

Table 30. Iron and Steel Industries Energy Consumption

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Value of Shipments (billion 1996 dollars)	67.40	72.90	72.71	75.48	78.18	78.94	80.25	81.81	82.74	83.82	85.03	85.78	86.11
Energy Consumption (trillion Btu)													
Distillate Oil	4.6	4.8	4.6	4.8	4.9	4.9	4.9	5.0	5.0	5.0	5.0	5.0	5.0
Residual Oil	34.1	20.6	27.0	24.8	24.3	23.0	22.6	22.5	21.3	20.6	20.8	21.1	21.4
Other Petroleum 2/ Petroleum Subtotal	7.9 46.5	7.7 33.1	7.6 39.2	7.5 37.1	7.3 36.5	7.2 35.2	7.1 34.6	7.0 34.5	6.9 33.2	6.8 32.4	6.7 32.5	6.6 32.6	6.4 32.8
Natural Gas	400.9	421.1	400.6	409.2	414.8	413.3	412.9	413.0	412.9	412.6	411.4	408.4	403.9
Metallurgical Coal	695.8	681.9	665.2	650.4	636.7	623.5	610.6	597.9	585.5	573.4	561.4	549.5	537.6
Net Coke Imports	24.4	27.0	21.3	20.3	19.6	17.4	16.1	15.3	13.9	12.8	12.1	10.4	8.2
Steam Coal	63.5	65.9	64.6	63.7	62.9	62.1	61.3	60.5	59.7	59.0	58.3	57.5	56.7
Coal Subtotal	783.7	774.9	751.1	734.4	719.3	702.9	687.9	673.7	659.1	645.2	631.8	617.4	602.5
Purchased Electricity	148.8	160.7	163.9	170.8	178.7	181.2	185.5	190.5	193.3	196.7	200.8	203.6	205.3
Total	1379.9	1389.7	1354.8	1351.5	1349.3	1332.6	1321.0	1311.7	1298.4	1286.8	1276.6	1262.0	1244.5
Energy Consumption per Unit of Output (thousand Btu per 1996 dollar shipments)													
Distillate Oil	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Residual Oil	0.51	0.28	0.37	0.33	0.31	0.29	0.28	0.28	0.26	0.25	0.24	0.25	0.25
Other Petroleum 2/ Petroleum Subtotal	0.12 0.69	0.11 0.45	0.10 0.54	0.10 0.49	0.09 0.47	0.09 0.45	0.09 0.43	0.09 0.42	0.08 0.40	0.08 0.39	0.08 0.38	0.08 0.38	0.07 0.38
Natural Gas	5.95	5.78	5.51	5.42	5.31	5.24	5.15	5.05	4.99	4.92	4.84	4.76	4.69
Metallurgical Coal	10.32	9.35	9.15	8.62	8.14	7.90	7.61	7.31	7.08	6.84	6.60	6.41	6.24
Net Coke Imports	0.36	0.37	0.29	0.27	0.25	0.22	0.20	0.19	0.17	0.15	0.14	0.12	0.10
Steam Coal	0.94	0.90	0.89	0.84	0.81	0.79	0.76	0.74	0.72	0.70	0.69	0.67	0.66
Coal Subtotal	11.63	10.63	10.33	9.73	9.20	8.90	8.57	8.23	7.97	7.70	7.43	7.20	7.00
Purchased Electricity	2.21	2.20	2.25	2.26	2.29	2.29	2.31	2.33	2.34	2.35	2.36	2.37	2.38
Total	20.47	19.06	18.63	17.91	17.26	16.88	16.46	16.03	15.69	15.35	15.01	14.71	14.45
Carbon Dioxide Emissions 3/ (million metric tons)	126.1	127.0	124.8	124.1	124.6	123.5	123.0	122.6	121.5	120.7	120.0	118.9	117.5
Combined Heat and Power 4/ Generating Capacity (gigawatts)													
Petroleum	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Natural Gas	0.16	0.16	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22	0.22	0.23	0.24
Coal	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Other 5/ Total	0.69 1.18	0.88 1.37	0.88 1.37	0.88 1.38	0.88 1.39	0.88 1.40	0.88 1.40	0.88 1.41	0.88 1.42	0.88 1.43	0.88 1.43	0.88 1.44	0.88 1.45
Net Generation (billion kilowatthours)													
Petroleum	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Natural Gas	0.81	0.75	0.76	0.80	0.86	0.92	0.98	1.03	1.09	1.16	1.21	1.27	1.31
Coal	1.42	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
Other 5/ Total	3.53 5.78	4.75 7.11	4.75 7.12	4.75 7.16	4.75 7.22	4.75 7.28	4.75 7.34	4.75 7.39	4.75 7.45	4.75 7.52	4.75 7.57	4.75 7.63	4.75 7.67
Disposition													
Sales to the Grid	0.56	0.68	0.68	0.68	0.69	0.69	0.70	0.70	0.71	0.72	0.72	0.73	0.73
Generation for Own Use	5.22	6.43	6.44	6.48	6.53	6.59	6.64	6.68	6.74	6.80	6.85	6.90	6.94
Thermal Output (trillion Btu)	41.3	52.2	52.2	52.4	52.5	52.7	52.8	52.9	53.1	53.3	53.4	53.5	53.6
Energy Input (trillion Btu)													
Petroleum	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Natural Gas	20.2	15.8	15.8	16.2	16.7	17.2	17.7	18.1	18.7	19.2	19.7	20.1	20.5

