367	8,805,474	2,158,766	185,733	4,016,589	287,764
78,459,698	Miscellaneous Manufacturing Industries	0	0	7,207,643	4,658,875	28,354,098	136,136	340,340	15,859,841	11,367,354	3,108,438	204,204	6,500,493	722,277
140,041,116	Paper And Allied Products	318,552	1,592,761	3,213,315	2,319,659	115,140,594	1,261,381	331,380	6,208,561	6,114,492	1,056,140	79,104	2,164,659	240,518
19,849,417	Petroleum Refining And Related Industries	106,224	9,074	1,529,301	835,377	16,034,973	17,081	29,358	678,978	530,051	76,332	1,068	1,601	0
208,709,932	Primary Metal Industries	291,757	44,775	60,295,393	1,736,096	62,885,093	66,594,157	293,201	7,725,771	6,044,560	1,461,671	51,996	1,178,292	0
66,122,451	Printing, Publishing, And Allied Industries	44,938	0	1,640,254	2,916,506	32,355,692	116,840	121,334	11,922,174	7,455,291	1,676,205	130,322	6,968,607	774,290
299,645,250	Rubber And Miscellaneous Plastics Products	0	0	43,289,416	24,047,798	157,172,755	1,171,964	2,484,789	28,555,351	24,543,629	7,640,303	698,671	9,036,518	1,004,058
83,769,711	Stone, Clay, Glass, And Concrete Products	48,343	72,514	17,081,061	3,035,514	49,293,363	0	513,640	5,241,146	4,147,394	1,015,195	100,714	2,898,745	322,083
45,780,294	Textile Mill Products	27,174	0	4,802,483	4,121,332	26,731,590	41,666	208,331	3,525,324	2,987,286	693,833	0	2,377,148	264,128
761,224	Tobacco Products	0	0	25,102	107,312	332,604	0	6,276	203,328	67,148	3,765	1,255	12,990	1,443
45,732,822	Transportation Equipment	89,640	0	4,338,950	2,050,860	19,690,068	450,918	592,169	8,630,816	6,739,316	1,535,655	252,623	1,234,228	41,560
2,102,729,959														

Industry	Savings Factors*														
	Conventional Boiler Use	CHP and/or Cogeneration Process	Process Heating	Process Cooling and Refrigeration	Machine Drive	Electro-Chemical Processes	Other Process Use	Facility HVAC	Facility Lighting	Other Facility Support	Onsite Transportation	Conventional Electricity Generation	Compressed Air	Sensors & Controls	End Use Not Reported
Apparel And Other Finished Products Made From Fabrics And Similar Materials	0%	0%	20%	5%	18%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Chemicals And Allied Products	0%	0%	20%	4%	26%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Electronic And Other Electrical Equipment And Components, Except Computer Equipment	0%	0%	30%	10%	25%	0%	0%	24%	49%	1%	0%	0%	20%	4%	5%
Fabricated Metal Products, Except Machinery And Transportation Equipment	0%	0%	30%	7%	26%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Food And Kindred Products	0%	0%	20%	5%	20%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Furniture And Fixtures	0%	0%	10%	4%	18%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Industrial And Commercial Machinery And Computer Equipment	0%	0%	30%	5%	18%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Leather And Leather Products	0%	0%	20%	5%	17%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Lumber And Wood Products, Except Furniture	0%	0%	10%	4%	18%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Measuring, Analyzing, And Controlling Instruments, Photographic, Medical, And Optical Goods, Watches And Clocks	0%	0%	10%	5%	17%	0%	0%	24%	49%	1%	0%	0%	20%	4%	5%
Miscellaneous Manufacturing Industries	0%	0%	20%	4%	17%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Paper And Allied Products	0%	0%	10%	4%	17%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Petroleum Refining And Related Industries	0%	0%	10%	4%	25%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Primary Metal Industries	0%	0%	20%	4%	19%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Printing, Publishing, And Allied Industries	0%	0%	20%	5%	17%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Rubber And Miscellaneous Plastics Products	0%	0%	30%	5%	23%	0%	0%	24%	35%	1%	0%	0%	20%	4%	5%
Stone, Clay, Glass, And Concrete Products	0%	0%	30%	5%	18%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Textile Mill Products	0%	0%	20%	5%	18%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Tobacco Products	0%	0%	20%	4%	17%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%
Transportation Equipment	0%	0%	10%	4%	19%	0%	0%	24%	40%	1%	0%	0%	20%	4%	5%

\* This savings factor includes considerations for remaining, base case, and convertible factor - it's an all inclusive factor

Note: GDS Estimates are based on a combination of past experience, recent and past projects, and industry standards and norms. Refer to SOURCES tab for further detail

