

INDUSTRIAL - ENERGY EFFICIENCY - PRAP (Energy/Demand/# Measures/Participants)

4 CSR 240-22.050(3)(G)1: 4 CSR 240-22.050(3)(G)4: 4 CSR 240-22.050(3)(H): 4 CSR 240-22.050(3)(G)3

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4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

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		End Use		Measure Name		Year by Year Energy Savings (kWh)																																																																																																																																																																																																																																																																																																																																																																																																																																																											
#	Measure	Space Heating	Space Heating	Water Loop Heat Pump (WLHP) - Heating	2023	2028	2033	2038	2043	2048	2053	2058	2063	2068	2073	2078	2083	2088	2093	2098	2103	2108	2113	2118	2123	2128	2133	2138	2143	2148	2153	2158	2163	2168	2173	2178	2183	2188	2193	2198	2203	2208	2213	2218	2223	2228	2233	2238	2243	2248	2253	2258	2263	2268	2273	2278	2283	2288	2293	2298	2303	2308	2313	2318	2323	2328	2333	2338	2343	2348	2353	2358	2363	2368	2373	2378	2383	2388	2393	2398	2403	2408	2413	2418	2423	2428	2433	2438	2443	2448	2453	2458	2463	2468	2473	2478	2483	2488	2493	2498	2503	2508	2513	2518	2523	2528	2533	2538	2543	2548	2553	2558	2563	2568	2573	2578	2583	2588	2593	2598	2603	2608	2613	2618	2623	2628	2633	2638	2643	2648	2653	2658	2663	2668	2673	2678	2683	2688	2693	2698	2703	2708	2713	2718	2723	2728	2733	2738	2743	2748	2753	2758	2763	2768	2773	2778	2783	2788	2793	2798	2803	2808	2813	2818	2823	2828	2833	2838	2843	2848	2853	2858	2863	2868	2873	2878	2883	2888	2893	2898	2903	2908	2913	2918	2923	2928	2933	2938	2943	2948	2953	2958	2963	2968	2973	2978	2983	2988	2993	2998	3003	3008	3013	3018	3023	3028	3033	3038	3043	3048	3053	3058	3063	3068	3073	3078	3083	3088	3093	3098	3103	3108	3113	3118	3123	3128	3133	3138	3143	3148	3153	3158	3163	3168	3173	3178	3183	3188	3193	3198	3203	3208	3213	3218	3223	3228	3233	3238	3243	3248	3253	3258	3263	3268	3273	3278	3283	3288	3293	3298	3303	3308	3313	3318	3323	3328	3333	3338	3343	3348	3353	3358	3363	3368	3373	3378	3383	3388	3393	3398	3403	3408	3413	3418	3423	3428	3433	3438	3443	3448	3453	3458	3463	3468	3473	3478	3483	3488	3493	3498	3503	3508	3513	3518	3523	3528	3533	3538	3543	3548	3553	3558	3563	3568	3573	3578	3583	3588	3593	3598	3603	3608	3613	3618	3623	3628	3633	3638	3643	3648	3653	3658	3663	3668	3673	3678	3683	3688	3693	3698	3703	3708	3713	3718	3723	3728	3733	3738	3743	3748	3753	3758	3763	3768	3773	3778	3783	3788	3793	3798	3803	3808	3813	3818	3823	3828	3833	3838	3843	3848	3853	3858	3863	3868	3873	3878	3883	3888	3893	3898	3903	3908	3913	3918	3923	3928	3933	3938	3943	3948	3953	3958	3963	3968	3973	3978	3983	3988	3993	3998	4003	4008	4013	4018	4023	4028	4033	4038	4043	4048	4053	4058	4063	4068	4073	4078	4083	4088	4093	4098	4103	4108	4113	4118	4123	4128	4133	4138	4143	4148	4153	4158	4163	4168	4173	4178	4183	4188	4193	4198	4203	4208	4213	4218	4223	4228	4233	4238	4243

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INDUSTRIAL - ENERGY EFFICIENCY - PRAP (Energy/Demand/# Measures/Participants)

#	End Use	Measure Name
100	Computers & Appliances, Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-ROB
104	Computers & Office Equipment	PC Network Energy Management Controls replacing no central control
107	Computers & Appliances, Computers, Office Equipment	High Efficiency CRAC Unit - ROB
109	Computers & Appliances, Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-Early
111	Computers & Appliances, Computers, Office Equipment	High Efficiency CRAC Unit - Early Replacement
105	Computers & Appliances, Computers, Office Equipment	Energy Star Computer Single Door Refrigerator-ROB
108	Computers & Appliances, Computers, Office Equipment	Energy Star Computer Single Door Refrigerator-Early Replacement
103	Computers & Office Equipment	Smart Strip plug outlet
106	Computers & Appliances, Computers, Office Equipment	Energy Star UPS-ROB
102	Computers & Appliances, Computers, Office Equipment	Energy Star UPS- Early Replacement

Cumulative Energy Savings (kWh)																			
#	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
100	61,988	141,232	227,637	324,041	385,452	458,617	538,617	585,617	635,617	685,617	735,617	785,617	835,617	885,617	935,617	985,617	1,035,617	1,085,617	1,135,617
104	24,578	55,998	94,223	132,447	148,593	152,897	152,897	152,897	152,897	152,897	152,897	152,897	152,897	152,897	152,897	152,897	152,897	152,897	152,897
107	729	2,211	4,448	7,223	10,216	13,187	16,185	19,172	22,159	25,146	28,134	31,121	34,108	37,095	40,082	43,069	46,056	49,043	52,030
109	199,209	454,028	785,052	1,076,075	1,344,099	1,539,841	1,735,617	1,931,393	2,127,169	2,322,945	2,518,721	2,714,497	2,910,273	3,106,049	3,301,825	3,497,601	3,693,377	3,889,153	4,084,929
111	161	408	741	1,161	1,695	2,319	3,039	3,755	4,522	5,286	6,051	6,816	7,580	8,345	9,110	9,874	10,639	11,403	12,168
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

150	Water Heating	Water Heating	Low Flow Faucet Aerators
156	Water Heating	Water Heating	Leak Inspection/Repairs
171	Water Heating	Water Heating	Process Cooling Condenser Heat Recovery
151	Water Heating	Water Heating	Heat Pump Water Heater-ROB
153	Water Heating	Water Heating	Efficient Hot Water Pumps-ROB
164	Water Heating	Water Heating	HVAC Condenser Heater Recovery Water Heating
176	Water Heating	Water Heating	Heat Pump Water Heater Early Replacement
172	Water Heating	Water Heating	Efficient Hot Water Pump Early Replacement
167	Water Heating	Water Heating	Hot Water (EWH) Pipe Insulation
158	Water Heating	Water Heating	Hot Water (EWH) Pipe Insulation
154	Water Heating	Water Heating	Heat Pump Storage Water Heating-ROB
157	Water Heating	Water Heating	Electric Tankless Water Heater-ROB
160	Water Heating	Water Heating	ECM Circulator Pump
162	Water Heating	Water Heating	Electric Tankless Water Heater-Early
169	Water Heating	Water Heating	Drain Water Heat Recovery Water Heater
177	Water Heating	Water Heating	Heat Pump Storage Water Heating-Early Replacement
175	Water Heating	Water Heating	Electric Tankless Water Heater-Early Replacement

150	31,839	72,642	122,059	171,673	221,089	270,699	320,126	369,642	419,159	468,676	518,193	567,710	617,227	666,744	716,261	765,778	815,295	864,812	914,329
156	2,522	8,867	11,202	18,746	20,265	24,834	26,379	31,923	38,467	43,024	47,580	52,137	56,694	61,251	65,808	70,365	74,922	79,479	84,036
171	3,042	6,000	11,060	15,391	21,121	25,851	30,581	35,312	40,042	44,772	49,503	54,233	58,963	63,694	68,424	73,154	77,885	82,615	87,346
151	2,980	6,744	11,348	19,951	25,155	29,762	34,369	38,976	43,583	48,190	52,797	57,404	62,011	66,618	71,225	75,832	80,439	85,046	89,653
153	1,610	3,887	6,571	9,254	11,178	13,681	16,184	18,687	21,191	23,694	26,197	28,700	31,203	33,706	36,209	38,712	41,215	43,718	46,221
164	1,283	2,923	4,919	6,915	9,009	10,909	12,812	14,807	16,802	18,806	20,809	22,812	24,816	26,819	28,822	30,825	32,828	34,831	36,834
176	752	1,713	2,883	4,053	5,222	6,392	7,562	8,731	9,901	11,070	12,240	13,410	14,579	15,749	16,918	18,088	19,257	20,427	21,596
172	1,423	3,242	5,455	7,668	9,881	12,094	14,307	16,520	18,733	20,946	23,159	25,372	27,585	29,798	32,011	34,224	36,437	38,650	40,863
167	4,043	9,211	15,488	21,765	28,042	34,319	40,596	46,873	53,150	59,427	65,704	71,981	78,258	84,535	90,812	97,089	103,366	109,643	115,920
158	1,658	3,779	6,358	8,937	11,516	14,095	16,674	19,253	21,832	24,411	26,990	29,569	32,148	34,727	37,306	39,885	42,464	45,043	47,622
154	2,411	5,493	9,542	13,592	17,641	20,454	24,240	27,990	31,739	35,488	39,237	42,986	46,735	50,484	54,233	57,982	61,731	65,480	69,229
157	630	1,611	3,482	5,243	6,825	11,407	13,989	16,571	19,153	21,735	24,317	26,899	29,481	32,063	34,645	37,227	39,809	42,391	44,973
162	134	84	154	241	328	415	502	589	676	763	850	937	1,024	1,111	1,198	1,285	1,372	1,459	1,546
169	5	13	24	36	48	59	70	81	92	103	114	125	136	147	158	169	180	191	202
177	164	498	1,051	1,527	2,299	2,972	3,645	4,317	4,990	5,663	6,336	7,009	7,682	8,355	9,028	9,701	10,374	11,047	11,720
175	13	65	154	242	331	420	509	598	687	776	865	954	1,043	1,132	1,221	1,310	1,400	1,489	1,578

300	Building Envelope	Building Envelope	Energy Efficient Windows-ROB
302	Building Envelope	Space Cooling - Chiller	Water Insulation
306	Building Envelope	Space Cooling - Chiller	Integrated Building Design
301	Building Envelope	Space Cooling - Chiller	Energy Efficient Windows-Early Replacement
304	Building Envelope	Space Cooling - Chiller	Ceiling Insulation
307	Building Envelope	Space Cooling - Chiller	Roof Insulation
305	Building Envelope	Space Cooling - Chiller	Window Improvements
303	Building Envelope	Space Cooling - Chiller	Cool Roofing-ROB
308	Building Envelope	Space Cooling - Chiller	Improved Duct Sealing
310	Building Envelope	Space Cooling - Chiller	Cool Roofing-Early

300	148,430	333,637	561,378	789,114	1,016,850	1,244,586	1,472,322	1,700,058	1,927,794	2,155,530	2,383,266	2,611,002	2,838,738	3,066,474	3,294,210	3,521,946	3,749,682	3,977,418	4,205,154
302	148,430	333,637	561,378	789,114	1,016,850	1,244,586	1,472,322	1,700,058	1,927,794	2,155,530	2,383,266	2,611,002	2,838,738	3,066,474	3,294,210	3,521,946	3,749,682	3,977,418	4,205,154
306	148,430	333,637	561,378	789,114	1,016,850	1,244,586	1,472,322	1,700,058	1,927,794	2,155,530	2,383,266	2,611,002	2,838,738	3,066,474	3,294,210	3,521,946	3,749,682	3,977,418	4,205,154
301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
304	14,213	36,073	68,952	102,738	136,514	200,273	264,032	327,791	391,550	455,309	519,068	582,827	646,586	710,345	774,104	837,863	901,622	965,381	1,029,140
307	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
305	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
308	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
310	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

HVAC Controls

346	Space cooling	Space Cooling - Chiller	Commercial EMS
348	Space cooling	Space Cooling - Chiller	Setback with Electric Heat
350	Space cooling	Envelope	Energy Efficient Windows-ROB
352	Space cooling	Space Cooling - Chiller	Web Enabled EMS
354	Space cooling	Space Cooling - Chiller	EMS Optimization / Continuous Commissioning
356	Space cooling	Space Cooling - Chiller	Chiller Run Up
358	Space cooling	Space Cooling - Chiller	Efficient Chiller Water Pump
360	Space cooling	Space Cooling - Chiller	Hot Water Insulation
362	Space cooling	Space Cooling - Chiller	Chiller Hot Water Reset
364	Space cooling	Space Cooling - Chiller	Water Side Economizer
366	Space cooling	Space Cooling - Chiller	Water Side Economizer Chiller > 300 ton-ROB
368	Space cooling	Space Cooling - Chiller	Water-Cooled Screw Chiller > 300 ton-ROB
370	Space cooling	Space Cooling - Chiller	VAV System Conversion
372	Space cooling	Space Cooling - Chiller	Variable Building Design
374	Space cooling	Space Cooling - Chiller	Motor Bell Replacement
376	Space cooling	Space Cooling - Chiller	Refrigerant Management
378	Space cooling	Space Cooling - Chiller	Air Cooled Screw Chiller-ROB
380	Space cooling	Space Cooling - Chiller	Air Cooled Screw Chiller-ROB
382	Space cooling	Space Cooling - Chiller	Air Cooled Efficient Windows- Early Replacement
384	Space cooling	Space Cooling - Chiller	EMS Tuning Scheduling Control
386	Space cooling	Envelope	Ceiling Insulation
388	Space cooling	Space Cooling - Chiller	High Efficiency Pumps-ROB
390	Space cooling	Space Cooling - Chiller	Air Cooled Screw Chiller-ROB
392	Space cooling	Space Cooling - Chiller	Roof Insulation
394	Space cooling	Space Cooling - Chiller	Water-Cooled Screw Chiller > 300 ton-ER
396	Space cooling	Space Cooling - Chiller	High Efficiency Pumps-ER
398	Space cooling	Space Cooling - Chiller	Air Cooled Screw Chiller-ER
400	Space cooling	Space Cooling - Chiller	Water-Cooled Centrifugal Chiller > 300 ton-ER
402	Space cooling	Ventilation	Economizer
404	Space cooling	Space Cooling - Chiller	Window Improvements
406	Space cooling	Space Cooling - HVAC Controls	Programmable Thermostats
408	Space cooling	Space Cooling - Chiller	HVAC Occupancy Sensors
410	Space cooling	Envelope	Cock-Rooling-ROB
412	Space cooling	HVAC Controls	Zoning
414	Space cooling	Envelope	Sealed Door Sealing
416	Space cooling	Envelope	Cock-Rooling-ER

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26 243	50 450	79 295	104 404	129 075	153 036	176 989	200 839	224 746	248 488	271 756	294 104	314 768	334 762	354 314	363 587	369 651	372 593	386 281
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#	End Use	Measure Name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
100	Computers & Office Equipment	Commercial & Office Equipment	2.9353	11.111	14.437	14.410	14.370	14.334	14.284	14.160	14.017	14.3356	14.3366	14.36261	14.38750	14.38647	14.41074	14.35761	14.33562	14.34705	14.16941	
101	Computers & Office Equipment	Energy Star Energy Management Controls replacing to certified control	0.6679	4.68308	5.74242	5.1545	4.69268	5.67961	5.70456	5.71629	5.74234	5.68401	5.64445	5.6948579	5.7045658	5.700574	5.7446888	5.6926366	5.6844351	5.686261	5.7162925	
102	Computers & Office Equipment	High Efficiency CRAC Unit - RCR	3.10699	0.22084	0.33424	0.14549	0.44449	0.34368	0.44581	0.44673	0.44735	0.44624	0.445518	0.4458102	0.4458102	0.4458102	0.4458102	0.4449589	0.4445443	0.4447249	0.4447249	
103	Computers & Office Equipment	Process Cooling Equipment including computers, monitors, copiers, multi-function machines etc.	29.40055	37.9752	46.418	46.347	46.1035	46.256	46.254	46.355	46.41	46.062	46.048	46.17071	46.26386	46.26345	46.34687	46.30338	46.406338	46.34315	46.35314	
111	Computers & Appliances, Computers, Office Equipment	High Efficiency CRAC Unit - Early Replacement	0.02393	0.03681	0.04993	0.06277	0.07972	0.06026	0.10613	0.10978	0.11337	0.11371	0.11372	0.1139292	0.1141223	0.1141138	0.1143419	0.1138893	0.113721	0.1138172	0.114358	
112	Computers & Appliances, Computers, Office Equipment	Energy Star Compact Single Door Refrigerator-RCR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
113	Computers & Appliances, Computers, Office Equipment	Energy Star Compact Single Door Refrigerator- Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
114	Computers & Office Equipment	Smart Plug plug outlet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
115	Computers & Office Equipment	Energy Star UPS-RCR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
116	Computers & Appliances, Computers, Office Equipment	Energy Star UPS- Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
118	Water Heating	Water Heaters	5.77103	7.35497	8.97883	8.97878	8.97876	8.94575	8.97511	8.97702	8.97883	8.9512	8.97005	8.975118	8.9751078	8.9494548	8.9797801	8.9787638	8.9780458	8.945693	8.9770246	
119	Water Heating	Water Heaters	0.52962	0.67479	0.82401	0.8241	0.824	0.82037	0.82367	0.82384	0.82401	0.82148	0.82376	0.8236739	0.8236689	0.8212317	0.8240047	0.8242595	0.8239955	0.8238448		
120	Water Heating	Water Heaters	0.5313	0.70302	0.86774	0.86783	0.86774	0.86458	0.85738	0.85737	0.85774	0.8581	0.85733	0.85738	0.8545874	0.8573844	0.8577313	0.857178	0.854167	0.8573714		
121	Water Heating	Water Heaters	0.53693	0.68789	0.83475	0.83484	0.83475	0.83168	0.83441	0.83459	0.83475	0.83219	0.83458	0.8321937	0.8321937	0.8304474	0.8347479	0.8345873	0.8317373	0.8345873		
122	Water Heating	Water Heaters	0.54178	0.71748	0.45939	0.45939	0.45933	0.45929	0.45933	0.45933	0.45933	0.45933	0.45933	0.45933	0.45933	0.45933	0.45933	0.45933	0.45933	0.45933		
123	Water Heating	Water Heaters	0.23527	0.26444	0.36185	0.36189	0.36185	0.36051	0.3617	0.36178	0.36189	0.36073	0.36174	0.3617002	0.3616988	0.3606642	0.3618863	0.3618453	0.3617358	0.3605126	0.3617358	
124	Water Heating	Water Heaters	0.33632	0.17734	0.21029	0.2111	0.2108	0.2113	0.212	0.2124	0.21028	0.21134	0.21202	0.21199	0.21199	0.212081	0.2120181	0.2				

#	End Use	Measure Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458
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4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

[illegible]

4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

INDUSTRIAL - ENERGY EFFICIENCY - PRAP (Energy/Demand/# Measures/Participants)

