

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

Industry/Process Unit	Existing Facilities		New Facilities		
	REI 2025 ¹	TPC ²	REI 1998 ³	REI 2025 ⁴	TPC ²
Food & Kindred Products					
Process Heating	0.829	-0.0069	0.900	0.629	-0.0132
Process Cooling	0.829	-0.0069	0.850	0.594	-0.0132
Other	0.829	-0.0069	0.915	0.639	-0.0132
Paper & Allied Products					
Wood Preparation	0.843	-0.0063	0.873	0.790	-0.0037
Waste Pulping	0.900	-0.0039	0.936	0.809	-0.0054
Mechanical Pulping	0.883	-0.0046	0.868	0.805	-0.0028
Semi-chemical	0.814	-0.0076	0.876	0.634	-0.0119
Kraft, Sulfite, misc. Chemicals	0.714	-0.0124	0.876	0.411	-0.0276
Bleaching	0.779	-0.0092	0.900	0.544	-0.0185
Paper Making	0.687	-0.0138	0.900	0.343	-0.0351
Bulk Chemicals					
Process Heating	0.843	-0.0063	0.900	0.644	-0.0123
Process Cooling	0.843	-0.0063	0.850	0.609	-0.0123
Electro-Chemical	0.843	-0.0063	0.950	0.680	-0.0123
Other	0.843	-0.0063	0.915	0.654	-0.0123
Glass & Glass Products⁵					
Batch Preparation	0.857	-0.0057	0.882	0.645	0.0115
Melting/Refining	0.710	-0.0126	0.900	0.418	-0.0280
Forming	0.866	-0.0053	0.982	0.682	-0.0134
Post-Forming	0.805	-0.0080	0.968	0.531	-0.0220
Hydraulic Cement					
Dry Process	0.788	-0.0088	0.889	0.558	-0.0171
Wet Process ⁶	0.788	-0.0088	NA	NA	NA
Finish Grinding	0.823	-0.0072	0.950	0.628	-0.0152
Blast Furnaces & Basic Steel					
Coke Oven ⁶	0.592	-0.0192	0.874	0.502	-0.0203
BF/BOF	0.905	-0.0037	1.000	0.678	-0.0143
EAF	0.801	-0.0082	0.990	0.632	-0.0165
Ingot Casting/Primary Rolling ⁶	1.000	0.0000	NA	NA	NA
Continuous Casting ⁷	0.932	-0.0026	1.000	0.867	-0.0053
Hot Rolling ⁷	0.427	-0.0310	0.750	0.093	-0.0743
Cold Rolling ⁷	0.383	-0.0349	0.924	0.023	-0.1278
Aluminum					
Alumina Refining	0.859	-0.0056	0.900	0.678	-0.0104
Primary Smelting	0.816	-0.0075	0.950	0.582	-0.0180
Secondary	0.667	-0.0149	0.750	0.388	-0.0241
Semi-Fabrication, Sheet	0.689	-0.0137	0.900	0.353	-0.0341
Semi-Fabrication, Other	0.706	-0.0128	0.950	0.346	-0.0367
Metal Based Durables					
Process Heating	0.814	-0.0076	0.900	0.614	-0.0141
Process Cooling	0.814	-0.0076	0.851	0.580	-0.0141
Electro-Chemical	0.814	-0.0076	0.955	0.651	-0.0141
Other	0.814	-0.0076	0.915	0.624	-0.0141

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

Industry/Process Unit	Existing Facilities		New Facilities		
	REI 2025 ¹	TPC ²	REI 1998 ³	REI 2025 ⁴	TPC ²
Other Non-Intensive Manufacturing					
Process Heating	0.821	-0.0073	0.900	0.617	-0.0139
Process Cooling	0.821	-0.0073	0.851	0.583	-0.0139
Electro-Chemical	0.821	-0.0073	0.955	0.655	-0.0139
Other	0.821	-0.0073	0.915	0.625	-0.0139
Non-Manufacturing	0.947	-0.0020	0.900	0.808	-0.0040

¹REI 2025 Existing Facilities = Ratio of 2025 energy intensity to average 1998 energy intensity for existing facilities.

²TPC = annual rate of change between 1998 and 2025.

³REI 1998 New Facilities = For new facilities, the ratio of State-of-the-art energy intensity to average 1998 energy intensity for existing facilities.

⁴REI 2025 New Facilities = Ratio of 2025 energy intensity for a new State-of-the-art facility to the average 1998 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(2004) (Washington, DC, 2004).