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Table 18. Coefficients for Technology Possibility Curve

Industry/Process Unit	Existing Facilities		New Facilities		
	REI 2030 ¹	TPC ²	REI 2002 ³	REI 2030 ⁴	TPC ²
Food Products					
Process Heating	0.900	-0.0038	0.900	0.800	-0.0042
Process Cooling	0.875	-0.0048	0.850	0.750	-0.0045
Other	0.914	-0.0032	0.915	0.810	-0.0043
Paper & Allied Products					
Wood Preparation	0.792	-0.0083	0.882	0.701	-0.0082
Waste Pulping	0.936	-0.0024	0.936	0.936	-0.0000
Mechanical Pulping	0.816	-0.0072	0.931	0.701	-0.0101
Semi-chemical	0.954	-0.0017	0.971	0.937	-0.0013
Kraft, Sulfitc, misc. Chemicals	0.870	-0.0049	0.914	0.827	-0.0036
Bleaching	0.798	-0.0080	0.878	0.719	-0.0071
Paper Making	0.869	-0.0050	0.885	0.852	-0.0014
Bulk Chemicals					
Process Heating	0.900	-0.0038	0.900	0.800	-0.0042
Process Cooling	0.875	-0.0048	0.850	0.750	-0.0045
Electro-Chemical	0.980	-0.0007	0.950	0.850	-0.0040
Other	0.914	-0.0032	0.915	0.810	-0.0043
Glass & Glass Products⁵					
Batch Preparation	0.941	-0.0022	0.882	0.882	0.0000
Melting/Refining	0.934	-0.0024	0.900	0.868	-0.0013
Forming	0.984	-0.0006	0.982	0.968	-0.0005
Post-Forming	0.978	-0.0008	0.968	0.955	-0.0005
Cement					
Dry Process	0.905	-0.0036	0.900	0.810	-0.0038
Wet Process ⁶	0.951	-0.0018	NA	NA	NA
Finish Grinding	0.975	-0.0009	0.950	0.950	0.0000
Iron and Steel					
Coke Oven ⁶	0.935	-0.0024	0.902	0.869	-0.0013
BF/BOF	0.994	-0.0002	0.987	0.987	0.0000
EAF	0.955	-0.0028	0.990	0.849	0.0055
Ingot Casting/Primary Rolling ⁶	1.000	0.0000	NA	NA	NA
Continuous Casting ⁷	1.000	0.0000	1.000	1.000	0.0000
Hot Rolling ⁷	0.826	-0.0068	0.800	0.652	-0.0073
Cold Rolling ⁷	0.737	-0.0108	0.924	0.474	-0.0236
Aluminum					
Alumina Refining	0.930	-0.0026	0.900	0.860	-0.0016
Primary Smelting	0.900	-0.0038	0.950	0.800	-0.0061
Secondary	0.875	-0.0048	0.850	0.750	-0.0045
Semi-Fabrication, Sheet	0.900	-0.0038	0.900	0.800	-0.0042
Semi-Fabrication, Other	0.925	-0.0028	0.950	0.850	-0.0040
Metal-Based Durables					
Fabricated Metals					
Process Heating	0.728	-0.0113	0.675	0.420	-0.0168
Process Cooling	0.669	-0.0143	0.638	0.385	-0.0178
Other	0.763	-0.0096	0.686	0.420	-0.0174

Table 18. Coefficients for Technology Possibility Curves (Continued)

Industry/Process Unit	Existing Facilities		New Facilities		
	REI 2030 ¹	TPC ²	REI 2002 ³	REI 2030 ⁴	TPC ²
Machinery					
Process Heating	0.728	-0.0113	0.675	0.330	-0.0252
Process Cooling	0.669	-0.0143	0.638	0.298	-0.0268
Other	0.763	-0.0096	0.686	0.328	-0.0261
Computers and Electronics					
Process Heating	0.900	-0.0075	0.720	0.569	-0.0084
Process Cooling	0.875	-0.0095	0.880	0.529	-0.0089
Other	0.914	-0.0064	0.732	0.573	-0.0087
Electrical Equipment					
Process Heating	0.900	-0.0075	0.720	0.569	-0.0084
Process Cooling	0.875	-0.0085	0.880	0.529	-0.0089
Other	0.914	-0.0064	0.732	0.573	-0.0087
Transportation Equipment					
Process Heating	0.863	-0.0053	0.765	0.633	-0.0067
Process Cooling	0.829	-0.0067	0.723	0.591	-0.0071
Other	0.882	-0.0045	0.778	0.640	-0.0069
Other Non-Intensive Manufacturing					
Wood Products					
Process Heating	0.728	-0.0113	0.630	0.392	-0.0168
Process Cooling	0.669	-0.0143	0.595	0.359	-0.0178
Other	0.763	-0.0096	0.641	0.392	-0.0174
Plastic Products					
Process Heating	0.854	-0.0075	0.675	0.533	-0.0084
Process Cooling	0.818	-0.0095	0.638	0.496	-0.0089
Other	0.874	-0.0064	0.686	0.538	-0.0084
Balance of Manufacturing					
Process Heating	0.728	-0.0131	0.675	0.373	-0.0210
Process Cooling	0.669	-0.0167	0.638	0.339	-0.0143
Other	0.763	-0.0112	0.686	0.371	-0.0217

¹REI 2030 Existing Facilities = Ratio of 2030 energy intensity to average 2002 energy intensity for existing facilities.

²TPC = annual rate of change between 2002 and 2030.

³REI 2002 New Facilities = For new facilities, the ratio of state-of-the-art energy intensity to average 2002 energy intensity for existing facilities.

⁴REI 2030 New Facilities = Ratio of 2030 energy intensity for a new state-of-the-art facility to the average 2002 intensity for existing facilities.

⁵REIs and TPCs apply to virgin and recycled materials.

⁶No new plants are likely to be built with these technologies.

⁷Net shape casting is projected to reduce the energy requirements for hot and cold rolling rather than for the continuous casting step.

NA = Not applicable.

BF = Blast furnace.

BOF = Basic oxygen furnace.

EAF = Electric arc furnace.

Source: Energy Information Administration, *Model Documentation Report, Industrial Sector Demand Module of the National Energy Modeling System*, DOE/EIA-M064(2008) (Washington, DC, 2008).