#	End Use	Measure Name	Cumulative kW Savings																	
			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024								
103	Computers & Appliances, Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-ROB	9,235,533.26	21,050.2	35,587.166	49,947,667.648	54,875,708	57,259,679	57,549,43	57,747,937	57,342,372	57,344,657	57,451,525	57,549,43	57,554,568	57,659,655	57,431,405	57,346,557	57,350,6	57,667,763
104	Computers & Office Equipment	PC Network Energy Management Controls replacing no central control	3,661,793.7	3,346,366	14,110,251	19,804,168.75	21,758,125	22,718,432	22,816,251	22,865,57	22,869,659	22,736,153	22,739,432	22,816,251	22,816,251	22,816,251	22,771,454	22,737,812	22,770,704	22,865,17
105	Computers & Appliances, Computers, Office Equipment	High Efficiency CRAC Unit - ROB	1,080,033.765	1,520,643	1,066,658.38	1,080,033.765	1,520,643	1,066,658.38	1,080,033.765	1,520,643	1,066,658.38	1,080,033.765	1,520,643	1,066,658.38	1,080,033.765	1,520,643	1,066,658.38	1,080,033.765	1,520,643	1,066,658.38
106	Computers & Appliances, Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-Enr	26,685,648	67,680,946	114,420,227	161,092,949	175,437,021	184,224,116	185,033,599	185,414,565	185,671,63	184,367,65	184,367,65	184,367,65	184,367,65	184,367,65	184,367,65	184,367,65	184,367,65	184,367,65
111	Computers & Appliances, Computers, Office Equipment	High Efficiency CRAC Unit - Early Replacement	0.022,925,51	0.00,0749	0.11,0067	0.17,571,136	0.22,062,804	0.34,462,19	0.452,27,08	0.562,9844	0.677,1389	0.788,0691	0.899,745	1.015,4508	1.131,3047	1.245,5396	1.362,1553	1.447,7594	1.521,5874	1.587,0751
107	Computers & Appliances, Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	Computers & Appliances, Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator- Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	Computers & Office Equipment	Smart Strip plug outlet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	Computers & Appliances, Computers, Office Equipment	Energy Star UPS-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	Computers & Appliances, Computers, Office Equipment	Energy Star UPS- Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159		Water Heating																		
160	Water Heating/Water Heating	Low Flow Faucet Aerator	5,777,102.9	13,106,318	22,132,625	31,114,937.92	40,090,179	48,888,506	58,024,07	67,013,489	76,005,828	84,723,148	88,16,2721	89,751,618	89,751,618	89,751,618	89,751,618	89,751,618	89,751,618	89,751,618
161	Water Heating/Water Heating	Furnace Insulation (Exterior)	0.52,96,223	1,202,844	2,031,1868	2,858,488,589	3,679,1798	4,488,5251	5,320,116	6,150,018	6,975,52	7,776,331	8,620,962	9,434,211	10,287,033	11,059,902	11,826,733	12,593,35	13,364,42	14,137,26
171	Water Heating/Water Heating	Process Cooling Condenser Heat Recovery	0.55,130,38	1,252,218	2,114,338	2,972,390,091	3,827,999	4,679,297	5,543,035	6,401,798	7,260,802	8,093,564	8,930,129	9,760,742	10,591,372	11,422,005	12,252,638	13,083,26	13,913,89	14,744,52
159	Water Heating/Water Heating	Heat Pump Water Heater-ROB	0.53,65,76	1,218,669	2,076,068	2,892,728,862	3,727,1403	4,545,122	5,394,477	6,230,161	7,066,191	7,876,378	8,720,964	9,566,454	10,406,986	11,251,917	12,097,545	12,938,173	13,783,807	14,634,418
160	Water Heating/Water Heating	Efficient Hot Water Pump-ROB	0.29,176,08	0.60,7052	1.11,849	1.67,404,282	2.09,0623	2.47,6112	2.93,3465	3.38,7033	3.84,2557	4.29,3702	4.74,6959	5.20,2232	5.65,6047	6.10,2235	6.56,6856	7.02,1668	7.48,6653	7.94,3111
164	Water Heating/Water Heating	HVAC Condenser Heat Recovery Water Heating	0.23,275,52	0.52,86,69	891,9557	1.25,935,031	1.61,56,303	1.97,0213	2.33,5774	2.70,0621	3.06,3044	3.41,4336	3.76,5549	4.14,6823	4.50,9562	4.86,2435	5.24,5685	5.63,3212	6.02,6037	6.40,9534
161	Water Heating/Water Heating	Heat Pump Water Heater Early Replacement	0.13,061,14	0.30,36,028	0.52,77,91	0.73,94,401	0.94,95,555	1.14,77,778	1.34,59,012	1.54,40,246	1.74,21,484	1.94,02,659	2.13,83,894	2.33,65,129	2.53,46,364	2.73,27,599	2.93,08,834	3.12,89,069	3.32,69,304	3.52,49,539
161	Water Heating/Water Heating	Efficient Hot Water Pump- Early Replacement	0.25,70,721	0.58,65,658	0.98,19,12	1.35,03,415	1.73,17,878	2.10,32,344	2.48,46,809	2.86,61,274	3.24,75,739	3.62,90,204	4.01,04,669	4.39,19,134	4.77,33,599	5.15,48,064	5.53,62,529	5.91,76,994	6.29,91,459	6.68,05,924
167	Water Heating/Water Heating	Hot Water (HRHW) Pipe Insulation	0.73,27,792	0.96,64,31	2,810,322	3,905,834.31	5,09,047	6,270,7419	7,367,358	8,509,074	9,650,879	10,757,783	11,927,356	13,056,907	14,203,546	15,350,163	16,496,781	17,643,398	18,790,015	19,936,632
168	Water Heating/Water Heating	Low Flow Showerhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	Water Heating/Water Heating	Heat Pump Water Heater-ROB	0.43,56,887	0.99,2519	1,67,59,144	2,35,60,488	3,03,56,69	3,71,8751	4,39,3827	5,07,4312	5,75,5214	6,43,5301	7,11,5387	7,79,5471	8,47,5555	9,15,5639	9,83,5723	10,51,5807	11,19,5891	11,87,5975
169	Water Heating/Water Heating	ECM Condenser Pump	0.11,41,901	0.34,52,531	0.66,66,78	1.13,17,837	1.60,224	2,08,6142	2,55,6334	3,03,4187	3,47,2988	3,95,2442	4,43,1987	4,91,1541	5,39,1095	5,87,0649	6,35,0203	6,82,9757	7,30,9311	7,78,8865
169	Water Heating/Water Heating	Electric Tankless Water Heater-ROB	0.00,00,04	0.01,01,526	0.02,02,44	0.04,06,034	0.08,12,068	0.13,24,102	0.18,36,136	0.23,48,170	0.28,60,204	0.33,72,238	0.38,84,272	0.43,96,306	0.49,08,340	0.54,20,374	0.59,32,408	0.64,44,442	0.69,56,476	0.74,68,510
169	Water Heating/Water Heating	Water Loop Heat Recovery Water Heater	0.00,00,05	0.00,02,459	0.00,04,382	0.00,06,765	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466	0.01,00,466
169	Water Heating/Water Heating	Heat Pump Storage Water Heating Early Replacement	0.00,00,75	0.00,09,556	0.01,19,509	0.02,39,419	0.03,59,329	0.04,79,239	0.05,99,149	0.07,19,059	0.08,38,969	0.09,58,879	0.10,78,789	0.11,98,699	0.13,18,609	0.14,38,519	0.15,58,429	0.16,78,339	0.17,98,249	0.19,18,159
177	Water Heating/Water Heating	Electric Tankless Water Heater Early Replacement	0.00,00,007	0.01,53,356	0.02,97,775	0.04,38,393	0.05,83,911	0.07,24,429	0.08,64,947	0.10,05,465	0.11,45,983	0.12,86,501	0.14,27,019	0.15,67,537	0.17,08,055	0.18,48,573	0.19,89,091	0.21,29,609	0.22,70,127	0.24,10,645
309		Building Envelope																		
309	Building Envelope	Energy Efficient Windows-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Building Envelope	Energy Efficient Windows-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Building Envelope	Integrated Building Design	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Building Envelope	Energy Efficient Windows- Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Building Envelope	Energy Efficient Windows-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Building Envelope	Roof Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Building Envelope	Window Improvements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Building Envelope	Cold Roofing/ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Building Envelope	Improved Dust Sealing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Building Envelope	Cold Roofing/ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309		Ventilation																		
309	Ventilation	Variable Speed Drive Control, 10 HP	18,762,065	42,837,261	72,438,918	101,609,977	130,409,12	159,283,189	188,304,93	218,033,598	248,760,83	275,874,25	305,27,384	335,08,263	364,99,306	394,327,89	424,181,29	453,90,572	483,61,858	513,33,144
309	Ventilation	Variable Speed Drive Control, 5 HP	18,762,065	42,837,261	72,438,918	101,609,977	130,409,12	159,283,189	188,304,93	218,033,598	248,760,83	275,874,25	305,27,384	335,08,263	364,99,306	394,327,89	424,181,29	453,90,572	483,61,858	513,33,144
309	Ventilation	Variable Speed Drive Control, 40 HP	18,762,065	42,837,261	72,438,918	101,609,977	130,409,12	159,283,189	188,304,93	218,033,598	248,760,83	275,874,25	305,27,384	335,08,263	364,99,306	394,327,89	424,181,29	453,90,572	483,61,858	513,33,144
309	Ventilation	Engineered CVR Hood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Ventilation	Exhaust Fan (HVLS)	1,82,39,782	4,51,029	8,46,255	13,229,008	19,25,185	26,27,085	34,48,572	42,92,773	51,63,991	59,93,306	68,58,455	77,414,447	86,262,291	94,97,085	103,81,897	112,52,612	121,00,475	129,30,901
309	Ventilation	Exhaust Fan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Ventilation	High Speed Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309	Ventilation	High Volume Low Speed Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309		Water Cooling/Chillers																		
309	Space cooling/Space Cooling - Chillers	Commercial EMS	11,18,303	25,382,177	42,346,247	59,822,844	77,101,94	95,07,674	113,23,466	130,33,669	148,42,028	165,43,194	179,87,063	199,46,118	218,34,282	231,33,731	249,73,665	265,94,724	281,75,843	297,70,833
309	Space cooling/Space Cooling - Chillers	Setback with Electric Heat	2,006,644	4,621,299	31,067,765	43,884,229	56,54,704	69,71,199	83,07,711	94,88,158	108,85,657	121,75,438	134,48,661	147,34,113	160,24,562	173,14,013	186,04,462	198,94,911	211,85,360	224,75,809
309	Space cooling/Space Cooling - Chillers	Energy Efficient Windows-ROB	0.82,954,28	20,34,549	33,44,424	47,12,021	60,87,863	75,04,715	89,37,907	102,08,768	114,78,737	128,86,661	141,97,489	157,43,815	172,37,755	187,31,695	202,25,635	217,19,575	232,13,515	247,07,455
309	Space cooling/Space Cooling - Chillers	Web Enabled EMS	10,26,227	24,33,652	40,67,064	57,36,103	73,33,533	91,17,213	108,54,545	124,02,535	139,44,484	156,72,044	173,44,405	191,27,009	209,35,609	227,18,213	245,00,819	262,83,425	280,66,031	300,71,223
309	Space cooling/Space Cooling - Chillers	EMS Optimization / Continuous Commissioning	0.79,18,827	1,79,61,25	2,99,															

Cumulative KW Savings

4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

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4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

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CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Energy/Demand/# Measures/Participants)

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4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

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2017 Integrated Resource Plan

4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

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INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Energy/Demand/# Measures/Participants)

#	Cost Type/Full Price	End Use	Measure Name
360			Area & Office Equipment
360			HVAC Controls
366	Space cooling	1 Space Cooling - Chillers	EMS Pump Scheduling Controls
366	Space cooling	2 Space Cooling - Chillers	Commercial EMS
366	Space cooling	3 Space Cooling - Chillers	Backhaul with Electric Heat
370	Space cooling	1 Space Cooling - Chillers	Web Enabled EMS
364	Space cooling	1 Space Cooling - Chillers	EMS Optimization / Continuous Commissioning
371	Space cooling	1 Space Cooling - Chillers	Retroscommissioning
362	Space cooling	1 HVAC Controls	Programmable Thermostats
362	Space cooling	2 Space Cooling - Chillers	HVAC Occupancy Sensors
367	Space cooling	1 HVAC Controls	
380			Area Cooling, Heating and Split AC
363	Space Cooling	1 Space Cooling - Chillers	Commercial EMS
366	Space Cooling	2 Space Cooling - Chillers	Backhaul with Electric Heat
360	Space Cooling	2 Retrofit	Energy Efficient Windows-ROB
370	Space Cooling	1 Space Cooling - Chillers	Web Enabled EMS
364	Space Cooling	1 Space Cooling - Chillers	EMS Optimization / Continuous Commissioning
366	Space Cooling	1 Space Cooling - Chillers	Heat Insulation
366	Space Cooling	1 Space Cooling - Chillers	Integrated Building Design
371	Space Cooling	1 Space Cooling - Chillers	Retroscommissioning
360	Space Cooling	2 Retrofit	Energy Efficient Windows- Early Replacement
391	Space Cooling	1 Space Cooling - Unitary and Split AC	DX Condenser Coil Cleaning
366	Space Cooling	2 Space Cooling - Chillers	EMS Pump Scheduling Controls
387	Space Cooling	1 Space Cooling - Chillers	Water Loop Heat Pump / WLPUR - Cooling-ROB
384	Space Cooling	1 Envelope	Ceiling Insulation
392	Space Cooling	2 Space Cooling - Unitary and Split AC	Room AC-ROB
397	Space Cooling	1 Space Cooling - Chillers	Roof Insulation
398	Space Cooling	1 Space Cooling - Unitary and Split AC	Room AC-ER
321	Space Cooling	1 Envelope	Window Insulation
396	Space Cooling	1 HVAC Controls	Window Improvements
392	Space Cooling	2 HVAC Controls	Programmable Thermostats
392	Space Cooling	2 Space Cooling - Unitary and Split AC	AC 20K+ / 700 K-ER
384	Space Cooling	2 Space Cooling - Unitary and Split AC	Ductless (min split) - Cooling-ROB
394	Space Cooling	1 Space Cooling - Unitary and Split AC	AC Source Heat Pump - Cooling-ROB
394	Space Cooling	1 Space Cooling - Unitary and Split AC	Ground Source Heat Pump - Cooling-ER
366	Space Cooling	1 Space Cooling - Chillers	Ductless (min split) - Cooling-ER
366	Space Cooling	1 HVAC Controls	HVAC Occupancy Sensors
397	Space Cooling	2 Envelope	Cool Roofing-ROB
387	Space Cooling	1 HVAC Controls	Roofs
398	Space Cooling	1 Envelope	Improved Duct Sealing
398	Space Cooling	1 Space Cooling - Unitary and Split AC	Ground Source Heat Pump - Cooling-ROB
390	Space Cooling	1 Space Cooling - Unitary and Split AC	AC 20K+ / 700 K-ER
396	Space Cooling	1 Space Cooling - Unitary and Split AC	Ground Source Heat Pump - Cooling-ER
396	Space Cooling	1 Space Cooling - Unitary and Split AC	Water Loop Heat Pump / WLPUR - Cooling-ER
366	Space Cooling	1 Space Cooling - Unitary and Split AC	Water Loop Heat Pump / WLPUR - Cooling-ER
310	Space Cooling	2 Envelope	Cool Roofing-ER
400			Cooling
500			Lighting
505	Lighting	2 Lighting Controls	Lighting Power Density - Parking Garage ROB
544	Lighting	1 Lighting Controls	Lighting Power Density - Parking Garage-ER
544	Lighting	1 Lighting Controls	Lighting Power Density - Exterior-ROB
561	Lighting	1 Lighting Controls	Lighting Power Density - Exterior-ER
541	Lighting	1 Lighting Controls	Lighting Power Density - Interior-ROB
513	Lighting	1 Lighting	LED Low Bay Lighting
517	Lighting	1 Lighting	HD Fixture Upgrade - Pulse Start Metal Halide
518	Lighting	1 Lighting	High Intensity Fluorescent Fixtures Replacing HPS
600	Lighting	1 Lighting	LED Exit Sign
528	Lighting	1 Lighting	LED Downlight
591	Lighting	1 Lighting	Lamp & Ballast Retrofit (APF's Replacing T12)
566	Lighting	1 Lighting Controls	Stairwell B-Level Control
597	Lighting	1 Lighting	Long Day Lighting Delay
597	Lighting	1 Lighting	Occupancy Sensor
543	Lighting	1 Lighting	Lamp & Ballast Retrofit (Low Wattage HPS's Replacing T12)
543	Lighting	1 Lighting	LED Specialty replacing incandescent
541	Lighting	1 Lighting Controls	Exterior Bi-level Controls
544	Lighting	1 Lighting	LED Screen in Replacing Incandescent
528	Lighting	1 Lighting	Interior induction Lighting-ROB
553	Lighting	1 Lighting	Daylight Sensor Controls
599	Lighting	1 Lighting Controls	Central Lighting Control
599	Lighting	1 Lighting	Pushy LED Lighting
501	Lighting	1 Lighting	Interior Induction Lighting-ER
537	Lighting	1 Lighting	T8 HP replacing T12
506	Lighting	1 Lighting	LED Grow Light
540	Lighting	1 Lighting	Lamp & Ballast Retrofit (APF's Low Wattage HPS's Replacing Standard T8)
540	Lighting	1 Lighting	Lamp & Ballast Retrofit (APF's Replacing Standard T8)
536	Lighting	1 Lighting	LED Tube Lighting
560	Lighting	1 Lighting Controls	Switching Controls for Multi-level Lighting (Neim-HD)
549	Lighting	1 Lighting	Occupancy Sensor & Daylight Sensor
512	Lighting	1 Lighting	LED High Bay Lighting
508	Lighting	1 Lighting	Garage HD Replacement with LED
507	Lighting	1 Lighting	Exterior HD replacement with LED
502	Lighting	1 Lighting Controls	Garage Bi-level Controls
542	Lighting	1 Lighting	Interior Nonballast Compact LED Fixtures
542	Lighting	1 Lighting	LED Specialty replacing CFL
544	Lighting	2 Lighting	Exterior Linear Fluorescent-ROB
518	Lighting	1 Lighting	Burnt-out Signs to LED
514	Lighting	1 Lighting	Light Tube
528	Lighting	1 Lighting	LED Screen in Replacing CFL
504	Lighting	1 Lighting	42W 8 lamp Hi Bay CFL
502	Lighting	1 Lighting	Exterior Linear Fluorescent-ER
529	Lighting	1 Lighting	LED Toolbox
600			Refrigeration
614	Process cooling	2 Refrigeration	Planting Head Pressure Control
626	Process cooling	2 Refrigeration	T/E - Evaporator Fan Motors
626	Process cooling	2 Refrigeration	Door Gaskets - Cooler and Freezer
626	Process cooling	2 Refrigeration	ECM case fan motors
626	Process cooling	2 Refrigeration	Strip Curtains
626	Process cooling	2 Refrigeration	ENERGY STAR Commercial Glass Door Freezers
630	Process cooling	2 Refrigeration	Lighting - High Speed Cools - between freezer and cooler
602	Process cooling	2 Refrigeration	Refrigerated Case Cools
612	Process cooling	2 Refrigeration	Door Heater Controls
611	Process cooling	2 Refrigeration	Door Energy Doors
624	Process cooling	2 Refrigeration	Efficient Refrigeration Condenser
600	Process cooling	2 Refrigeration	ENERGY STAR Commercial Solid Door Freezers

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[illegible]

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Energy/Demand/# Measures/Participants)

				Year by Year Energy Savings (kW)																							
#	Cost Type	End Use	Measure Name																								
				2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037					
100	Computers & Office Equipment	Computers & Office Equipment	Computers & Office Equipment including computers, monitors, copiers, multi-function machines-ROB	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	3				
102	Computers & Office Equipment	Office Equipment	PC Network Energy Management Controls replacing no central control	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	0				
107	Computers & Office Equipment	Computers, Office Equipment	High Efficiency CPMAC Unit - ROB	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0				
109	Computers & Office Equipment	Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-Early	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	2				
111	Computers & Office Equipment	Computers, Office Equipment	High Efficiency CPMAC Unit - Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
140	Computers & Office Equipment	Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
148	Computers & Office Equipment	Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
150	Computers & Office Equipment	Office Equipment	Smart Plug also called	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
156	Computers & Office Equipment	Computers, Office Equipment	Energy Star UPS-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
156	Computers & Office Equipment	Computers, Office Equipment	Energy Star UPS- Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
160	Water Heating	Water Heating	Low Flow Faucet Aerator	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	1				
168	Water Heating	Water Heating	Tank Insulation (seelec)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0				
171	Water Heating	Water Heating	Process Cooling Condenser Heat Recovery	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0				
181	Water Heating	Water Heating	Heat Pump Water Heater-ROB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0				
183	Water Heating	Water Heating	Efficient Hot Water Pump-ROB	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0				
184	Water Heating	Water Heating	HVAC Condenser Heat Recovery Water Heating	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0				
179	Water Heating	Water Heating	Heat Pump Water Heater Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
178	Water Heating	Water Heating	Efficient Hot Water Pump-Early Replacement	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0				
147	Water Heating	Water Heating	Hot Water (JWH) Pipe Insulation	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0				
146	Water Heating	Water Heating	Low Flow Showerhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
194	Water Heating	Water Heating	Heat Pump Storage Water Heating-ROB	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0				
170	Water Heating	Water Heating	ECM Circulator Pumps	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0				
152	Water Heating	Water Heating	Electric Tankless Water Heater-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
169	Water Heating	Water Heating	Chain Water Heat Recovery Water Heater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
177	Water Heating	Water Heating	Heat Pump Storage Water Heating-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
177	Water Heating	Water Heating	Electric Tankless Water Heater-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
300	Other	Envelope	Energy Efficient Windows-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
301	Other	Space Cooling - Chiller	Wall Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
301	Other	Space Cooling - Chiller	Integrated Building Design	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
301	Other	Envelope	Energy Efficient Windows-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
301	Other	Envelope	Cellulose Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
301	Other	Space Cooling - Chiller	Roof Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
301	Other	Space Cooling - Chiller	Window Improvements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
301	Other	Envelope	Cool Roofing-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
301	Other	Envelope	Improved Duct Sealing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
310	Other	Envelope	Cool Roofing-ER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
330	Ventilation	Ventilation	Variable Speed Drive Control, 15 HP	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	7				
332	Ventilation	Ventilation	Variable Speed Drive Control, 5 HP	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	7				
332	Ventilation	Ventilation	Variable Speed Drive Control, 40 HP	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	7				
333	Ventilation	Ventilation	Engineered CRV Hood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
333	Ventilation	Ventilation	Denitrification Unit (DNU)	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	0				
334	Ventilation	Ventilation	Economizer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
334	Ventilation	Ventilation	High Speed Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
331	Ventilation	Ventilation	High Volume Low Speed Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
331	Ventilation	Ventilation	Variable Speed Drive Control, 15 HP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
331	Ventilation	Ventilation	Variable Speed Drive Control, 5 HP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
331	Ventilation	Ventilation	Variable Speed Drive Control, 40 HP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
340	Space Cooling - Chiller	Space Cooling - Chiller	Commercial EMS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
340	Space Cooling - Chiller	Space Cooling - Chiller	Refrigerant with Electric Heat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
340	Space Cooling - Chiller	Envelope	Energy Efficient Windows-ROB	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0				
370	Space Cooling - Chiller	Space Cooling - Chiller	Web Enabled EMS	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-6	-1				
344	Space Cooling - Chiller	Space Cooling - Chiller	EMS Optimization - Continuous Commissioning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
345	Space Cooling - Chiller	Space Cooling - Chiller	Chiller Tune Up	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0				
351	Space Cooling - Chiller	Space Cooling - Chiller	Whisper Chiller Water Pump	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0				
346	Space Cooling - Chiller	Space Cooling - Chiller	Water Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
347	Space Cooling - Chiller	Space Cooling - Chiller	Chiller Hot Water Reset	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
348	Space Cooling - Chiller	Space Cooling - Chiller	Water Side Economizer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
348	Space Cooling - Chiller	Space Cooling - Chiller	Water-Cooled Centrifugal Chiller > 300 ton-ROB	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0				
348	Space Cooling - Chiller	Space Cooling - Chiller	Water-Cooled Screw Chiller > 300 ton-ROB	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0				
348	Space Cooling - Chiller	Space Cooling - Chiller	VAV System Conversion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
351	Space Cooling - Chiller	Space Cooling - Chiller	Integrated Building Design	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	7				
348	Space Cooling - Chiller	Space Cooling - Chiller	Water Ball Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
371	Space Cooling - Chiller	Space Cooling - Chiller	Refrigerant Commissioning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
341	Space Cooling - Chiller	Space Cooling - Chiller	Air-Cooled Rack Chiller-ROB	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	1				
342	Space Cooling - Chiller	Space Cooling - Chiller	Air-Cooled Screw Chiller-ROB	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	1				
309	Space Cooling - Chiller	Envelope	Energy Efficient Windows-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
309	Space Cooling - Chiller	Space Cooling - Chiller	EMS Pump Scheduling Controls	0																							

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INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Energy/Demand/# Measures/Participants)

#	Cost Type HVAC Zinc	End Use	Measure Name	Year by Year Energy Savings (kW)																		
				2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
100	1	Process Cooling & Refrig.	Compressors & Office Equipment																			
1040	1	Process Cooling & Refrig.	Process Cooling & Refrigeration																			
1040	2	Process Cooling & Refrig.	Evaporator Motor Reduction - ROB	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	1
1040	3	Process Cooling & Refrig.	Evaporator Motor Reduction - Early Replacement	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	1
1040	4	Process Cooling & Refrig.	Boiling Head Pressure Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1040	5	Process Cooling & Refrig.	Electric Supply System Improvements	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	2
1040	6	Process Cooling & Refrig.	Sensors & Controls	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	1
1040	7	Process Cooling & Refrig.	Improved Refrigeration	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	5
1040	8	Process Cooling & Refrig.	Refrigerant charging reduction	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	1
1040	9	Process Cooling & Refrig.	Energy Information System	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0
1040	10	Process Cooling & Refrig.	Evaporator Fan Motor Controls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1050	1	Process Heating	Process Heating																			
1050	2	Process Heating	Electric Supply System Improvements	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	4
1050	3	Process Heating	Sensors & Controls	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	3
1050	4	Process Heating	Industrial Process WWTP Dissolved Oxygen (DO) Aeration	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	0
1050	5	Process Heating	Energy Information System	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	1
				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1060	1	Industrial Other	Industrial Other																			
1060	2	Industrial Other	Blanket Insulation - Hg. Modelling (plastics)	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	2
1060	3	Industrial Other	Pilot Laser Resizing, CO2 laser (auto industry) - ROB	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	1
1060	4	Industrial Other	3 Phase High Eff. Battery Charger - ROB	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	5
1060	5	Industrial Other	Hybrid Injection Molding Machine - ROB	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	1
1060	6	Industrial Other	High Efficiency Welders - ROB	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0
1070	1	Industrial Other	On-Demand ventilation control for Dust and Fume Collection Systems	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1070	2	Industrial Other	Paint Drying Insulation (plastics)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1070	3	Industrial Other	Industrial Air Curtains	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1070	4	Industrial Other	Low Fume Hood Ventilation Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1070	5	Industrial Other	Pilot Laser Resizing, CO2 laser (auto industry) - Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1070	6	Industrial Other	3 Phase High Eff. Battery Charger - Early Replacement	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	4
1070	7	Industrial Other	Injection Molding Machine - efficient (plastics)	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	3
1070	8	Industrial Other	High Efficiency Welders - Early Replacement	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	0
1070	9	Industrial Other	High Speed Turbo Blower for Washwater	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	1
1070	10	Industrial Other	Hybrid Injection Molding Machine - Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	1	Industrial Other	Process Fan Ventilation Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	2	Agriculture	Run Thermal Controller	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	3	Agriculture	Other Industrial - Low-Energy Livestock Water ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	4	Agriculture	Milk Pre-Conditioner Heat Exchanger	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	5	Agriculture	Low Pressure Sprinkler Nozzles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	6	Agriculture	VFD for Process Fans - Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	7	Agriculture	Slurry Storage Temperature and Moisture Management Controller	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	8	Agriculture	VFD for Process Pumps - Agriculture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	9	Agriculture	Variable Speed Drive with Heat Exchanger, Milk New	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	10	Agriculture	Variable Speed Drive for Dairy Vacuum Pumps	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1080	11	Agriculture	Other Industrial - Low-Energy Livestock Water - Early Replacement	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0
1080	12	Agriculture	Greenhouse Environmental Controls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	13	Agriculture	VFD for Process Pumps - Injection	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
1080	14	Agriculture	Other Industrial - Dairy Refrigerator Tune-Up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	15	Agriculture	Variable Speed Drive with Heat Exchanger, Milk	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
1080	16	Agriculture	Refrigerator Compressor with Heat Exchanger for Dairy Refrigeration	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0
1080	17	Agriculture		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0
Totals (*1000)																						