Indicates Survey Data Used to Revise Estimates

<b>Savings Factors - Only Eligible End Uses Displayed</b>									
Industry	Process Heating	Process Cooling and Refrigeration	Machine Drive	Facility HVAC	Facility Lighting	Other Facility Support	Compressed Air	Sensors & Controls	End Use Not Reported
Apparel And Other Finished Products Made From Fabrics And Similar Materials	20%	5%	18%	24%	40%	1%	20%	4%	5%
Chemicals And Allied Products	20%	4%	26%	24%	40%	1%	20%	4%	5%
Electronic And Other Electrical Equipment And Components, Except Computer Equipment	30%	10%	25%	24%	49%	1%	20%	4%	5%
Fabricated Metal Products, Except Machinery And Transportation Equipment	30%	7%	26%	24%	40%	1%	20%	4%	5%
Food And Kindred Products	20%	5%	20%	24%	40%	1%	20%	4%	5%
Furniture And Fixtures	10%	4%	18%	24%	40%	1%	20%	4%	5%
Industrial And Commercial Machinery And Computer Equipment	30%	5%	18%	24%	40%	1%	20%	4%	5%
Leather And Leather Products	20%	5%	17%	24%	40%	1%	20%	4%	5%
Lumber And Wood Products, Except Furniture	10%	4%	18%	24%	40%	1%	20%	4%	5%
Measuring, Analyzing, And Controlling Instruments: Photographic, Medical, And Optical Goods: Watches And Clocks	10%	5%	17%	24%	49%	1%	20%	4%	5%
Miscellaneous Manufacturing Industries	20%	4%	17%	24%	40%	1%	20%	4%	5%
Paper And Allied Products	10%	4%	17%	24%	40%	1%	20%	4%	5%
Petroleum Refining And Related Industries	10%	4%	25%	24%	40%	1%	20%	4%	5%
Primary Metal Industries	20%	4%	19%	24%	40%	1%	20%	4%	5%
Printing, Publishing, And Allied Industries	20%	5%	17%	24%	40%	1%	20%	4%	5%
Rubber And Miscellaneous Plastics Products	30%	5%	23%	24%	35%	1%	20%	4%	5%
Stone, Clay, Glass, And Concrete Products	30%	5%	18%	24%	40%	1%	20%	4%	5%
Textile Mill Products	20%	5%	18%	24%	40%	1%	20%	4%	5%
Tobacco Products	20%	4%	17%	24%	40%	1%	20%	4%	5%
Transportation Equipment	10%	4%	19%	24%	40%	1%	20%	4%	5%

\* This savings factor includes considerations for remaining, base case, and convertible factor - it's an all inclusive factor

2018 Annual kWh Savings by Industry Category End Use (Tech Potential)										
Industry Category	Process Heating	Process Cooling and Refrigeration	Machine Drive	Facility HVAC	Facility Lighting	Other Facility Support	Compressed Air	Sensors & Controls	End Use Not Reported	Industry Total Potential kWh Savings
Apparel And Other Finished Products Made From Fabrics And Similar Materials	37,779	8,703	315,241	265,858	284,963	1,538	135,034	166,531	3,751	1,219,398
Chemicals And Allied Products	154,398	76,644	3,068,826	317,305	383,593	2,283	85,103	798,334	1,321	4,887,806
Electronic And Other Electrical Equipment And Components, Except Computer Equipment	18,357,073	1,444,901	29,339,968	13,412,826	20,766,498	82,498	2,872,830	12,405,874	0	98,682,469
Fabricated Metal Products, Except Machinery And Transportation Equipment	8,338,232	293,809	13,818,125	2,923,756	4,545,335	21,217	1,579,709	4,493,719	30,942	36,044,843
Food And Kindred Products	1,256,061	2,485,008	17,877,561	3,238,312	5,143,762	20,584	2,144,488	7,014,839	53,728	39,234,343
Furniture And Fixtures	71,180	13,265	1,128,691	231,124	849,466	0	230,622	421,149	6,406	2,951,902
Industrial And Commercial Machinery And Computer Equipment	4,800,147	353,621	18,851,345	9,499,460	11,753,534	54,356	1,652,042	8,238,783	30,329	55,233,618
Leather And Leather Products	83,227	189,243	909,554	385,223	697,523	2,774	185,478	531,227	5,152	2,989,402
Lumber And Wood Products, Except Furniture	458,838	23,447	10,930,360	1,625,134	3,019,030	0	798,418	3,221,565	7,580	20,084,372
Measuring, Analyzing, And Controlling Instruments: Photographic, Medical, And Optical Goods: Watches And Clocks	1,540,743	434,627	10,889,558	2,826,088	4,314,682	21,588	803,318	4,906,085	14,388	25,751,077
Miscellaneous Manufacturing Industries	1,441,529	186,355	4,820,197	3,806,362	4,546,941	31,084	1,300,099	2,870,200	36,114	19,038,880
Paper And Allied Products	321,332	92,786	19,573,901	1,490,055	2,445,797	10,561	432,932	5,435,442	12,026	29,814,831
Petroleum Refining And Related Industries	152,930	33,415	4,008,743	162,955	212,020	763	320	789,258	0	5,360,405
Primary Metal Industries	12,059,079	69,444	11,948,168	1,854,185	2,417,824	14,617	235,658	8,281,438	0	36,880,412
Printing, Publishing, And Allied Industries	328,051	145,825	5,500,468	2,861,322	2,982,116	16,762	1,393,721	2,359,143	38,714	15,626,123
Rubber And Miscellaneous Plastics Products	12,986,825	1,202,390	36,149,734	6,853,284	8,590,270	76,403	1,807,304	11,596,402	50,203	79,312,815
Stone, Clay, Glass, And Concrete Products	5,124,318	151,776	8,872,805	1,257,875	1,658,958	10,152	579,749	3,225,976	16,104	20,897,713
Textile Mill Products	960,497	206,067	4,811,686	846,078	1,194,914	6,938	475,430	1,735,039	13,206	10,249,855
Tobacco Products	5,020	4,292	56,543	48,799	26,859	38	2,598	29,879	72	174,101
Transportation Equipment	433,895	82,034	3,741,113	2,071,396	2,695,727	15,357	246,846	1,762,813	2,078	11,051,258
<b>Tech Potential By End Use:</b>	<b>68,911,153</b>	<b>7,497,651</b>	<b>206,612,585</b>	<b>55,977,397</b>	<b>78,529,814</b>	<b>389,514</b>	<b>16,961,697</b>	<b>80,283,695</b>	<b>322,115</b>	<b>515,485,621</b>
	<b>13%</b>	<b>1%</b>	<b>40%</b>	<b>11%</b>	<b>15%</b>	<b>0%</b>	<b>3%</b>	<b>16%</b>	<b>0%</b>	<b>25% of Annual kWh Sales</b>

