APPENDIX 10C. NATIONAL ENERGY SAVINGS AND NET PRESENT VALUE SENSITIVITY ANALYSIS

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APPENDIX 10C. NATIONAL ENERGY SAVINGS AND NET PRESENT VALUE RESULTS SENSITIVITY ANALYSIS

10C.1 POLYPHASE MOTORS RESULTS

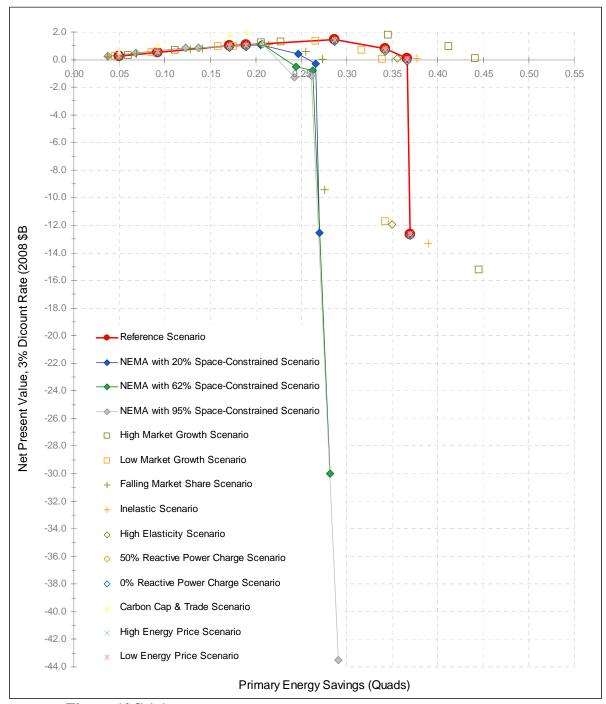


Figure 10C.1.1 Polyphase Motors: Net Present Value (3% Discount Rate) versus Primary Energy Savings

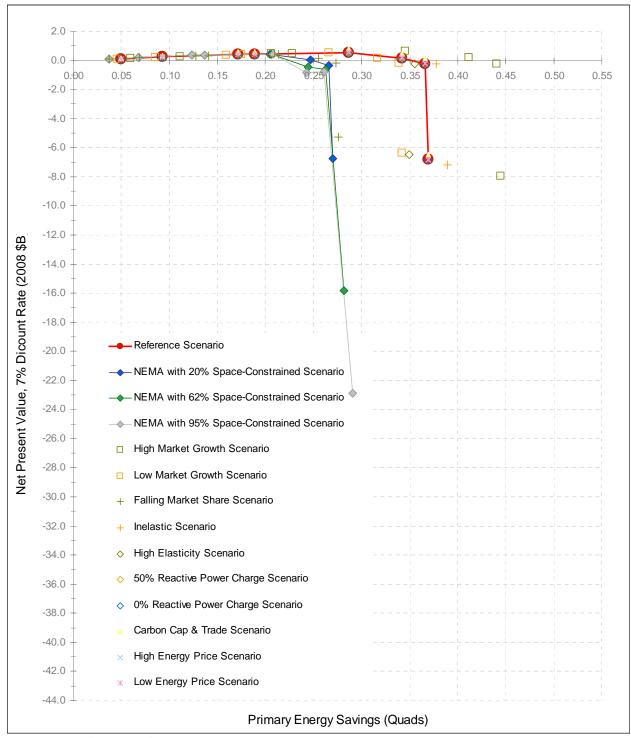


Figure 10C.1.2 Polyphase Motors: Net Present Value (7% Discount Rate) versus Primary Energy Savings

Table 10C.1.1 Polyphase Motors: Reference Scenario

-				T	rial Stan	dard Le	vel		
		1	2	3	4	4B	5	6	7
Motor Efficiency		76.12%	77.69%	79.39%	80.07%	82.58%	84.42%	85.35%	86.97%
Shipments (Millions)		32.2	32.2	32.2	32.2	32.2	32.2	31.2	30.5
Site Savings	Active Energy (TWh)	6.3	12.8	23.0	25.9	42.8	50.9	54.2	59.1
Site Savings	Reduced Reactive Power (GVAr)	14.3	20.3	42.3	42.9	43.1	52.1	57.9	30.2
	Active Energy Savings	0.037	0.074	0.133	0.150	0.248	0.295	0.314	0.342
Primary Energy Savings (Quads)	Reduced Reactive Losses	0.013	0.018	0.038	0.039	0.039	0.047	0.053	0.027
	Total Savings	0.050	0.093	0.171	0.189	0.287	0.342	0.366	0.370
Discounted Primary Energy Savings (Quads)	3% Discount Rate	0.03	0.05	0.09	0.10	0.15	0.18	0.19	0.20
Discounted Filmary Energy Savings (Quads)	7% Discount Rate	0.01	0.02	0.04	0.05	0.07	0.09	0.09	0.09
Equipment Cost Increase (2008 \$B)		0.22	0.36	0.64	0.86	1.77	3.80	5.43	28.59
Discounted Equipment Cost Increase (2008 \$B)	3% Discount Rate	0.12	0.20	0.36	0.48	0.98	2.11	3.02	15.89
Discounted Equipment Cost Increase (2000 \$B)	7% Discount Rate	0.06	0.10	0.18	0.25	0.51	1.10	1.56	8.23
	Active Energy Savings	0.70	1.41	2.53	2.86	4.72	5.62	5.97	6.51
Operating Cost Savings (2008 \$B)	Reactive Power Savings	0.11	0.16	0.33	0.33	0.33	0.40	0.45	0.23
	Total Savings	0.81	1.57	2.86	3.19	5.05	6.02	6.42	6.75
Discounted Operating Cost Savings (2008 \$B)	3% Discount Rate	0.39	0.75	1.37	1.53	2.42	2.89	3.08	3.24
Discounted Operating Cost Savings (2000 \$D)	7% Discount Rate	0.17	0.33	0.60	0.66	1.05	1.26	1.34	1.41
Net Present Value (2008 \$B)	3% Discount Rate	0.26	0.55	1.01	1.05	1.44	0.77	0.06	-12.65
THE I TESCHE VALUE (2000 PD)	7% Discount Rate	0.10	0.22	0.41	0.42	0.54	0.16	-0.22	-6.82

Table 10C.1.2 Polyphase Motors: NEMA with 20% Space-Constrained Scenario

·				Tı	rial Stan	dard Le	vel		
		1	2	3	4	4B	5	6	7
Motor Efficiency		76.12%	77.69%	79.39%	80.07%	82.58%	84.42%	85.35%	86.97%
Shipments (Millions)		30.9	30.9	30.9	30.9	30.9	30.9	30.0	29.3
Site Savings	Active Energy (TWh)	4.8	9.6	16.7	18.9	30.6	36.8	39.5	43.3
Site Savings	Reduced Reactive Power (GVAr)	13.5	19.2	40.2	40.8	40.9	49.7	55.6	29.0
Primary Energy Savings (Quads)	Active Energy Savings	0.028	0.055	0.097	0.110	0.178	0.214	0.229	0.251
Triniary Energy Savings (Quaus)	Reduced Reactive Losses	0.009	0.013	0.027	0.027	0.027	0.033	0.037	0.019
Discounted Primary Energy Savings	Total Savings	0.037	0.068	0.123	0.137	0.205	0.247	0.266	0.270
(Quads)	3% Discount Rate	0.02	0.04	0.07	0.07	0.11	0.13	0.14	0.14
Equipment Cost Increase (2008 \$B)	7% Discount Rate	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.07
Discounted Equipment Cost Increase		0.21	0.35	0.62	0.83	1.70	3.66	5.23	27.52
(2008 \$B)	3% Discount Rate	0.12	0.19	0.34	0.46	0.95	2.04	2.91	15.34
	7% Discount Rate	0.06	0.10	0.18	0.24	0.49	1.06	1.52	7.98
Operating Cost Savings (2008 \$B)	Active Energy Savings	0.62	1.22	2.13	2.41	3.91	4.70	5.04	5.52
Reactive Power Savings		0.10	0.15	0.31	0.32	0.32	0.38	0.43	0.22
Discounted Operating Cost Savings	Total Savings	0.72	1.37	2.44	2.73	4.23	5.08	5.47	5.75
(2008 \$B)	3% Discount Rate	0.35	0.66	1.18	1.32	2.04	2.46	2.64	2.78
	7% Discount Rate	0.15	0.29	0.52	0.58	0.90	1.08	1.16	1.22
Net Present Value (2008 \$B)	3% Discount Rate	0.23	0.47	0.83	0.86	1.10	0.42	-0.27	-12.55
	7% Discount Rate	0.09	0.19	0.34	0.34	0.40	0.02	-0.36	-6.76

Table 10C.1.3 Polyphase Motors: NEMA with 62% Space-Constrained Scenario

Trial Standard Level 1 2 3 **4B** 5 7 6 **Motor Efficiency** 76.12% 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% **Shipments (Millions)** 30.9 30.9 30.9 30.9 30.9 30.9 29.3 29.0 **Active Energy** 4.8 9.6 16.7 18.9 30.8 37.4 38.9 44.5 (TWh) **Site Savings Reduced Reactive** 13.5 19.2 40.2 40.8 42.1 41.6 55.4 35.6 Power (GVAr) **Active Energy** 0.028 0.055 0.097 0.110 0.178 0.217 0.226 0.258 Savings Primary Energy Savings (Quads) **Reduced Reactive** 0.009 0.013 0.027 0.027 0.028 0.028 0.037 0.024 Losses **Total Savings** 0.037 0.068 0.123 0.137 0.206 0.244 0.263 0.282 0.02 0.11 **3% Discount Rate** 0.04 0.07 0.07 0.13 0.14 0.15 **Discounted Primary Energy Savings (Quads)** 0.04 7% Discount Rate 0.01 0.02 0.03 0.05 0.06 0.07 0.07 **Equipment Cost Increase (2008 \$B)** 0.21 0.35 0.83 1.70 5.37 6.07 0.61 59.02 0.19 0.34 0.46 0.95 2.99 3.39 32.90 3% Discount Rate 0.12 Discounted Equipment Cost Increase (2008 \$B) 7% Discount Rate 0.06 0.10 0.180.24 0.49 1.56 1.76 17.11 Active Energy 0.62 1.22 2.13 2.41 3.93 4.77 4.97 5.68 Savings Operating Cost Savings (2008 \$B) Reactive Power 0.10 0.15 0.31 0.32 0.33 0.32 0.43 0.28 **Savings** 4.25 5.09 **Total Savings** 0.72 1.37 2.44 2.73 5.40 5.96 0.35 1.18 1.32 2.06 2.46 2.61 2.88 **3% Discount Rate** 0.66 Discounted Operating Cost Savings (2008 \$B) 0.90 0.29 0.52 0.58 1.08 1.15 **7% Discount Rate** 0.15 1.27 3% Discount Rate 0.23 0.47 0.83 0.86 1.11 -0.53 -0.78 -30.01 Net Present Value (2008 \$B) 7% Discount Rate 0.09 0.19 0.34 0.34 0.41 -0.48-0.62 -15.85