4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Energy/Demand/# Measures/Participants)

				Cumulative Energy Savings (kWh)																	
#	Cost Type HPI/El Zinc	End Use	Measure Name	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
100	Computers & Office Equipment	Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-RCB	118,794	237,588	356,382	475,176	475,176	475,176	475,176	475,176	475,176	475,176	475,176	475,176	475,176	475,176	475,176	475,176	475,176	475,176
102	Computers & Office Equipment	Office Equipment	PC Network Energy Management Controls replacing no central control	47,102	94,203	141,305	188,406	188,406	188,406	188,406	188,406	188,406	188,406	188,406	188,406	188,406	188,406	188,406	188,406	188,406	188,406
107	Computers & Office Equipment	Computers, Office Equipment	High Efficiency CPUAC Unit - RCB	5,800	11,718	17,528	23,338	29,148	34,958	40,768	46,578	52,388	58,198	64,008	69,818	75,628	81,438	87,248	93,058	98,868	104,678
109	Computers & Office Equipment	Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-Early	381,548	763,096	1,144,644	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791	1,527,791
111	Computers & Office Equipment	Computers, Office Equipment	High Efficiency CPUAC Unit - Early Replacement	2,204	4,408	6,612	8,816	11,019	13,223	15,427	17,631	19,835	22,039	24,243	26,447	28,651	30,855	33,059	35,263	37,467	39,671
101	Computers & Office Equipment	Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator-RCB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	Computers & Office Equipment	Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	Computers & Office Equipment	Computers, Office Equipment	Energy Star UPS-RCB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	Computers & Office Equipment	Computers, Office Equipment	Energy Star UPS-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	Water Heating	Water Heating	Water Heating	104,747	209,494	314,241	418,988	523,735	628,482	733,229	837,976	942,722	1,047,469	1,152,216	1,256,963	1,361,710	1,466,457	1,571,204	1,675,951	1,780,698	1,885,445
168	Water Heating	Water Heating	Low Flow Faucet Aerator	9,813	19,626	29,439	39,252	49,064	58,877	68,690	78,503	88,316	98,129	107,942	117,755	127,568	137,381	147,194	157,007	166,820	176,633
171	Water Heating	Water Heating	Process Cooling Condenser Heat Recovery	10,506	20,012	30,019	40,026	50,032	60,039	70,045	80,051	90,058	100,064	110,071	120,077	130,084	140,090	150,096	160,103	170,109	180,116
169	Water Heating	Water Heating	Heat Pump Water Heater-RCB	9,738	19,476	29,214	38,952	48,690	58,428	68,166	77,904	87,642	97,380	107,118	116,856	126,594	136,332	146,070	155,808	165,546	175,284
163	Water Heating	Water Heating	Efficient Hot Water Pump-RCB	5,200	10,391	15,582	21,182	26,478	31,774	37,069	42,365	47,661	52,957	58,253	63,549	68,845	74,141	79,437	84,733	89,929	95,225
164	Water Heating	Water Heating	HVAC Condenser Water Recovery Water Heating	4,221	8,443	12,664	16,885	21,107	25,329	29,551	33,773	37,995	42,217	46,439	50,661	54,883	59,105	63,327	67,549	71,771	75,993
170	Water Heating	Water Heating	Heat Pump Water Heater-Early Replacement	2,474	4,948	7,422	9,897	12,371	14,846	17,319	19,794	22,268	24,742	27,216	29,690	32,164	34,638	37,112	39,586	42,060	44,534
178	Water Heating	Water Heating	Efficient Hot Water Pump-Early Replacement	4,692	9,384	14,076	18,768	23,460	28,152	32,844	37,536	42,228	46,920	51,612	56,304	60,996	65,688	70,380	75,072	79,764	84,456
147	Water Heating	Water Heating	Hot Water (DHW) Pipe Insulation	5,300	10,600	15,900	21,200	26,500	31,800	37,100	42,400	47,700	53,000	58,300	63,600	68,900	74,200	79,500	84,800	90,100	95,400
166	Water Heating	Water Heating	Low Flow Showerhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154	Water Heating	Water Heating	Heat Pump Storage Water Heating-RCB	7,852	15,704	23,556	31,408	39,260	47,112	54,964	62,816	70,668	78,520	86,372	94,224	102,076	109,928	117,780	125,632	133,484	141,336
160	Water Heating	Water Heating	RCR Condenser Pump	5,482	10,964	16,446	21,928	27,390	32,872	38,354	43,836	49,318	54,800	60,282	65,764	71,246	76,728	82,210	87,692	93,174	98,656
162	Water Heating	Water Heating	Electric Tankless Water Heater-RCB	4,864	9,728	14,592	19,456	24,320	29,184	34,048	38,912	43,776	48,640	53,504	58,368	63,232	68,096	72,960	77,824	82,688	87,552
168	Water Heating	Water Heating	Chimney Water Heater Recovery Water Heater	70	140	210	280	350	420	490	560	630	700	770	840	910	980	1,050	1,120	1,190	1,260
168	Water Heating	Water Heating	Heat Pump Storage Water Heating-Early Replacement	1,423	2,846	4,269	5,692	7,115	8,538	9,961	11,384	12,807	14,230	15,653	17,076	18,499	19,922	21,345	22,768	24,191	25,614
177	Water Heating	Water Heating	Electric Tankless Water Heater-Early Replacement	487	973	1,460	1,946	2,433	2,919	3,406	3,892	4,379	4,865	5,352	5,838	6,325	6,811	7,298	7,784	8,271	8,757
300	Other	Envelope	Energy Efficient Windows-RCB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
306	Other	Space Cooling - Chillers	Wall Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
301	Other	Space Cooling - Chillers	Integrated Building Design	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
308	Other	Envelope	Energy Efficient Windows-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
304	Other	Envelope	Ceiling Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
307	Other	Space Cooling - Chillers	Roof Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
305	Other	Space Cooling - Chillers	Window Improvements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
303	Other	Envelope	Cool Roofing-RCB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
308	Other	Envelope	Improved Duct Sealing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
310	Other	Envelope	Cool Roofing-ER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
320	Ventilation	Ventilation	Ventilation	277,730	555,460	833,190	1,110,920	1,388,650	1,666,380	1,944,110	2,221,840	2,499,570	2,777,300	3,055,030	3,332,760	3,610,490	3,888,220	4,165,950	4,443,680	4,721,410	5,000,000
322	Ventilation	Ventilation	Variable Speed Drive Control - 15 HP	277,730	555,460	833,190	1,110,920	1,388,650	1,666,380	1,944,110	2,221,840	2,499,570	2,777,300	3,055,030	3,332,760	3,610,490	3,888,220	4,165,950	4,443,680	4,721,410	5,000,000
324	Ventilation	Ventilation	Variable Speed Drive Control - 40 HP	277,730	555,460	833,190	1,110,920	1,388,650	1,666,380	1,944,110	2,221,840	2,499,570	2,777,300	3,055,030	3,332,760	3,610,490	3,888,220	4,165,950	4,443,680	4,721,410	5,000,000
333	Ventilation	Ventilation	Engineered CVR Hood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
321	Ventilation	Ventilation	Identification Fan (DLS)	107,802	215,604	323,406	431,208	539,010	646,812	754,614	862,416	970,218	1,078,020	1,185,822	1,293,624	1,401,426	1,509,228	1,617,030	1,724,832	1,832,634	1,940,436
321	Ventilation	Ventilation	Economizer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
330	Ventilation	Ventilation	High Speed Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
331	Ventilation	Ventilation	High Volume Low Speed Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
340	Space cooling	Space Cooling - Chillers	Space Cooling - Chillers	38,880	77,760	116,640	155,520	194,400	233,280	272,160	311,040	349,920	388,800	427,680	466,560	505,440	544,320	583,200	622,080	660,960	699,840
360	Space cooling	Space Cooling - Chillers	Commercial EMS	17,885	35,770	53,655	71,540	89,425	107,310	125,195	143,080	160,965	178,850	196,735	214,620	232,505	250,390	268,275	286,160	304,045	321,930
360	Space cooling	Space Cooling - Chillers	Setback with Electric Heat	17,885	35,770	53,655	71,540	89,425	107,310	125,195	143,080	160,965	178,850	196,735	214,620	232,505	250,390	268,275	286,160	304,045	321,930
370	Space cooling	Space Cooling - Chillers	Energy Efficient Windows-RCB	35,531	71,062	106,593	142,124	177,655	213,186	248,717	284,248	319,779	355,310	390,841	426,372	461,903	497,434	532,965	568,496	604,027	639,558
370	Space cooling	Space Cooling - Chillers	Wall Envelope EMS	37,081	74,162	111,243	148,324	185,405	222,486	259,567	296,648	333,729	370,810	407,891	444,972	482,053	519,134	556,215	593,296	630,377	667,458
364	Space cooling	Space Cooling - Chillers	EMS Optimization/Continuous Commissioning	1,696	3,392	5,088	6,784	8,480	10,176	11,872	13,568	15,264	16,960	18,656	20,352	22,048	23,744	25,440	27,136	28,832	30,528
360	Space cooling	Space Cooling - Chillers	Chiller Tune Up	3,244	6,488	9,732	12,976	16,220	19,464	22,708	25,952	29,196	32,440	35,684	38,928	42,172	45,416	48,660	51,904	55,148	58,392
341	Space cooling	Space Cooling - Chillers	Efficient Chiller Water Pump	2,675	5,350	8,025	10,700	13,375	16,050	18,725	21,400	24,075	26,750	29,425	32,100	34,775	37,450	40,125	42,800	45,475	48,150
342	Space cooling	Space Cooling - Chillers	Water Ins																		

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INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Energy/Demand/# Measures/Participants)

Item	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	
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4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Energy/Demand/# Measures/Participants)

#	Cost Type Initial	End Use	Measure Name	Cumulative Energy Savings (kWh)																					
				2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
100			Computers & Office Equipment																						
700			Compressed Air																						
900			Space Heating																						
901	Space Heating	1 Space Cooling - Chillers	Commercial EMS	85,895	171,810	267,889	343,820	429,775	515,731	601,696	687,641	773,596	859,551	945,506	1,031,461	1,117,416	1,203,371	1,289,326	1,375,281	1,461,236	1,547,191	1,633,146	1,719,101	1,805,056	1,891,011
902	Space Heating	1 Space Cooling - Chillers	Sealback with Electric Heat	37,821	75,643	113,764	151,685	189,607	227,528	265,449	303,371	341,292	341,292	341,292	341,292	341,292	341,292	341,292	341,292	341,292	341,292	341,292	341,292	341,292	341,292
903	Space Heating	2 Envelope	Energy Efficient Windows-RCB	67,548	135,096	202,644	270,192	337,740	405,275	472,831	540,384	607,932	675,480	743,028	810,576	878,124	945,672	1,013,220	1,080,768	1,148,316	1,215,864	1,283,412	1,350,960	1,418,508	1,486,056
904	Space Heating	1 Space Cooling - Chillers	Web Enabled EMS	62,428	124,856	187,270	250,707	313,135	375,563	437,991	500,419	562,847	625,275	687,703	750,131	812,559	874,987	937,415	999,843	1,062,271	1,124,699	1,187,127	1,249,555	1,311,983	1,374,411
905	Space Heating	1 Space Cooling - Chillers	EMS Optimization - Continuous Commissioning	3,681	7,362	11,042	14,723	18,404	22,085	25,766	29,447	33,127	36,808	40,489	44,170	47,851	51,531	55,212	58,893	62,574	66,255	69,936	73,617	77,298	80,979
906	Space Heating	1 Space Cooling - Chillers	Wall Insulation	11,736	23,471	35,207	46,943	58,679	70,415	82,151	93,887	105,623	117,359	129,095	140,831	152,567	164,303	176,039	187,775	199,511	211,247	222,983	234,719	246,455	258,191
907	Space Heating	1 Space Heating	VFD Pump	19,750	39,500	59,250	79,000	98,750	118,500	138,250	158,000	177,750	197,500	217,250	237,000	256,750	276,500	296,250	316,000	335,750	355,500	375,250	395,000	414,750	434,500
908	Space Heating	1 Space Cooling - Chillers	Integrated Building Design	339,853	719,506	1,079,859	1,439,612	1,799,365	2,159,118	2,518,871	2,878,624	3,238,377	3,598,130	3,957,883	4,317,636	4,677,389	5,037,142	5,396,895	5,756,648	6,116,401	6,476,154	6,835,907	7,195,660	7,555,413	7,915,166
909	Space Heating	1 Space Cooling - Chillers	Recommissioning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
990	Space Heating	1 Envelope	Energy Efficient Windows Early Replacement	43,440	86,880	130,320	173,760	217,200	260,640	304,080	347,520	390,960	434,400	477,840	521,280	564,720	608,160	651,600	695,040	738,480	781,920	825,360	868,800	912,240	955,680
991	Space Heating	1 Space Cooling - Chillers	EMS Pump Scheduling Controls	4,462	8,924	13,386	17,848	22,310	26,772	31,234	35,696	40,158	44,620	49,082	53,544	58,006	62,468	66,930	71,392	75,854	80,316	84,778	89,240	93,702	98,164
992	Space Heating	1 Envelope	Ceiling Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
993	Space Heating	2 Space Heating	Ground Source Heat Pump - Heating/RCB	163,241	326,482	489,723	652,964	816,205	979,446	1,142,687	1,305,928	1,469,169	1,632,410	1,795,651	1,958,892	2,122,133	2,285,374	2,448,615	2,611,856	2,775,097	2,938,338	3,101,579	3,264,820	3,428,061	3,591,302
994	Space Heating	1 Space Cooling - Chillers	Roof Insulation	1,761	3,522	5,283	7,044	8,805	10,566	12,327	14,088	15,849	17,610	19,371	21,132	22,893	24,654	26,415	28,176	29,937	31,698	33,459	35,220	36,981	38,742
995	Space Heating	2 Space Heating	Water Loop Heat Pump (WLHP) - Heating	3,381	6,762	10,143	13,564	16,985	20,396	23,737	27,128	30,519	33,910	37,301	40,693	44,084	47,475	50,866	54,257	57,648	61,039	64,430	67,821	71,212	74,603
996	Space Heating	1 Envelope	Desiccant Humidity Exchangers (DXHE) - Heating	86,055	172,110	258,165	344,220	430,275	516,330	602,385	688,440	774,495	860,550	946,605	1,032,660	1,118,715	1,204,770	1,290,825	1,376,880	1,462,935	1,548,990	1,635,045	1,721,100	1,807,155	1,893,210
997	Space Heating	1 Envelope	Economizer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
998	Space Heating	1 Space Cooling - Chillers	Window Improvements	329	657	986	1,314	1,643	1,971	2,300	2,628	2,957	3,285	3,614	3,942	4,271	4,600	4,928	5,257	5,586	5,915	6,244	6,573	6,902	7,231
999	Space Heating	1 HVAC Controls	Programmable Thermostats	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	Space Heating	1 Space Heating	ECM motors on furnaces	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1001	Space Heating	2 Space Heating	Air Source Heat Pump - Heating/RCB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1002	Space Heating	1 Space Heating	Ground Source Heat Pump - Heating/ER	40,842	81,684	122,526	163,368	204,210	245,052	285,894	326,736	367,578	408,420	449,262	490,104	530,946	571,788	612,630	653,472	694,314	735,156	775,998	816,840	857,682	898,524
1003	Space Heating	1 Space Cooling - Chillers	HVAC Occupancy Sensors	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1004	Space Heating	2 Envelope	Cool Roofing/RCB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1005	Space Heating	1 HVAC Controls	Staging	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1006	Space Heating	1 Envelope	Improved Dust Sealing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1007	Space Heating	2 Space Heating	Boilers (incl. cond.) - Heating	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1008	Space Heating	1 Space Heating	Ductless (incl. cond.) - Heating/ER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009	Space Heating	1 Space Heating	Water Loop Heat Pump (WLHP) - Heating/ER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1010	Space Heating	1 Space Heating	Air Source Heat Pump - Heating/ER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1011	Space Heating	1 Envelope	Cool Roofing/ER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
900			Other																						
910	Other	1 Other	Engine Block Heater Timer	9,084	18,168	27,252	36,336	45,420	54,504	63,588	72,672	81,756	90,840	99,924	109,008	118,092	127,176	136,260	145,344	154,428	163,512	172,596	181,680	190,764	199,848
911	Other	1 Other	Parting Charge Exhaust Fan CO Control	11,482	22,964	34,446	45,928	57,410	68,892	80,374	91,856	103,338	114,820	126,302	137,784	149,266	160,748	172,230	183,712	195,194	206,676	218,158	229,640	241,122	252,604
912	Other	1 Other	NEMA Premium Transformer, three-phase-RCB	1,380	2,760	4,140	5,520	6,900	8,280	9,660	11,040	12,420	13,800	15,180	16,560	17,940	19,320	20,700	22,080	23,460	24,840	26,220	27,600	28,980	30,360
913	Other	1 Other	High Efficiency Transformer, three-phase-RCB	1,349	2,698	4,047	5,396	6,745	8,094	9,443	10,792	12,141	13,490	14,839	16,188	17,537	18,886	20,235	21,584	22,933	24,282	25,631	26,980	28,329	29,678
914	Other	1 Other	High Efficiency Transformer, single-phase-RCB	1,330	2,660	4,000	5,330	6,660	7,990	9,320	10,650	11,980	13,310	14,640	15,970	17,300	18,630	19,960	21,290	22,620	23,950	25,280	26,610	27,940	29,270
915	Other	1 Other	NEMA Premium Transformer, single-phase-RCB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
916	Other	1 Other	High Efficiency Transformer, three-phase-ER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
917	Other	1 Other	High Efficiency Transformer, three-phase-ER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
918	Other	1 Other	High Efficiency Transformer, single-phase-ER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
919	Other	1 Other	NEMA Premium Transformer, single-phase-ER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
920	Other	1 Other	Softstart Slow and Load Motor Controls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000	Machine Drive	Machine Drive	Air-Exhausting Air Moisture	312,542	625,084	937,626	1,250,167	1,562,710	1,875,252	2,187,794	2,500,336	2,812,878	3,125,420	3,437,962	3,750,504	4,063,046									

4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

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#	Cost Type =Full =Zero	End Use	Measure Name	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
100		Computers & Office Equipment	Commercial & Office Equipment																				
102	Computers &	2)Appliances, Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-ROB	18	19	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
104	Computers &	1)Office Equipment	Pc Network Energy Management Controls, reducing to central control	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
107	Computers &	2)Appliances, Computers, Office Equipment	High Efficiency (CRAC Unit - ROB)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
108	Computers &	1)Appliances, Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-Early	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
111	Computers &	2)Appliances, Computers, Office Equipment	High Efficiency (CRAC Unit - Early Replacement)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	Computers &	2)Appliances, Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	Computers &	1)Appliances, Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	Computers &	1)Office Equipment	Smart Plug plug outlet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	Computers &	2)Appliances, Computers, Office Equipment	Energy Star UPS-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	Computers &	1)Appliances, Computers, Office Equipment	Energy Star UPS-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150			Water Heating																				
165	Water Heating	1)Water Heating	Low Flow Faucet Asstator	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
168	Water Heating	1)Water Heating	Tank Insulation (electrical)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
171	Water Heating	1)Water Heating	Procede Cooling Condenser Heat Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
161	Water Heating	2)Water Heating	Heat Pump Water Heater-ROB	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
173	Water Heating	2)Water Heating	E-Round Hot Water Pump-ROB	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
174	Water Heating	2)Water Heating	HVAC Condenser Heat Recovery Water Heating	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176	Water Heating	2)Water Heating	Heat Pump Water Heater-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
166	Water Heating	2)Water Heating	Efficient Hot Water Pump-Early Replacement	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
167	Water Heating	2)Water Heating	Hot Water (CHW) Pipe Insulation	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
169	Water Heating	2)Water Heating	Low Flow Showerhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	Water Heating	2)Water Heating	Heat Pump Storage Water Heating-ROB	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
172	Water Heating	2)Water Heating	ECM Circulator Pump	1	1	1	1	1															