2018 Annual kWh Savings by Industry Category End Use (Max Achievable)										
Industry Category	Process Heating	Process Cooling and Refrigeration	Machine Drive	Facility HVAC	Facility Lighting	Other Facility Support	Compressed Air	Sensors & Controls	End Use Not Reported	Industry Max Achievable Potential kWh Savings
Apparel And Other Finished Products Made From Fabrics And Similar Materials	25,186	7,252	315,241	221,548	142,482	1,538	135,034	166,531	3,751	1,018,563
Chemicals And Allied Products	102,932	63,870	3,068,826	264,421	191,797	2,283	85,103	798,334	1,321	4,578,885
Electronic And Other Electrical Equipment And Components, Except Computer Equipment	12,238,049	1,204,084	29,339,968	11,177,355	10,383,249	82,498	2,872,830	12,405,874	0	79,703,908
Fabricated Metal Products, Except Machinery And Transportation Equipment	5,558,822	244,841	13,818,125	2,436,463	2,272,667	21,217	1,579,709	4,493,719	30,942	30,456,504
Food And Kindred Products	837,374	2,070,840	17,877,561	2,698,594	2,571,881	20,584	2,144,488	7,014,839	53,728	35,289,888
Furniture And Fixtures	47,453	11,054	1,128,691	192,604	424,733	0	230,622	421,149	6,406	2,462,711
Industrial And Commercial Machinery And Computer Equipment	3,200,098	294,684	18,851,345	7,916,217	5,876,767	54,356	1,652,042	8,238,783	30,329	46,114,621
Leather And Leather Products	55,485	157,702	909,554	321,019	348,762	2,774	185,478	531,227	5,152	2,517,154
Lumber And Wood Products, Except Furniture	305,892	19,539	10,930,360	1,354,278	1,509,515	0	798,418	3,221,565	7,580	18,147,148
Measuring, Analyzing, And Controlling Instruments: Photographic, Medical, And Optical Goods: Watches And Clocks	1,027,162	362,189	10,889,558	2,355,073	2,157,341	21,588	803,318	4,906,085	14,388	22,536,702
Miscellaneous Manufacturing Industries	961,019	155,296	4,820,197	3,171,968	2,273,471	31,084	1,300,099	2,870,200	36,114	15,619,447
Paper And Allied Products	214,221	77,322	19,573,901	1,241,712	1,222,898	10,561	432,932	5,435,442	12,026	28,221,015
Petroleum Refining And Related Industries	101,953	27,846	4,008,743	135,796	106,010	763	320	789,258	0	5,170,690
Primary Metal Industries	8,039,386	57,870	11,948,168	1,545,154	1,208,912	14,617	235,658	8,281,438	0	31,331,203
Printing, Publishing, And Allied Industries	218,701	121,521	5,500,468	2,384,435	1,491,058	16,762	1,393,721	2,359,143	38,714	13,524,523
Rubber And Miscellaneous Plastics Products	8,657,883	1,001,992	36,149,734	5,711,070	4,295,135	76,403	1,807,304	11,596,402	50,203	69,346,126
Stone, Clay, Glass, And Concrete Products	3,416,212	126,480	8,872,805	1,048,229	829,479	10,152	579,749	3,225,976	16,104	18,125,186
Textile Mill Products	640,331	171,722	4,811,686	705,065	597,457	6,938	475,430	1,735,039	13,206	9,156,875
Tobacco Products	3,347	3,577	56,543	40,666	13,430	38	2,598	29,879	72	150,149
Transportation Equipment	289,263	68,362	3,741,113	1,726,163	1,347,863	15,357	246,846	1,762,813	2,078	9,199,858
<b>Max Achievable Potential By End Use:</b>	<b>45,940,769</b>	<b>6,248,042</b>	<b>206,612,585</b>	<b>46,647,831</b>	<b>39,264,907</b>	<b>389,514</b>	<b>16,961,697</b>	<b>80,283,695</b>	<b>322,115</b>	<b>442,671,155</b>
	<b>10%</b>	<b>1%</b>	<b>47%</b>	<b>11%</b>	<b>9%</b>	<b>0%</b>	<b>4%</b>	<b>18%</b>	<b>0%</b>	<b>21% of Annual kWh Sales</b>