Table 10C.1.4 Polyphase Motors: NEMA with 95% Space-Constrained Scenario

Trial Standard Level 1 2 3 **4B** 5 7 6 **Motor Efficiency** 76.12% 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% **Shipments (Millions)** 30.9 30.9 30.9 30.9 30.9 30.9 28.9 28.8 Active Energy 4.8 9.6 16.7 18.9 30.9 37.8 38.7 45.5 (TWh) **Site Savings Reduced Reactive** 13.5 19.2 40.2 40.8 43.0 35.2 55.4 40.8 Power (GVAr) **Active Energy** 0.028 0.055 0.097 0.110 0.179 0.219 0.224 0.264 Savings Primary Energy Savings (Quads) **Reduced Reactive** 0.009 0.013 0.027 0.027 0.029 0.023 0.037 0.027 Losses **Total Savings** 0.037 0.068 0.123 0.137 0.208 0.243 0.261 0.291 0.02 0.11 **3% Discount Rate** 0.04 0.07 0.07 0.13 0.14 0.15 **Discounted Primary Energy Savings (Quads)** 0.04 7% Discount Rate 0.01 0.02 0.03 0.05 0.06 0.07 0.07 **Equipment Cost Increase (2008 \$B)** 0.21 0.34 0.82 1.70 6.72 6.73 83.37 0.61 0.19 0.34 0.46 0.95 3.74 3.75 3% Discount Rate 0.12 46.47 Discounted Equipment Cost Increase (2008 \$B) 7% Discount Rate 0.06 0.10 0.180.24 0.49 1.95 1.95 24.17 Active Energy 0.62 1.22 2.13 2.41 3.94 4.83 4.93 5.81 Savings Operating Cost Savings (2008 \$B) Reactive Power 0.10 0.15 0.31 0.32 0.33 0.27 0.43 0.32 **Savings** 4.27 **Total Savings** 0.72 1.37 2.44 2.73 5.10 5.36 6.13 0.35 1.18 1.32 2.07 2.47 2.59 2.96 **3% Discount Rate** 0.66 Discounted Operating Cost Savings (2008 \$B) 0.29 0.52 0.58 0.91 1.08 1.14 **7% Discount Rate** 0.15 1.30 3% Discount Rate 0.23 0.47 0.84 0.86 1.12 -1.28 -1.16 -43.50 Net Present Value (2008 \$B) 7% Discount Rate 0.09 0.19 0.34 0.34 0.42 -0.86 -0.81 -22.87

Table 10C.1.5 Polyphase Motors: High Market Growth Scenario

Trial Standard Level 1 2 3 4 **4B** 5 7 6 **Motor Efficiency** 76.12% 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% **Shipments (Millions)** 40.0 40.0 40.0 40.0 40.0 40.0 38.9 38.0 **Active Energy** 7.6 15.5 27.8 31.3 51.7 61.5 65.4 71.4 (TWh) **Site Savings Reduced Reactive** 17.3 24.4 50.8 51.6 51.9 62.7 69.7 36.4 Power (GVAr) **Active Energy** 0.044 0.089 0.1600.181 0.299 0.355 0.378 0.412 Savings **Primary Energy Savings (Quads) Reduced Reactive** 0.016 0.022 0.046 0.047 0.047 0.057 0.063 0.033 Losses **Total Savings** 0.206 0.228 0.345 0.441 0.060 0.111 0.412 0.445 0.03 0.06 0.11 0.12 0.18 0.21 0.23 0.23 3% Discount Rate **Discounted Primary Energy Savings (Quads)** 0.05 **7% Discount Rate** 0.01 0.03 0.06 0.08 0.10 0.11 0.11 **Equipment Cost Increase (2008 \$B)** 0.28 0.45 0.80 1.07 2.20 4.73 6.76 35.57 **3% Discount Rate** 0.15 0.24 0.43 0.58 1.19 2.55 3.65 19.19 Discounted Equipment Cost Increase (2008 \$B) 1.28 1.82 **7% Discount Rate** 0.07 0.12 0.22 0.29 0.59 9.60 **Active Energy** 0.87 5.93 7.05 1.77 3.18 3.59 7.51 8.18 Savings Operating Cost Savings (2008 \$B) **Reactive Power** 0.14 0.20 0.41 0.42 0.42 0.50 0.56 0.29 Savings **Total Savings** 1.01 1.97 3.59 4.01 6.35 7.56 8.07 8.48 0.47 0.92 1.87 2.96 3.52 3.76 **3% Discount Rate** 1.67 3.95 Discounted Operating Cost Savings (2008 \$B) **7% Discount Rate** 0.20 0.38 0.70 0.78 1.24 1.48 1.57 1.66 1.77 0.97 -15.24 3% Discount Rate 0.32 0.67 1.24 1.29 0.11 Net Present Value (2008 \$B) 0.12 0.48 0.49 0.65 0.20 -0.25 -7.94 0.26 7% Discount Rate

Table 10C.1.6 Polyphase Motors: Low Market Growth Scenario

Trial Standard Level 1 2 3 4 **4B** 5 7 6 **Motor Efficiency** 76.12% 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% **Shipments (Millions)** 29.7 29.7 29.7 29.7 29.7 29.7 28.8 28.1 **Active Energy** 47.1 5.8 11.8 21.2 24.0 39.6 50.1 54.6 (TWh) **Site Savings Reduced Reactive** 13.3 18.8 39.1 39.7 39.9 48.2 53.6 28.0 Power (GVAr) **Active Energy** 0.034 0.069 0.123 0.139 0.229 0.273 0.290 0.317 Savings **Primary Energy Savings (Quads) Reduced Reactive** 0.012 0.017 0.035 0.036 0.036 0.044 0.049 0.025 Losses **Total Savings** 0.266 0.317 0.339 0.342 0.046 0.086 0.159 0.175 0.02 0.05 0.08 0.09 0.14 0.17 0.18 0.18 3% Discount Rate **Discounted Primary Energy Savings (Quads)** 0.04 0.07 0.08 **7% Discount Rate** 0.01 0.02 0.04 0.09 0.09 **Equipment Cost Increase (2008 \$B)** 0.20 0.33 0.59 0.80 1.63 3.51 5.01 26.35 **3% Discount Rate** 0.11 0.19 0.33 0.44 0.91 1.96 2.79 14.71 Discounted Equipment Cost Increase (2008 \$B) 1.02 **7% Discount Rate** 0.06 0.10 0.17 0.23 0.47 1.46 7.66 **Active Energy** 5.50 0.64 1.30 2.33 2.63 4.35 5.17 6.00 Savings Operating Cost Savings (2008 \$B) **Reactive Power** 0.10 0.14 0.30 0.30 0.31 0.37 0.41 0.21 Savings 5.54 **Total Savings** 0.74 1.44 2.63 2.94 4.65 5.91 6.21 1.27 1.41 2.24 2.67 2.85 **3% Discount Rate** 0.36 0.69 2.99 Discounted Operating Cost Savings (2008 \$B) **7% Discount Rate** 0.16 0.30 0.55 0.62 0.98 1.17 1.25 1.31 0.94 0.71 3% Discount Rate 0.24 0.51 0.97 1.33 0.05 -11.71 Net Present Value (2008 \$B) 0.10 0.21 0.38 0.39 0.51 -0.21 0.15 -6.35 7% Discount Rate

Table 10C.1.7 Polyphase Motors: Falling Market Share Scenario

Trial Standard Level 1 2 3 4 **4B** 5 7 6 76.12% 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% **Motor Efficiency Shipments (Millions)** 23.3 23.3 23.3 23.3 23.3 23.3 22.6 22.1 **Active Energy** 4.7 9.5 19.2 37.8 17.0 31.7 40.2 43.8 (TWh) **Site Savings Reduced Reactive** 10.7 15.2 31.5 32.0 32.2 38.9 43.2 22.6 Power (GVAr) **Active Energy** 0.027 0.0550.099 0.112 0.185 0.220 0.234 0.255 Savings **Primary Energy Savings (Quads) Reduced Reactive** 0.010 0.014 0.029 0.029 0.029 0.035 0.039 0.021Losses **Total Savings** 0.214 0.255 0.037 0.069 0.1280.141 0.273 0.276 0.02 0.04 0.07 0.08 0.12 0.14 0.15 3% Discount Rate 0.15 **Discounted Primary Energy Savings (Quads)** 0.07 0.07 0.07 **7% Discount Rate** 0.01 0.02 0.03 0.04 0.06 **Equipment Cost Increase (2008 \$B)** 0.16 0.26 0.46 0.62 1.28 2.75 3.93 20.67 **3% Discount Rate** 0.09 0.15 0.27 0.36 0.73 1.58 2.25 11.85 Discounted Equipment Cost Increase (2008 \$B) 0.39 1.21 **7% Discount Rate** 0.05 0.08 0.14 0.19 0.85 6.37 **Active Energy** 0.50 1.01 2.05 4.02 4.28 1.81 3.38 4.66 Savings Operating Cost Savings (2008 \$B) **Reactive Power** 0.08 0.11 0.23 0.24 0.24 0.29 0.32 0.17 Savings **Total Savings** 0.58 1.12 2.05 2.28 3.62 4.31 4.60 4.83 1.79 1.01 1.13 2.13 2.27 **3% Discount Rate** 0.29 0.56 2.39 Discounted Operating Cost Savings (2008 \$B) **7% Discount Rate** 0.13 0.25 0.46 0.51 0.81 0.96 1.03 1.08 0.75 0.77 3% Discount Rate 0.19 0.41 1.06 0.56 0.02 -9.45 Net Present Value (2008 \$B) 0.31 0.32 0.41 0.12 -0.18 -5.29 0.08 0.17 7% Discount Rate

Table 10C.1.8 Polyphase Motors: Middle Inelasticity Scenario

Trial Standard Level 1 2 3 4 **4B** 5 7 6 **Motor Efficiency** 76.12% 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% **Shipments (Millions)** 32.2 32.2 32.2 32.2 32.2 32.2 32.2 32.2 **Active Energy** 6.3 23.0 50.9 12.8 25.9 42.8 55.8 62.2 (TWh) **Site Savings Reduced Reactive** 14.3 20.3 42.3 42.9 43.1 52.1 59.7 31.9 Power (GVAr) **Active Energy** 0.133 0.037 0.0740.150 0.248 0.295 0.323 0.360 Savings **Primary Energy Savings (Quads) Reduced Reactive** 0.013 0.018 0.038 0.039 0.039 0.054 0.047 0.029 Losses **Total Savings** 0.287 0.342 0.050 0.093 0.171 0.189 0.377 0.389 0.03 0.05 0.09 0.10 0.15 0.18 0.20 0.21 3% Discount Rate **Discounted Primary Energy Savings (Quads)** 0.05 0.07 **7% Discount Rate** 0.01 0.02 0.04 0.09 0.10 0.10 **Equipment Cost Increase (2008 \$B)** 0.22 0.36 0.64 0.86 1.77 3.80 5.60 30.11 **3% Discount Rate** 0.12 0.20 0.36 0.48 0.98 2.11 3.11 16.73 Discounted Equipment Cost Increase (2008 \$B) **7% Discount Rate** 0.06 0.10 0.18 0.25 0.51 1.10 1.61 8.67 **Active Energy** 5.62 0.70 1.41 2.53 2.86 4.72 6.15 6.86 Savings Operating Cost Savings (2008 \$B) **Reactive Power** 0.11 0.16 0.33 0.33 0.33 0.40 0.46 0.25 Savings **Total Savings** 0.81 1.57 2.86 3.19 5.05 6.02 6.61 7.11 1.37 1.53 2.42 2.89 3.17 **3% Discount Rate** 0.39 0.75 3.41 Discounted Operating Cost Savings (2008 \$B) 1.49 **7% Discount Rate** 0.17 0.33 0.60 0.66 1.05 1.26 1.38 0.77 3% Discount Rate 0.26 0.55 1.01 1.05 1.44 0.06 -13.32 Net Present Value (2008 \$B) 0.10 0.22 0.41 0.42 0.54 -0.23 -7.19 0.16 7% Discount Rate