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			Annual KW Reduction																										
Cost Type	End Use	Measure Name	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037							
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20							
360			HVAC Controls																										
360	Space cooling	1 Space Cooling - Chiller	EMS Pump Scheduling Controls																										
360	Space cooling	1 Space Cooling - Chiller	Commercial EMS																										
360	Space cooling	1 Space Cooling - Chiller	Backstop with Electric Heat																										
370	Space cooling	1 Space Cooling - Chiller	Heat Enabled EMS																										
364	Space cooling	1 Space Cooling - Chiller	EMS Optimization / Continuous Commissioning																										
371	Space cooling	1 Space Cooling - Chiller	Recommissioning																										
364	Space cooling	1 HVAC Controls	Programmable Thermostats																										
364	Space cooling	1 Space Cooling - Chiller	HVAC Occupancy Sensors																										
367	Space cooling	1 HVAC Controls	Zoning																										
360			Space Cooling - Unitary and Split AC																										
361	Space cooling	1 Space Cooling - Chiller	Commercial EMS																										
360	Space cooling	1 Space Cooling - Chiller	Backstop with Electric Heat																										
360	Space cooling	1 Envelope	Energy Efficient Windows-ERCB																										
370	Space cooling	1 Space Cooling - Chiller	Heat Enabled EMS																										
364	Space cooling	1 Space Cooling - Chiller	EMS Optimization / Continuous Commissioning																										
364	Space cooling	1 Space Cooling - Chiller	Watt Reduction																										
364	Space cooling	1 Space Cooling - Chiller	Integrated Building Design																										
371	Space cooling	1 Space Cooling - Chiller	Recommissioning																										
360	Space cooling	1 Envelope	Energy Efficient Windows- Exterior Replacement																										
361	Space cooling	1 Space Cooling - Unitary and Split AC	DX Condenser- Coil Cleaning																										
360	Space cooling	1 Space Cooling - Chiller	EMS Pump Scheduling Controls																										
367	Space cooling	2 Space Cooling - Unitary and Split AC	Water Loop Heat Pump (WLHP) - Cooling/ERCB																										
364	Space cooling	1 Envelope	Ceiling Insulation																										
360	Space cooling	1 Space Cooling - Chiller	Room AC/ROB																										
367	Space cooling	1 Space Cooling - Chiller	Roof Insulation																										
361	Space cooling	1 Space Cooling - Unitary and Split AC	Room AC-ER																										
361	Space cooling	1 Envelope	Retrocommissioning																										
364	Space cooling	1 Space Cooling - Chiller	Window Improvements																										
360	Space cooling	1 HVAC Controls	Programmable Thermostats																										
364	Space cooling	1 Space Cooling - Unitary and Split AC	AC JAK - 760 K-ERCB																										
364	Space cooling	2 Space Cooling - Unitary and Split AC	Ductless (mm split) - Cooling/ROB																										
364	Space cooling	2 Space Cooling - Unitary and Split AC	Air Source Heat Pump - Cooling/ROB																										
364	Space cooling	2 Space Cooling - Unitary and Split AC	Ductless (mm split) - Cooling/ER																										
364	Space cooling	2 Space Cooling - Chiller	HVAC Occupancy Sensors																										
360	Space cooling	1 Envelope	Cool Roofing/ERCB																										
367	Space cooling	1 HVAC Controls	Zoning																										
360	Space cooling	1 Envelope	Improved Duct Sealing																										
360	Space cooling	1 Space Cooling - Unitary and Split AC	Ground Source Heat Pump - Cooling/ROB																										
360	Space cooling	1 Space Cooling - Unitary and Split AC	AC JAK - 760 K-ER																										
360	Space cooling	1 Space Cooling - Unitary and Split AC	Ground Source Heat Pump - Cooling/ER																										
360	Space cooling	1 Space Cooling - Unitary and Split AC	Air Source Heat Pump - Cooling/ER																										
360	Space cooling	1 Space Cooling - Unitary and Split AC	Water Loop Heat Pump (WLHP) - Cooling/ER																										
310	Space cooling	1 Envelope	Cool Roofing/ER																										
400			Cooling																										
500			Lighting																										
550	Lighting	2 Lighting Controls	Lighting Power Density - Parking Garage/ROB																										
564	Lighting	1 Lighting Controls	Lighting Power Density - Parking Garage/ER																										
564	Lighting	1 Lighting Controls	Lighting Power Density - Exterior-ERCB																										
563	Lighting	1 Lighting Controls	Lighting Power Density - Exterior-ER																										
563	Lighting	1 Lighting	LED Light Fixtures - Interior																										
511	Lighting	1 Lighting	LED Low Bay Lighting																										
511	Lighting	1 Lighting	HED Fluorescent Upgrade - Pulse Start Metal Halide																										
511	Lighting	1 Lighting	High Intensity Fluorescent Fixtures (replacing HED)																										
567	Lighting	1 Lighting	LED Exit Signs																										
628	Lighting	1 Lighting	LED Downlight																										
601	Lighting	1 Lighting	Lamp & Ballast Retrofit (HPTB Replacing T12)																										
567	Lighting	1 Lighting Controls	Stairwell Ballast Control																										
567	Lighting	1 Lighting	Long Day Lighting Delay																										
567	Lighting	1 Lighting	Occupancy Sensor																										
601	Lighting	1 Lighting	Lamp & Ballast Retrofit (Low Voltage HPTB Replacing T12)																										
564	Lighting	1 Lighting	LED Specialty retrofit in incandescent																										
564	Lighting	1 Lighting Controls	Retrofit Ballast Controls																										
524	Lighting	1 Lighting	LED Screw In Replacing Incandescent																										
500	Lighting	1 Controls	Interior reduction Lighting/ROB																										
564	Lighting	1 Lighting	Daylight Sensor Controls																										
564	Lighting	1 Lighting Controls	Central Lighting Control																										
564	Lighting	1 Lighting	Dimmable LED Lighting																										
601	Lighting	1 Lighting	Interior Induction Lighting/ER																										
564	Lighting	1 Lighting	T5 HP replacing T12																										
564	Lighting	1 Lighting	LED Glow Light																										
564	Lighting	1 Lighting	Lamp & Ballast Retrofit (Low Voltage HPTB Replacing Standard T8)																										
564	Lighting	1 Lighting	Lamp & Ballast Retrofit (HPTB Replacing Standard T8)																										
564	Lighting	1 Lighting	LED Tube Lighting																										
560	Lighting	1 Lighting Controls	Switching Controls for Multilevel Lighting (Non-HED)																										
564	Lighting	1 Lighting Controls	Occupancy Sensor & Daylight Sensor																										
564	Lighting	1 Lighting	LED High Bay Lighting																										
564	Lighting	1 Lighting	Chase and Recessed lighting with LED																										
564	Lighting	1 Lighting	Interior HED replacement with LED																										
564	Lighting	1 Lighting Controls	Garage Ballast Controls																										
564	Lighting	1 Lighting	Interior Non-High/Bay/Lowbay LED Fixtures																										
564	Lighting	1 Lighting	LED Specialty retrofit CPL																										
564	Lighting	1 Lighting	Exterior Linear Fluorescent/ERCB																										
564	Lighting	1 Lighting	Retrofitted Signs to LED																										
564	Lighting	1 Lighting	Light Tube																										
524	Lighting</																												

4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Energy/Demand/# Measures/Participants)

[illegible]

4 CSR 240-22.050(3)(G)1; 4 CSR 240-22.050(3)(G)4; 4 CSR 240-22.050(3)(H); 4 CSR 240-22.050(3)(G)3

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2017 Integrated Resource Plan

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Energy/Demand/# Measures/Participants)

#	Cost Type 1=Full 2=Inc.	End Use	Measure Name	Cumulative KW Reduction																					
				2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037			
Computers & Office Equipment																									
102	Computers &	2	Appliances, Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-ROB	18	35	53	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	
104	Computers &	1	Office Equipment	PC Network Energy Management Controls replacing no central control	1	14	21	28	35	42	49	56	63	70	78	85	92	99	106	113	120	127	134	141	
107	Computers &	1	Appliances, Computers, Office Equipment	High Efficiency (CNC) Low-ROB	1	2	3	4	4	5	6	7	8	9	10	10	11	12	13	13	13	13	13	13	
109	Computers &	1	Appliances, Computers, Office Equipment	Energy Star office equipment including computers, monitors, copiers, multi-function machines-Early	57	114	172	228	228	227	228	228	229	229	227	227	228	228	228	228	227	227	228	228	
111	Computers &	1	Appliances, Computers, Office Equipment	High Efficiency (CNC) Low-ROB	0	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
110	Computers &	1	Appliances, Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
108	Computers &	1	Appliances, Computers, Office Equipment	Energy Star Compliant Single Door Refrigerator-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
110	Computers &	1	Office Equipment	Smart Sleep Schedules	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
106	Computers &	2	Appliances, Computers, Office Equipment	Energy Star UPS-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
110	Computers &	1	Appliances, Computers, Office Equipment	Energy Star UPS-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Water Heating																									
160	Water Heating	1	Water Heating	Low Flow Faucet Aerator	19	38	57	76	95	114	133	152	171	190	190	190	190	190	190	190	190	190	190	190	
168	Water Heating	1	Water Heating	Fans Insulation (electrical)	2	3	5	7	9	10	12	14	16	17	19	21	23	24	26	28	29	29	27	27	
171	Water Heating	1	Water Heating	Process Cooling Condenser Heat Recovery	2	4	5	7	9	11	13	15	16	18	20	22	24	26	27	27	27	27	27	28	
167	Water Heating	1	Water Heating	Heat Pump Water Heater-ROB	2	4	5	7	9	11	12	14	16	18	19	21	23	25	26	28	29	29	27	27	
163	Water Heating	2	Water Heating	Efficient Hot Water Pump-ROB	1	2	3	4	5	6	7	8	9	10	11	12	12	13	14	14	14	14	15	15	
164	Water Heating	1	Water Heating	HVAC Condenser Heater Recovery Water Heating	1	2	2	3	4	5	5	6	7	8	8	9	10	11	11	11	11	11	11	12	
170	Water Heating	1	Water Heating	Heat Pump Water Heater-Early Replacement	0	1	1	2	2	3	3	4	4	4	5	5	6	6	7	7	7	7	7	7	
174	Water Heating	1	Water Heating	Efficient Hot Water Pump-Early Replacement	1	2	3	3	4	5	6	7	8	8	9	10	11	12	13	13	13	13	13	13	
167	Water Heating	1	Water Heating	Hot Water (CHW) Pipe Insulation	2	5	7	10	12	14	17	19	22	25	27	29	31	34	36	38	41	43	45	46	
166	Water Heating	1	Water Heating	Low Flow Showerhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
166	Water Heating	1	Water Heating	Heat Pump Storage Water Heating-ROB	1	3	4	6	7	9	10	12	13	14	14	14	14	14	14	14	14	14	14	14	
170	Water Heating	1	Water Heating	ECM Circulator Pump	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	15	15	15	15	15	
164	Water Heating	2	Water Heating	Electric Tankless Water Heater-ROB	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	2	2	
169	Water Heating	2	Water Heating	Drain Water Heat Recovery Water Heater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
170	Water Heating	1	Water Heating	Heat Pump Storage Water Heating-Early Replacement	0	1	1	1	1	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	
177	Water Heating	1	Water Heating	Electric Tankless Water Heater-Early Replacement	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	
Envelope																									
300	Other	2	Envelope	Energy Efficient Windows-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
304	Other	1	Space Cooling - Chillers	Wall Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
301	Other	0	Envelope	Integrated Building Design	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
309	Other	1	Envelope	Energy Efficient Windows-Early Replacement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
304	Other	1	Envelope	Ceiling Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
307	Other	1	Space Cooling - Chillers	Roof Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
305	Other	1	Space Cooling - Chillers	Window Improvements	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
301	Other	0	Envelope	Cool Roofing-ROB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
308	Other	1	Envelope	Improved Duct Sealing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
310	Other	1	Envelope	Cool Roofing-Early	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ventilation																									
302	Ventilation	1	Ventilation	Variable Speed Drive Control, 15 HP	36	71	108	143	178	213	250	286	323	355	391	428	464	500	536	574	610	648	687	727	
323	Ventilation	1	Ventilation	Variable Speed Drive Control, 5 HP	36	71	108	143	178	213	250	286	323	355	391	428	464	500	536	574	610	648	687	727	
324	Ventilation	2	Ventilation	Variable Speed Drive Control, 40 HP	36	71	108	143	178	213	250	286	323	355	391	428	464	500	536	574	610	648	687	727	
303	Ventilation	0	Ventilation	Engineered CVI Hood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
304	Ventilation	1	Ventilation	Deconstruction Fan (HVLS)	20	41	61	81	101	121	142	163	183	202	223	243	264	284	305	324	345	364	385	405	
321	Ventilation	0	Ventilation	Economizer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
300	Ventilation	1	Ventilation	High Speed Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
331	Ventilation	1	Ventilation	High Volume Low Speed Fans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Space Cooling - Chillers																									
300	Space cooling	1	Space Cooling - Chillers	Commercial EMS	35	71	105	141	176	213	250	282	315	352	385	425	464	499	538	578	618	658	698	738	
368	Space cooling	1	Space Cooling - Chillers	Refract with Electric Heat	15	31	46	62	78	94	110	125	150	140	139	141	142	136	140	145	150	142	145	148	
300	Space cooling	0	Space Cooling - Chillers	Energy Efficient Windows-ROB	28	56	83	111	139	168	197	223	249	275	304	330	358	387	416	444	470	507	529	559	
370	Space cooling	1	Space Cooling - Chillers	Web Enabled EMS	34	68	101	135	169	204	239	271	302	337	369	408	445	479	508	536	564	593	621	649	
364	Space cooling	1	Space Cooling - Chillers	EMS Optimization / Continuous Commissioning	2	3	4	6	8	9	11	12	13	15	16	18	20	21	23	24	25	27	29	31	
300	Space cooling	1	Space Cooling - Chillers	Chiller Turn-Up	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	
351	Space cooling	1	Space Cooling - Chillers	Efficient Chiller Water Pump	2	4	7	9	12	14	17	19	21	23	25	28	31	33	35	38	41	43	46	49	
366	Space cooling	1	Space Cooling - Chillers	Wall Insulation	0	0	14	15	24	29	34	38	43	48	52	58	63	67	72	76	81	85	89	93	
347	Space cooling	1	Space Cooling - Chillers	Chilled Hot Water Reset	14	28	42	57	71	86	100	114	131	148	165	183	201	219	237	255	273	291	309	327	
343	Space cooling	1	Space Cooling - Chillers	Water Side Economizer	6	13	19	25	31	38	44	51	58	65	72	79	87	95	101	108	116	122	129	136	
358	Space cooling	1	Space Cooling - Chillers	Water-Cooled Centrifugal Chiller > 300 ton-ROB	7	15	22	29	36	44	51	58	65	72	79	87	95	101	108	116	122	129	136	143	
348	Space cooling	2	Space Cooling - Chillers	Water-Cooled Screw Chiller > 300 ton-ROB	7	14	20	27	34	41	48	55	61	68	74	82	89	96	102	109	116	122	129	136	
344	Space cooling	1	Space Cooling - Chillers	VAV System Conversion	1	2	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
300	Space cooling	1	Space Cooling - Chillers	Integrated Building Design	143	284	422	560	707	852	1,005	1,136	1,267	1,415	1,549	1,711	1,866	1,991	2,122	2,254	2,394	2,533	2,687	2,847	
344	Space cooling	1	Space Cooling - Chillers	Motor Set Replacement	1	1	2	2	3	4	4	5	5	6	7	7	8	9	9	9	9	9	9	9	
371	Space cooling	0	Space Cooling - Chillers	Refract/Commissioning	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
341	Space cooling	2	Space Cooling - Chillers	Air-Cooled Recip Chiller-ROB	36	72	108	144	180	216	252	288	324	360	396	432	468	504	540	576	612	648	684	720	
342	Space cooling	2	Space Cooling - Chillers	Air-Cooled Screw Chiller-Early Replacement	37	73	109	145	183	221	260	294	338	385	431	462	493	518	548	585	618	655	688	722	
300	Space cooling	1	Envelope	Energy Efficient Windows-Early Replacement	1	13	20	27	34	41	49	56	63	70	78	85	92	99	106	113	120	127	134	141	
369	Space cooling	1	Envelope	BEMS Pump Scheduling Controls	1	2	3	5	6	7	8	9	10	11	12	14	15	16	17	17	17	17	17	17	
304	Space cooling	1	Envelope	Ceiling Insulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0							

[illegible]

2017 Integrated Resource Plan

[illegible]

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			Cost Initial 2Yr:		Cumulative KW Reduction																									
ID	Year	End Use	Measure Name		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037							
104	Process Cooling & Refrig.	Process Cooling & Refrig.	Process Cooling & Refrigeration																											
		Process Cooling & Refrig.	Vaporator Motor Reduction - RCB	14	29	43	58	72	88	101	116	130	144	159	173	188	202	217	217	217	217	216	222							
		Process Cooling & Refrig.	Vaporator Motor Reduction - Early Replacement	17	35	52	69	87	104	121	139	156	173	191	209	226	242	260	260	260	260	259	267							
		Process Cooling & Refrig.	Refrating Heat Pressure Control	26	51	77	102	128	153	179	204	230	255	281	307	332	357	383	383	383	383	382	393							
		Process Cooling & Refrig.	Chiller System Improvements	50	75	99	124	148	173	198	223	248	273	298	323	348	373	398	398	398	398	397	413							
		Process Cooling & Refrig.	Sensors & Controls	21	41	62	83	104	124	145	166	187	207	228	249	270	290	311	311	311	311	310	319							
		Process Cooling & Refrig.	Improved Refrigeration	79	157	236	315	394	473	551	630	709	788	866	945	1,024	1,102	1,182	1,182	1,182	1,182	1,179	1,213							
		Process Cooling & Refrig.	Redundant charring control	158	214	215	215	215	215	214	215	215	215	214	215	215	214	215	215	214	215	215	214	215						
		Process Cooling & Refrig.	Energy Information System	6	12	18	23	29	35	41	47	53	59	65	70	76	82	88	88	88	88	88	90							
		Process Cooling & Refrig.	Evaporator Fan Motor Controls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
105	Process Heating	Process Heating	Process Heating																											
		Process Heating	Electric Supply System Improvements	48	95	143	190	238	285	333	381	429	475	524	571	619	665	714	714	714	714	712	733							
		Process Heating	Sensors & Controls	43	81	121	161	202	242	283	324	364	404	445	485	526	566	607	607	607	607	606	634							
		Process Heating	Industrial Process-WWTP Dissolved Oxygen (DO) Aeration	22	44	66	88	110	131	154	176	198	219	219	219	219	219	220	219	219	219	219	219							
		Process Heating	Energy Information System	15	30	45	60	75	89	105	120	135	149	164	179	194	209	224	224	224	224	224	230							
		Process Heating	Process Heating																											
		Process Heating	Process Heating																											
		Process Heating	Process Heating																											
		Process Heating	Process Heating																											
		Process Heating	Process Heating																											
106	Industrial Other	Industrial Other	Industrial Other																											
		Industrial Other	Barnet Insulation - by Modeling (packs)	1	1	2	2	3	3	4	5	5	6	6	6	6	6	6	6	6	6	6	6	6						
		Industrial Other	Fiber Laser Replacing CO2 laser (auto industry) - RCB	3	5	8	10	13	15	18	21	23	26	28	31	34	36	39	41	44	44	45	49							
		Industrial Other	1 Phase High BT Battery Charger - RCB	0	1	1	1	1	2	2	2	3	3	3	4	4	4	4	5	5	5	5	5							
		Industrial Other	Injection Molding Machine - Early Replacement	0	1	1	2	3	4	5	6																			

2017 Integrated Resource Plan

INDUSTRIAL - ENERGY EFFICIENCY - PRAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

GDS ASSOCIATES - COST EFFECTIVENESS SCREENING TOOL®

INPUT WORKSHEET

Non HVAC

#1 Office Equipment		Ratio: TRC		20 *MAP level Incentives equalled 100% of Measure Incremental Cost					50% Measure Level Ratios			
	Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM	
								#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
1	Energy Star Compliant Refrigerator-ROB	A - Commercial Office Equipment	\$750	\$375	\$375	\$750	\$375					
2	Energy Star office equipment including computers, monitors, copiers, etc.	A - Commercial Office Equipment	\$137	\$69	\$69	\$137	\$69	3.60	7.19	0.50	7.19	
3	Smart Strip plug outlet	A - Commercial Office Equipment	\$40	\$20	\$20	\$40	\$20	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
4	PC Network Energy Management Controls replacing no central control	A - Commercial Office Equipment	\$20	\$10	\$10	\$20	\$10	3.39	6.78	0.50	6.78	
5	Energy Star UPS-ROB	A - Commercial Office Equipment	\$1,303	\$652	\$652	\$1,303	\$652	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
6	High Efficiency CRAC unit-ROB	A - Commercial Office Equipment	\$83	\$41	\$41	\$83	\$41	2.33	4.65	0.50	4.65	
7	Energy Star Compliant Refrigerator-ER	A - Commercial Office Equipment	\$802	\$401	\$401	\$802	\$401	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
8	Energy Star office equipment including computers, monitors, copiers, etc.	A - Commercial Office Equipment	\$227	\$113	\$113	\$227	\$113	2.17	4.35	0.50	4.35	
9	Energy Star UPS-ER	A - Commercial Office Equipment	\$1,407	\$704	\$704	\$1,407	\$704	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
10	High Efficiency CRAC unit-ER	A - Commercial Office Equipment	\$113	\$56	\$56	\$113	\$56	1.75	3.50	0.50	3.50	
11	Add New Measure											
Program Totals:			n/a	n/a	n/a	n/a	n/a	1.63	2.45	0.50	2.45	

#2 Water Heating		Ratio: TRC		Measure Level Ratios							
	Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM
								#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1	Heat Pump Water Heater-ROB	G - Commercial Electric DHW	\$10,600	\$5,300	\$5,300	\$10,600	\$5,300	22.66	45.33	0.50	45.33
2	Heat Pump Storage Water Heater-ROB	G - Commercial Electric DHW	\$83	\$42	\$42	\$83	\$42	6.11	12.23	0.50	12.23
3	Electric Tankless Water Heater-ROB	G - Commercial Electric DHW	\$466	\$233	\$233	\$466	\$233	2.55	5.10	0.50	5.10
4	Low Flow Faucet Aerator	G - Commercial Electric DHW	\$3	\$1	\$1	\$3	\$1	281.86	563.71	0.50	563.71
5	Low Flow Showerhead	G - Commercial Electric DHW	\$25	\$13	\$13	\$25	\$13	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	Hot Water (DHW) Pipe Insulation	G - Commercial Electric DHW	\$10	\$5	\$5	\$10	\$5	7.28	14.56	0.50	14.56
7	Tank Insulation (electric)	G - Commercial Electric DHW	\$2	\$1	\$1	\$2	\$1	224.06	448.12	0.50	448.12
8	ECM Circulator Pump	G - Commercial Electric DHW	\$2,267	\$1,133	\$1,133	\$2,267	\$1,133	2.80	5.59	0.50	5.59
9	Drain water Heat Recovery Water Heater	G - Commercial Electric DHW	\$631	\$316	\$316	\$631	\$316	1.57	3.14	0.50	3.14
10	Efficient Hot Water Pump-ROB	G - Commercial Electric DHW	\$33	\$17	\$17	\$33	\$17	19.38	38.75	0.50	38.75
11	HVAC Condenser Heater Recovery Water Heating	G - Commercial Electric DHW	\$254	\$127	\$127	\$254	\$127	39.97	79.94	0.50	79.94
12	Process Cooling Condenser Heater Recovery Water Heating	G - Commercial Electric DHW	\$254	\$127	\$127	\$254	\$127	29.98	59.96	0.50	59.96
13	Heat Pump Water Heater-ER	G - Commercial Electric DHW	\$13,846	\$6,923	\$6,923	\$13,846	\$6,923	17.35	34.70	0.50	34.70
14	Heat Pump Storage Water Heater-ER	G - Commercial Electric DHW	\$231	\$116	\$116	\$231	\$116	2.25	4.50	0.50	4.50
15	Electric Tankless Water Heater-ER	G - Commercial Electric DHW	\$681	\$341	\$341	\$681	\$341	1.75	3.49	0.50	3.49
16	Efficient Hot Water Pump-ER	G - Commercial Electric DHW	\$61	\$31	\$31	\$61	\$31	10.46	20.93	0.50	20.93
17	Add New Measure										
Program Totals:			n/a	n/a	n/a	n/a	n/a	11.57	17.36	0.50	17.36

#3 Ventilation		Ratio: TRC		Measure Level Ratios							
	Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM
								#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
1	Economizer	C - Commercial Ventilation	\$101	\$51	\$51	\$101	\$51	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2	Variable Speed Drive Control, 15 HP	C - Commercial Ventilation	\$3,690	\$1,845	\$1,845	\$3,690	\$1,845	6.33	12.66	0.50	12.66
3	Variable Speed Drive Control, 5 HP	C - Commercial Ventilation	\$1,230	\$615	\$615	\$1,230	\$615	6.33	12.66	0.50	12.66
4	Variable Speed Drive Control, 40 HP	C - Commercial Ventilation	\$9,840	\$4,920	\$4,920	\$9,840	\$4,920	6.33	12.66	0.50	12.66
5	High Speed Fans	C - Commercial Ventilation	\$675	\$338	\$338	\$675	\$338	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	High Volume Low Speed Fans	C - Commercial Ventilation	\$375	\$188	\$188	\$375	\$188	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7	Destratification Fans (HVLS)	C - Commercial Ventilation	\$13	\$6	\$6	\$13	\$6	2.59	5.19	0.50	5.19
8	Engineered OKV hood	C - Commercial Ventilation	\$316	\$158	\$158	\$316	\$158	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9	Add New Measure										
Program Totals:			n/a	n/a	n/a	n/a	n/a	3.61	5.42	0.50	5.42