Industry Category	2018 Demand Factors (kWh/kW)								
	Process Heating	Process Cooling and Refrigeration	Machine Drive	Facility HVAC	Facility Lighting	Other Facility Support	Compressed Air	Sensors & Controls	End Use Not Reported
Apparel And Other Finished Products Made From Fabrics And Similar Materials	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Chemicals And Allied Products	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Electronic And Other Electrical Equipment And Components, Except Computer Equipment	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Fabricated Metal Products, Except Machinery And Transportation Equipment	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Food And Kindred Products	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Furniture And Fixtures	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Industrial And Commercial Machinery And Computer Equipment	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Leather And Leather Products	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Lumber And Wood Products, Except Furniture	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Measuring, Analyzing, And Controlling Instruments; Photographic, Medical, And Optical Goods; Watches And Clocks	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Miscellaneous Manufacturing Industries	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Paper And Allied Products	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Petroleum Refining And Related Industries	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Primary Metal Industries	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Printing, Publishing, And Allied Industries	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Rubber And Miscellaneous Plastics Products	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Stone, Clay, Glass, And Concrete Products	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Textile Mill Products	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Tobacco Products	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154
Transportation Equipment	7.271	7.271	7.271	2.015	4.818	6.045	7.271	7.271	6.154

Industry Category	2018 Annual Demand Savings (kW Reduction)									
	Process Heating	Process Cooling and Refrigeration	Machine Drive	Facility HVAC	Facility Lighting	Other Facility Support		Sensors & Controls	End Use Not Reported	
Apparel And Other Finished Products Made From Fabrics And Similar Materials	5.20	1.20	43.36	131.94	59.15	0.25	18.57	22.90	0.61	
Chemicals And Allied Products	21.23	10.54	422.06	157.47	79.62	0.38	11.70	109.80	0.21	
Electronic And Other Electrical Equipment And Components, Except Computer Equipment	2524.70	198.72	4035.20	6656.49	4310.19	13.65	395.11	1706.21	0.00	
Fabricated Metal Products, Except Machinery And Transportation Equipment	1146.78	40.41	1900.44	1451.00	943.41	3.51	217.26	618.03	5.03	
Food And Kindred Products	172.75	341.77	2458.75	1607.10	1067.61	3.41	294.94	964.77	8.73	
Furniture And Fixtures	9.79	1.82	155.23	114.70	176.31	0.00	31.72	57.92	1.04	
Industrial And Commercial Machinery And Computer Equipment	660.18	48.63	2592.68	4714.37	2439.50	8.99	227.21	1133.10	4.93	
Leather And Leather Products	11.45	26.03	125.09	191.18	144.77	0.46	25.51	73.06	0.84	
Lumber And Wood Products, Except Furniture	63.11	3.22	1503.28	806.52	626.61	0.00	109.81	443.07	1.23	
Measuring, Analyzing, And Controlling Instruments; Photographic, Medical, And Optical Goods; Watches And Clocks	211.90	59.78	1497.67	1402.53	895.53	3.57	110.48	674.75	2.34	
Miscellaneous Manufacturing Industries	198.26	25.63	662.93	1889.01	943.74	5.14	178.81	394.75	5.87	
Paper And Allied Products	44.19	12.76	2692.05	739.48	507.64	1.75	59.54	747.55	1.95	
Petroleum Refining And Related Industries	21.03	4.60	551.33	80.87	44.01	0.13	0.04	108.55	0.00	
Primary Metal Industries	1658.52	9.55	1643.26	920.19	501.83	2.42	32.41	1138.97	0.00	
Printing, Publishing, And Allied Industries	45.12	20.06	756.49	1420.01	618.95	2.77	191.68	324.46	6.29	
Rubber And Miscellaneous Plastics Products	1786.11	165.37	4971.77	3401.13	1782.95	12.64	248.56	1594.88	8.16	
Stone, Clay, Glass, And Concrete Products	704.76	20.87	1220.30	624.26	344.32	1.68	79.73	443.68	2.62	
Textile Mill Products	132.10	28.34	661.76	419.89	248.01	1.15	65.39	238.62	2.15	
Tobacco Products	0.69	0.59	7.78	24.22	5.57	0.01	0.36	4.11	0.01	
Transportation Equipment	59.67	11.28	514.53	1027.99	559.51	2.54	33.95	242.44	0.34	
	<b>9477.53</b>	<b>1031.17</b>	<b>28415.98</b>	<b>27780.35</b>	<b>16299.26</b>	<b>64.44</b>		<b>11041.63</b>	<b>52.34</b>	<b>94,162.70</b>