Table 10C.1.9 Polyphase Motors: High Elasticity Scenario

Trial Standard Level 1 2 3 4 **4B** 5 7 6 **Motor Efficiency** 76.12% 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% **Shipments (Millions)** 32.2 32.2 32.2 32.2 32.2 32.2 30.3 28.9 **Active Energy** 6.3 23.0 50.9 12.8 25.9 42.8 52.5 55.9 (TWh) **Site Savings Reduced Reactive** 14.3 20.3 42.3 42.9 43.1 52.1 56.2 28.6 Power (GVAr) **Active Energy** 0.037 0.0740.133 0.150 0.248 0.295 0.304 0.324 Savings **Primary Energy Savings (Quads) Reduced Reactive** 0.013 0.018 0.038 0.039 0.039 0.047 0.051 0.026Losses **Total Savings** 0.287 0.342 0.355 0.050 0.093 0.171 0.189 0.350 0.03 0.05 0.09 0.10 0.15 0.18 0.19 0.19 3% Discount Rate **Discounted Primary Energy Savings (Quads)** 0.05 0.07 **7% Discount Rate** 0.01 0.02 0.04 0.09 0.09 0.09 **Equipment Cost Increase (2008 \$B)** 0.22 0.36 0.64 0.86 1.77 3.80 5.27 27.06 **3% Discount Rate** 0.12 0.20 0.36 0.48 0.98 2.11 2.93 15.04 Discounted Equipment Cost Increase (2008 \$B) **7% Discount Rate** 0.06 0.10 0.18 0.25 0.51 1.10 1.52 7.79 **Active Energy** 5.62 0.70 1.41 2.53 2.86 4.72 5.80 6.17 Savings Operating Cost Savings (2008 \$B) **Reactive Power** 0.11 0.16 0.33 0.33 0.33 0.40 0.43 0.22 Savings **Total Savings** 0.81 1.57 2.86 3.19 5.05 6.02 6.23 6.39 1.37 1.53 2.42 2.89 2.99 **3% Discount Rate** 0.39 0.75 3.07 Discounted Operating Cost Savings (2008 \$B) **7% Discount Rate** 0.17 0.33 0.60 0.66 1.05 1.26 1.30 1.33 0.77 3% Discount Rate 0.26 0.55 1.01 1.05 1.44 0.06 -11.97 Net Present Value (2008 \$B) 0.10 0.22 0.41 0.42 0.54 -0.22 0.16 7% Discount Rate -6.46

Table 10C.1.10 Polyphase Motors: 50% Reactive Power Charge Scenario

Trial Standard Level

1 2 3 4 **4B** 5 7 6 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% 76.12% **Motor Efficiency Shipments (Millions)** 32.2 32.2 32.2 32.2 32.2 32.2 31.2 30.5 **Active Energy** 6.3 23.0 25.9 50.9 12.8 42.8 54.2 59.1 (TWh) **Site Savings Reduced Reactive** 14.3 20.3 42.3 42.9 43.1 52.1 57.9 30.2 Power (GVAr) **Active Energy** 0.150 0.037 0.074 0.133 0.248 0.295 0.314 0.342 **Savings** Primary Energy Savings (Quads) **Reduced Reactive** 0.013 0.038 0.039 0.039 0.047 0.018 0.053 0.027 Losses 0.171 0.342 0.366 **Total Savings** 0.050 0.093 0.189 0.287 0.370 Discounted Primary Energy Savings (Quads) 0.03 0.05 0.09 0.10 0.15 0.18 0.19 0.20 3% Discount Rate 0.04 0.05 0.09 0.09 7% Discount Rate 0.01 0.02 0.07 0.09 **Equipment Cost Increase (2008 \$B) Discounted Equipment Cost Increase (2008** 0.22 0.36 0.64 0.86 1.77 3.80 5.43 28.59 **\$B)** 3% Discount Rate 0.12 0.20 0.36 0.48 0.98 2.11 3.02 15.89 7% Discount Rate 0.06 0.10 0.18 0.25 0.51 1.10 1.56 8.23 Operating Cost Savings (2008 \$B) **Active Energy** 0.70 1.41 2.53 2.86 5.62 5.97 4.72 6.51 **Savings** 0.06 0.08 0.16 0.17 0.17 0.20 0.22 **Reactive Power Savings** 0.12 **Total Savings** 0.75 1.49 2.70 3.02 4.89 5.82 6.20 6.63 Discounted Operating Cost Savings (2008 \$B) 0.71 1.29 2.35 2.79 2.98 3% Discount Rate 0.36 1.45 3.18 0.31 0.56 1.02 1.22 1.30 1.39 0.16 0.63 7% Discount Rate Net Present Value (2008 \$B) 3% Discount Rate 0.24 0.51 0.94 0.97 1.36 0.68 -0.04 -12.70 0.21 0.38 0.12 -0.27 **7% Discount Rate** 0.09 0.38 0.51 -6.85

Table 10C.1.11 Polyphase Motors: 0% Reactive Power Charge Scenario

Trial Standard Level

1 2 3 4 **4B** 5 7 6 76.12% 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% **Motor Efficiency Shipments (Millions)** 32.2 32.2 32.2 32.2 32.2 32.2 31.2 30.5 **Active Energy** 6.3 23.0 25.9 42.8 50.9 12.8 54.2 59.1 (TWh) **Site Savings Reduced Reactive** 14.3 20.3 42.3 42.9 43.1 52.1 57.9 30.2 Power (GVAr) **Active Energy** 0.037 0.0740.133 0.150 0.248 0.295 0.314 0.342 Savings **Primary Energy Savings (Quads) Reduced Reactive** 0.013 0.018 0.038 0.039 0.039 0.047 0.053 0.027 Losses **Total Savings** 0.287 0.342 0.050 0.093 0.171 0.189 0.366 0.370 0.03 0.05 0.09 0.10 0.15 0.18 0.19 0.20 **3% Discount Rate Discounted Primary Energy Savings (Quads)** 0.05 0.07 0.09 **7% Discount Rate** 0.01 0.02 0.04 0.09 0.09 0.64 **Equipment Cost Increase (2008 \$B)** 0.22 0.36 0.86 1.77 3.80 5.43 28.59 **3% Discount Rate** 0.12 0.20 0.36 0.48 0.98 2.11 3.02 15.89 Discounted Equipment Cost Increase (2008 \$B) **7% Discount Rate** 0.06 0.10 0.18 0.25 0.51 1.10 1.56 8.23 **Active Energy** 5.62 0.70 5.97 1.41 2.53 2.86 4.72 6.51 Savings Operating Cost Savings (2008 \$B) **Reactive Power** 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 Savings **Total Savings** 0.70 1.41 2.53 2.86 4.72 5.62 5.97 6.51 1.22 1.37 2.27 2.70 2.87 **3% Discount Rate** 0.33 0.68 3.13 Discounted Operating Cost Savings (2008 \$B) **7% Discount Rate** 0.15 0.30 0.53 0.60 0.99 1.18 1.25 1.36 0.59 3% Discount Rate 0.21 0.48 0.86 0.89 1.28 -0.15 -12.76Net Present Value (2008 \$B) 0.08 0.19 0.35 0.35 0.48 0.08 -0.31 -6.87 7% Discount Rate

Table 10C.1.12 Polyphase Motors: Carbon Cap & Trade Scenario

Trial Standard Level

		1	2	3	4	4B	5	6	7
Motor Efficiency		76.12%	77.69%	79.39%	80.07%	82.58%	84.42%	85.35%	86.97%
Shipments (Millions)		32.2	32.2	32.2	32.2	32.2	32.2	31.2	30.5
Site Savings	Active Energy (TWh)	6.3	12.8	23.0	25.9	42.8	50.9	54.2	59.1
Site Savings	Reduced Reactive Power (GVAr)	14.3	20.3	42.3	42.9	43.1	52.1	57.9	30.2
	Active Energy Savings	0.037	0.074	0.133	0.150	0.248	0.295	0.314	0.342
Primary Energy Savings (Quads)	Reduced Reactive Losses	0.013	0.018	0.038	0.039	0.039	0.047	0.053	0.027
	Total Savings	0.050	0.093	0.171	0.189	0.287	0.342	0.366	0.370
Discounted Primary Energy Savings (Quads)	3% Discount Rate	0.03	0.05	0.09	0.10	0.15	0.18	0.19	0.20
Discounted 11 mary Energy Savings (Quades)	7% Discount Rate	0.01	0.02	0.04	0.05	0.07	0.09	0.09	0.09
Equipment Cost Increase (2008 \$B)		0.22	0.36	0.64	0.86	1.77	3.80	5.43	28.59
Discounted Equipment Cost Increase (2008 \$B)	3% Discount Rate	0.12	0.20	0.36	0.48	0.98	2.11	3.02	15.89
	7% Discount Rate	0.06	0.10	0.18	0.25	0.51	1.10	1.56	8.23
	Active Energy Savings	0.95	1.93	3.46	3.91	6.45	7.67	8.16	8.90
Operating Cost Savings (2008 \$B)	Reactive Power Savings	0.15	0.22	0.45	0.46	0.46	0.56	0.62	0.32
	Total Savings	1.10	2.14	3.91	4.36	6.91	8.23	8.78	9.22
Discounted Operating Cost Savings (2008 \$B)	3% Discount Rate	0.51	0.99	1.81	2.02	3.19	3.81	4.06	4.27
Discounted Operating Cost Savings (2000 4D)	7% Discount Rate	0.21	0.41	0.75	0.84	1.33	1.58	1.69	1.78
Net Present Value (2008 \$B)	3% Discount Rate	0.39	0.79	1.45	1.54	2.21	1.69	1.04	-11.62
Tier Tresent value (2000 42)	7% Discount Rate	0.15	0.31	0.57	0.59	0.82	0.49	0.12	-6.46