INDUSTRIAL - ENERGY EFFICIENCY - PRAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

#4 Lighting		Ratio: TRC					Measure Level Ratios			
Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM
1 Lamp & Ballast Retrofit (HPT8 Replacing T12)	H - Commercial Lighting	\$11	\$6	\$6	\$11	\$6	6.30	12.61	0.50	12.61
2 Lamp & Ballast Retrofit (HPT8 Replacing Standard T8)	H - Commercial Lighting	\$11	\$6	\$6	\$11	\$6	2.30	4.60	0.50	4.60
3 Lamp & Ballast Retrofit (Low Wattage HPT8 Replacing T12)	H - Commercial Lighting	\$37	\$19	\$19	\$37	\$19	3.36	6.73	0.50	6.73
4 Lamp & Ballast Retrofit (Low Wattage HPT8 Replacing Standard)	H - Commercial Lighting	\$37	\$19	\$19	\$37	\$19	2.01	4.02	0.50	4.02
5 T5 HP Retrofits	H - Commercial Lighting	\$366	\$183	\$183	\$366	\$183	2.99	5.98	0.50	5.98
6 Light Tube	H - Commercial Lighting	\$500	\$250	\$250	\$500	\$250	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
7 High Intensity Fluorescent Fixture (replacing HID)	H - Commercial Lighting	\$284	\$142	\$142	\$284	\$142	5.14	10.27	0.50	10.27
8 42W 8 lamp Hi Bay CFL	H - Commercial Lighting	\$496	\$248	\$248	\$496	\$248	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9 HID Fixture Upgrade - Pulse Start Metal Halide	H - Commercial Lighting	\$162	\$81	\$81	\$162	\$81	5.66	11.32	0.50	11.32
10 Interior Induction Lighting-ROB	H - Commercial Lighting	\$2	\$1	\$1	\$2	\$1	3.99	7.98	0.50	7.98
11 LED Screw In (replacing Incandescent)	H - Commercial Lighting	\$28	\$14	\$14	\$28	\$14	3.82	7.64	0.50	7.64
12 LED Screw In (replacing CFL)	H - Commercial Lighting	\$12	\$6	\$6	\$12	\$6	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13 LED High bay lighting	H - Commercial Lighting	\$2,900	\$1,450	\$1,450	\$2,900	\$1,450	2.17	4.35	0.50	4.35
14 LED low bay lighting	H - Commercial Lighting	\$298	\$149	\$149	\$298	\$149	8.67	17.34	0.50	17.34
15 LED Downlight	H - Commercial Lighting	\$61	\$31	\$31	\$61	\$31	4.69	9.38	0.50	9.38
16 LED Specialty (replacing Incandescent)	H - Commercial Lighting	\$23	\$12	\$12	\$23	\$12	4.15	8.31	0.50	8.31
17 LED Specialty (replacing CFL)	H - Commercial Lighting	\$10	\$5	\$5	\$10	\$5	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
18 LED Troffer	H - Commercial Lighting	\$125	\$63	\$63	\$125	\$63	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19 LED Tube Lighting	H - Commercial Lighting	\$30	\$15	\$15	\$30	\$15	2.20	4.39	0.50	4.39
20 LED Grow Light	H - Commercial Lighting	\$2	\$1	\$1	\$2	\$1	2.82	5.65	0.50	5.65
21 Interior Non Highbay/Lowbay LED Fixtures	H - Commercial Lighting	\$3	\$1	\$1	\$3	\$1	1.64	3.29	0.50	3.29
22 Illuminated Signs to LED	H - Commercial Lighting	\$4	\$2	\$2	\$4	\$2	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
23 LED Exit Sign	H - Commercial Lighting	\$64	\$32	\$32	\$64	\$32	4.78	9.56	0.50	9.56
24 Exterior HID replacement with LEDs	H - Commercial Lighting	\$754	\$377	\$377	\$754	\$377	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25 Garage HID replacement with LEDs	H - Commercial Lighting	\$567	\$283	\$283	\$567	\$283	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
26 Exterior Linear Fluorescent-ROB	H - Commercial Lighting	\$567	\$283	\$283	\$567	\$283	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27 Central Lighting Control	H - Commercial Lighting	\$2,700	\$1,350	\$1,350	\$2,700	\$1,350	3.23	6.47	0.50	6.47
28 Daylight Sensor Controls	H - Commercial Lighting	\$3,000	\$1,500	\$1,500	\$3,000	\$1,500	3.67	7.34	0.50	7.34
29 Occupancy Sensor	H - Commercial Lighting	\$98	\$49	\$49	\$98	\$49	3.28	6.55	0.50	6.55
30 Occupancy Sensor & Daylight Sensor	H - Commercial Lighting	\$278	\$139	\$139	\$278	\$139	2.09	4.18	0.50	4.18
31 Switching Controls for Multilevel Lighting (Non-HID)	H - Commercial Lighting	\$3,000	\$1,500	\$1,500	\$3,000	\$1,500	2.81	5.63	0.50	5.63
32 Lighting Power Density - Interior	H - Commercial Lighting	\$220	\$110	\$110	\$220	\$110	15.44	30.87	0.50	30.87
33 Lighting Power Density - Exterior-ROB	H - Commercial Lighting	\$220	\$110	\$110	\$220	\$110	14.07	28.13	0.50	28.13
34 Lighting Power Density - Parking Garage-ROB	H - Commercial Lighting	\$220	\$110	\$110	\$220	\$110	35.90	71.79	0.50	71.79
35 Stairwell Bi-Level Control	H - Commercial Lighting	\$825	\$413	\$413	\$825	\$413	4.03	8.05	0.50	8.05
36 Exterior Bi-Level Controls	H - Commercial Lighting	\$3,700	\$1,850	\$1,850	\$3,700	\$1,850	3.92	7.83	0.50	7.83
37 Garage Bi-Level Controls	H - Commercial Lighting	\$500	\$250	\$250	\$500	\$250	1.84	3.67	0.50	3.67
38 Long Day Lighting Dairy	H - Commercial Lighting	\$2	\$1	\$1	\$2	\$1	#DIV/0!	#DIV/0!	0.00	0.00
39 Poultry LED Lighting	H - Commercial Lighting	2	1	1	2	\$1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
40 Interior Induction Lighting-ER	H - Commercial Lighting	\$2	\$1	\$1	\$2	\$1	3.59	7.18	0.50	7.18
41 Exterior Linear Fluorescent-ER	H - Commercial Lighting	\$830	\$415	\$415	\$830	\$415	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
42 Lighting Power Density - Exterior-ER	H - Commercial Lighting	\$234	\$117	\$117	\$234	\$117	13.25	26.49	0.50	26.49
43 Lighting Power Density - Parking Garage-ER	H - Commercial Lighting	\$234	\$117	\$117	\$234	\$117	33.80	67.60	0.50	67.60
44 Add New Measure										
Program Totals:		n/a	n/a	n/a	n/a	n/a	2.20	3.30	0.50	3.30

#5 Other		Ratio: TRC					Measure Level Ratios			
Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM
1 NEMA Premium Transformer, single-phase-ROB	J - Other - C/I	\$12	\$6	\$6	\$12	\$6	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2 NEMA Premium Transformer, three-phase-ROB	J - Other - C/I	\$10	\$5	\$5	\$10	\$5	1.36	2.72	0.50	2.72
3 High Efficiency Transformer, single-phase-ROB	J - Other - C/I	\$2	\$1	\$1	\$2	\$1	1.92	3.84	0.50	3.84
4 High Efficiency Transformer, three-phase-ROB	J - Other - C/I	\$6	\$3	\$3	\$6	\$3	1.92	3.83	0.50	3.83
5 Optimized Snow and Ice Melt Controls (electric)	J - Other - C/I	\$15	\$8	\$8	\$15	\$8	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6 Engine Block Heater Timer	J - Other - C/I	\$35	\$18	\$18	\$35	\$18	24.04	48.09	0.50	48.09
7 Parking Garage Exhaust Fan CO Control	J - Other - C/I	\$900	\$450	\$450	\$900	\$450	2.86	5.73	0.50	5.73
8 NEMA Premium Transformer, single-phase-ER	J - Other - C/I	\$15	\$8	\$8	\$15	\$8	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9 NEMA Premium Transformer, three-phase-ER	J - Other - C/I	\$14	\$7	\$7	\$14	\$7	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
10 High Efficiency Transformer, single-phase-ER	J - Other - C/I	\$2	\$1	\$1	\$2	\$1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11 High Efficiency Transformer, three-phase-ER	J - Other - C/I	\$10	\$5	\$5	\$10	\$5	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12 Add New Measure										
Program Totals:		n/a	n/a	n/a	n/a	n/a	2.83	4.24	0.50	4.24

INDUSTRIAL - ENERGY EFFICIENCY - PRAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

#6	Machine Drive		Ratio TRC					Measure Level Ratios			
	Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM
1	Advanced Lubricants	K - Industrial Process	\$0.001	\$0.001	\$0.001	\$0.001	\$0	117.06	234.12	0.50	234.12
2	Compressed Air System Management	K - Industrial Process	\$0.002	\$0.001	\$0.001	\$0.002	\$0	73.19	146.38	0.50	146.38
3	Compressed Air - Advanced Compressor Controls	K - Industrial Process	\$0.050	\$0.025	\$0.025	\$0.050	\$0	29.54	59.08	0.50	59.08
4	Elec Motors Replacing Pneumatic (Comp Air)	K - Industrial Process	\$620.000	\$310.000	\$310.000	\$620.000	\$310	22.99	45.97	0.50	45.97
5	Compressed Air Audits and Leak Repair	K - Industrial Process	\$4.000	\$2.000	\$2.000	\$4.000	\$2	11.77	23.54	0.50	23.54
6	Storage Tank Addition (Comp Air)	K - Industrial Process	\$24.000	\$12.000	\$12.000	\$24.000	\$12	24.04	48.07	0.50	48.07
7	VFD for Process Fans	K - Industrial Process	\$200.000	\$100.000	\$100.000	\$200.000	\$100	5.64	11.29	0.50	11.29
8	Automatic Drains, High Efficiency Nozzles and Other (Comp Air)	K - Industrial Process	\$355.000	\$177.500	\$177.500	\$355.000	\$178	1.85	3.70	0.50	3.70
9	VFD for Process Pumps	K - Industrial Process	\$200.000	\$100.000	\$100.000	\$200.000	\$100	5.81	11.62	0.50	11.62
10	Pump System Efficiency Improvements	K - Industrial Process	\$0.008	\$0.004	\$0.004	\$0.008	\$0	184.62	369.23	0.50	369.23
11	Motor System Optimization (Including ASD)	K - Industrial Process	\$0.009	\$0.005	\$0.005	\$0.009	\$0	164.10	328.21	0.50	328.21
12	Electric Supply System Improvements	K - Industrial Process	\$0.010	\$0.005	\$0.005	\$0.010	\$0	147.69	295.39	0.50	295.39
13	Sensors & Controls	K - Industrial Process	\$0.014	\$0.007	\$0.007	\$0.014	\$0	105.50	210.99	0.50	210.99
14	Industrial Motor Management	K - Industrial Process	\$0.018	\$0.009	\$0.009	\$0.018	\$0	29.92	59.84	0.50	59.84
15	Fan System Improvements	K - Industrial Process	\$0.024	\$0.012	\$0.012	\$0.024	\$0	61.54	123.08	0.50	123.08
16	High Efficiency Pumps ROB	K - Industrial Process	\$31.000	\$15.500	\$15.500	\$31.000	\$16	22.25	44.51	0.50	44.51
17	Advanced Efficient Motors ROB	K - Industrial Process	\$4.550	\$2.275	\$2.275	\$4.550	\$2	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
18	High Efficiency Dryers (Comp Air) ROB	K - Industrial Process	\$4.000	\$2.000	\$2.000	\$4.000	\$2	14.69	29.38	0.50	29.38
19	Energy Information System	K - Industrial Process	\$0.061	\$0.031	\$0.031	\$0.061	\$0	24.21	48.42	0.50	48.42
20	Advanced Efficient Motors - Early Replacement	K - Industrial Process	\$34.200	\$17.100	\$17.100	\$34.200	\$17	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21	Air Compressor-Adding an Air Compressor to Aid Low Load Conditions	K - Industrial Process	\$1,482.000	\$741.000	\$741.000	\$1,482.000	\$741	3.65	7.30	0.50	7.30
22	Air-Entraining Air Nozzles	K - Industrial Process	\$98.000	\$49.000	\$49.000	\$98.000	\$49	114.95	229.89	0.50	229.89
23	Compressed Air-Fixed Speed Air Compressor - ROB	K - Industrial Process	\$30.000	\$15.000	\$15.000	\$30.000	\$15	45.09	90.18	0.50	90.18
24	Compressed Air-Fixed Speed Air Compressor - Early Replacement	K - Industrial Process	\$81.870	\$40.935	\$40.935	\$81.870	\$41	16.52	33.05	0.50	33.05
25	High Efficiency Dryers (comp air) - Early Replacement	K - Industrial Process	\$6.180	\$3.090	\$3.090	\$6.180	\$3	9.51	19.01	0.50	19.01
26	High Efficiency Pumps - Early Replacement	K - Industrial Process	\$99.130	\$49.565	\$49.565	\$99.130	\$50	7.08	14.17	0.50	14.17
27	Receiver Capacity Addition	K - Industrial Process	\$2,000.000	\$1,000.000	\$1,000.000	\$2,000.000	\$1,000	4.68	9.36	0.50	9.36
28	Synchronous belt drives	K - Industrial Process	\$6.480	\$3.240	\$3.240	\$6.480	\$3	8.07	16.13	0.50	16.13
29	Variable Speed Air Compressor-Replace Fixed Speed Air Compressor with Variable Speed - ROB	K - Industrial Process	\$190.000	\$95.000	\$95.000	\$190.000	\$95	23.79	47.58	0.50	47.58
30	Variable Speed Air Compressor-Replace Fixed Speed Air Compressor with Variable Speed - Early Replacement	K - Industrial Process	\$241.870	\$120.935	\$120.935	\$241.870	\$121	18.69	37.38	0.50	37.38
31	VSD Air Compressor-Install VSD Air Compressor for Trim	K - Industrial Process	\$669.000	\$334.500	\$334.500	\$669.000	\$335	3.04	6.08	0.50	6.08
32	Add New Measure	K - Industrial Process									
	Program Totals:	n/a	n/a	n/a	n/a	n/a	n/a	10.79	16.19	0.50	16.19

4 CSR 240-22.050(3)(G)5A through 5F; 4 CSR 240-22.050(3)(H)

INDUSTRIAL - ENERGY EFFICIENCY - PRAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

#7 Industrial Other		Ratio: TRC					Measure Level Ratios			
Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM
1 Barrel Insulation - Inj. Molding (Plastics)	K - Industrial Process	\$80	\$40	\$40	\$80	\$40	15.16	30.32	0.50	30.32
2 High Efficiency Welders ROB	K - Industrial Process	\$300	\$150	\$150	\$300	\$150	6.56	13.12	0.50	13.12
3 Pellet Dryer Insulation (Plastics)	K - Industrial Process	\$40	\$20	\$20	\$40	\$20	6.85	13.70	0.50	13.70
4 3 Phase High Eff Battery Charger ROB	K - Industrial Process	\$873	\$436	\$436	\$873	\$436	4.33	8.67	0.50	8.67
5 Injection Molding Machine - Efficient (Plastics)	K - Industrial Process	\$175	\$88	\$88	\$175	\$88	2.45	4.89	0.50	4.89
6 Fiber Laser Replacing CO2 Laser (Auto Industry) ROB	K - Industrial Process	\$5,000	\$2,500	\$2,500	\$5,000	\$2,500	9.69	19.38	0.50	19.38
7 Lab Fume Hood Ventilation Reduction	K - Industrial Process	\$4	\$2	\$2	\$4	\$2	3.64	7.28	0.50	7.28
8 Process Fan Ventilation Reduction	K - Industrial Process	\$2	\$1	\$1	\$2	\$1	1.62	3.24	0.50	3.24
9 Hybrid Injection Molding Machine ROB	K - Industrial Process	\$75	\$38	\$38	\$75	\$38	4.80	9.61	0.50	9.61
10 3 Phase High Eff Battery Charger - Early Replacement	K - Industrial Process	\$1,313	\$656	\$656	\$1,313	\$656	2.33	4.67	0.50	4.67
11 Fiber Laser Replacing CO2 Laser (auto industry) - Early Replacement	K - Industrial Process	\$21,767	\$10,884	\$10,884	\$21,767	\$10,884	2.34	4.68	0.50	4.68
12 High Efficiency Welders - Early Replacement	K - Industrial Process	\$635	\$318	\$318	\$635	\$318	3.16	6.32	0.50	6.32
13 High Speed Turbo Blower for Wastewater	K - Industrial Process	\$1,100	\$550	\$550	\$1,100	\$550	2.36	4.72	0.50	4.72
14 Hybrid Injection Molding Machine - Early Replacement	K - Industrial Process	\$189	\$95	\$95	\$189	\$95	1.99	3.99	0.50	3.99
15 Industrial Air Curtain	K - Industrial Process	\$45	\$23	\$23	\$45	\$23	3.29	6.57	0.50	6.57
16 On Demand ventilation control for Dust and Fume Collection Systems	K - Industrial Process	\$766	\$383	\$383	\$766	\$383	4.45	8.89	0.50	8.89
17 Add New Measure										
Program Totals:		n/a	n/a	n/a	n/a	n/a	2.52	3.78	0.50	3.78

#8 Process Cooling & Refrigeration		Ratio: TRC					Measure Level Ratios			
Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM
1 Improved Refrigeration	K - Industrial Process	\$0	\$0	\$0	\$0	\$0	49.23	98.46	0.50	98.46
2 Electric Supply System Improvements	K - Industrial Process	\$0	\$0	\$0	\$0	\$0	147.69	295.39	0.50	295.39
3 Sensors & Controls	K - Industrial Process	\$0	\$0	\$0	\$0	\$0	105.50	210.99	0.50	210.99
4 Energy Information System	K - Industrial Process	\$0	\$0	\$0	\$0	\$0	24.21	48.42	0.50	48.42
5 Evaporator Fan Motor Controls	K - Industrial Process	\$621	\$311	\$311	\$621	\$311	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6 Floating Head Pressure Control	K - Industrial Process	\$120	\$60	\$60	\$120	\$60	9.54	19.07	0.50	19.07
7 Refrigerant charging correction	K - Industrial Process	\$10	\$5	\$5	\$10	\$5	3.73	7.46	0.50	7.46
8 Evaporator Motor Reduction - ROB	K - Industrial Process	\$1	\$0	\$0	\$1	\$0	136.05	272.11	0.50	272.11
9 Evaporator Motor Reduction - Early Replacement	K - Industrial Process	\$4	\$2	\$2	\$4	\$2	19.22	38.43	0.50	38.43
10 Add New Measure										
Program Totals:		n/a	n/a	n/a	n/a	n/a	10.30	15.45	0.50	15.45

#9 Process Heating		Ratio: TRC					Measure Level Ratios			
Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM
1 Electric Supply System Improvements	K - Industrial Process	\$0	\$0	\$0	\$0	\$0	147.69	295.39	0.50	295.39
2 Sensors & Controls	K - Industrial Process	\$0	\$0	\$0	\$0	\$0	105.50	210.99	0.50	210.99
3 Energy Information System	K - Industrial Process	\$0	\$0	\$0	\$0	\$0	24.21	48.42	0.50	48.42
4 Industrial-Process-WWTP Dissolved Oxygen (DO) Aeration	K - Industrial Process	\$500	\$250	\$250	\$500	\$250	1.85	3.69	0.50	3.69
5 Add New Measure										
Program Totals:		n/a	n/a	n/a	n/a	n/a	12.13	18.20	0.50	18.20

#10 Agriculture		Ratio: TRC					Measure Level Ratios			
Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM
1 Other Industrial - Low-Energy Livestock Waterer ROB	K - Industrial Process	\$92	\$46	\$46	\$92	\$46	23.92	47.84	0.50	47.84
2 Other Industrial - Dairy Refrigerator Tune-Up	K - Industrial Process	\$0	\$0	\$0	\$0	\$0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3 Greenhouse Environmental Controls	K - Industrial Process	\$125	\$63	\$63	\$125	\$63	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4 Scroll Compressor with Heat Exchanger for Dairy Refrigeration	K - Industrial Process	\$1,500	\$750	\$750	\$1,500	\$750	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5 Variable Speed Drive with Heat Exchanger, Milk	K - Industrial Process	\$2	\$1	\$1	\$2	\$1	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6 Milk Pre-Cooler Heat Exchanger	K - Industrial Process	\$0	\$0	\$0	\$0	\$0	13.18	26.36	0.50	26.36
7 Variable Speed Drives for Dairy Vacuum Pumps	K - Industrial Process	\$356	\$178	\$178	\$356	\$178	1.96	3.91	0.50	3.91
8 VFD for Process Fans - Agriculture	K - Industrial Process	\$200	\$100	\$100	\$200	\$100	4.69	9.37	0.50	9.37
9 VFD for Process Pumps - Agriculture	K - Industrial Process	\$200	\$100	\$100	\$200	\$100	2.67	5.35	0.50	5.35
10 WFD for Process Pumps - Irrigation	K - Industrial Process	\$200	\$100	\$100	\$200	\$100	2.31	4.62	0.50	4.62
11 Grain Storage Temperature and Moisture Management Controller	K - Industrial Process	\$233	\$117	\$117	\$233	\$117	2.54	5.09	0.50	5.09
12 Low Pressure Sprinkler Nozzles	K - Industrial Process	\$1	\$1	\$1	\$1	\$1	8.04	16.09	0.50	16.09
13 Fan Thermostat Controller	K - Industrial Process	\$50	\$25	\$25	\$50	\$25	28.72	57.43	0.50	57.43
14 Variable Speed Drive with Heat Exchanger, Milk New	K - Industrial Process	\$1	\$0	\$0	\$1	\$0	2.03	4.06	0.50	4.06
15 Other Industrial - Low-Energy Livestock Waterer Early Replacement	K - Industrial Process	\$179	\$90	\$90	\$179	\$90	12.29	24.58	0.50	24.58
16 Add New Measure										
Program Totals:		n/a	n/a	n/a	n/a	n/a	2.94	4.42	0.50	4.42

INDUSTRIAL - ENERGY EFFICIENCY - PRAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