5,474

In order to estimate industry specific savings factors associated with individual end uses, figures from a number of previous state and regional potential assessments were utilized (see Sources below):

<b>Conventional Boiler Use</b>	No electric savings potential. See gas model.
<b>CHP and/or Cogeneration</b>	Because acceptance and savings related to CHP and/or Cogeneration vary so greatly within the industrial sector, potential savings are difficult to generalize. In accordance with the Oregon Assessment, this end use can be seen as an additional savings opportunity not included in the analysis. Some ACEEE studies (Florida and Texas) estimate that CHP systems could increase savings by as much as 50%, saving 5-10% of total consumption. Factors may later be added depending on results from site visits.
<b>Process Heating, Process Cooling and Refrigeration, Machine Drive</b>	Data from Tables 1 and 11 of the Oregon study, Figures 1,2,7, and 8 of the California assessment, Table 2 of the ACEEE Texas study, Table 4 of the Florida study, Table 2 of the Fan & Pump study, Appendix D of the Connecticut Potential Analysis, and the ACEEE Vermont Analysis was used to create a range for each end use. Within this range, each industry category was analyzed using Appendix D of the Connecticut analysis to estimate appropriate factors. Once all savings were calculated with preliminary factors, these savings were analyzed to determine if ratios were appropriate across end use and industry. Factors were then tweaked to approach previously confirmed savings ratios.
<b>All Other End Uses</b>	The remaining factors were evaluated as cross-cutting (industry non-specific) end uses. Lighting and HVAC factors were taken from Table 11 of the Oregon study, with confirmation from the ACEEE Vermont study. The savings factor for Sensors and Controls was taken from the Vermont study, again referencing the previously mentioned assessments. The remaining factors (with significant savings) were taken from the Reading model and confirmed by ACEEE analyses.

**Sources**

*Connecticut Efficiency Potential Analysis (GDS)*  
*EPRI Potential Study Webinar*  
*Resource Assessment for Energy Trust of Oregon*  
*California Industrial Energy Efficiency Potential (Ernest Orlando Lawrence, Berkeley National Laboratory)*  
*ACEEE Potential Studies (Vermont, Florida, Texas and Fan & Pump Analyses)*  
*Reading Industrial Tech Potential Analysis (GDS)*  
*Vermont Electric Energy Efficiency Potential Study (GDS).*

% Gas Sales by Industry & End Use												
2018 Therms Sales	New Hampshire Specific Industry	Conventional Boiler Use	CHP and/or Cogeneration Process	Process Heating	Process Cooling and Refrigeration	Machine Drive	Other Process Use	Facility HVAC	Facility Lighting	Other Facility Support	Other Nonprocess Use	End Use Not Reported
153,399	Apparel And Other Finished Products Made From Fabrics And Similar Materials	25%	0%	25%	0%	0%	0%	19%	0%	13%	0%	19%
542,309	Chemicals And Allied Products	27%	28%	35%	2%	3%	2%	2%	0%	0%	0%	1%
1,557,367	Electronic And Other Electrical Equipment And Components, Except Computer Equipment	12%	0%	53%	0%	0%	0%	29%	0%	0%	0%	6%
3,184,570	Fabricated Metal Products, Except Machinery And Transportation Equipment	4%	0%	62%	0%	1%	0%	21%	0%	0%	0%	12%
8,550,090	Food And Kindred Products	41%	7%	38%	0%	2%	1%	7%	0%	0%	0%	4%
149,910	Furniture And Fixtures	4%	0%	42%	0%	0%	0%	46%	0%	0%	0%	8%
973,233	Industrial And Commercial Machinery And Computer Equipment	16%	1%	36%	0%	3%	0%	36%	0%	1%	0%	6%
450,206	Leather And Leather Products	75%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%
1,075,247	Lumber And Wood Products, Except Furniture	27%	0%	48%	0%	2%	2%	14%	0%	0%	2%	5%
4,663,035	Measuring, Analyzing, And Controlling Instruments: Photographic, Medical, And Optical Goods: Watches And Clocks	23%	15%	47%	1%	2%	1%	8%	0%	1%	0%	3%
828,708	Miscellaneous Manufacturing Industries	29%	0%	26%	0%	0%	0%	32%	0%	0%	0%	13%
11,946,935	Paper And Allied Products	29%	32%	26%	1%	4%	0%	5%	0%	0%	0%	4%
4,342,829	Petroleum Refining And Related Industries	18%	15%	60%	0%	1%	0%	2%	0%	0%	0%	3%
11,022,195	Primary Metal Industries	6%	5%	79%	1%	0%	0%	7%	0%	1%	0%	2%
785,699	Printing, Publishing, And Allied Industries	13%	0%	40%	0%	2%	0%	33%	0%	2%	0%	9%
2,589,478	Rubber And Miscellaneous Plastics Products	37%	2%	29%	1%	1%	1%	19%	0%	1%	1%	10%
2,211,984	Stone, Clay, Glass, And Concrete Products	3%	1%	85%	0%	0%	0%	5%	0%	0%	0%	5%
1,450,624	Textile Mill Products	21%	0%	39%	0%	3%	0%	21%	0%	0%	0%	17%
34,841	Tobacco Products	50%	0%	25%	0%	0%	0%	25%	0%	0%	0%	0%
483,040	Transportation Equipment	26%	2%	32%	1%	1%	0%	31%	0%	1%	0%	7%
56,995,702	Source: 2002 Manufacturing Energy Consumption Survey (MECS) Data ( <a href="http://www.eia.gov/emeu/mecs/mecs2002/">http://www.eia.gov/emeu/mecs/mecs2002/</a> )											

