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Table 24. Coefficients for Technology Possibility Curves, High Technology Case

Industry/Process Unit	Existing Facilities		New Faciliies	
	REI 2030[1]	TPC[2]	REI 2030[3]	TPC[2]
Food Products				
Process Heating	0.889	-0.004	0.702	-0.009
Process Cooling	0.889	-0.004	0.702	-0.009
Other	0.889	-0.004	0.702	-0.009
Paper & Allied Products				
Wood Preparation	0.747	-0.010	0.532	-0.018
Waste Pulping	0.898	-0.004	0.800	-0.006
Mechanical Pulping	0.771	-0.009	0.580	-0.017
Semi-chemical	0.948	-0.002	0.777	-0.008
Kraft, Sulfite, misc. Chemicals (a)	0.827	-0.007	0.549	-0.018
Bleaching	0.758	-0.010	0.627	-0.012
Paper Making	0.766	-0.009	0.451	-0.024
Bulk Chemicals				
Process Heating	0.893	-0.004	0.710	-0.009
Process Cooling	0.893	-0.004	0.710	-0.009
Electro-Chemical	0.893	-0.004	0.710	-0.009
Other	0.893	-0.004	0.710	-0.009
Glass & Glass Products[4]				
Batch Preparation	0.941	-0.002	0.819	-0.003
Melting/Refining	0.822	-0.007	0.449	-0.025
Forming	0.965	-0.001	0.826	-0.006
Post-Forming	0.971	-0.001	0.865	-0.004
Cement				
Dry Process	0.800	-0.008	0.531	-0.019
Wet Process[6]	0.894	-0.004	NA	NA
Finish Grinding	0.850	-0.006	0.600	-0.016
Iron & Steel				
Coke Oven[5]	0.845	-0.006	0.637	-0.012
BF/BOF	0.950	-0.002	0.785	-0.008
EAF	0.845	-0.006	0.655	-0.015
Ingot Casting/Primary Rolling[5]	1.000	-0.000	NA	NA
Continuous Casting[6]	1.000	-0.000	1.000	0.000
Hot Rolling[6]	0.761	-0.010	0.337	-0.030
Cold Rolling[6]	0.706	-0.012	0.400	-0.029
Aluminum				
Alumina Refining	0.915	-0.003	0.576	-0.016
Primary Smelting	0.800	-0.008	0.522	-0.021
Secondary	0.825	-0.007	0.376	-0.029
Semi-Fabrication, Sheet/plate/foil	0.750	-0.010	0.457	-0.024
Semi-Fabrication, Other	0.825	-0.007	0.467	-0.025
Metal-Based Durables				
Fabricated Metals				
Process Heating	0.704	-0.0124	0.380	-0.0203
Process Cooling	0.647	-0.0155	0.369	-0.0193
Other	0.741	-0.0106	0.386	-0.0203

Table 24. Coefficients for Technology Possibility Curves, High Technology Case (Continued)

Industry/Process Unit	Existing Facilities		New Facilities	
	REI 2030[1]	TPC[2]	REI 2030[4]	TPC[2]
Machinery				
Process Heating	0.704	-0.0124	0.284	-0.0305
Process Cooling	0.647	-0.0155	0.280	-0.0290
Other	0.738	-0.0108	0.281	-0.0314
Computers and Electronics				
Process Heating	0.792	-0.0083	0.541	-0.0102
Process Cooling	0.748	-0.0103	0.503	-0.0107
Other	0.817	-0.0072	0.545	-0.0105
Electrical Equipment				
Process Heating	0.890	-0.0083	0.780	-0.0102
Process Cooling	0.865	-0.0103	0.742	-0.0107
Other	0.905	-0.0072	0.793	-0.0105
Transportation Equipment				
Process Heating	0.849	-0.0058	0.609	-0.0081
Process Cooling	0.817	-0.0072	0.581	-0.0077
Other	0.870	-0.0050	0.619	-0.0051
Other Non-Intensive Manufacturing				
Wood Products				
Process Heating	0.705	-0.0124	0.356	-0.0202
Process Cooling	0.647	-0.0154	0.341	-0.0196
Other	0.742	-0.0106	0.354	-0.0209
Plastic Products				
Process Heating	0.793	-0.0083	0.508	-0.0253
Process Cooling	0.749	-0.0103	0.473	-0.0266
Other	0.817	-0.0072	0.512	-0.0260
Balance of Manufacturing				
Process Heating	0.665	-0.0145	0.330	-0.0253
Process Cooling	0.602	-0.0180	0.300	-0.0266
Other	0.702	-0.0126	0.328	-0.0260

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

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

[3]REI 2030 New Facilities = Ratio of 2030 energy intensity for a new State-of-the-art facility to the average 2002 intensity for existing facilities.

[4] REIs and TPCs apply to virgin and recycled materials.

[5]No new plants are likely to be built with these technologies.

[6]Net 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).