GDS ASSOCIATES - COST EFFECTIVENESS SCREENING TOOL®

INPUT WORKSHEET

HVAC

#1 Space Cooling - Chillers		Ratio: TRC					Measure Level Ratios			
Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate Incentive	TRC	Direct Utility	Participant	RIM
1 Air-Cooled Recip Chiller	A- Commercial Cooling	\$141	\$71	\$71	\$141	\$71	5.84	11.68	4.76	1.23
2 Air-Cooled Screw Chiller	A- Commercial Cooling	\$144	\$72	\$72	\$144	\$72	5.84	11.68	4.67	1.25
3 Water-Cooled Centrifugal Chiller > 300 ton	A- Commercial Cooling	\$27	\$14	\$14	\$27	\$14	15.47	30.95	11.88	1.30
4 Water-Cooled Screw Chiller > 300 ton	A- Commercial Cooling	\$27	\$14	\$14	\$27	\$14	17.98	35.97	11.46	1.57
5 Chiller Tune Up	A- Commercial Cooling	\$3	\$1	\$1	\$3	\$1	60.92	121.83	44.26	1.38
6 High Efficiency Pumps	A- Commercial Cooling	\$97	\$48	\$48	\$97	\$48	3.12	6.24	3.03	1.03
7 Efficient Chilled Water Pump	A- Commercial Cooling	\$198	\$99	\$99	\$198	\$99	51.86	103.73	34.37	1.51
8 Chilled Hot Water Reset	A- Commercial Cooling	\$5	\$3	\$3	\$5	\$3	20.01	40.03	30.11	0.66
9 VAV System Conversion	A- Commercial Cooling	\$2,000	\$1,000	\$1,000	\$2,000	\$1,000	5.17	10.33	7.14	0.72
10 Motor Belt Replacement	A- Commercial Cooling	\$21	\$11	\$11	\$21	\$11	5.66	11.33	5.64	1.00
11 Water-Side Economizer	A- Commercial Cooling	\$50	\$25	\$25	\$50	\$25	18.54	37.08	25.61	0.72
12 Improved Duct Sealing - Cooling Chiller	C- Commercial Electric Heating and Cooling	\$108	\$54	\$54	\$108	\$54	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13 Integrated Building Design	C- Commercial Electric Heating and Cooling	\$74,099	\$37,050	\$37,050	\$74,099	\$37,050	4.97	9.94	4.43	1.12
14 Energy Efficient Windows	C- Commercial Electric Heating and Cooling	\$75	\$36	\$36	\$75	\$36	58.93	117.86	70.78	0.83
15 Cool Roof	C- Commercial Electric Heating and Cooling	\$665	\$332	\$332	\$665	\$332	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16 Ceiling Insulation	C- Commercial Electric Heating and Cooling	\$47	\$24	\$24	\$47	\$24	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17 Wall Insulation	C- Commercial Electric Heating and Cooling	\$100	\$50	\$50	\$100	\$50	29.46	58.91	24.61	1.20
18 Roof Insulation	C- Commercial Electric Heating and Cooling	\$111	\$56	\$56	\$111	\$56	2.69	5.39	1.83	1.47
19 Window Improvements	C- Commercial Electric Heating and Cooling	\$389	\$194	\$194	\$389	\$194	1.45	2.90	1.50	0.97
20 EMS Install	C- Commercial Electric Heating and Cooling	\$4	\$2	\$2	\$4	\$2	253.67	507.34	338.05	0.75
21 EMS Optimization	C- Commercial Electric Heating and Cooling	\$50	\$25	\$25	\$50	\$25	33.63	67.26	39.05	0.86
22 HVAC Occupancy Sensors	C- Commercial Electric Heating and Cooling	\$250	\$125	\$125	\$250	\$125	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
23 Setback with Electric Heat	C- Commercial Electric Heating and Cooling	\$50	\$25	\$25	\$50	\$25	138.36	276.73	204.66	0.68
24 EMS Pump Scheduling Controls	C- Commercial Electric Heating and Cooling	\$507	\$254	\$254	\$507	\$254	3.22	6.44	4.10	0.79
25 Web-enabled EMS	C- Commercial Electric Heating and Cooling	\$50	\$25	\$25	\$50	\$25	28.01	56.02	59.97	0.47
26 Zoning	C- Commercial Electric Heating and Cooling	\$500	\$250	\$250	\$500	\$250	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27 Retrocommissioning	C- Commercial Electric Heating and Cooling	\$0	\$0	\$0	\$0	\$0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28 Air Cooled Recip Chiller-ER	A- Commercial Cooling	\$260	\$130	\$130	\$260	\$130	2.43	4.86	1.78	1.37
29 Air Cooled Screw Chiller-ER	A- Commercial Cooling	\$263	\$132	\$132	\$263	\$132	2.81	5.61	2.18	1.29
30 Water Cooled Centrifugal Chiller >300 ton-ER	A- Commercial Cooling	\$208	\$104	\$104	\$208	\$104	1.87	3.73	1.71	1.09
31 Water Cooled Screw Chiller >300 ton-ER	A- Commercial Cooling	\$97	\$48	\$48	\$97	\$48	3.88	7.77	1.94	2.00
32 High Efficiency Pumps-ER	A- Commercial Cooling	\$164	\$82	\$82	\$164	\$82	1.89	3.78	2.01	0.94
33 Energy Efficient Windows-ER	C- Commercial Electric Heating and Cooling	\$183	\$91	\$91	\$183	\$91	24.72	49.45	29.62	0.83
34 Cool Roof-ER	C- Commercial Electric Heating and Cooling	\$2,643	\$1,321	\$1,321	\$2,643	\$1,321	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
35 Add New Measure										
Program Totals:		n/a	n/a	n/a	n/a	n/a	4.14	6.21	5.97	0.96

INDUSTRIAL - ENERGY EFFICIENCY - PRAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

#2 Space Cooling - Unitary and Split AC		Ratio: TRC					Measure Level Ratios			
Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RM
1 AC 240k - 760k	A- Commercial Cooling	\$115	\$58	\$58	\$115	\$58	2.30	4.60	1.46	1.57
2 Air Source Heat Pump - Cooling	A- Commercial Cooling	\$53	\$26	\$26	\$53	\$26	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3 Ductless (mini split) - Cooling	A- Commercial Cooling	\$802	\$401	\$401	\$802	\$401	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4 Water Loop Heat Pump (WLHP) - Cooling	A- Commercial Cooling	\$25	\$13	\$13	\$25	\$13	3.86	7.73	3.69	1.05
5 Ground Source Heat Pump - Cooling	A- Commercial Cooling	\$180	\$90	\$90	\$180	\$90	1.77	3.53	0.88	2.01
6 DX Condenser Coil Cleaning	A- Commercial Cooling	\$6	\$3	\$3	\$6	\$3	11.02	22.03	5.42	2.03
7 Room A/C	A- Commercial Cooling	\$75	\$37	\$37	\$75	\$37	8.11	16.21	3.07	2.64
8 Improved Duct Sealing - Cooling AC	C- Commercial Electric Heating and Cooling	\$108	\$54	\$54	\$108	\$54	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
9 Integrated Building Design	C- Commercial Electric Heating and Cooling	\$74,099	\$37,050	\$37,050	\$74,099	\$37,050	4.97	9.94	4.43	1.12
10 Energy Efficient Windows	C- Commercial Electric Heating and Cooling	\$75	\$38	\$38	\$75	\$38	58.93	117.86	70.78	0.83
11 Cool Roof	C- Commercial Electric Heating and Cooling	\$665	\$332	\$332	\$665	\$332	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12 Ceiling Insulation	C- Commercial Electric Heating and Cooling	\$47	\$24	\$24	\$47	\$24	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
13 Wall Insulation	C- Commercial Electric Heating and Cooling	\$100	\$50	\$50	\$100	\$50	29.46	58.91	24.61	1.20
14 Roof Insulation	C- Commercial Electric Heating and Cooling	\$111	\$56	\$56	\$111	\$56	2.69	5.39	1.83	1.47
15 Window Improvements	C- Commercial Electric Heating and Cooling	\$389	\$194	\$194	\$389	\$194	1.45	2.90	1.50	0.97
16 Programmable Thermostats	C- Commercial Electric Heating and Cooling	\$59	\$29	\$29	\$59	\$29	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
17 EMS install	C- Commercial Electric Heating and Cooling	\$4	\$2	\$2	\$4	\$2	253.67	507.34	338.05	0.75
18 EMS Optimization	C- Commercial Electric Heating and Cooling	\$50	\$25	\$25	\$50	\$25	33.63	67.26	39.05	0.86
19 HVAC Occupancy Sensors	C- Commercial Electric Heating and Cooling	\$250	\$125	\$125	\$250	\$125	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
20 Setback with Electric Heat	C- Commercial Electric Heating and Cooling	\$50	\$25	\$25	\$50	\$25	138.36	276.73	204.66	0.68
21 EMS Pump Scheduling Controls	C- Commercial Electric Heating and Cooling	\$507	\$254	\$254	\$507	\$254	3.22	6.44	4.10	0.79
22 Web enabled EMS	C- Commercial Electric Heating and Cooling	\$50	\$25	\$25	\$50	\$25	28.01	56.02	59.97	0.47
23 Zoning	C- Commercial Electric Heating and Cooling	\$500	\$250	\$250	\$500	\$250	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
24 Retrocommissioning	C- Commercial Electric Heating and Cooling	\$0	\$0	\$0	\$0	\$0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25 AC 240k - 760k-ER	A- Commercial Cooling	\$272	\$136	\$136	\$272	\$136	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
26 Air Source Heat Pump-Cooling-ER	A- Commercial Cooling	\$375	\$187	\$187	\$375	\$187	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27 Ductless Mini Split-Cooling-ER	A- Commercial Cooling	\$907	\$454	\$454	\$907	\$454	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28 Water Loop Heat Pump(WLHP) Cooling-ER	A- Commercial Cooling	\$816	\$408	\$408	\$816	\$408	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
29 Ground Source Heat Pump-Cooling-ER	A- Commercial Cooling	\$274	\$137	\$137	\$274	\$137	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30 Room A/C-ER	A- Commercial Cooling	\$112	\$56	\$56	\$112	\$56	5.49	10.97	2.23	2.46
31 Energy Efficient Windows-ER	C- Commercial Electric Heating and Cooling	\$183	\$91	\$91	\$183	\$91	24.72	49.45	29.62	0.83
32 Cool Roof-ER	C- Commercial Electric Heating and Cooling	\$2,643	\$1,321	\$1,321	\$2,643	\$1,321	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
33 Add New Measure										
Program Totals:		n/a	n/a	n/a	n/a	n/a	3.64	5.46	5.20	0.94

#3 Space Heating		Ratio: TRC					Measure Level Ratios			
Measure Name	Measure Type	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RM
1 Air Source Heat Pump - Heating	B- Commercial Electric Heating	\$210	\$105	\$105	\$210	\$105	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2 Ground Source Heat Pump - Heating	B- Commercial Electric Heating	\$180	\$90	\$90	\$180	\$90	2.85	5.71	2.37	1.20
3 Ductless (mini split) - Heating	B- Commercial Electric Heating	\$641	\$321	\$321	\$641	\$321	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4 VFD Pumps	B- Commercial Electric Heating	\$4,535	\$2,268	\$2,268	\$4,535	\$2,268	5.63	11.27	6.37	0.88
5 ECM motors on furnaces	B- Commercial Electric Heating	\$1,250	\$625	\$625	\$1,250	\$625	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6 Water Loop Heat Pump (WLHP) - Heating	B- Commercial Electric Heating	\$20	\$10	\$10	\$20	\$10	1.26	2.53	2.22	0.57
7 Improved Duct Sealing - Heating	C- Commercial Electric Heating and Cooling	\$108	\$54	\$54	\$108	\$54	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8 Integrated Building Design	C- Commercial Electric Heating and Cooling	\$74,099	\$37,050	\$37,050	\$74,099	\$37,050	4.97	9.94	4.43	1.12
9 Energy Efficient Windows	C- Commercial Electric Heating and Cooling	\$75	\$38	\$38	\$75	\$38	58.93	117.86	70.78	0.83
10 Cool Roof	C- Commercial Electric Heating and Cooling	\$665	\$332	\$332	\$665	\$332	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11 Ceiling Insulation	C- Commercial Electric Heating and Cooling	\$47	\$24	\$24	\$47	\$24	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12 Wall Insulation	C- Commercial Electric Heating and Cooling	\$100	\$50	\$50	\$100	\$50	29.46	58.91	24.61	1.20
13 Roof Insulation	C- Commercial Electric Heating and Cooling	\$111	\$56	\$56	\$111	\$56	2.69	5.39	1.83	1.47
14 Window Improvements	C- Commercial Electric Heating and Cooling	\$389	\$194	\$194	\$389	\$194	1.45	2.90	1.50	0.97
15 Programmable Thermostats	C- Commercial Electric Heating and Cooling	\$59	\$29	\$29	\$59	\$29	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16 EMS install	C- Commercial Electric Heating and Cooling	\$4	\$2	\$2	\$4	\$2	253.67	507.34	338.05	0.75
17 EMS Optimization	C- Commercial Electric Heating and Cooling	\$50	\$25	\$25	\$50	\$25	33.63	67.26	39.05	0.86
18 HVAC Occupancy Sensors	C- Commercial Electric Heating and Cooling	\$250	\$125	\$125	\$250	\$125	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19 Setback with Electric Heat	C- Commercial Electric Heating and Cooling	\$50	\$25	\$25	\$50	\$25	138.36	276.73	204.66	0.68
20 EMS Pump Scheduling Controls	C- Commercial Electric Heating and Cooling	\$507	\$254	\$254	\$507	\$254	3.22	6.44	4.10	0.79
21 Web enabled EMS	C- Commercial Electric Heating and Cooling	\$50	\$25	\$25	\$50	\$25	28.01	56.02	59.97	0.47
22 Destratification Fan (HVLIS)	C- Commercial Electric Heating and Cooling	\$13	\$6	\$6	\$13	\$6	2.50	5.01	2.10	1.19
23 Retrocommissioning	C- Commercial Electric Heating and Cooling	\$0	\$0	\$0	\$0	\$0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
24 Air Source Heat Pump-Heating-ER	B- Commercial Electric Heating	\$513	\$256	\$256	\$513	\$256	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25 Ground Source Heat Pump-Heating-ER	B- Commercial Electric Heating	\$274	\$137	\$137	\$274	\$137	1.41	2.81	1.09	1.29
26 Ductless Mini Split-Heating-ER	B- Commercial Electric Heating	\$907	\$454	\$454	\$907	\$454	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27 Water Loop Heat Pump(WLHP) Heating-ER	B- Commercial Electric Heating	\$116	\$58	\$58	\$116	\$58	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28 Energy Efficient Windows-ER	C- Commercial Electric Heating and Cooling	\$183	\$91	\$91	\$183	\$91	24.72	49.45	29.62	0.83
29 Cool Roof-ER	C- Commercial Electric Heating and Cooling	\$2,643	\$1,321	\$1,321	\$2,643	\$1,321	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30 Add New Measure										
Program Totals:		n/a	n/a	n/a	n/a	n/a	3.14	4.71	4.68	0.91

4 CSR 240-22.050(3)(G)5A through 5F; 4 CSR 240-22.050(3)(H)

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

GDS ASSOCIATES - COST EFFECTIVENESS SCREENING TOOL®

INPUT WORKSHEET

MAP

NonHVAC

#1 Office Equipment		Ratio: TRC		\$20.00		\$1.00											
				6,353		Measure Level Ratios											
Measure Name		Measure Type		Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	Societal	TRC	Direct Utility	Participant	RIM			
1	Energy Star Compliant Refrigerator-ROB	A - Commercial Office Equipment			\$750.00	\$0.00	\$375.00	\$1,125.00	\$750.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
2	Energy Star office equipment including computers, monitors, copiers, etc.	A - Commercial Office Equipment	1,464	\$137.00	\$0.00	\$68.50	\$205.50	\$137.00	\$40.00	3.54	3.54	3.54	1.00	3.54			
3	Smart Strip plug outlet	A - Commercial Office Equipment	-	\$40.00	\$0.00	\$20.00	\$60.00	\$40.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
4	PC Network Energy Management Controls replacing no central control	A - Commercial Office Equipment	4,239	\$20.00	\$0.00	\$10.00	\$30.00	\$20.00	\$40.00	3.34	3.34	3.34	1.00	3.34			
5	Energy Star UPS-ROB	A - Commercial Office Equipment	-	\$1,303.35	\$0.00	\$651.68	\$1,955.03	\$1,303.35	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
6	High Efficiency CRAC unit-ROB	A - Commercial Office Equipment	650	\$82.50	\$0.00	\$41.25	\$123.75	\$82.50	\$40.00	2.24	2.24	2.24	1.00	2.24			
7	Energy Star Compliant Refrigerator-ER	A - Commercial Office Equipment	-	\$802.02	\$0.00	\$401.01	\$1,203.03	\$802.02	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
8	Energy Star office equipment including computers, monitors, copiers, etc.	A - Commercial Office Equipment	4,706	\$226.78	\$0.00	\$113.39	\$340.17	\$226.78	\$40.00	2.14	2.14	2.14	1.00	2.14			
9	Energy Star UPS-ER	A - Commercial Office Equipment	-	\$1,407.36	\$0.00	\$703.68	\$2,111.04	\$1,407.36	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
10	High Efficiency CRAC unit-ER	A - Commercial Office Equipment	254	\$112.59	\$0.00	\$56.30	\$168.89	\$112.59	\$40.00	1.64	1.64	1.64	1.00	1.64			
11	Add New Measure				\$0.00	\$0.00	\$0.00	\$0.00									
Program Totals:			n/a	n/a	n/a				n/a	1.60	1.60	1.60	1.00	1.60			

#2 Water Heating		Ratio: TRC		8,411		Measure Level Ratios											
				8,411		Measure Level Ratios											
Measure Name		Measure Type		Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	Societal	TRC	Direct Utility	Participant	RIM			
1	Heat Pump Water Heater-ROB	G - Commercial Electric DHW	1	\$10,600.00	\$0.00	\$5,300.00	\$15,900.00	\$10,600.00	\$0.00	22.38	22.38	22.38	1.00	22.38			
2	Heat Pump Storage Water Heater-ROB	G - Commercial Electric DHW	330	\$83.00	\$0.00	\$41.50	\$124.50	\$83.00	\$0.00	6.04	6.04	6.04	1.00	6.04			
3	Electric Tankless Water Heater-ROB	G - Commercial Electric DHW	14	\$466.00	\$0.00	\$233.00	\$699.00	\$466.00	\$0.00	2.41	2.41	2.41	1.00	2.41			
4	Low Flow Faucet Aerator	G - Commercial Electric DHW	2,088	\$2.50	\$0.00	\$1.25	\$3.75	\$2.50	\$0.00	277.98	277.98	277.98	1.00	277.98			
5	Low Flow Showerhead	G - Commercial Electric DHW	-	\$25.00	\$0.00	\$12.50	\$37.50	\$25.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
6	Hot Water (DHW) Pipe Insulation	G - Commercial Electric DHW	5,352	\$10.00	\$0.00	\$5.00	\$15.00	\$10.00	\$0.00	7.20	7.20	7.20	1.00	7.20			
7	Tank Insulation (electric)	G - Commercial Electric DHW	370	\$2.35	\$0.00	\$1.18	\$3.53	\$2.35	\$0.00	221.12	221.12	221.12	1.00	221.12			
8	ECM Circulator Pump	G - Commercial Electric DHW	20	\$2,266.67	\$0.00	\$1,133.34	\$3,400.01	\$2,266.67	\$0.00	2.69	2.69	2.69	1.00	2.69			
9	Drain water Heat Recovery Water Heater	G - Commercial Electric DHW	3	\$631.00	\$0.00	\$315.50	\$946.50	\$631.00	\$0.00	1.49	1.49	1.49	1.00	1.49			
10	Efficient Hot Water Pump-ROB	G - Commercial Electric DHW	181	\$33.00	\$0.00	\$16.50	\$49.50	\$33.00	\$0.00	19.13	19.13	19.13	1.00	19.13			
11	HVAC Condenser Heater Recovery Water Heating	G - Commercial Electric DHW	21	\$254.00	\$0.00	\$127.00	\$381.00	\$254.00	\$0.00	39.58	39.58	39.58	1.00	39.58			
12	Process Cooling Condenser Heater Recovery Water Heating	G - Commercial Electric DHW	31	\$254.00	\$0.00	\$127.00	\$381.00	\$254.00	\$0.00	29.61	29.61	29.61	1.00	29.61			
13	Heat Pump Water Heater-ER	G - Commercial Electric DHW	0	\$13,846.00	\$0.00	\$6,923.00	\$20,769.00	\$13,846.00	\$0.00	17.14	17.14	17.14	1.00	17.14			
14	Heat Pump Storage Water Heater-ER	G - Commercial Electric DHW	59	\$231.30	\$0.00	\$115.65	\$346.95	\$231.30	\$0.00	2.17	2.17	2.17	1.00	2.17			
15	Electric Tankless Water Heater-ER	G - Commercial Electric DHW	14	\$681.21	\$0.00	\$340.61	\$1,021.82	\$681.21	\$0.00	1.65	1.65	1.65	1.00	1.65			
16	Efficient Hot Water Pump-ER	G - Commercial Electric DHW	160	\$61.11	\$0.00	\$30.56	\$91.67	\$61.11	\$0.00	10.33	10.33	10.33	1.00	10.33			
17	Add New Measure																
Program Totals:			n/a	n/a	n/a				n/a	10.77	10.77	10.77	1.00	10.77			

#3 Ventilation		Ratio: TRC		172,355		Measure Level Ratios											
				172,355		Measure Level Ratios											
Measure Name		Measure Type		Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	Societal	TRC	Direct Utility	Participant	RIM			
1	Economizer	C - Commercial Ventilation	-	\$101.00	\$0.00	\$50.50	\$151.50	\$101.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
2	Variable Speed Drive Control, 15 HP	C - Commercial Ventilation	255	\$3,690.00	\$0.00	\$1,845.00	\$5,535.00	\$3,690.00	\$0.00	6.25	6.25	6.25	1.00	6.25			
3	Variable Speed Drive Control, 5 HP	C - Commercial Ventilation	766	\$1,230.00	\$0.00	\$615.00	\$1,845.00	\$1,230.00	\$0.00	6.25	6.25	6.25	1.00	6.25			
4	Variable Speed Drive Control, 40 HP	C - Commercial Ventilation	96	\$9,840.00	\$0.00	\$4,920.00	\$14,760.00	\$9,840.00	\$0.00	6.25	6.25	6.25	1.00	6.25			
5	High Speed Fans	C - Commercial Ventilation	-	\$675.00	\$0.00	\$337.50	\$1,012.50	\$675.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
6	High Volume Low Speed Fans	C - Commercial Ventilation	-	\$375.00	\$0.00	\$187.50	\$562.50	\$375.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
7	Destratification Fans (HVLS)	C - Commercial Ventilation	171,238	\$12.75	\$0.00	\$6.38	\$19.13	\$12.75	\$0.00	2.46	2.46	2.46	1.00	2.46			
8	Engineered CKV hood	C - Commercial Ventilation	-	\$316.00	\$0.00	\$158.00	\$474.00	\$316.00	\$0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			
9	Add New Measure							\$0.00									
Program Totals:			n/a	n/a	n/a				n/a	3.07	3.07	3.07	1.00	3.07			