Table 10C.1.13 Polyphase Motors: High Energy Price Scenario

Trial Standard Level 1 2 3 4 **4B** 5 7 6 76.12% 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% **Motor Efficiency Shipments (Millions)** 32.2 32.2 32.2 32.2 32.2 32.2 31.2 30.5 **Active Energy** 6.3 23.0 25.9 42.8 50.9 12.8 54.2 59.1 (TWh) **Site Savings Reduced Reactive** 14.3 20.3 42.3 42.9 43.1 52.1 57.9 30.2 Power (GVAr) **Active Energy** 0.037 0.0740.133 0.150 0.248 0.295 0.314 0.342 Savings **Primary Energy Savings (Quads) Reduced Reactive** 0.013 0.018 0.038 0.039 0.039 0.047 0.053 0.027 Losses **Total Savings** 0.171 0.287 0.342 0.050 0.093 0.189 0.366 0.370 0.03 0.05 0.09 0.10 0.15 0.18 0.19 3% Discount Rate 0.20 **Discounted Primary Energy Savings (Quads)** 0.05 0.07 0.09 **7% Discount Rate** 0.01 0.02 0.04 0.09 0.09 0.64 **Equipment Cost Increase (2008 \$B)** 0.22 0.36 0.86 1.77 3.80 5.43 28.59 **3% Discount Rate** 0.12 0.20 0.36 0.48 0.98 2.11 3.02 15.89 Discounted Equipment Cost Increase (2008 \$B) **7% Discount Rate** 0.06 0.10 0.18 0.25 0.51 1.10 1.56 8.23 **Active Energy** 5.48 0.68 2.79 4.60 1.38 2.47 5.83 6.35 Savings Operating Cost Savings (2008 \$B) **Reactive Power** 0.11 0.15 0.32 0.32 0.32 0.39 0.44 0.23 Savings **Total Savings** 0.79 1.53 2.79 3.11 4.93 5.87 6.26 6.58 1.33 1.49 2.36 2.81 3.00 **3% Discount Rate** 0.38 0.73 3.15 Discounted Operating Cost Savings (2008 \$B) **7% Discount Rate** 0.16 0.32 0.58 0.65 1.02 1.22 1.30 1.37 0.70 -0.02 3% Discount Rate 0.25 0.53 0.98 1.01 1.38 -12.73 Net Present Value (2008 \$B) 0.10 0.21 0.39 0.40 0.51 0.12 -0.26 -6.86 7% Discount Rate

Table 10C.1.14 Polyphase Motors: Low Energy Price Scenario

Trial Standard Level 1 2 3 4 **4B** 5 7 6 76.12% 77.69% 79.39% 80.07% 82.58% 84.42% 85.35% 86.97% **Motor Efficiency Shipments (Millions)** 32.2 32.2 32.2 32.2 32.2 32.2 31.2 30.5 **Active Energy** 6.3 23.0 25.9 42.8 50.9 12.8 54.2 59.1 (TWh) **Site Savings Reduced Reactive** 14.3 20.3 42.3 42.9 43.1 52.1 57.9 30.2 Power (GVAr) **Active Energy** 0.037 0.0740.133 0.150 0.248 0.295 0.314 0.342 Savings **Primary Energy Savings (Quads) Reduced Reactive** 0.013 0.018 0.038 0.039 0.039 0.047 0.053 0.027 Losses **Total Savings** 0.171 0.287 0.342 0.050 0.093 0.189 0.366 0.370 0.03 0.05 0.09 0.10 0.15 0.18 0.19 0.20 **3% Discount Rate Discounted Primary Energy Savings (Quads)** 0.05 0.07 0.09 **7% Discount Rate** 0.01 0.02 0.04 0.09 0.09 0.64 **Equipment Cost Increase (2008 \$B)** 0.22 0.36 0.86 1.77 3.80 5.43 28.59 **3% Discount Rate** 0.12 0.20 0.36 0.48 0.98 2.11 3.02 15.89 Discounted Equipment Cost Increase (2008 \$B) **7% Discount Rate** 0.06 0.10 0.18 0.25 0.51 1.10 1.56 8.23 **Active Energy** 5.63 0.70 2.54 5.99 1.42 2.87 4.73 6.53 Savings Operating Cost Savings (2008 \$B) **Reactive Power** 0.11 0.16 0.33 0.33 0.33 0.40 0.45 0.23 Savings **Total Savings** 0.81 1.57 2.87 3.20 5.06 6.03 6.44 6.76 1.38 1.54 2.44 2.91 3.11 **3% Discount Rate** 0.39 0.76 3.27 Discounted Operating Cost Savings (2008 \$B) **7% Discount Rate** 0.17 0.33 0.60 0.68 1.07 1.28 1.36 1.43 0.09 **3% Discount Rate** 0.27 0.56 1.03 1.06 1.46 0.80 -12.62 Net Present Value (2008 \$B) 0.23 0.42 0.43 0.56 -0.20 0.11 0.18 -6.80 7% Discount Rate

10C.2 CAPACITOR-START RUN MOTORS RESULTS

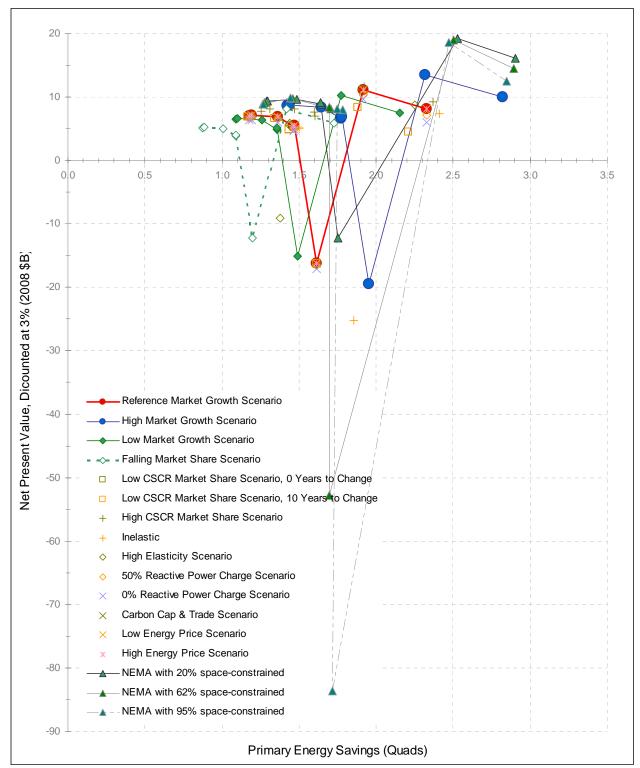


Figure 10C.2.1 Capacitor Start Motors: Net Present Value (3% Discount Rate) versus Primary Energy Savings

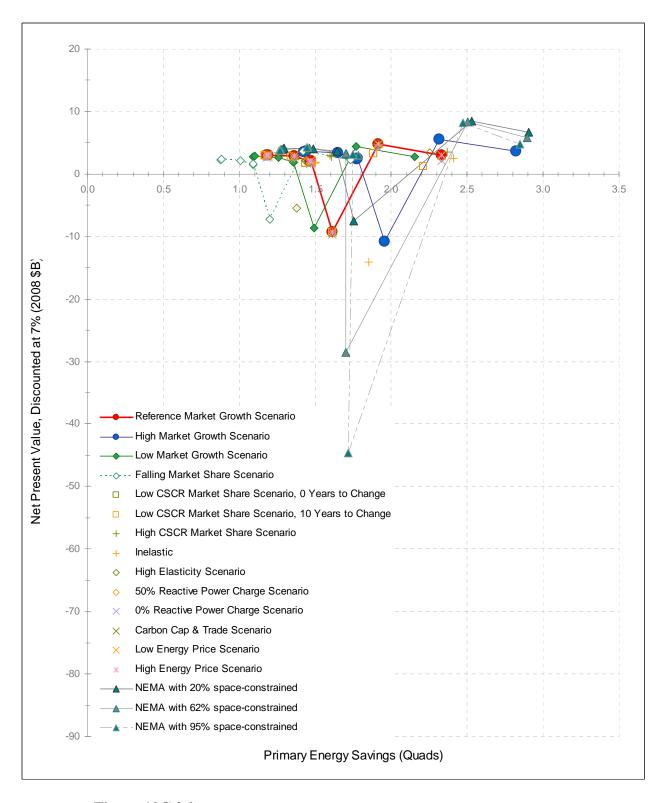


Figure 10C.2.2 Capacitor Start Motors: Net Present Value (7% Discount Rate) versus Primary Energy Savings

Table 10C.2.1 Capacitor Start Motors: Reference Case

Trial Standard Level 2 3 4 5 7 8 1 6 7 4 7 7 Level 4 5 6 6 **CSIR Motor Efficiency** Rating at 1/2 HP (%) 68.50% 68.50% 71.20% 73.00% 73.00% 77.00% 77.00% 77.00% 7 Level 2 3 4 3 **CSCR Motor Efficiency** 75.99% 75.99% 77.50% 75.99% 84.22% 75.99% 81.96% Rating at 1/2 HP (%) 73.70% **CSIR Motors** 138.3 137.5 137.2 131.5 129.7 122.9 4.4 9.1 **Shipments (Millions)** 1.7 126.1 2.4 2.8 5.5 7.3 0.0 135.0 **CSCR Motors Active Energy Savings** 171.1 172.7 195.1 219.0 220.4 240.8 263.5 303.3 (TWh) **Site Savings Reduced Reactive** 196.8 199.6 242.1 207.3 201.5 230.0 410.3 608.6 Power (GVAr) **Active Energy Savings** 0.99 1.00 1.13 1.27 1.28 1.40 1.53 1.76 **Reduced Reactive** Primary Energy Savings (Quads) 0.19 0.18 0.19 0.23 0.19 0.21 0.38 0.57 Losses **Total Savings** 1.18 1.19 1.36 1.47 1.47 1.61 1.91 2.33 3% Discount Rate 0.63 0.64 0.73 0.79 0.79 0.87 1.03 1.25 **Discounted Primary Energy** Savings (Quads) 7% Discount Rate 0.31 0.31 0.36 0.39 0.39 0.43 0.51 0.62 4.0 4.0 **Equipment Cost Increase (2008 \$B)** 6.8 11.4 11.1 52.4 6.4 16.5 2.2 2.2 3.8 6.4 6.2 29.1 9.2 3% Discount Rate 3.6 **Discounted Equipment Cost** Increase (2008 \$B) 7% Discount Rate 1.2 1.2 1.9 3.3 3.2 15.1 1.8 4.8 17.4 17.5 19.8 22.3 22.4 24.5 **Active Energy Savings** 26.8 30.8 **Reactive Power** Operating Cost Savings (2008 \$B) 1.4 1.7 2.9 1.4 1.5 1.4 1.6 4.3 **Savings Total Savings** 18.8 19.0 21.5 23.7 23.8 26.1 29.7 35.1 3% Discount Rate 9.3 9.4 10.6 11.7 11.8 12.9 14.6 17.3 **Discounted Operating Cost** Savings (2008 \$B) 7% Discount Rate 4.2 4.2 4.8 5.3 5.3 5.8 6.6 7.8 **3% Discount Rate** 7.0 7.1 6.9 5.4 5.6 -16.2 8.1 11.1 Net Present Value (2008 \$B) 7% Discount Rate 3.0 3.1 2.8 2.0 2.1 -9.3 4.7 3.0