Therms Sales by Industry & End Use												
2018 Therms Sales	New Hampshire Specific Industry	Conventional Boiler Use	CHP and/or Cogeneration Process	Process Heating	Process Cooling and Refrigeration	Machine Drive	Other Process Use	Facility HVAC	Facility Lighting	Other Facility Support	Other Nonprocess Use	End Use Not Reported
153,399	Apparel And Other Finished Products Made From Fabrics And Similar Materials	38,350	0	38,350	0	0	0	28,762	0	19,175	0	28,762
542,309	Chemicals And Allied Products	145,700	153,997	191,833	8,297	13,939	8,961	10,952	0	996	996	6,306
1,557,367	Electronic And Other Electrical Equipment And Components, Except Computer Equipment	183,220	0	824,489	0	0	0	458,049	0	0	0	91,610
3,184,570	Fabricated Metal Products, Except Machinery And Transportation Equipment	124,885	0	1,966,941	0	31,221	0	655,647	0	15,611	0	390,266
8,550,090	Food And Kindred Products	3,526,912	564,917	3,267,356	0	198,484	61,072	625,989	0	0	0	305,360
149,910	Furniture And Fixtures	6,246	0	62,463	0	0	0	68,709	0	0	0	12,493
973,233	Industrial And Commercial Machinery And Computer Equipment	158,150	12,165	352,797	0	24,331	0	352,797	0	12,165	0	60,827
450,206	Leather And Leather Products	337,655	0	0	0	0	0	112,552	0	0	0	0
1,075,247	Lumber And Wood Products, Except Furniture	288,013	0	518,423	0	19,201	19,201	153,607	0	0	19,201	57,603
4,663,035	Measuring, Analyzing, And Controlling Instruments: Photographic, Medical, And Optical Goods: Watches And Clocks	1,050,650	689,412	2,207,109	36,372	87,623	47,945	357,932	0	23,972	8,266	152,100
828,708	Miscellaneous Manufacturing Industries	240,593	0	213,860	0	0	0	267,325	0	0	0	106,930
11,946,935	Paper And Allied Products	3,413,410	3,852,277	3,072,069	73,144	438,867	48,763	585,156	0	0	0	463,248
4,342,829	Petroleum Refining And Related Industries	762,792	666,172	2,603,663	10,171	61,023	20,341	86,450	0	10,171	0	122,047
11,022,195	Primary Metal Industries	659,303	507,156	8,723,087	67,621	0	0	726,924	0	84,526	0	253,578
785,699	Printing, Publishing, And Allied Industries	104,760	0	314,280	0	17,460	0	261,900	0	17,460	0	69,840
2,589,478	Rubber And Miscellaneous Plastics Products	952,928	41,432	745,770	20,716	20,716	20,716	497,180	0	20,716	20,716	248,590
2,211,984	Stone, Clay, Glass, And Concrete Products	75,531	16,185	1,877,489	0	10,790	0	107,902	0	5,395	0	118,692
1,450,624	Textile Mill Products	302,213	0	564,132	0	40,295	0	302,213	0	0	0	241,771
34,841	Tobacco Products	17,420	0	8,710	0	0	0	8,710	0	0	0	0
483,040	Transportation Equipment	125,051	7,356	156,927	4,904	4,904	0	149,571	0	4,904	0	34,328
56,995,702												