Table 30. Iron and Steel Industries Energy Consumption

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Coal	18.8	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7
Other 5/	74.1	111.2	111.2	111.2	111.2	111.2	111.2	111.2	111.2	111.2	111.2	111.2	111.2
Total	113.3	148.8	148.9	149.3	149.8	150.3	150.8	151.2	151.8	152.3	152.8	153.2	153.6
Efficiency 6/	0.538	0.514	0.514	0.514	0.515	0.516	0.516	0.517	0.517	0.518	0.519	0.519	0.520
Power-to-Heat Ratio 7/	0.477	0.465	0.465	0.467	0.469	0.472	0.474	0.476	0.479	0.482	0.484	0.486	0.488

Table 30. Iron and Steel Industries Energy Consumption

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2002-2025
Value of Shipments (billion 1996 dollars)	86.70	87.74	88.75	89.64	91.07	91.77	93.07	94.09	95.67	97.38	99.08	101.26	1.4%
Energy Consumption (trillion Btu)													
Distillate Oil	5.0	4.9	5.0	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.2	5.3	0.5%
Residual Oil	21.3	21.4	21.0	20.4	19.6	18.9	18.7	19.0	18.5	18.1	17.8	17.6	-0.7%
Other Petroleum 2/	6.3	6.2	6.1	6.0	5.9	5.8	5.7	5.6	5.5	5.4	5.3	5.2	-1.7%
Petroleum Subtotal	32.6	32.6	32.0	31.4	30.5	29.7	29.4	29.6	29.1	28.6	28.3	28.0	-0.7%
Natural Gas	400.8	399.4	400.1	401.0	404.5	405.3	407.7	408.3	412.1	416.6	420.9	427.0	0.1%
Metallurgical Coal	525.8	514.2	502.7	491.6	480.6	470.0	459.6	449.2	439.1	429.2	419.5	410.1	-2.2%
Net Coke Imports	6.6	5.6	4.8	4.0	4.0	3.4	3.6	3.7	4.6	5.9	7.2	9.4	-4.5%
Steam Coal	55.9	55.2	54.5	53.8	53.2	52.5	52.0	51.4	50.9	50.5	50.1	49.7	-1.2%
Coal Subtotal	588.3	575.0	562.0	549.3	537.9	525.9	515.2	504.3	494.6	485.6	476.8	469.2	-2.2%
Purchased Electricity	207.6	211.2	214.4	217.4	221.7	224.1	228.2	231.8	236.7	241.9	247.0	253.5	2.0%
Total	1229.4	1218.2	1208.5	1199.1	1194.6	1185.0	1180.5	1174.0	1172.6	1172.7	1173.1	1177.7	-0.7%
Energy Consumption per Unit of Output (thousand Btu per 1996 dollar shipments)													
Distillate Oil	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-1.0%
Residual Oil	0.25	0.24	0.24	0.23	0.22	0.21	0.20	0.20	0.19	0.19	0.18	0.17	-2.1%
Other Petroleum 2/	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	-3.1%
Petroleum Subtotal	0.38	0.37	0.36	0.35	0.34	0.32	0.32	0.31	0.30	0.29	0.29	0.28	-2.1%
Natural Gas	4.62	4.55	4.51	4.47	4.44	4.42	4.38	4.34	4.31	4.28	4.25	4.22	-1.4%
Metallurgical Coal	6.06	5.86	5.67	5.48	5.28	5.12	4.94	4.77	4.59	4.41	4.23	4.05	-3.6%