Table 10C.2.2 Capacitor Start Motors: NEMA with 20% Space-Constrained Scenario

	2	Trial Standard Level									
		1	2	3	4	5	6	7	8		
CCTD 15	Level	4	4	5	6	6	7	7	7		
CSIR Motor Efficiency	Rating at 1/2 HP (%)	68.50%	68.50%	71.20%	73.00%	73.00%	77.00%	77.00%	77.00%		
CCCD M.A. Dee	Level	2	3	3	4	3	8	3	7		
CSCR Motor Efficiency	Rating at 1/2 HP (%)	73.70%	75.99%	75.99%	77.50%	75.99%	84.22%	75.99%	81.96%		
CI	CSIR Motors	132.1	132.0	131.2	124.1	122.7	118.0	2.8	7.8		
Shipments (Millions)	CSCR Motors	2.3	2.4	3.2	7.5	8.9	0.0	131.2	122.2		
Site Servings	Active Energy Savings (TWh)	187.3	188.3	213.8	244.7	246.6	261.9	366.4	394.8		
Site Savings	Reduced Reactive Power (GVAr)	198.4	199.2	242.3	217.9	205.5	228.9	393.8	601.9		
_	Active Energy Savings	1.09	1.09	1.24	1.42	1.43	1.52	2.13	2.29		
Primary Energy Savings (Quads)	Reduced Reactive Losses	0.20	0.20	0.25	0.22	0.21	0.23	0.40	0.61		
	Total Savings	1.29	1.30	1.49	1.64	1.64	1.75	2.53	2.90		
Discounted Primary Energy	3% Discount Rate	0.69	0.70	0.80	0.88	0.88	0.94	1.36	1.56		
Savings (Quads)	7% Discount Rate	0.34	0.34	0.39	0.43	0.43	0.46	0.67	0.77		
Equipment Cost Increase (2008 \$B)	3.8	3.9	6.5	10.8	10.5	50.4	5.8	15.8		
Discounted Equipment Cost	3% Discount Rate	2.1	2.1	3.6	6.0	5.8	28.1	3.3	8.8		
Increase (2008 \$B)	7% Discount Rate	1.1	1.1	1.9	3.1	3.0	14.6	1.7	4.6		
	Active Energy Savings	21.9	22.0	25.0	28.6	28.8	30.6	42.7	46.1		
Operating Cost Savings (2008 \$B)	Reactive Power Savings	1.4	1.4	1.7	1.5	1.5	1.6	2.8	4.3		
	Total Savings	23.3	23.4	26.7	30.2	30.3	32.3	45.5	50.3		
Discounted Operating Cost	3% Discount Rate	11.5	11.6	13.2	14.9	15.0	15.9	22.5	24.9		
	7% Discount Rate	5.2	5.2	5.9	6.7	6.7	7.2	10.2	11.2		
Net Present Value (2008 \$B)	3% Discount Rate	9.4	9.4	9.6	8.9	9.1	-12.2	19.3	16.1		
THE TIESCHE VALUE (2000 PD)	7% Discount Rate	4.1	4.1	4.1	3.6	3.7	-7.4	8.5	6.7		

Table 10C.2.3 Capacitor Start Motors: NEMA with 62% Space-Constrained Scenario

		Trial Standard Level									
		1	2	3	4	5	6	7	8		
CSIR Motor Efficiency	Level	4	4	5	6	6	7	7	7		
Cork wotor Efficiency	Rating at 1/2 HP (%)	68.50%	68.50%	71.20%	73.00%	73.00%	77.00%	77.00%	77.00%		
CSCR Motor Efficiency	Level	2	3	3	4	3	8	3	7		
egen violor Efficiency	Rating at 1/2 HP (%)	73.70%	75.99%	75.99%	77.50%	75.99%	84.22%	75.99%	81.96%		
Shipments (Millions)	CSIR Motors	132.3	132.2	132.0	113.1	110.2	111.7	0.0	0.0		
Simplificates (availables)	CSCR Motors	2.1	2.2	2.4	16.5	19.5	0.4	134.4	128.5		
Site Savings	Active Energy Savings (TWh)	190.9	191.7	214.5	252.0	254.7	253.3	364.0	396.5		
Site Savings	Reduced Reactive Power (GVAr)	162.3	164.2	212.9	238.2	215.0	223.6	383.6	582.1		
	Active Energy Savings	1.11	1.11	1.25	1.46	1.48	1.47	2.12	2.30		
Primary Energy Savings (Quads)	Reduced Reactive Losses	0.16	0.17	0.22	0.24	0.22	0.23	0.39	0.59		
	Total Savings	1.27	1.28	1.46	1.71	1.70	1.70	2.50	2.89		
Discounted Primary Energy	3% Discount Rate	0.68	0.69	0.79	0.92	0.91	0.91	1.35	1.56		
Savings (Quads)	7% Discount Rate	0.34	0.34	0.39	0.45	0.45	0.45	0.66	0.76		
Equipment Cost Increase (2008 \$B))	4.5	4.5	6.1	13.1	12.7	122.5	5.9	18.7		
Discounted Equipment Cost	3% Discount Rate	2.5	2.5	3.4	7.3	7.1	68.3	3.3	10.4		
Increase (2008 \$B)	7% Discount Rate	1.3	1.3	1.8	3.8	3.7	35.5	1.7	5.4		
	Active Energy Savings	22.3	22.4	25.1	29.5	29.8	29.6	42.4	46.3		
Operating Cost Savings (2008 \$B)	Reactive Power Savings	1.1	1.2	1.5	1.7	1.5	1.6	2.7	4.1		
	Total Savings	23.5	23.6	26.6	31.1	31.3	31.2	45.1	50.4		
Discounted Operating Cost	3% Discount Rate	11.6	11.7	13.1	15.4	15.5	15.4	22.4	24.9		
Savings (2008 \$B)	7% Discount Rate	5.2	5.3	5.9	6.9	7.0	6.9	10.1	11.2		
Net Present Value (2008 \$B)	3% Discount Rate	9.1	9.2	9.8	8.1	8.4	-52.8	19.1	14.5		
THE TESTIL TAILE (2000 PD)	7% Discount Rate	3.9	4.0	4.2	3.1	3.3	-28.6	8.4	5.8		

Table 10C.2.4 Capacitor Start Motors: NEMA with 95% Space-Constrained Scenario

	Scorario			Tı	rial Stan	dard Le	vel		
		1	2	3	4	5	6	7	8
COTT I.E. TOWN	Level	4	4	5	6	6	7	7	7
CSIR Motor Efficiency	Rating at 1/2 HP (%)	68.50%	68.50%	71.20%	73.00%	73.00%	77.00%	77.00%	77.00%
CCCD M. A E88°	Level	2	3	3	4	3	8	3	7
CSCR Motor Efficiency	Rating at 1/2 HP (%)	73.70%	75.99%	75.99%	77.50%	75.99%	84.22%	75.99%	81.96%
Cl. (M'III)	CSIR Motors	132.3	132.3	132.4	101.8	100.5	108.2	0.0	0.0
Shipments (Millions)	CSCR Motors	2.0	2.1	1.9	27.0	28.3	2.4	134.4	127.0
Site Servings	Active Energy Savings (TWh)	193.8	194.5	215.4	261.5	261.9	255.6	360.7	393.3
Site Savings	Reduced Reactive Power (GVAr)	134.2	136.6	189.8	259.1	222.8	228.6	373.2	553.3
Primary Energy Savings (Quads)	Active Energy Savings	1.13	1.13	1.25	1.52	1.52	1.49	2.10	2.29
	Reduced Reactive Losses	0.14	0.14	0.19	0.26	0.23	0.23	0.38	0.56
	Total Savings	1.26	1.27	1.44	1.78	1.75	1.72	2.47	2.85
Discounted Primary Energy	3% Discount Rate	0.68	0.68	0.78	0.96	0.94	0.92	1.33	1.53
Savings (Quads)	7% Discount Rate	0.33	0.33	0.38	0.47	0.46	0.45	0.65	0.75
Equipment Cost Increase (2008 \$B)	5.0	5.0	5.8	14.3	14.0	178.0	6.3	21.8
Discounted Equipment Cost	3% Discount Rate	2.8	2.8	3.2	8.0	7.8	99.2	3.5	12.1
Increase (2008 \$B)	7% Discount Rate	1.4	1.4	1.7	4.2	4.1	51.6	1.8	6.3
	Active Energy Savings	22.7	22.8	25.2	30.6	30.6	29.9	42.0	45.9
Operating Cost Savings (2008 \$B)	Reactive Power Savings	0.9	1.0	1.3	1.8	1.6	1.6	2.6	3.9
	Total Savings	23.6	23.7	26.5	32.4	32.2	31.5	44.7	49.8
Discounted Operating Cost	3% Discount Rate	11.7	11.7	13.1	16.0	15.9	15.6	22.1	24.7
	7% Discount Rate	5.3	5.3	5.9	7.2	7.2	7.0	10.0	11.1
Net Present Value (2008 \$B)	3% Discount Rate	8.9	8.9	9.9	8.0	8.1	-83.6	18.6	12.5
11ct 11cscnt value (2000 pD)	7% Discount Rate	3.8	3.8	4.2	3.1	3.1	-44.6	8.2	4.8

Table 10C.2.5 Capacitor Start Motors: Segmented Markets High Market Growth Scenario

		Trial Standard Level								
		1	2	3	4	5	6	7	8	
CSIR Motor Efficiency	Level	4	4	5	6	6	7	7	7	
CSIK Motor Emercincy	Rating at 1/2 HP (%)	68.50%	68.50%	71.20%	73.00%	73.00%	77.00%	77.00%	77.00%	
CSCR Motor Efficiency	Level	2	3	3	4	3	8	3	7	
CSCK William Efficiency	Rating at 1/2 HP (%)	73.70%	75.99%	75.99%	77.50%	75.99%	84.22%	75.99%	81.96%	
Shipments (Millions)	CSIR Motors	172.0	171.1	170.7	163.6	161.4	152.9	5.4	11.4	
Simplificates (availables)	CSCR Motors	2.1	3.0	3.5	6.8	9.1	0.0	167.9	156.9	
Sita Savings	Active Energy Savings (TWh)	207.9	209.9	237.2	266.2	267.9	292.7	320.3	368.6	
Site Savings	Reduced Reactive Power (GVAr)	239.1	242.5	294.2	252.0	244.9	279.5	498.7	739.6	
Primary Energy Savings (Quads)	Active Energy Savings	1.20	1.22	1.37	1.54	1.55	1.69	1.85	2.13	
	Reduced Reactive Losses	0.22	0.23	0.27	0.23	0.23	0.26	0.46	0.69	
	Total Savings	1.43	1.44	1.65	1.78	1.78	1.95	2.32	2.82	
Discounted Primary Energy	3% Discount Rate	0.75	0.76	0.86	0.93	0.93	1.03	1.22	1.48	
Savings (Quads)	7% Discount Rate	0.36	0.36	0.41	0.44	0.45	0.49	0.58	0.71	
Equipment Cost Increase (2008 \$B)	5.0	5.0	8.4	14.2	13.9	65.2	8.0	20.6	
Discounted Equipment Cost	3% Discount Rate	2.7	2.7	4.5	7.7	7.5	35.2	4.3	11.1	
Increase (2008 \$B)	7% Discount Rate	1.4	1.3	2.3	3.8	3.7	17.6	2.2	5.6	
	Active Energy Savings	21.8	22.0	24.9	27.9	28.1	30.7	33.6	38.7	
Operating Cost Savings (2008 \$B)	Reactive Power Savings	1.7	1.8	2.1	1.8	1.8	2.0	3.6	5.4	
	Total Savings	23.6	23.8	27.0	29.8	29.9	32.7	37.2	44.1	
Discounted Operating Cost	3% Discount Rate	11.3	11.4	13.0	14.3	14.3	15.7	17.9	21.1	
Savings (2008 \$B)	7% Discount Rate	4.9	4.9	5.6	6.2	6.2	6.8	7.7	9.2	
Net Present Value (2008 \$B)	3% Discount Rate	8.6	8.7	8.4	6.6	6.9	-19.5	13.5	10.0	
inci i i eschi value (2000 pd)	7% Discount Rate	3.5	3.6	3.3	2.3	2.5	-10.8	5.6	3.6	