Industry	Savings Factors*														
	Conventional Boiler Use	CHP and/or Cogeneration Process	Process Heating	Process Cooling and Refrigeration	Machine Drive	Electro-Chemical Processes	Other Process Use	Facility HVAC	Facility Lighting	Other Facility Support	Onsite Transportation	Conventional Electricity Generation	Other Nonprocess Use	Sensors & Controls	End Use Not Reported
Apparel And Other Finished Products Made From Fabrics And Similar Materials	17%	0%	14%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Chemicals And Allied Products	14%	0%	11%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Electronic And Other Electrical Equipment And Components, Except Computer Equipment	20%	0%	12%	0%	0%	0%	0%	11%	0%	1%	0%	0%	0%	0%	5%
Fabricated Metal Products, Except Machinery And Transportation Equipment	17%	0%	14%	0%	0%	0%	0%	17%	0%	1%	0%	0%	0%	0%	5%
Food And Kindred Products	18%	0%	15%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Furniture And Fixtures	17%	0%	11%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Industrial And Commercial Machinery And Computer Equipment	17%	0%	12%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Leather And Leather Products	16%	0%	11%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Lumber And Wood Products, Except Furniture	17%	0%	11%	0%	0%	0%	0%	20%	0%	1%	0%	0%	0%	0%	5%
Measuring, Analyzing, And Controlling Instruments, Photographic, Medical, And Optical Goods, Watches And Clocks	15%	0%	12%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Miscellaneous Manufacturing Industries	18%	0%	13%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Paper And Allied Products	18%	0%	11%	0%	0%	0%	0%	16%	0%	1%	0%	0%	0%	0%	5%
Petroleum Refining And Related Industries	14%	0%	11%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Primary Metal Industries	14%	0%	11%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Printing, Publishing, And Allied Industries	15%	0%	10%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Rubber And Miscellaneous Plastics Products	18%	0%	13%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Stone, Clay, Glass, And Concrete Products	15%	0%	11%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Textile Mill Products	18%	0%	13%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Tobacco Products	18%	0%	14%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%
Transportation Equipment	16%	0%	11%	0%	0%	0%	0%	13%	0%	1%	0%	0%	0%	0%	5%

\* This savings factor includes considerations for remaining, base case, and convertible factor - it's an all inclusive factor

Note: GDS Estimates are based on a combination of past experience, recent and past projects, and industry standards and norms. Refer to SOURCES tab for further detail

Indicates Survey Data Used to Inform Savings Factors

Industry	<b>Savings Factors - Only Eligible End Uses Displayed</b>				
	Conventional Boiler Use	Process Heating	Facility HVAC	Other Facility Support	End Use Not Reported
Apparel And Other Finished Products Made From Fabrics And Similar Materials	17%	14%	13%	1%	5%
Chemicals And Allied Products	14%	11%	13%	1%	5%
Electronic And Other Electrical Equipment And Components, Except Computer Equipment	20%	12%	11%	1%	5%
Fabricated Metal Products, Except Machinery And Transportation Equipment	17%	14%	17%	1%	5%
Food And Kindred Products	18%	15%	13%	1%	5%
Furniture And Fixtures	17%	11%	13%	1%	5%
Industrial And Commercial Machinery And Computer Equipment	17%	12%	13%	1%	5%
Leather And Leather Products	16%	11%	13%	1%	5%
Lumber And Wood Products, Except Furniture	17%	11%	20%	1%	5%
Measuring, Analyzing, And Controlling Instruments; Photographic, Medical, And Optical Goods; Watches And Clocks	15%	12%	13%	1%	5%
Miscellaneous Manufacturing Industries	18%	13%	13%	1%	5%
Paper And Allied Products	18%	11%	16%	1%	5%
Petroleum Refining And Related Industries	14%	11%	13%	1%	5%
Primary Metal Industries	14%	11%	13%	1%	5%
Printing, Publishing, And Allied Industries	15%	10%	13%	1%	5%
Rubber And Miscellaneous Plastics Products	18%	13%	13%	1%	5%
Stone, Clay, Glass, And Concrete Products	15%	11%	13%	1%	5%
Textile Mill Products	18%	13%	13%	1%	5%
Tobacco Products	18%	14%	13%	1%	5%
Transportation Equipment	16%	11%	13%	1%	5%

*\* This savings factor includes considerations for remaining, base case, and convertible factor - it's an all inclusive factor*

**Note: GDS Estimates are based on a combination of past experience, recent and past projects, and industry standards and norms. Refer to SOURCES tab for further detail**

**2018 Annual Therms Savings by Industry Category End Use (Tech Potential)**

Industry Category	Conventional Boiler Use	Process Heating	Facility HVAC	Other Facility Support	End Use Not Reported	Industry Total Potential Therms Savings	
Apparel And Other Finished Products Made From Fabrics And Similar Materials	6,519	5,369	3,739	192	0	15,819	
Chemicals And Allied Products	20,398	21,102	1,424	10	315	43,249	
Electronic And Other Electrical Equipment And Components, Except Computer Equipment	36,644	98,939	50,385	0	4,580	190,548	
Fabricated Metal Products, Except Machinery And Transportation Equipment	21,230	275,372	111,460	156	19,513	427,732	
Food And Kindred Products	634,844	490,103	81,379	0	15,268	1,221,594	
Furniture And Fixtures	1,062	6,871	8,932	0	625	17,490	
Industrial And Commercial Machinery And Computer Equipment	26,886	42,336	45,864	122	3,041	118,248	
Leather And Leather Products	54,025	0	14,632	0	0	68,656	
Lumber And Wood Products, Except Furniture	48,962	57,027	30,721	0	2,880	139,590	
Measuring, Analyzing, And Controlling Instruments: Photographic, Medical, And Optical Goods: Watches And Clocks	157,598	264,853	46,531	240	7,605	476,827	
Miscellaneous Manufacturing Industries	43,307	27,802	34,752	0	5,347	111,207	
Paper And Allied Products	614,414	337,928	93,625	0	23,162	1,069,129	
Petroleum Refining And Related Industries	106,791	286,403	11,238	102	6,102	410,636	
Primary Metal Industries	92,302	959,540	94,500	845	12,679	1,159,866	
Printing, Publishing, And Allied Industries	15,714	31,428	34,047	175	3,492	84,856	
Rubber And Miscellaneous Plastics Products	171,527	96,950	64,633	207	12,429	345,747	
Stone, Clay, Glass, And Concrete Products	11,330	206,524	14,027	54	5,935	237,869	
Textile Mill Products	54,398	73,337	39,288	0	12,089	179,112	
Tobacco Products	3,136	1,219	1,132	0	0	5,487	
Transportation Equipment	20,008	17,262	19,444	49	1,716	58,480	
<b>Tech Potential By End Use:</b>	<b>2,141,095</b>	<b>3,300,363</b>	<b>801,754</b>	<b>2,151</b>	<b>136,779</b>	<b>6,382,142</b>	<b>6,382,142</b>
	<b>34%</b>	<b>52%</b>	<b>13%</b>	<b>0%</b>	<b>2%</b>		<i>11% of Annual Therms Sales</i>