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

#4 Lighting		Ratio: TRC		6,397,976										Measure Level Ratios				
Measure Name		Measure Type		Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	Societal	TRC	Direct Utility	Participant	RIM				
1	Lamp & Ballast Retrofit (HPT8 Replacing T12)	H - Commercial Lighting		115,469	\$11.00	\$0.00	\$5.50	\$16.50	\$11.00	6.23	6.23	6.23	1.00	6.23				
2	Lamp & Ballast Retrofit (HPT8 Replacing Standard T8)	H - Commercial Lighting		99,271	\$11.00	\$0.00	\$5.50	\$16.50	\$11.00	2.22	2.22	2.22	1.00	2.22				
3	Lamp & Ballast Retrofit (Low Wattage HPT8 Replacing T12)	H - Commercial Lighting		62,366	\$37.00	\$0.00	\$18.50	\$55.50	\$37.00	3.33	3.33	3.33	1.00	3.33				
4	Lamp & Ballast Retrofit (Low Wattage HPT8 Replacing Standard T8)	H - Commercial Lighting		72,653	\$37.00	\$0.00	\$18.50	\$55.50	\$37.00	1.90	1.90	1.90	1.00	1.90				
5	T5 HP Retrofits	H - Commercial Lighting		7,192	\$366.00	\$0.00	\$183.00	\$549.00	\$366.00	2.95	2.95	2.95	1.00	2.95				
6	Light Tube	H - Commercial Lighting		-	\$500.00	\$0.00	\$250.00	\$750.00	\$500.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
7	High Intensity Fluorescent Fixture (replacing HID)	H - Commercial Lighting		9,238	\$284.00	\$0.00	\$142.00	\$426.00	\$284.00	5.07	5.07	5.07	1.00	5.07				
8	42W 8 lamp Hi Bay CFL	H - Commercial Lighting		-	\$496.40	\$0.00	\$248.20	\$744.60	\$496.40	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
9	HID Fixture Upgrade - Pulse Start Metal Halide	H - Commercial Lighting		3,270	\$162.00	\$0.00	\$81.00	\$243.00	\$162.00	5.59	5.59	5.59	1.00	5.59				
10	Interior Induction Lighting-ROB	H - Commercial Lighting		1,251,121	\$1.53	\$0.00	\$0.77	\$2.30	\$1.53	3.86	3.86	3.86	1.00	3.86				
11	LED Screw In (replacing Incandescent)	H - Commercial Lighting		7,464	\$28.00	\$0.00	\$14.00	\$42.00	\$28.00	3.77	3.77	3.77	1.00	3.77				
12	LED Screw In (replacing CFL)	H - Commercial Lighting		-	\$12.00	\$0.00	\$6.00	\$18.00	\$12.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
13	LED High bay lighting	H - Commercial Lighting		2,300	\$2,900.00	\$0.00	\$1,450.00	\$4,350.00	\$2,900.00	2.05	2.05	2.05	1.00	2.05				
14	LED low bay lighting	H - Commercial Lighting		1,410	\$298.00	\$0.00	\$149.00	\$447.00	\$298.00	8.56	8.56	8.56	1.00	8.56				
15	LED Downlight	H - Commercial Lighting		295	\$61.00	\$0.00	\$30.50	\$91.50	\$61.00	4.63	4.63	4.63	1.00	4.63				
16	LED Specialty (replacing Incandescent)	H - Commercial Lighting		10,873	\$23.00	\$0.00	\$11.50	\$34.50	\$23.00	4.10	4.10	4.10	1.00	4.10				
17	LED Specialty (replacing CFL)	H - Commercial Lighting		-	\$10.17	\$0.00	\$5.09	\$15.26	\$10.17	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
18	LED Troffer	H - Commercial Lighting		-	\$125.00	\$0.00	\$62.50	\$187.50	\$125.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
19	LED Tube Lighting	H - Commercial Lighting		125,788	\$30.00	\$0.00	\$15.00	\$45.00	\$30.00	2.07	2.07	2.07	1.00	2.07				
20	LED Grow Light	H - Commercial Lighting		1,951,172	\$1.53	\$0.00	\$0.77	\$2.30	\$1.53	2.79	2.79	2.79	1.00	2.79				
21	Interior Non Highbay/Lowbay LED Fixtures	H - Commercial Lighting		2,646,558	\$2.67	\$0.00	\$1.34	\$4.01	\$2.67	1.55	1.55	1.55	1.00	1.55				
22	Illuminated Signs to LED	H - Commercial Lighting		-	\$4.00	\$0.00	\$2.00	\$6.00	\$4.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
23	LED Exit Sign	H - Commercial Lighting		3,128	\$64.00	\$0.00	\$32.00	\$96.00	\$64.00	4.72	4.72	4.72	1.00	4.72				
24	Exterior HID replacement with LEDs	H - Commercial Lighting		-	\$753.67	\$0.00	\$376.84	\$1,130.51	\$753.67	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
25	Garage HID replacement with LEDs	H - Commercial Lighting		-	\$566.67	\$0.00	\$283.34	\$850.01	\$566.67	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
26	Exterior Linear Fluorescent-ROB	H - Commercial Lighting		-	\$566.67	\$0.00	\$283.34	\$850.01	\$566.67	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
27	Central Lighting Control	H - Commercial Lighting		1,190	\$2,700.00	\$0.00	\$1,350.00	\$4,050.00	\$2,700.00	3.19	3.19	3.19	1.00	3.19				
28	Daylight Sensor Controls	H - Commercial Lighting		1,412	\$3,000.00	\$0.00	\$1,500.00	\$4,500.00	\$3,000.00	3.62	3.62	3.62	1.00	3.62				
29	Occupancy Sensor	H - Commercial Lighting		13,122	\$98.00	\$0.00	\$49.00	\$147.00	\$98.00	3.23	3.23	3.23	1.00	3.23				
30	Occupancy Sensor & Daylight Sensor	H - Commercial Lighting		9,878	\$278.00	\$0.00	\$139.00	\$417.00	\$278.00	2.01	2.01	2.01	1.00	2.01				
31	Switching Controls for Multilevel Lighting (Non-HID)	H - Commercial Lighting		1,066	\$3,000.00	\$0.00	\$1,500.00	\$4,500.00	\$3,000.00	2.72	2.72	2.72	1.00	2.72				
32	Lighting Power Density - Interior	H - Commercial Lighting		230	\$220.00	\$0.00	\$110.00	\$330.00	\$220.00	15.24	15.24	15.24	1.00	15.24				
33	Lighting Power Density - Exterior-ROB	H - Commercial Lighting		261	\$220.00	\$0.00	\$110.00	\$330.00	\$220.00	13.85	13.85	13.85	1.00	13.85				
34	Lighting Power Density - Parking Garage-ROB	H - Commercial Lighting		12	\$220.00	\$0.00	\$110.00	\$330.00	\$220.00	35.41	35.41	35.41	1.00	35.41				
35	Stairwell Bi-Level Control	H - Commercial Lighting		242	\$825.00	\$0.00	\$412.50	\$1,237.50	\$825.00	3.97	3.97	3.97	1.00	3.97				
36	Exterior Bi-Level Controls	H - Commercial Lighting		129	\$3,700.00	\$0.00	\$1,850.00	\$5,550.00	\$3,700.00	3.87	3.87	3.87	1.00	3.87				
37	Garage Bi-Level Controls	H - Commercial Lighting		892	\$500.00	\$0.00	\$250.00	\$750.00	\$500.00	1.77	1.77	1.77	1.00	1.77				
38	Long Day Lighting Dairy	H - Commercial Lighting		-	\$2.00	\$0.00	\$1.00	\$3.00	\$2.00	#DIV/0!	#DIV/0!	#DIV/0!	0.00	0.00				
39	Poultry LED Lighting	H - Commercial Lighting		-	\$1.53	\$0.00	\$0.77	\$2.30	\$1.53	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
40	Interior Induction Lighting-ER	H - Commercial Lighting		1,014,819	\$1.70	\$0.00	\$0.85	\$2.55	\$1.70	3.47	3.47	3.47	1.00	3.47				
41	Exterior Linear Fluorescent-ER	H - Commercial Lighting		-	\$830.10	\$0.00	\$415.05	\$1,245.15	\$830.10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
42	Lighting Power Density - Exterior-ER	H - Commercial Lighting		405	\$233.63	\$0.00	\$116.82	\$350.45	\$233.63	13.05	13.05	13.05	1.00	13.05				
43	Lighting Power Density - Parking Garage-ER	H - Commercial Lighting		19	\$233.63	\$0.00	\$116.82	\$350.45	\$233.63	33.34	33.34	33.34	1.00	33.34				
44	Add New Measure																	
Program Totals:		n/a		n/a	n/a				n/a	1.94	1.94	1.94	1.00	1.94				

#5 Other		Ratio: TRC		19,422										Measure Level Ratios				
Measure Name		Measure Type		Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	Societal	TRC	Direct Utility	Participant	RIM				
1	NEMA Premium Transformer, single-phase-ROB	J - Other - C/I		-	\$11.98	\$0.00	\$5.99	\$17.97	\$11.98	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
2	NEMA Premium Transformer, three-phase-ROB	J - Other - C/I		2,331	\$10.46	\$0.00	\$5.23	\$15.69	\$10.46	1.29	1.29	1.29	1.00	1.29				
3	High Efficiency Transformer, single-phase-ROB	J - Other - C/I		13,441	\$1.54	\$0.00	\$0.77	\$2.31	\$1.54	1.82	1.82	1.82	1.00	1.82				
4	High Efficiency Transformer, three-phase-ROB	J - Other - C/I		3,281	\$6.08	\$0.00	\$3.04	\$9.12	\$6.08	1.82	1.82	1.82	1.00	1.82				
5	Optimized Snow and Ice Melt Controls (electric)	J - Other - C/I		-	\$15.15	\$0.00	\$7.58	\$22.73	\$15.15	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
6	Engine Block Heater Timer	J - Other - C/I		284	\$35.00	\$0.00	\$17.50	\$52.50	\$35.00	23.78	23.78	23.78	1.00	23.78				
7	Parking Garage Exhaust Fan CO Control	J - Other - C/I		84	\$900.00	\$0.00	\$450.00	\$1,350.00	\$900.00	2.76	2.76	2.76	1.00	2.76				
8	NEMA Premium Transformer, single-phase-ER	J - Other - C/I		-	\$15.00	\$0.00	\$7.50	\$22.50	\$15.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
9	NEMA Premium Transformer, three-phase-ER	J - Other - C/I		-	\$14.00	\$0.00	\$7.00	\$21.00	\$14.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
10	High Efficiency Transformer, single-phase-ER	J - Other - C/I		-	\$2.35	\$0.00	\$1.18	\$3.53	\$2.35	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
11	High Efficiency Transformer, three-phase-ER	J - Other - C/I		-	\$10.00	\$0.00	\$5.00	\$15.00	\$10.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!				
12	Add New Measure																	
Program Totals:		n/a		n/a	n/a				n/a	2.44	2.44	2.44	1.00	2.44				

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

#6 Machine Drive		Ratio: TRC						Measure Level Ratios				
		304,197,697										
Measure Name	Measure Type	Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	Societal	TRC	Direct Utility	Participant	RIM
1 Advanced Lubricants	K - Industrial Process	68,116,759	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	114.86	114.86	114.86	1.00	114.86
2 Compressed Air System Management	K - Industrial Process	102,107,771	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	71.82	71.82	71.82	1.00	71.82
3 Compressed Air - Advanced Compressor Controls	K - Industrial Process	2,365,220	\$0.05	\$0.00	\$0.03	\$0.08	\$0.05	29.18	29.18	29.18	1.00	29.18
4 Elec Motors Replacing Pneumatic (Comp Air)	K - Industrial Process	1,788	\$620.00	\$0.00	\$310.00	\$930.00	\$620.00	22.75	22.75	22.75	1.00	22.75
5 Compressed Air Audits and Leak Repair	K - Industrial Process	343,563	\$4.00	\$0.00	\$2.00	\$6.00	\$4.00	11.55	11.55	11.55	1.00	11.55
6 Storage Tank Addition (Comp Air)	K - Industrial Process	6,811	\$24.00	\$0.00	\$12.00	\$36.00	\$24.00	23.74	23.74	23.74	1.00	23.74
7 VFD for Process Fans	K - Industrial Process	13,357	\$200.00	\$0.00	\$100.00	\$300.00	\$200.00	5.58	5.58	5.58	1.00	5.58
8 Automatic Drains, High Efficiency Nozzles and Other (Comp Air)	K - Industrial Process	913	\$355.00	\$0.00	\$177.50	\$532.50	\$355.00	1.82	1.82	1.82	1.00	1.82
9 VFD for Process Pumps	K - Industrial Process	46,162	\$200.00	\$0.00	\$100.00	\$300.00	\$200.00	5.74	5.74	5.74	1.00	5.74
10 Pump System Efficiency Improvements	K - Industrial Process	23,088,060	\$0.01	\$0.00	\$0.00	\$0.01	\$0.01	182.40	182.40	182.40	1.00	182.40
11 Motor System Optimization (Including ASD)	K - Industrial Process	73,106,321	\$0.01	\$0.00	\$0.00	\$0.01	\$0.01	162.13	162.13	162.13	1.00	162.13
12 Electric Supply System Improvements	K - Industrial Process	16,560,142	\$0.01	\$0.00	\$0.01	\$0.02	\$0.01	145.92	145.92	145.92	1.00	145.92
13 Sensors & Controls	K - Industrial Process	6,211,677	\$0.01	\$0.00	\$0.01	\$0.02	\$0.01	104.23	104.23	104.23	1.00	104.23
14 Industrial Motor Management	K - Industrial Process	8,540,696	\$0.02	\$0.00	\$0.01	\$0.03	\$0.02	29.51	29.51	29.51	1.00	29.51
15 Fan System Improvements	K - Industrial Process	1,837,048	\$0.02	\$0.00	\$0.01	\$0.04	\$0.02	60.80	60.80	60.80	1.00	60.80
16 High Efficiency Pumps ROB	K - Industrial Process	42,988	\$31.00	\$0.00	\$15.50	\$46.50	\$31.00	22.04	22.04	22.04	1.00	22.04
17 Advanced Efficient Motors ROB	K - Industrial Process	-	\$4.55	\$0.00	\$2.28	\$6.83	\$4.55	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
18 High Efficiency Dryers (Comp Air) ROB	K - Industrial Process	62,397	\$4.00	\$0.00	\$2.00	\$6.00	\$4.00	14.50	14.50	14.50	1.00	14.50
19 Energy Information System	K - Industrial Process	1,746,023	\$0.06	\$0.00	\$0.03	\$0.09	\$0.06	23.92	23.92	23.92	1.00	23.92
20 Advanced Efficient Motors - Early Replacement	K - Industrial Process	-	\$34.20	\$0.00	\$17.10	\$51.30	\$34.20	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
21 Air Compressor-Adding an Air Compressor to Aid Low Load Conditions	K - Industrial Process	880	\$1,482.00	\$0.00	\$741.00	\$2,223.00	\$1,482.00	3.52	3.52	3.52	1.00	3.52
22 Air-Entraining Air Nozzles	K - Industrial Process	766	\$98.00	\$0.00	\$49.00	\$147.00	\$98.00	113.58	113.58	113.58	1.00	113.58
23 Compressed Air-Fixed Speed Air Compressor - ROB	K - Industrial Process	9,543	\$30.00	\$0.00	\$15.00	\$45.00	\$30.00	44.67	44.67	44.67	1.00	44.67
24 Compressed Air-Fixed Speed Air Compressor - Early Replacement	K - Industrial Process	8,107	\$81.87	\$0.00	\$40.94	\$122.81	\$81.87	16.37	16.37	16.37	1.00	16.37
25 High Efficiency Dryers (comp air) - Early Replacement	K - Industrial Process	77,164	\$6.18	\$0.00	\$3.09	\$9.27	\$6.18	9.38	9.38	9.38	1.00	9.38
26 High Efficiency Pumps - Early Replacement	K - Industrial Process	43,708	\$99.13	\$0.00	\$49.57	\$148.70	\$99.13	6.89	6.89	6.89	1.00	6.89
27 Receiver Capacity Addition	K - Industrial Process	390	\$2,000.00	\$0.00	\$1,000.00	\$3,000.00	\$2,000.00	4.62	4.62	4.62	1.00	4.62
28 Synchronous belt drives	K - Industrial Process	320,985	\$6.48	\$0.00	\$3.24	\$9.72	\$6.48	7.94	7.94	7.94	1.00	7.94
29 Variable Speed Air Compressor-Replace Fixed Speed Air Compressor with Variable Speed - ROB	K - Industrial Process	10,491	\$190.00	\$0.00	\$95.00	\$285.00	\$190.00	23.53	23.53	23.53	1.00	23.53
30 Variable Speed Air Compressor-Replace Fixed Speed Air Compressor with Variable Speed - Early Replacement	K - Industrial Process	12,274	\$241.87	\$0.00	\$120.94	\$362.81	\$241.87	18.48	18.48	18.48	1.00	18.48
31 VSD Air Compressor-Install VSD Air Compressor for Trim	K - Industrial Process	8,160	\$669.00	\$0.00	\$334.50	\$1,003.50	\$669.00	2.88	2.88	2.88	1.00	2.88
32 Add New Measure	K - Industrial Process	-	-	-	-	-	-	-	-	-	-	-
Program Totals:		n/a	n/a	n/a	-	-	n/a	9.68	9.68	9.68	1.00	9.68

#7 Industrial Other		Ratio: TRC						Measure Level Ratios				
		55,141										
Measure Name	Measure Type	Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	Societal	TRC	Direct Utility	Participant	RIM
1 Barrel Insulation - Inj. Molding (Plastics)	K - Industrial Process	61	\$80.00	\$0.00	\$40.00	\$120.00	\$80.00	14.97	14.97	14.97	1.00	14.97
2 High Efficiency Welders ROB	K - Industrial Process	16	\$300.00	\$0.00	\$150.00	\$450.00	\$300.00	6.37	6.37	6.37	1.00	6.37
3 Pellet Dryer Insulation (Plastics)	K - Industrial Process	296	\$40.00	\$0.00	\$20.00	\$60.00	\$40.00	6.77	6.77	6.77	1.00	6.77
4 3 Phase High Eff Battery Charger ROB	K - Industrial Process	15	\$872.50	\$0.00	\$436.25	\$1,308.75	\$872.50	4.28	4.28	4.28	1.00	4.28
5 Injection Molding Machine - Efficient (Plastics)	K - Industrial Process	314	\$175.00	\$0.00	\$87.50	\$262.50	\$175.00	2.31	2.31	2.31	1.00	2.31
6 Fiber Laser Replacing CO2 Laser (Auto Industry) ROB	K - Industrial Process	10	\$5,000.00	\$0.00	\$2,500.00	\$7,500.00	\$5,000.00	9.57	9.57	9.57	1.00	9.57
7 Lab Fume Hood Ventilation Reduction	K - Industrial Process	3,430	\$4.00	\$0.00	\$2.00	\$6.00	\$4.00	3.52	3.52	3.52	1.00	3.52
8 Process Fan Ventilation Reduction	K - Industrial Process	50,472	\$2.00	\$0.00	\$1.00	\$3.00	\$2.00	1.52	1.52	1.52	1.00	1.52
9 Hybrid Injection Molding Machine ROB	K - Industrial Process	626	\$75.00	\$0.00	\$37.50	\$112.50	\$75.00	4.75	4.75	4.75	1.00	4.75
10 3 Phase High Eff Battery Charger - Early Replacement	K - Industrial Process	16	\$1,312.55	\$0.00	\$656.28	\$1,968.83	\$1,312.55	2.24	2.24	2.24	1.00	2.24
11 Fiber Laser Replacing CO2 laser (auto industry) - Early Replacement	K - Industrial Process	2	\$21,767.00	\$0.00	\$10,883.50	\$32,650.50	\$21,767.00	2.20	2.20	2.20	1.00	2.20
12 High Efficiency Welders - Early Replacement	K - Industrial Process	15	\$635.00	\$0.00	\$317.50	\$952.50	\$635.00	3.01	3.01	3.01	1.00	3.01
13 High Speed Turbo Blower for Wastewater	K - Industrial Process	5	\$1,100.00	\$0.00	\$550.00	\$1,650.00	\$1,100.00	2.23	2.23	2.23	1.00	2.23
14 Hybrid Injection Molding Machine - Early Replacement	K - Industrial Process	377	\$189.23	\$0.00	\$94.62	\$283.85	\$189.23	1.88	1.88	1.88	1.00	1.88
15 Industrial Air Curtain	K - Industrial Process	3,586	\$45.00	\$0.00	\$22.50	\$67.50	\$45.00	3.17	3.17	3.17	1.00	3.17
16 On-Demand ventilation control for Dust and Fume Collection Systems	K - Industrial Process	39	\$766.00	\$0.00	\$383.00	\$1,149.00	\$766.00	4.39	4.39	4.39	1.00	4.39
17 Add New Measure	K - Industrial Process	-	-	-	-	-	-	-	-	-	-	-
Program Totals:		n/a	n/a	n/a	-	-	n/a	2.31	2.31	2.31	1.00	2.31

#8 Process Cooling & Refrigeration		Ratio: TRC						Measure Level Ratios				
		17,259,768										
Measure Name	Measure Type	Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	Societal	TRC	Direct Utility	Participant	RIM
1 Improved Refrigeration	K - Industrial Process	10,438,423	\$0.03	\$0.00	\$0.02	\$0.05	\$0.03	48.64	48.64	48.64	1.00	48.64
2 Electric Supply System Improvements	K - Industrial Process	3,294,715	\$0.01	\$0.00	\$0.01	\$0.02	\$0.01	145.92	145.92	145.92	1.00	145.92
3 Sensors & Controls	K - Industrial Process	2,749,297	\$0.01	\$0.00	\$0.01	\$0.02	\$0.01	104.23	104.23	104.23	1.00	104.23
4 Energy Information System	K - Industrial Process	777,332	\$0.06	\$0.00	\$0.03	\$0.09	\$0.06	23.92	23.92	23.92	1.00	23.92
5 Evaporator Fan Motor Controls	K - Industrial Process	-	\$621.00	\$0.00	\$310.50	\$931.50	\$621.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6 Floating Head Pressure Control	K - Industrial Process	2,679	\$120.00	\$0.00	\$60.00	\$180.00	\$120.00	9.39	9.39	9.39	1.00	9.39
7 Refrigerant charging correction	K - Industrial Process	165,487	\$10.36	\$0.00	\$5.18	\$15.54	\$10.36	3.67	3.67	3.67	1.00	3.67
8 Evaporator Motor Reduction - ROB	K - Industrial Process	41,694	\$0.50	\$0.00	\$0.25	\$0.75	\$0.50	134.42	134.42	134.42	1.00	134.42
9 Evaporator Motor Reduction - Early Replacement	K - Industrial Process	49,974	\$3.54	\$0.00	\$1.77	\$5.31	\$3.54	18.99	18.99	18.99	1.00	18.99
10 Add New Measure	K - Industrial Process	-	-	-	-	-	-	-	-	-	-	-
Program Totals:		n/a	n/a	n/a	-	-	n/a	10.17	10.17	10.17	1.00	10.17

4 CSR 240-22.050(3)(G)5A through 5F; 4 CSR 240-22.050(3)(H)

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

#9 Process Heating		Ratio: TRC											
		13,438,914											
								Measure Level Ratios					
Measure Name	Measure Type	Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	Societal	TRC	Direct Utility	Participant	RIM	
1	Electric Supply System Improvements	K - Industrial Process	6,209,037	\$0.01	\$0.00	\$0.01	\$0.02	\$0.01	145.92	145.92	145.92	1.00	145.92
2	Sensors & Controls	K - Industrial Process	5,280,777	\$0.01	\$0.00	\$0.01	\$0.02	\$0.01	104.23	104.23	104.23	1.00	104.23
3	Energy Information System	K - Industrial Process	1,949,099	\$0.06	\$0.00	\$0.03	\$0.09	\$0.06	23.92	23.92	23.92	1.00	23.92
4	Industrial-Process-WWTP Dissolved Oxygen (DO) Aeration	K - Industrial Process	2,588	\$500.00	\$0.00	\$250.00	\$750.00	\$500.00	1.77	1.77	1.77	1.00	1.77
5	Add New Measure												
Program Totals:		n/a	n/a	n/a			n/a	9.43	9.43	9.43	1.00	9.43	