Table 10C.2.6 Capacitor Start Motors: Segmented Markets Low Market Growth Scenario

		Trial Standard Level									
		1	2	3	4	5	6	7	8		
CSIR Motor Efficiency	Level	4	4	5	6	6	7	7	7		
CSIR Motor Efficiency	Rating at 1/2 HP (%)	68.50%	68.50%	71.20%	73.00%	73.00%	77.00%	77.00%	77.00%		
CSCR Motor Efficiency	Level	2	3	3	4	3	8	3	7		
CSCR Motor Efficiency	Rating at 1/2 HP (%)	73.70%	75.99%	75.99%	77.50%	75.99%	84.22%	75.99%	81.96%		
Chinmonta (Milliona)	CSIR Motors	127.5	126.8	126.4	121.2	119.6	113.3	4.0	8.4		
Shipments (Millions)	CSCR Motors	1.5	2.2	2.6	5.0	6.7	0.0	124.4	116.3		
Site Savings	Active Energy Savings (TWh)	158.1	159.6	180.3	202.4	203.7	222.5	243.5	280.3		
Site Savings	Reduced Reactive Power (GVAr)	181.8	184.4	223.7	191.6	186.2	212.5	379.2	562.4		
Primary Energy Savings (Quads)	Active Energy Savings	0.92	0.93	1.05	1.18	1.18	1.29	1.42	1.63		
	Reduced Reactive Losses	0.17	0.17	0.21	0.18	0.17	0.20	0.35	0.53		
	Total Savings	1.09	1.10	1.26	1.36	1.36	1.49	1.77	2.16		
Discounted Primary Energy	3% Discount Rate	0.59	0.59	0.68	0.73	0.73	0.81	0.96	1.16		
Savings (Quads)	7% Discount Rate	0.29	0.29	0.34	0.36	0.36	0.40	0.47	0.57		
Equipment Cost Increase (2008 \$B)	3.7	3.7	6.2	10.5	10.3	48.3	5.9	15.3		
Discounted Equipment Cost	3% Discount Rate	2.1	2.1	3.5	5.9	5.7	26.9	3.3	8.5		
Increase (2008 \$B)	7% Discount Rate	1.1	1.1	1.8	3.1	3.0	14.0	1.7	4.4		
	Active Energy Savings	16.0	16.2	18.3	20.5	20.6	22.5	24.7	28.4		
Operating Cost Savings (2008 \$B)	Reactive Power Savings	1.3	1.3	1.6	1.3	1.3	1.5	2.7	3.9		
	Total Savings	17.3	17.5	19.8	21.8	21.9	24.0	27.3	32.3		
Discounted Operating Cost	3% Discount Rate	8.6	8.7	9.8	10.8	10.9	11.9	13.5	16.0		
Savings (2008 \$B)	7% Discount Rate	3.9	3.9	4.4	4.9	4.9	5.4	6.1	7.2		
Net Present Value (2008 \$B)	3% Discount Rate	6.5	6.6	6.4	4.9	5.1	-15.0	10.2	7.5		
110.110.011 1 aluc (2000 pD)	7% Discount Rate	2.8	2.8	2.6	1.8	1.9	-8.7	4.4	2.8		

Table 10C.2.7 Capacitor Start Motors: Segmented Markets Falling Market Share Scenario

		Trial Standard Level								
		1	2	3	4	5	6	7	8	
CSIR Motor Efficiency	Level	4	4	5	6	6	7	7	7	
Cork Motor Emercincy	Rating at 1/2 HP (%)	68.50%	68.50%	71.20%	73.00%	73.00%	77.00%	77.00%	77.00%	
CSCR Motor Efficiency	Level	2	3	3	4	3	8	3	7	
CSCR Motor Emclency	Rating at 1/2 HP (%)	73.70%	75.99%	75.99%	77.50%	75.99%	84.22%	75.99%	81.96%	
Shipments (Millions)	CSIR Motors	100.0	99.4	99.2	95.1	93.8	88.9	3.2	6.6	
Simplifients (withholis)	CSCR Motors	1.2	1.7	2.0	3.9	5.3	0.0	97.6	91.2	
Sita Savings	Active Energy Savings (TWh)	126.3	127.5	144.1	161.7	162.7	177.8	194.6	223.9	
Site Savings	Reduced Reactive Power (GVAr)	145.3	147.3	178.7	153.1	148.8	169.8	303.0	449.3	
Primary Energy Savings (Quads)	Active Energy Savings	0.74	0.74	0.84	0.94	0.95	1.04	1.14	1.31	
	Reduced Reactive Losses	0.14	0.14	0.17	0.14	0.14	0.16	0.28	0.42	
	Total Savings	0.87	0.88	1.01	1.09	1.09	1.20	1.42	1.73	
Discounted Primary Energy	3% Discount Rate	0.48	0.49	0.56	0.60	0.60	0.66	0.78	0.95	
Savings (Quads)	7% Discount Rate	0.24	0.25	0.28	0.30	0.30	0.33	0.40	0.48	
Equipment Cost Increase (2008 \$B)	2.9	2.9	4.9	8.3	8.1	37.9	4.6	12.0	
Discounted Equipment Cost	3% Discount Rate	1.7	1.7	2.8	4.7	4.6	21.7	2.7	6.9	
Increase (2008 \$B)	7% Discount Rate	0.9	0.9	1.5	2.6	2.5	11.7	1.4	3.7	
	Active Energy Savings	12.4	12.6	14.2	15.9	16.0	17.5	19.2	22.1	
Operating Cost Savings (2008 \$B)	Reactive Power Savings	1.0	1.0	1.2	1.0	1.0	1.2	2.1	3.1	
	Total Savings	13.4	13.6	15.4	17.0	17.1	18.7	21.2	25.1	
Discounted Operating Cost	3% Discount Rate	6.8	6.9	7.9	8.7	8.7	9.5	10.8	12.8	
Savings (2008 \$B)	7% Discount Rate	3.2	3.2	3.7	4.0	4.1	4.4	5.1	6.0	
Net Present Value (2008 \$B)	3% Discount Rate	5.2	5.3	5.1	3.9	4.1	-12.2	8.2	5.9	
THE TTESEM VAIUE (2000 PD)	7% Discount Rate	2.3	2.3	2.2	1.5	1.6	-7.2	3.6	2.3	

Table 10C.2.8 Capacitor Start Motors: Segmented Markets Low CSCR Market Share Scenario: 0 Year Market Share Transition Time

Trial Standard Level 1 2 3 7 8 Level 4 4 6 7 **CSIR Motor Efficiency** 68.50% 71.20% 73.00% 73.00% 77.00% 77.00% 77.00% Rating at 1/2 HP (%) 68.50% 2 7 Level **CSCR Motor Efficiency** Rating at 1/2 HP (%) 73.70% 75.99% 75.99% 77.50% 75.99% 84.22% 75.99% 81.96% **CSIR Motors** 139.7 139.6 139.5 122.9 136.1 135.8 21.6 33.5 **Shipments (Millions) CSCR Motors** 0.2 0.4 0.4 0.7 1.1 0.0 115.3 99.1 **Active Energy Savings** 169.7 170.1 192.8 216.7 217.0 240.8 261.0 292.8 (TWh) Site Savings **Reduced Reactive** 192.8 193.4 229.9 236.6 187.1 186.7 389.9 544.0 Power (GVAr) **Active Energy Savings** 0.99 0.99 1.12 1.26 1.26 1.40 1.52 1.70 **Reduced Reactive Primary Energy Savings (Quads)** 0.18 0.18 0.22 0.17 0.17 0.21 0.36 0.51 Losses 1.17 1.17 1.34 1.43 1.44 1.61 1.88 2.21 **Total Savings** 0.72 0.77 0.77 3% Discount Rate 0.63 0.63 0.87 1.01 1.19 **Discounted Primary Energy** Savings (Quads) 7% Discount Rate 0.31 0.31 0.35 0.38 0.38 0.43 0.50 0.58 Equipment Cost Increase (2008 \$B) 4.1 4.1 6.9 12.0 12.0 52.4 11.0 21.8 3% Discount Rate 2.3 2.3 3.9 6.7 6.6 29.1 6.1 12.1 **Discounted Equipment Cost Increase (2008 \$B)** 7% Discount Rate 1.2 1.2 2.0 3.5 3.4 15.1 3.2 6.3 **Active Energy Savings** 17.2 17.3 19.6 22.0 22.0 24.5 26.5 29.7 **Reactive Power** Operating Cost Savings (2008 \$B) 1.4 1.4 1.7 1.3 1.3 2.7 3.8 1.6 **Savings Total Savings** 18.6 18.6 21.3 23.3 23.4 26.1 29.3 33.6 9.2 9.2 10.5 11.5 11.5 12.9 14.5 16.6 3% Discount Rate **Discounted Operating Cost** Savings (2008 \$B) 7% Discount Rate 4.1 4.1 4.7 5.2 5.2 5.8 7.5 6.5 3% Discount Rate 6.9 6.9 6.6 4.8 4.9 -16.2 8.3 4.5 Net Present Value (2008 \$B) 7% Discount Rate 3.0 3.0 2.7 1.7 1.7 -9.3 3.3 1.2

Table 10C.2.9 Capacitor Start Motors: Segmented Markets Low CSCR
Market Share Scenario: 10 Year Market Share Transition
Time

			Trial Standard Level						
		1	2	3	4	5	6	7	8
CSIR Motor Efficiency	Level	4	4	5	6	6	7	7	7
	Rating at 1/2 HP (%)	68.50%	68.50%	71.20%	73.00%	73.00%	77.00%	77.00%	77.00%
CSCR Motor Efficiency	Level	2	3	3	4	3	8	3	7
	Rating at 1/2 HP (%)	73.70%	75.99%	75.99%	77.50%	75.99%	84.22%	75.99%	81.96%
Shipments (Millions)	CSIR Motors	139.7	139.6	139.5	136.1	135.8	122.9	21.6	33.5
	CSCR Motors	0.2	0.4	0.4	0.7	1.1	0.0	115.3	99.1
Site Savings	Active Energy Savings (TWh)	169.7	170.1	192.8	216.7	217.0	240.8	261.0	292.8
Site Savings	Reduced Reactive Power (GVAr)	192.8	193.4	236.6	187.1	186.7	229.9	389.9	544.0
Primary Energy Savings (Quads)	Active Energy Savings	0.99	0.99	1.12	1.26	1.26	1.40	1.52	1.70
	Reduced Reactive Losses	0.18	0.18	0.22	0.17	0.17	0.21	0.36	0.51
	Total Savings	1.17	1.17	1.34	1.43	1.44	1.61	1.88	2.21
Discounted Primary Energy	3% Discount Rate	0.63	0.63	0.72	0.77	0.77	0.87	1.01	1.19
Savings (Quads)	7% Discount Rate	0.31	0.31	0.35	0.38	0.38	0.43	0.50	0.58
Equipment Cost Increase (2008 \$B)	4.1	4.1	6.9	12.0	12.0	52.4	11.0	21.8
Discounted Equipment Cost Increase (2008 \$B)	3% Discount Rate	2.3	2.3	3.9	6.7	6.6	29.1	6.1	12.1
	7% Discount Rate	1.2	1.2	2.0	3.5	3.4	15.1	3.2	6.3
Operating Cost Savings (2008 \$B)	Active Energy Savings	17.2	17.3	19.6	22.0	22.0	24.5	26.5	29.7
	Reactive Power Savings	1.4	1.4	1.7	1.3	1.3	1.6	2.7	3.8
	Total Savings	18.6	18.6	21.3	23.3	23.4	26.1	29.3	33.6
Discounted Operating Cost Savings (2008 \$B)	3% Discount Rate	9.2	9.2	10.5	11.5	11.5	12.9	14.5	16.6
	7% Discount Rate	4.1	4.1	4.7	5.2	5.2	5.8	6.5	7.5
Net Present Value (2008 \$B)	3% Discount Rate	6.9	6.9	6.6	4.8	4.9	-16.2	8.3	4.5
1101 1 1050111 v alue (2000 pd)	7% Discount Rate	3.0	3.0	2.7	1.7	1.7	-9.3	3.3	1.2