**2018 Annual Therms Savings by Industry Category End Use (Max Achievable)**

Industry Category	Conventional Boiler Use	Process Heating	Facility HVAC	Other Facility Support	End Use Not Reported	Industry Max Achievable Potential Therms Savings	
Apparel And Other Finished Products Made From Fabrics And Similar Materials	6,519	3,579	3,116	192	0	13,406	
Chemicals And Allied Products	20,398	14,068	1,187	10	315	35,978	
Electronic And Other Electrical Equipment And Components, Except Computer Equipment	36,644	65,959	41,988	0	4,580	149,171	
Fabricated Metal Products, Except Machinery And Transportation Equipment	21,230	183,581	92,883	156	19,513	317,364	
Food And Kindred Products	634,844	326,736	67,815	0	15,268	1,044,663	
Furniture And Fixtures	1,062	4,581	7,443	0	625	13,711	
Industrial And Commercial Machinery And Computer Equipment	26,886	28,224	38,220	122	3,041	96,492	
Leather And Leather Products	54,025	0	12,193	0	0	66,218	
Lumber And Wood Products, Except Furniture	48,962	38,018	25,601	0	2,880	115,461	
Measuring, Analyzing, And Controlling Instruments: Photographic, Medical, And Optical Goods: Watches And Clocks	157,598	176,569	38,776	240	7,605	380,787	
Miscellaneous Manufacturing Industries	43,307	18,535	28,960	0	5,347	96,148	
Paper And Allied Products	614,414	225,285	78,021	0	23,162	940,882	
Petroleum Refining And Related Industries	106,791	190,935	9,365	102	6,102	313,296	
Primary Metal Industries	92,302	639,693	78,750	845	12,679	824,270	
Printing, Publishing, And Allied Industries	15,714	20,952	28,372	175	3,492	68,705	
Rubber And Miscellaneous Plastics Products	171,527	64,633	53,861	207	12,429	302,658	
Stone, Clay, Glass, And Concrete Products	11,330	137,683	11,689	54	5,935	166,690	
Textile Mill Products	54,398	48,891	32,740	0	12,089	148,118	
Tobacco Products	3,136	813	944	0	0	4,892	
Transportation Equipment	20,008	11,508	16,203	49	1,716	49,485	
<b>Max Achievable Potential By End Use:</b>	<b>2,141,095</b>	<b>2,200,242</b>	<b>668,129</b>	<b>2,151</b>	<b>136,779</b>	<b>5,148,395</b>	<b>5,148,395</b>
	<b>42%</b>	<b>43%</b>	<b>13%</b>	<b>0%</b>	<b>3%</b>		<i>9% of Annual Therms Sales</i>

In order to estimate industry specific savings factors associated with individual end uses, figures from a number of previous state and regional potential assessments were utilized (see Sources below):

<b>Natural Gas Savings Factors</b>	The PNM study and the CA assessment were used to determine an appropriate range of savings ratios for each industry and each end use. Essentially, three end uses were considered for natural gas savings: Boilers, Process Heating, and Space Heating. Upon developing savings ratios across end use and category, savings factors were estimated to fall within these categories. Once savings factors and ratios were within the appropriate range, the numbers were adapted for NH specific industries and tweaked accordingly.
<b>CHP and/or Cogeneration</b>	Because acceptance and savings related to CHP and/or Cogeneration vary so greatly within the industrial sector, potential savings are difficult to generalize. In accordance with the Oregon Assessment, this end use can be seen as an additional savings opportunity not included in the analysis. Some ACEEE studies (Florida and Texas) estimate that CHP systems could increase savings by as much as 50%, saving 5-10% of total consumption. Factors may later be added depending on results from site visits.

**Sources**

*Natural Gas Potential in PNM Service Territory (GDS)*  
*California Industrial Energy Efficiency Potential (Ernest Orlando Lawrence, Berkeley National Laboratory)*  
*US Department of Energy Industrial Technologies Program Database.*