#10 Agriculture		Ratio: TRC											
		2,392,949											
								Measure Level Ratios					
Measure Name	Measure Type	Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	Societal	TRC	Direct Utility	Participant	RIM	
1	Other Industrial - Low-Energy Livestock Waterer ROB	K - Industrial Process	272	\$92.00	\$0.00	\$46.00	\$138.00	\$92.00	23.64	23.64	23.64	1.00	23.64
2	Other Industrial - Dairy Refrigerator Tune-Up	K - Industrial Process	-	\$0.05	\$0.00	\$0.03	\$0.08	\$0.05	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
3	Greenhouse Environmental Controls	K - Industrial Process	-	\$125.00	\$0.00	\$62.50	\$187.50	\$125.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4	Scroll Compressor with Heat Exchanger for Dairy Refrigeration	K - Industrial Process	-	\$1,500.00	\$0.00	\$750.00	\$2,250.00	\$1,500.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	Variable Speed Drive with Heat Exchanger, Milk	K - Industrial Process	-	\$2.20	\$0.00	\$1.10	\$3.30	\$2.20	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	Milk Pre-Cooler Heat Exchanger	K - Industrial Process	1,680,944	\$0.15	\$0.00	\$0.08	\$0.23	\$0.15	13.03	13.03	13.03	1.00	13.03
7	Variable Speed Drives for Dairy Vacuum Pumps	K - Industrial Process	1,753	\$356.00	\$0.00	\$178.00	\$534.00	\$356.00	1.89	1.89	1.89	1.00	1.89
8	VFD for Process Fans - Agriculture	K - Industrial Process	2,443	\$200.00	\$0.00	\$100.00	\$300.00	\$200.00	4.53	4.53	4.53	1.00	4.53
9	VFD for Process Pumps - Agriculture	K - Industrial Process	7,963	\$200.00	\$0.00	\$100.00	\$300.00	\$200.00	2.53	2.53	2.53	1.00	2.53
10	WFD for Process Pumps - Irrigation	K - Industrial Process	14,812	\$200.00	\$0.00	\$100.00	\$300.00	\$200.00	2.20	2.20	2.20	1.00	2.20
11	Grain Storage Temperature and Moisture Management Controller	K - Industrial Process	2,489	\$233.00	\$0.00	\$116.50	\$349.50	\$233.00	2.40	2.40	2.40	1.00	2.40
12	Low Pressure Sprinkler Nozzles	K - Industrial Process	153,205	\$1.00	\$0.00	\$0.50	\$1.50	\$1.00	7.95	7.95	7.95	1.00	7.95
13	Fan Thermostat Controller	K - Industrial Process	1,308	\$50.00	\$0.00	\$25.00	\$75.00	\$50.00	28.29	28.29	28.29	1.00	28.29
14	Variable Speed Drive with Heat Exchanger, Milk New	K - Industrial Process	527,760	\$0.50	\$0.00	\$0.25	\$0.75	\$0.50	1.91	1.91	1.91	1.00	1.91
15	Other Industrial - Low-Energy Livestock Waterer Early Replacement	K - Industrial Process	346	\$179.08	\$0.00	\$89.54	\$268.62	\$179.08	12.15	12.15	12.15	1.00	12.15
16	Add New Measure												
Program Totals:		n/a	n/a	n/a			n/a	2.22	2.22	2.22	1.00	2.22	

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

GDS ASSOCIATES - COST EFFECTIVENESS SCREENING TOOL

INPUT WORKSHEET

MAP HVAC

#1 Space Cooling - Chillers		Ratio: TRC		8,012												Measure Level Ratios					
Measure Name		Measure Type		Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM								
1	Air-Cooled Recip Chiller	A- Commercial Cooling	1,724	\$141.0	\$0.0	\$70.5	\$211.5	\$141.0	\$143.9	5.78	5.78	5.23	1.10								
2	Air-Cooled Screw Chiller	A- Commercial Cooling	1,754	\$143.9	\$1.0	\$72.0	\$215.9	\$143.9	\$143.9	5.78	5.78	5.14	1.12								
3	Water-Cooled Centrifugal Chiller > 300 ton	A- Commercial Cooling	669	\$27.3	\$2.0	\$13.7	\$41.0	\$27.3	\$27.3	15.31	15.31	12.31	1.24								
4	Water-Cooled Screw Chiller > 300 ton	A- Commercial Cooling	657	\$27.2	\$3.0	\$13.6	\$40.7	\$27.2	\$27.2	17.80	17.80	11.89	1.50								
5	Chiller Tune Up	A- Commercial Cooling	223	\$2.8	\$4.0	\$1.4	\$4.2	\$2.8	\$2.8	60.13	60.13	44.35	1.36								
6	High Efficiency Pumps	A- Commercial Cooling	46	\$96.8	\$5.0	\$48.4	\$145.2	\$96.8	\$96.8	3.01	3.01	3.48	0.87								
7	Efficient Chilled Water Pump	A- Commercial Cooling	8	\$196.0	\$6.0	\$99.0	\$297.0	\$196.0	\$196.0	51.29	51.29	34.63	1.48								
8	Chilled Hot Water Reset	A- Commercial Cooling	1,296	\$5.3	\$7.0	\$2.6	\$7.9	\$5.3	\$5.3	19.70	19.70	30.35	0.65								
9	VAV System Conversion	A- Commercial Cooling	2	\$2,000.0	\$8.0	\$1,000.0	\$3,000.0	\$2,000.0	\$2,000.0	5.10	5.10	7.60	0.67								
10	Motor Belt Replacement	A- Commercial Cooling	128	\$21.0	\$9.0	\$10.5	\$31.5	\$21.0	\$21.0	5.59	5.59	6.10	0.92								
11	Water-Side Economizer	A- Commercial Cooling	58	\$50.0	\$10.0	\$25.0	\$75.0	\$50.0	\$50.0	18.27	18.27	25.93	0.70								
12	Improved Duct Sealing - Cooling Chiller	C- Commercial Electric Heating and Cooling	0	\$108.0	\$11.0	\$54.0	\$162.0	\$108.0	\$108.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
13	Integrated Building Design	C- Commercial Electric Heating and Cooling	17	\$74,099.0	\$12.0	\$37,049.5	\$111,148.5	\$74,099.0	\$74,099.0	4.84	4.84	4.87	0.99								
14	Energy Efficient Windows	C- Commercial Electric Heating and Cooling	171	\$75.0	\$13.0	\$37.5	\$112.5	\$75.0	\$75.0	58.23	58.23	70.90	0.82								
15	Cool Roof	C- Commercial Electric Heating and Cooling	0	\$664.9	\$14.0	\$332.4	\$997.3	\$664.9	\$664.9	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
16	Ceiling Insulation	C- Commercial Electric Heating and Cooling	0	\$47.2	\$15.0	\$23.6	\$70.7	\$47.2	\$47.2	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
17	Wall Insulation	C- Commercial Electric Heating and Cooling	70	\$100.0	\$16.0	\$50.0	\$150.0	\$100.0	\$100.0	29.18	29.18	24.99	1.17								
18	Roof Insulation	C- Commercial Electric Heating and Cooling	154	\$111.1	\$17.0	\$55.6	\$166.7	\$111.1	\$111.1	2.59	2.59	2.29	1.13								
19	Window Improvements	C- Commercial Electric Heating and Cooling	7	\$388.9	\$18.0	\$194.5	\$583.4	\$388.9	\$388.9	1.37	1.37	1.96	0.70								
20	EMS install	C- Commercial Electric Heating and Cooling	698	\$3.5	\$19.0	\$1.8	\$5.3	\$3.5	\$3.5	250.01	250.01	336.10	0.74								
21	EMS Optimization	C- Commercial Electric Heating and Cooling	22	\$50.0	\$20.0	\$25.0	\$75.0	\$50.0	\$50.0	33.20	33.20	39.31	0.84								
22	HVAC Occupancy Sensors	C- Commercial Electric Heating and Cooling	0	\$250.0	\$21.0	\$125.0	\$375.0	\$250.0	\$250.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
23	Setback with Electric Heat	C- Commercial Electric Heating and Cooling	24	\$50.0	\$22.0	\$25.0	\$75.0	\$50.0	\$50.0	136.20	136.20	203.40	0.67								
24	EMS Pump Scheduling Controls	C- Commercial Electric Heating and Cooling	15	\$507.0	\$23.0	\$253.5	\$760.5	\$507.0	\$507.0	3.18	3.18	4.58	0.69								
25	Web enabled EMS	C- Commercial Electric Heating and Cooling	269	\$50.0	\$24.0	\$25.0	\$75.0	\$50.0	\$50.0	27.49	27.49	60.04	0.46								
26	Zoning	C- Commercial Electric Heating and Cooling	0	\$500.0	\$25.0	\$250.0	\$750.0	\$500.0	\$500.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
27	Retrocommissioning	C- Commercial Electric Heating and Cooling	0	\$0.3	\$26.0	\$0.2	\$0.5	\$0.3	\$0.3	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
28	Air Cooled Recip Chiller-ER	A- Commercial Cooling	1,143	\$260.4	\$27.0	\$130.2	\$390.6	\$260.4	\$260.4	2.32	2.32	2.24	1.03								
29	Air Cooled Screw Chiller-ER	A- Commercial Cooling	948	\$263.3	\$28.0	\$131.7	\$395.0	\$263.3	\$263.3	2.67	2.67	2.63	1.02								
30	Water Cooled Centrifugal Chiller >300 ton-ER	A- Commercial Cooling	315	\$208.1	\$29.0	\$104.1	\$312.2	\$208.1	\$208.1	1.77	1.77	2.18	0.81								
31	Water Cooled Screw Chiller >300 ton-ER	A- Commercial Cooling	521	\$96.7	\$33.0	\$48.4	\$145.1	\$96.7	\$96.7	3.72	3.72	2.40	1.55								
32	High Efficiency Pumps-ER	A- Commercial Cooling	54	\$164.0	\$31.0	\$82.0	\$246.0	\$164.0	\$164.0	1.78	1.78	2.46	0.72								
33	Energy Efficient Windows-ER	C- Commercial Electric Heating and Cooling	94	\$182.9	\$32.0	\$91.5	\$274.4	\$182.9	\$182.9	23.88	23.88	29.66	0.81								
34	Cool Roof-ER	C- Commercial Electric Heating and Cooling	0	\$2,643.0	\$33.0	\$1,321.5	\$3,964.5	\$2,643.0	\$2,643.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
35	Add New Measure				\$34.0	\$0.0	\$0.0	\$0.0	\$0.0												
Program Totals		n/a	n/a	n/a	n/a				n/a	3.68	3.68	5.75	0.88								

#2 Space Cooling - Unitary and Split AC		Ratio: TRC		79,039												Measure Level Ratios					
Measure Name		Measure Type		Total Units	Per Unit Total or Incremental Cost	Per Unit Total Participant Cost	Per Unit Total Utility Admin Cost	Per Unit Total Utility Cost	Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM								
1	AC 240k - 760k	A- Commercial Cooling	12,077	\$115.1	\$0.0	\$57.6	\$172.7	\$115.1	\$115.1	2.19	2.19	1.93	1.14								
2	Air Source Heat Pump - Cooling	A- Commercial Cooling	0	\$52.5	\$0.0	\$26.3	\$78.8	\$52.5	\$52.5	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
3	Ductless (mini split) - Cooling	A- Commercial Cooling	0	\$80.9	\$0.0	\$40.09	\$120.88	\$80.9	\$80.9	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
4	Water Loop Heat Pump (WLHP) - Cooling	A- Commercial Cooling	4,279	\$25.1	\$0.0	\$12.6	\$37.7	\$25.1	\$25.1	3.73	3.73	4.13	0.90								
5	Ground Source Heat Pump - Cooling	A- Commercial Cooling	40,780	\$180.0	\$0.0	\$90.0	\$270.0	\$180.0	\$180.0	1.69	1.69	1.36	1.24								
6	DX Condenser Coil Cleaning	A- Commercial Cooling	4,832	\$6.4	\$0.0	\$3.2	\$9.6	\$6.4	\$6.4	10.87	10.87	5.87	1.85								
7	Room A/C	A- Commercial Cooling	3,081	\$74.8	\$0.0	\$37.4	\$112.1	\$74.8	\$74.8	7.89	7.89	3.51	2.25								
8	Improved Duct Sealing - Cooling AC	C- Commercial Electric Heating and Cooling	0	\$108.0	\$0.0	\$54.0	\$162.0	\$108.0	\$108.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
9	Integrated Building Design	C- Commercial Electric Heating and Cooling	173	\$74,099.0	\$0.0	\$37,049.5	\$111,148.5	\$74,099.0	\$74,099.0	4.84	4.84	4.87	0.99								
10	Energy Efficient Windows	C- Commercial Electric Heating and Cooling	1,618	\$75.0	\$0.0	\$37.5	\$112.5	\$75.0	\$75.0	58.23	58.23	70.90	0.82								
11	Cool Roof	C- Commercial Electric Heating and Cooling	0	\$664.9	\$0.0	\$332.4	\$997.3	\$664.9	\$664.9	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
12	Ceiling Insulation	C- Commercial Electric Heating and Cooling	0	\$47.2	\$0.0	\$23.6	\$70.7	\$47.2	\$47.2	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
13	Wall Insulation	C- Commercial Electric Heating and Cooling	666	\$100.0	\$0.0	\$50.0	\$150.0	\$100.0	\$100.0	29.18	29.18	24.99	1.17								
14	Roof Insulation	C- Commercial Electric Heating and Cooling	1,624	\$111.1	\$0.0	\$55.6	\$166.7	\$111.1	\$111.1	2.59	2.59	2.29	1.13								
15	Window Improvements	C- Commercial Electric Heating and Cooling	110	\$388.9	\$0.0	\$194.5	\$583.4	\$388.9	\$388.9	1.37	1.37	1.96	0.70								
16	Programmable Thermostats	C- Commercial Electric Heating and Cooling	0	\$50.0	\$0.0	\$25.0	\$75.0	\$50.0	\$50.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
17	EMS install	C- Commercial Electric Heating and Cooling	6,595	\$3.5	\$0.0	\$1.8	\$5.3	\$3.5	\$3.5	250.01	250.01	336.10	0.74								
18	EMS Optimization	C- Commercial Electric Heating and Cooling	212	\$50.0	\$0.0	\$25.0	\$75.0	\$50.0	\$50.0	33.20	33.20	39.31	0.84								
19	HVAC Occupancy Sensors	C- Commercial Electric Heating and Cooling	0	\$250.0	\$0.0	\$125.0	\$375.0	\$250.0	\$250.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
20	Setback with Electric Heat	C- Commercial Electric Heating and Cooling	227	\$50.0	\$0.0	\$25.0	\$75.0	\$50.0	\$50.0	136.20	136.20	203.40	0.67								
21	EMS Pump Scheduling Controls	C- Commercial Electric Heating and Cooling	225	\$507.0	\$0.0	\$253.5	\$760.5	\$507.0	\$507.0	3.18	3.18	4.58	0.69								
22	Web enabled EMS	C- Commercial Electric Heating and Cooling	2,542	\$50.0	\$0.0	\$25.0	\$75.0	\$50.0	\$50.0	27.49	27.49	60.04	0.46								
23	Zoning	C- Commercial Electric Heating and Cooling	0	\$500.0	\$0.0	\$250.0	\$750.0	\$500.0	\$500.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
24	Retrocommissioning	C- Commercial Electric Heating and Cooling	0	\$0.3	\$0.0	\$0.2	\$0.5	\$0.3	\$0.3	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
25	AC 240k - 760k-ER	A- Commercial Cooling	0	\$271.7	\$0.0	\$135.9	\$407.6	\$271.7	\$271.7	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
26	Air Source Heat Pump-Cooling-ER	A- Commercial Cooling	0	\$374.8	\$0.0	\$187.4	\$562.2	\$374.8	\$374.8	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
27	Ductless Mini Split-Cooling-ER	A- Commercial Cooling	0	\$907.4	\$0.0	\$453.7	\$1,361.1	\$907.4	\$907.4	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
28	Water Loop Heat Pump(WLHP) Cooling-ER	A- Commercial Cooling	0	\$816.0	\$0.0	\$408.0	\$1,224.0	\$816.0	\$816.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
29	Ground Source Heat Pump-Cooling-ER	A- Commercial Cooling	0	\$273.7	\$0.0	\$136.8	\$410.5	\$273.7	\$273.7	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
30	Room A/C-ER	A- Commercial Cooling	3,883	\$112.4	\$0.0	\$56.2	\$168.7	\$112.4	\$112.4	5.25	5.25	2.67	1.96								
31	Energy Efficient Windows-ER	C- Commercial Electric Heating and Cooling	1,213	\$182.9	\$0.0	\$91.5	\$274.4	\$182.9	\$182.9	23.88	23.88	29.66	0.81								
32	Cool Roof-ER	C- Commercial Electric Heating and Cooling	0	\$2,643.0	\$0.0	\$1,321.5	\$3,964.5	\$2,643.0	\$2,643.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!								
33	Add New Measure																				
Program Totals		n/a	n/a	n/a	n/a				n/a	3.12	3.12	4.89	0.87								

INDUSTRIAL - ENERGY EFFICIENCY - PMAP (Incremental/Utility Admin./Incentive/Cost Effectiveness)

#3 Space Heating		Ratio: TRC		119,073				Measure Level Ratios			
Measure Name	Measure Type	Total Units	Per Unit Total or Incremental Cost				Per Unit Rebate - Incentive	TRC	Direct Utility	Participant	RIM
1 Air Source Heat Pump - Heating	B- Commercial Electric Heating	0	\$210.0	\$0.0	\$105.0	\$315.0	\$210.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2 Ground Source Heat Pump - Heating	B- Commercial Electric Heating	7,269	\$180.0	\$0.0	\$90.0	\$270.0	\$180.0	2.70	2.70	2.80	0.96
3 Ductless (mini split) - Heating	B- Commercial Electric Heating	0	\$641.5	\$0.0	\$320.7	\$962.2	\$641.5	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
4 VFD Pumps	B- Commercial Electric Heating	16	\$4,535.0	\$0.0	\$2,267.5	\$6,802.5	\$4,535.0	5.56	5.56	6.83	0.81
5 ECM motors on furnaces	B- Commercial Electric Heating	0	\$1,250.0	\$0.0	\$625.0	\$1,875.0	\$1,250.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6 Water Loop Heat Pump (WLHP) - Heating	B- Commercial Electric Heating	2,180	\$20.1	\$0.0	\$10.0	\$30.1	\$20.1	1.17	1.17	2.66	0.44
7 Improved Duct Sealing - Heating	C- Commercial Electric Heating and Cooling	0	\$108.0	\$0.0	\$54.0	\$162.0	\$108.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
8 Integrated Building Design	C- Commercial Electric Heating and Cooling	40	\$74,099.0	\$0.0	\$37,049.5	\$111,148.5	\$74,099.0	4.84	4.84	4.87	0.99
9 Energy Efficient Windows	C- Commercial Electric Heating and Cooling	381	\$75.0	\$0.0	\$37.5	\$112.5	\$75.0	58.23	58.23	70.90	0.82
10 Cool Roof	C- Commercial Electric Heating and Cooling	0	\$664.9	\$0.0	\$332.4	\$997.3	\$664.9	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11 Ceiling Insulation	C- Commercial Electric Heating and Cooling	0	\$47.2	\$0.0	\$23.6	\$70.7	\$47.2	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
12 Wall Insulation	C- Commercial Electric Heating and Cooling	157	\$100.0	\$0.0	\$50.0	\$150.0	\$100.0	29.18	29.18	24.99	1.17
13 Roof Insulation	C- Commercial Electric Heating and Cooling	382	\$111.1	\$0.0	\$55.6	\$166.7	\$111.1	2.59	2.59	2.29	1.13
14 Window Improvements	C- Commercial Electric Heating and Cooling	19	\$388.9	\$0.0	\$194.5	\$583.4	\$388.9	1.37	1.37	1.96	0.70
15 Programmable Thermostats	C- Commercial Electric Heating and Cooling	0	\$59.0	\$0.0	\$29.5	\$88.5	\$59.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
16 EMS Install	C- Commercial Electric Heating and Cooling	1,552	\$3.5	\$0.0	\$1.8	\$5.3	\$3.5	250.01	250.01	336.10	0.74
17 EMS Optimization	C- Commercial Electric Heating and Cooling	50	\$50.0	\$0.0	\$25.0	\$75.0	\$50.0	33.20	33.20	39.31	0.84
18 HVAC Occupancy Sensors	C- Commercial Electric Heating and Cooling	0	\$250.0	\$0.0	\$125.0	\$375.0	\$250.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
19 Setback with Electric Heat	C- Commercial Electric Heating and Cooling	53	\$50.0	\$0.0	\$25.0	\$75.0	\$50.0	136.20	136.20	203.40	0.67
20 EMS Pump Scheduling Controls	C- Commercial Electric Heating and Cooling	53	\$507.0	\$0.0	\$253.5	\$760.5	\$507.0	3.18	3.18	4.58	0.69
21 Web enabled EMS	C- Commercial Electric Heating and Cooling	598	\$50.0	\$0.0	\$25.0	\$75.0	\$50.0	27.49	27.49	60.04	0.46
22 Destratification Fan (HVLS)	C- Commercial Electric Heating and Cooling	106,324	\$12.8	\$0.0	\$6.4	\$19.1	\$12.8	2.37	2.37	2.55	0.93
23 Retrocommissioning	C- Commercial Electric Heating and Cooling	0	\$0.3	\$0.0	\$0.2	\$0.5	\$0.3	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
24 Air Source Heat Pump-Heating-ER	B- Commercial Electric Heating	0	\$512.9	\$0.0	\$256.5	\$769.4	\$512.9	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
25 Ground Source Heat Pump-Heating-ER	B- Commercial Electric Heating	5,626	\$273.7	\$0.0	\$136.8	\$410.5	\$273.7	1.34	1.34	1.57	0.86
26 Ductless Mini Split-Heating-ER	B- Commercial Electric Heating	0	\$907.4	\$0.0	\$453.7	\$1,361.1	\$907.4	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
27 Water Loop Heat Pump(WLHP) Heating-ER	B- Commercial Electric Heating	0	\$115.9	\$0.0	\$57.9	\$173.8	\$115.9	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
28 Energy Efficient Windows-ER	C- Commercial Electric Heating and Cooling	244	\$182.9	\$0.0	\$91.5	\$274.4	\$182.9	23.88	23.88	29.66	0.81
29 Cool Roof-ER	C- Commercial Electric Heating and Cooling	0	\$2,643.0	\$0.0	\$1,321.5	\$3,964.5	\$2,643.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
30 Add New Measure											
Program Totals		n/a	n/a	n/a			n/a	2.64	2.64	4.39	0.81

4 CSR 240-22.050(3)(G)5A through 5F; 4 CSR 240-22.050(3)(H)

Compliance References

4 CSR 240-22.050(3)(G)1	1-39
4 CSR 240-22.050(3)(G)3	1-39
4 CSR 240-22.050(3)(G)4	1-39
4 CSR 240-22.050(3)(H)	1-39
4 CSR 240-22.050(3)(G)5A	40-51
4 CSR 240-22.050(3)(G)5B	40-51
4 CSR 240-22.050(3)(G)5C	40-51
4 CSR 240-22.050(3)(G)5D	40-51
4 CSR 240-22.050(3)(G)5E	40-51
4 CSR 240-22.050(3)(G)5F	40-51
4 CSR 240-22.050(3)(H)	40-51