Net Coke Imports	0.08	0.06	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.06	0.07	0.09	-5.9%
Steam Coal	0.64	0.63	0.61	0.60	0.58	0.57	0.56	0.55	0.53	0.52	0.51	0.49	-2.6%
Coal Subtotal	6.79	6.55	6.33	6.13	5.91	5.73	5.54	5.36	5.17	4.99	4.81	4.63	-3.5%
Purchased Electricity	2.39	2.41	2.42	2.43	2.43	2.44	2.45	2.46	2.47	2.48	2.49	2.50	0.6%
Total	14.18	13.88	13.62	13.38	13.12	12.91	12.68	12.48	12.26	12.04	11.84	11.63	-2.1%
Carbon Dioxide Emissions 3/ (million metric tons)	116.3	115.5	114.9	114.2	113.9	113.3	113.1	112.9	113.3	114.0	114.4	115.3	-0.4%
Combined Heat and Power 4/ Generating Capacity (gigawatts)													
Petroleum	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	N/A
Natural Gas	0.24	0.25	0.26	0.26	0.27	0.28	0.29	0.29	0.30	0.31	0.32	0.32	3.1%
Coal	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	N/A
Other 5/	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	N/A
Total	1.45	1.46	1.47	1.47	1.48	1.49	1.50	1.50	1.51	1.52	1.53	1.53	0.5%
Net Generation (billion kilowatthours)													
Petroleum	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	N/A
Natural Gas	1.36	1.40	1.45	1.50	1.55	1.61	1.67	1.72	1.78	1.83	1.89	1.95	4.2%
Coal	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	N/A
Other 5/	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	N/A
Total	7.72	7.76	7.81	7.86	7.91	7.97	8.03	8.08	8.14	8.19	8.25	8.31	0.7%
Disposition													
Sales to the Grid	0.74	0.74	0.75	0.75	0.76	0.76	0.77	0.77	0.78	0.78	0.79	0.80	0.7%
Generation for Own Use	6.98	7.02	7.06	7.11	7.16	7.21	7.26	7.31	7.36	7.41	7.46	7.52	0.7%
Thermal Output (trillion Btu)	53.7	53.9	54.0	54.1	54.2	54.3	54.5	54.6	54.7	54.8	55.0	55.1	0.2%
Energy Input (trillion Btu)													
Petroleum	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	N/A
Natural Gas	20.9	21.2	21.6	22.0	22.5	22.9	23.4	23.9	24.3	24.7	25.2	25.7	2.1%

Table 30. Iron and Steel Industries Energy Consumption

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2002-2025
Coal	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	N/A
Other 5/	111.2	111.2	111.2	111.2	111.2	111.2	111.2	111.2	111.2	111.2	111.2	111.2	N/A
Total	153.9	154.3	154.7	155.1	155.6	156.0	156.5	156.9	157.4	157.8	158.3	158.8	0.3%
Efficiency 6/	0.520	0.521	0.521	0.521	0.522	0.523	0.523	0.524	0.524	0.525	0.525	0.526	0.1%
Power-to-Heat Ratio 7/	0.490	0.492	0.494	0.496	0.498	0.500	0.503	0.505	0.507	0.510	0.512	0.515	0.4%