Table 10C.2.10 Capacitor Start Motors: Segmented Markets High CSCR Market Share Scenario

Trial Standard Level 1 2 3 6 7 8 Level 4 4 5 6 7 7 **CSIR Motor Efficiency** 68.50% 71.20% 73.00% 73.00% 77.00% 77.00% 77.00% Rating at 1/2 HP (%) 68.50% 2 7 Level **CSCR Motor Efficiency Rating at 1/2 HP (%)** 73.70% 75.99% 75.99% 77.50% 75.99% 84.22% 75.99% 81.96% **CSIR Motors** 125.4 106.8 120.6 116.7 99.0 122.8 0.5 1.2 **Shipments (Millions) CSCR Motors** 14.5 19.3 23.2 30.7 38.7 0.1 139.4 134.9 **Active Energy Savings** 306.6 179.8 187.9 208.4 228.4 233.1 240.9 264.1 (TWh) **Site Savings Reduced Reactive** 222.8 234.8 274.8 296.7 260.6 230.3 414.8 628.3 Power (GVAr) **Active Energy Savings** 1.05 1.21 1.33 1.35 1.40 1.54 1.78 1.09 **Reduced Reactive Primary Energy Savings (Quads)** 0.21 0.22 0.26 0.28 0.24 0.21 0.39 0.59 Losses 1.25 1.31 1.47 1.60 1.60 1.61 1.92 2.37 **Total Savings** 0.71 0.79 1.27 3% Discount Rate 0.67 0.86 0.86 0.87 1.03 **Discounted Primary Energy** Savings (Quads) 7% Discount Rate 0.33 0.35 0.39 0.42 0.42 0.43 0.51 0.63 Equipment Cost Increase (2008 \$B) 3.7 3.8 6.0 9.7 9.0 52.4 5.4 15.0 3% Discount Rate 2.0 2.1 3.3 5.4 5.0 29.1 3.0 8.3 **Discounted Equipment Cost Increase (2008 \$B)** 7% Discount Rate 1.1 1.1 1.7 2.8 2.6 15.1 1.6 4.3 **Active Energy Savings** 18.3 19.1 21.2 23.2 23.7 24.5 26.8 31.1 **Reactive Power** Operating Cost Savings (2008 \$B) 1.6 1.7 1.9 2.1 1.8 2.9 4.4 1.6 **Savings** 23.1 25.3 25.5 29.7 35.6 **Total Savings** 19.8 20.7 26.1 9.8 10.2 11.4 12.5 12.6 12.9 14.7 17.6 3% Discount Rate **Discounted Operating Cost** Savings (2008 \$B) 7% Discount Rate 4.4 4.6 5.1 5.6 5.7 5.8 7.9 6.6 9.2 3% Discount Rate 7.8 8.2 8.1 7.1 7.6 -16.2 11.7 Net Present Value (2008 \$B) 7% Discount Rate 3.3 3.5 3.4 2.8 3.1 -9.3 5.0 3.6

 Table 10C.2.11
 Capacitor Start Motors: Segmented Markets Inelasticity Scenario

Trial Standard Level 2 3 4 5 7 8 1 7 4 4 7 7 Level 5 6 6 **CSIR Motor Efficiency** Rating at 1/2 HP (%) 68.50% 68.50% 71.20% 73.00% 73.00% 77.00% 77.00% 77.00% 7 Level 2 3 4 3 **CSCR Motor Efficiency** 75.99% 75.99% 77.50% 75.99% 84.22% 75.99% 81.96% Rating at 1/2 HP (%) 73.70% **CSIR Motors** 138.3 137.5 137.2 134.5 132.6 5.0 10.4 **Shipments (Millions)** 1.7 2.4 2.8 5.5 7.3 0.0 135.0 129.5 **CSCR Motors Active Energy Savings** 171.1 172.7 195.1 223.9 225.2 276.3 264.5 313.6 (TWh) **Site Savings Reduced Reactive** 196.8 199.6 242.1 211.8 205.8 265.4 411.4 627.5 Power (GVAr) **Active Energy Savings** 0.99 1.00 1.13 1.30 1.31 1.61 1.54 1.82 **Reduced Reactive** Primary Energy Savings (Quads) 0.18 0.19 0.23 0.20 0.19 0.25 0.38 0.59 Losses **Total Savings** 1.18 1.19 1.36 1.50 1.50 1.85 1.92 2.41 3% Discount Rate 0.63 0.64 0.73 0.81 0.81 1.00 1.03 1.30 **Discounted Primary Energy** Savings (Quads) 7% Discount Rate 0.31 0.31 0.36 0.40 0.40 0.49 0.51 0.64 4.0 71.8 **Equipment Cost Increase (2008 \$B)** 4.0 6.8 12.6 12.2 6.9 19.0 2.2 2.2 3.8 7.0 6.8 39.9 3.8 10.6 3% Discount Rate **Discounted Equipment Cost** Increase (2008 \$B) 7% Discount Rate 1.2 1.2 1.9 3.6 3.5 20.7 2.0 5.5 17.4 19.8 22.7 26.9 **Active Energy Savings** 17.5 22.9 28.1 31.9 **Reactive Power** Operating Cost Savings (2008 \$B) 1.4 2.9 1.4 1.7 1.5 1.4 1.9 4.4 **Savings Total Savings** 18.8 19.0 21.5 24.2 24.3 29.9 29.8 36.3 3% Discount Rate 9.3 9.4 10.6 12.0 12.0 14.8 14.7 17.9 **Discounted Operating Cost** Savings (2008 \$B) 7% Discount Rate 4.2 4.2 4.8 5.4 5.4 6.6 6.6 8.1 **3% Discount Rate** 7.0 7.1 6.9 5.0 5.2 -25.1 10.9 7.3 Net Present Value (2008 \$B) 7% Discount Rate 3.0 3.1 2.8 1.8 1.9 -14.0 4.6 2.6

 Table 10C.2.12
 Capacitor Start Motors: Segmented Markets High Elasticity Scenario

Trial Standard Level 3 4 5 7 8 1 2 7 4 4 7 7 Level 5 6 6 **CSIR Motor Efficiency** Rating at 1/2 HP (%) 68.50% 68.50% 71.20% 73.00% 73.00% 77.00% 77.00% 77.00% 7 Level 2 3 3 **CSCR Motor Efficiency** 75.99% 75.99% 77.50% 75.99% 84.22% 75.99% 81.96% Rating at 1/2 HP (%) 73.70% **CSIR Motors** 138.3 137.5 137.2 128.6 126.8 105.9 3.8 7.9 **Shipments (Millions)** 1.7 2.4 2.8 5.5 7.3 0.0 135.0 122.7 **CSCR Motors Active Energy Savings** 171.1 172.7 195.1 214.1 215.6 205.3 262.5 292.9 (TWh) **Site Savings Reduced Reactive** 196.8 199.6 242.1 202.9 197.2 194.5 409.3 589.7 Power (GVAr) **Active Energy Savings** 0.99 1.00 1.13 1.24 1.25 1.19 1.53 1.70 **Reduced Reactive** Primary Energy Savings (Quads) 0.18 0.19 0.23 0.19 0.18 0.18 0.38 0.55 Losses **Total Savings** 1.18 1.19 1.36 1.43 1.44 1.37 1.91 2.25 3% Discount Rate 0.63 0.64 0.73 0.77 0.77 0.74 1.03 1.21 **Discounted Primary Energy** Savings (Quads) 7% Discount Rate 0.31 0.31 0.36 0.38 0.38 0.36 0.50 0.59 4.0 **Equipment Cost Increase (2008 \$B)** 4.0 6.8 10.4 10.1 36.1 6.0 14.3 7.9 2.2 2.2 3.8 5.8 20.1 3.4 3% Discount Rate 5.6 **Discounted Equipment Cost** Increase (2008 \$B) 7% Discount Rate 1.2 1.2 1.9 3.0 2.9 10.4 1.7 4.1 17.4 19.8 **Active Energy Savings** 17.5 21.8 21.9 20.9 26.7 29.8 **Reactive Power** Operating Cost Savings (2008 \$B) 1.4 2.9 1.4 1.7 1.4 1.4 1.4 4.1 **Savings Total Savings** 18.8 19.0 21.5 23.2 23.3 22.2 29.5 33.9 3% Discount Rate 9.3 9.4 10.6 11.5 11.5 11.0 14.6 16.7 **Discounted Operating Cost** Savings (2008 \$B) 7% Discount Rate 4.2 4.2 4.8 5.1 5.2 4.9 6.6 7.5 **3% Discount Rate** 7.0 7.1 6.9 5.7 5.9 -9.1 11.2 8.8 Net Present Value (2008 \$B) 2.2 2.3 7% Discount Rate 3.0 3.1 2.8 -5.5 4.8 3.4

Table 10C.2.13 Capacitor Start Motors: Segmented Markets 50% Reactive Power Charge Scenario

Trial Standard Level 1 2 3 6 7 8 Level 4 4 5 6 7 7 **CSIR Motor Efficiency** 68.50% 71.20% 73.00% 73.00% 77.00% 77.00% 77.00% Rating at 1/2 HP (%) 68.50% 2 7 Level **CSCR Motor Efficiency** Rating at 1/2 HP (%) 73.70% 75.99% 75.99% 77.50% 75.99% 84.22% 75.99% 81.96% 131.5 **CSIR Motors** 138.3 137.2 129.7 122.9 4.4 9.1 137.5 **Shipments (Millions) CSCR Motors** 1.7 2.4 2.8 5.5 7.3 0.0 135.0 126.1 **Active Energy Savings** 219.0 171.1 172.7 195.1 220.4 240.8 263.5 303.3 (TWh) Site Savings **Reduced Reactive** 199.6 207.3 230.0 196.8 242.1 201.5 410.3 608.6 Power (GVAr) **Active Energy Savings** 0.99 1.00 1.13 1.27 1.28 1.40 1.53 1.76 **Reduced Reactive Primary Energy Savings (Quads)** 0.18 0.19 0.23 0.19 0.19 0.21 0.38 0.57 Losses 1.18 1.19 1.36 1.47 1.47 1.61 1.91 2.33 **Total Savings** 0.73 0.79 0.79 1.25 3% Discount Rate 0.63 0.64 0.87 1.03 **Discounted Primary Energy** Savings (Quads) 7% Discount Rate 0.31 0.31 0.36 0.39 0.39 0.43 0.51 0.62 Equipment Cost Increase (2008 \$B) 4.0 4.0 6.8 11.4 52.4 16.5 11.1 6.4 2.2 3% Discount Rate 2.2 3.8 6.4 6.2 29.1 3.6 9.2 **Discounted Equipment Cost Increase (2008 \$B)** 7% Discount Rate 1.2 1.2 1.9 3.3 3.2 15.1 1.8 4.8 **Active Energy Savings** 17.4 17.5 19.8 22.3 22.4 24.5 26.8 30.8 **Reactive Power** Operating Cost Savings (2008 \$B) 0.7 0.7 0.9 0.7 0.7 0.8 1.4 2.1 **Savings** 20.7 25.3 28.2 33.0 **Total Savings** 18.1 18.3 23.0 23.1 8.9 9.0 10.2 11.4 11.4 12.5 13.9 16.3 3% Discount Rate **Discounted Operating Cost** Savings (2008 \$B) 7% Discount Rate 4.0 4.1 4.6 5.1 5.1 5.6 6.3 7.3 7.1 3% Discount Rate 6.7 6.8 6.5 5.0 5.2 -16.6 10.4 Net Present Value (2008 \$B) 7% Discount Rate 2.9 2.9 2.6 1.8 1.9 -9.5 4.4 2.6

Table 10C.2.14 Capacitor Start Motors: Segmented Markets 0% Reactive Power Charge Scenario

Trial Standard Level 2 3 6 7 8 1 Level 4 4 5 6 7 7 **CSIR Motor Efficiency** 68.50% 71.20% 73.00% 73.00% 77.00% 77.00% 77.00% Rating at 1/2 HP (%) 68.50% 2 7 Level **CSCR Motor Efficiency** Rating at 1/2 HP (%) 73.70% 75.99% 75.99% 77.50% 75.99% 84.22% 75.99% 81.96% 131.5 **CSIR Motors** 138.3 137.2 129.7 122.9 4.4 9.1 137.5 **Shipments (Millions) CSCR Motors** 1.7 2.4 2.8 5.5 7.3 0.0 135.0 126.1 **Active Energy Savings** 219.0 171.1 172.7 195.1 220.4 240.8 263.5 303.3 (TWh) Site Savings **Reduced Reactive** 199.6 207.3 230.0 196.8 242.1 201.5 410.3 608.6 Power (GVAr) **Active Energy Savings** 0.99 1.00 1.13 1.27 1.28 1.40 1.53 1.76 **Reduced Reactive Primary Energy Savings (Quads)** 0.18 0.19 0.23 0.19 0.19 0.21 0.38 0.57 Losses 1.18 1.19 1.36 1.47 1.47 1.61 1.91 2.33 **Total Savings** 0.73 0.79 0.79 1.25 3% Discount Rate 0.63 0.64 0.87 1.03 **Discounted Primary Energy** Savings (Quads) 7% Discount Rate 0.31 0.31 0.36 0.39 0.39 0.43 0.51 0.62 Equipment Cost Increase (2008 \$B) 4.0 4.0 6.8 11.4 52.4 16.5 11.1 6.4 2.2 3% Discount Rate 2.2 3.8 6.4 6.2 29.1 3.6 9.2 **Discounted Equipment Cost Increase (2008 \$B)** 7% Discount Rate 1.2 1.2 1.9 3.3 3.2 15.1 1.8 4.8 **Active Energy Savings** 17.4 17.5 19.8 22.3 22.4 24.5 26.8 30.8 **Reactive Power** Operating Cost Savings (2008 \$B) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 **Savings** 17.4 22.3 22.4 **Total Savings** 17.5 19.8 24.5 26.8 30.8 8.6 8.7 9.8 11.0 11.1 12.1 13.2 15.2 3% Discount Rate **Discounted Operating Cost** Savings (2008 \$B) 7% Discount Rate 3.9 3.9 4.4 4.9 5.0 5.4 5.9 6.8 9.7 3% Discount Rate 6.3 6.4 6.0 4.6 4.9 -17.0 6.0 Net Present Value (2008 \$B) 7% Discount Rate 2.7 2.7 2.5 1.6 1.8 -9.7 4.1 2.1

Table 10C.2.15 Capacitor Start Motors: Segmented Markets Carbon Cap & Trade Scenario

Trial Standard Level 1 2 3 6 7 8 Level 4 4 5 6 7 7 **CSIR Motor Efficiency** 68.50% 71.20% 73.00% 73.00% 77.00% 77.00% 77.00% Rating at 1/2 HP (%) 68.50% 2 7 Level **CSCR Motor Efficiency** Rating at 1/2 HP (%) 73.70% 75.99% 75.99% 77.50% 75.99% 84.22% 75.99% 81.96% 131.5 **CSIR Motors** 138.3 137.2 129.7 122.9 4.4 9.1 137.5 **Shipments (Millions) CSCR Motors** 1.7 2.4 2.8 5.5 7.3 0.0 135.0 126.1 **Active Energy Savings** 171.1 172.7 195.1 219.0 220.4 240.8 263.5 303.3 (TWh) **Site Savings Reduced Reactive** 199.6 207.3 230.0 196.8 242.1 201.5 410.3 608.6 Power (GVAr) **Active Energy Savings** 0.99 1.00 1.13 1.27 1.28 1.40 1.53 1.76 **Reduced Reactive Primary Energy Savings (Quads)** 0.18 0.19 0.23 0.19 0.19 0.21 0.38 0.57 Losses 1.18 1.19 1.36 1.47 1.47 1.61 1.91 2.33 **Total Savings** 0.73 0.79 0.79 1.25 3% Discount Rate 0.63 0.64 0.87 1.03 **Discounted Primary Energy** Savings (Quads) 7% Discount Rate 0.31 0.31 0.36 0.39 0.39 0.43 0.51 0.62 Equipment Cost Increase (2008 \$B) 4.0 4.0 6.8 11.4 52.4 16.5 11.1 6.4 2.2 3% Discount Rate 2.2 3.8 6.4 6.2 29.1 3.6 9.2 **Discounted Equipment Cost Increase (2008 \$B)** 7% Discount Rate 1.2 1.2 1.9 3.3 3.2 15.1 1.8 4.8 **Active Energy Savings** 17.4 17.5 19.8 22.3 22.4 24.5 26.8 30.8 **Reactive Power** Operating Cost Savings (2008 \$B) 1.4 1.7 1.5 1.4 2.9 4.3 1.4 1.6 **Savings** 23.7 29.7 35.1 **Total Savings** 18.8 19.0 21.5 23.8 26.1 9.3 9.4 10.6 11.7 11.8 12.9 14.6 17.3 3% Discount Rate **Discounted Operating Cost** Savings (2008 \$B) 7% Discount Rate 4.2 4.2 4.8 5.3 5.3 5.8 7.8 6.6 7.1 3% Discount Rate 7.0 6.9 5.4 5.6 -16.2 11.1 8.1 Net Present Value (2008 \$B) -9.3 7% Discount Rate 3.0 3.1 2.8 2.0 2.1 4.7 3.0

 Table 10C.2.16
 Capacitor Start Motors: Segmented Markets High Energy Price

Trial Standard Level 2 3 4 5 7 8 1 6 7 4 4 7 7 Level 5 6 6 **CSIR Motor Efficiency** Rating at 1/2 HP (%) 68.50% 68.50% 71.20% 73.00% 73.00% 77.00% 77.00% 77.00% 7 Level 2 3 4 3 **CSCR Motor Efficiency** 75.99% 75.99% 77.50% 75.99% 84.22% 75.99% 81.96% Rating at 1/2 HP (%) 73.70% **CSIR Motors** 138.3 137.5 137.2 131.5 129.7 122.9 4.4 9.1 **Shipments (Millions)** 1.7 2.4 2.8 5.5 7.3 0.0 135.0 **CSCR Motors** 126.1 **Active Energy Savings** 171.1 172.7 195.1 219.0 220.4 240.8 263.5 303.3 (TWh) **Site Savings Reduced Reactive** 196.8 199.6 242.1 207.3 201.5 230.0 410.3 608.6 Power (GVAr) **Active Energy Savings** 0.99 1.00 1.13 1.27 1.28 1.40 1.53 1.76 **Reduced Reactive** Primary Energy Savings (Quads) 0.18 0.19 0.23 0.19 0.19 0.21 0.38 0.57 Losses **Total Savings** 1.18 1.19 1.36 1.47 1.47 1.61 1.91 2.33 3% Discount Rate 0.63 0.64 0.73 0.79 0.79 0.87 1.03 1.25 **Discounted Primary Energy** Savings (Quads) 7% Discount Rate 0.31 0.31 0.36 0.39 0.39 0.43 0.51 0.62 4.0 **Equipment Cost Increase (2008 \$B)** 4.0 6.8 11.4 11.1 52.4 6.4 16.5 2.2 2.2 3.8 6.4 6.2 29.1 9.2 3% Discount Rate 3.6 **Discounted Equipment Cost** Increase (2008 \$B) 7% Discount Rate 1.2 1.2 1.9 3.3 3.2 15.1 1.8 4.8 17.4 19.8 22.3 22.4 24.5 **Active Energy Savings** 17.5 26.8 30.8 **Reactive Power** Operating Cost Savings (2008 \$B) 1.4 2.9 1.4 1.7 1.5 1.4 1.6 4.3 **Savings Total Savings** 18.8 19.0 21.5 23.7 23.8 26.1 29.7 35.1 3% Discount Rate 9.3 9.4 10.6 11.7 11.8 12.9 14.6 17.3 **Discounted Operating Cost** Savings (2008 \$B) 7% Discount Rate 4.2 4.2 4.8 5.3 5.3 5.8 6.6 7.8 **3% Discount Rate** 7.0 7.1 6.9 5.4 5.6 -16.2 11.1 8.1 Net Present Value (2008 \$B) 7% Discount Rate 3.0 3.1 2.8 2.0 2.1 -9.3 4.7 3.0

Table 10C.2.17 Capacitor Start Motors: Segmented Markets Low Energy Price

Table 10C.2.17 Capacitor Start Motors: Segme	ented Markets Low Energy Price		
		Trial Standard Level	
		1	2
CSIR Motor Efficiency	Level	4	4
	Rating at 1/2 HP (%)	68.50%	68.50%
CSCR Motor Efficiency	Level	2	3
	Rating at 1/2 HP (%)	73.70%	75.99%
Shipments (Millions)	CSIR Motors	138.3	137.5
	CSCR Motors	1.7	2.4
Site Savings	Active Energy Savings (TWh)	171.1	172.7
	Reduced Reactive Power (GVAr)	196.8	199.6
Primary Energy Savings (Quads)	Active Energy Savings	0.99	1.00
	Reduced Reactive Losses	0.18	0.19
	Total Savings	1.18	1.19
Discounted Primary Energy Savings (Quads)	3% Discount Rate	0.63	0.64
	7% Discount Rate	0.31	0.31
Equipment Cost Increase (2008 \$B)		4.0	4.0
Discounted Equipment Cost Increase (2008 \$B)	3% Discount Rate	2.2	2.2
	7% Discount Rate	1.2	1.2
Operating Cost Savings (2008 \$B)	Active Energy Savings	17.4	17.5
	Reactive Power Savings	1.4	1.4
	Total Savings	18.8	19.0
Discounted Operating Cost Savings (2008 \$B)	3% Discount Rate	9.3	9.4
	7% Discount Rate	4.2	4.2
Net Present Value (2008 \$B)	3% Discount Rate	7.0	7.1
	7% Discount Rate	3.0	3.1