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Assumptions to the Annual Energy Outlook 2007

Table 67. Coal Mining Productivity by Region
(Short Tons per Miner Hour)

Supply Region	2005	2010	2015	2020	2025	2030	Average Annual Growth 05-30
Northern Appalachia	4.05	3.89	4.04	4.07	4.10	4.15	0.1%
Central Appalachia	3.07	2.74	2.66	2.56	2.49	2.39	-1.0%
Southern Appalachia	2.18	2.12	2.03	1.96	1.90	1.83	-0.7%
Eastern Interior	4.33	4.65	4.75	4.85	4.83	4.87	0.5%
Western Interior	4.12	4.13	4.13	4.13	4.13	4.13	0.0%
Gulf Lignite	9.53	9.29	9.06	8.84	8.62	8.41	-0.5%
Dakota Lignite	16.80	17.10	17.54	17.98	18.43	18.90	0.5%
Western Montana	23.39	25.46	24.50	22.09	21.53	20.98	-0.4%
Wyoming, Northern Power River Basin	41.79	42.76	43.45	43.93	44.33	44.55	0.3%
Wyoming, Southern Power River Basin	43.46	43.24	42.90	42.38	41.71	40.88	-0.2%
Western Wyoming	9.32	9.13	9.36	9.57	9.62	9.66	0.1%
Rocky Mountain	7.52	7.50	7.67	7.82	7.94	8.05	0.3%
Arizona/New Mexico	9.19	9.30	9.43	9.49	9.55	9.58	0.2%
Alaska/ Washington	4.11	4.13	4.13	4.13	4.13	4.13	0.0%
U.S. Average	6.36	6.47	6.80	7.18	7.75	7.84	0.8%

Source: Projections: Energy Information Administration, Office of Integrated and Forecasting.

Table 68. Transportation Rate Multipliers

(Constant Dollar Index, 2005=1.000)

Scenario	Region:	2005	2010	2015	2020	2025	2030
Reference Case	East	1.000	1.0863	1.0641	1.0589	1.0497	1.0422
	West	1.000	1.0627	1.0459	1.0415	1.0342	1.0283
High Resource Price	East	1.000	1.0869	1.0634	1.0606	1.0545	1.0475
	West	1.000	1.0631	1.0454	1.0427	1.0377	1.0322
Low Resource Price	East	1.000	1.0856	1.0650	1.0589	1.0477	1.0394
	West	1.000	1.0622	1.0465	1.0414	1.0328	1.0262
High Economic Growth	East	1.000	1.0868	1.0680	1.0681	1.0644	1.0605
	West	1.000	1.0630	1.0487	1.0482	1.0449	1.0416
Low Economic Growth	East	1.000	1.0859	1.0603	1.0506	1.0375	1.0266
	West	1.000	1.0624	1.0431	1.0354	1.0253	1.0169
High Coal Cost	East	1.000	1.0903	1.0860	1.1000	1.1096	1.1210
	West	1.000	1.0661	1.0630	1.0730	1.0800	1.0884
Low Coal Cost	East	1.000	1.0819	1.0427	1.0193	0.9935	0.9683
	West	1.000	1.0590	1.0292	1.0108	0.9907	0.9710

Source: Projections: Energy Information Administration, Office of Integrated Analysis and Forecasting. Based on methodology described in *Coal Market Module of the National Energy Modeling System, Model Documentation 2007*, DOE/EIA-060(2007), (Washington, DC, 2007).

Table 69. World Steam Coal Import Demand by Import Region

(Million metric tons of coal equivalent)

Import Regions[1]	2005[2]	2010	2015	2020	2025	2030
The Americas	50.6	51.6	56.5	86.5	93.1	108.6
United States[3]	23.1	29.8	33.7	58.9	64.5	77.8
Canada	13.5	7.3	6.8	6.9	7.5	7.8
Mexico	6.0	5.8	6.9	9.5	9.5	9.5
South America	8.1	8.7	9.1	11.2	11.6	13.6
Europe	157.3	163.4	160.6	157.7	151.3	149.8
Scandinavia	9.6	10.3	7.5	6.5	5.7	4.9
U.K/Ireland	35.7	35.0	33.8	33.0	32.4	31.6
Germany/Austria	25.2	26.7	28.1	27.8	26.8	25.8
Other NW Europe	23.8	19.8	17.9	16.9	14.9	13.9
Iberia	22.9	22.7	21.4	20.3	19.0	17.4
Italy	13.6	23.2	25.0	26.8	26.8	26.8
Med/E Europe	26.5	25.7	26.9	26.4	25.7	29.4
Asia	252.2	294.6	319.4	341.6	376.5	409.7
Japan	88.8	86.3	83.4	82.6	85.8	88.5
East Asia	94.8	123.2	133.2	141.0	154.6	169.4
China/Hong Kong	24.9	31.4	38.4	42.4	48.8	55.9
ASEAN	20.6	28.5	35.5	43.9	53.5	60.9
Indian Sub	23.1	25.2	28.9	31.7	33.8	35.0
Total	460.1	509.6	536.5	585.8	620.9	668.1

[1]Import Regions: **South America:** Argentina, Brazil, Chile, Puerto Rico; **Scandinavia:** Denmark, Finland, Norway, Sweden; **Other NW Europe:** Belgium, France, Luxembourg, Netherlands; **Iberia:** Portugal, Spain; **Med/E Europe:** Algeria, Bulgaria, Croatia, Egypt, Greece, Israel, Malta, Morocco, Romania, Tunisia, Turkey; **East Asia:** North Korea, South Korea, Taiwan; **ASEAN:** Malaysia, Philippines, Thailand; **Indian Sub:** Bangladesh, India, Iran, Pakistan, Sri Lanka.

[2]The base year of the world trade forecast for coal is 2005.

[3]Excludes imports to Puerto Rico and the U.S. Virgin Islands.

Notes: One "metric ton of coal equivalent" contains 27.78 million Btu. Totals may not equal sum of components due to independent rounding.

Table 70. World Metallurgical Coal Import Demand by Import Region
(Million metric tons of coal equivalent)

Import Regions[1]	2005[2]	2010	2015	2020	2025	2030
The Americas	20.1	26.1	26.9	28.4	30.4	34.9
United States	1.2	1.3	1.3	1.3	1.3	1.3
Canada	4.4	3.9	3.8	3.6	3.4	3.3
Mexico	1.0	1.6	1.7	1.9	2.0	2.2
South America	13.4	19.3	20.1	21.6	23.6	28.1
Europe	57.9	50.3	48.4	51.6	53.5	54.9
Scandinavia	3.7	2.5	2.1	1.9	1.6	1.3
U.K/Ireland	8.9	6.8	6.8	6.8	6.8	6.8
Germany/Austria	6.1	6.6	6.6	6.6	6.6	6.5
Other NW Europe	16.2	14.2	12.6	11.5	11.0	11.1
Iberia	5.3	3.9	3.8	3.8	3.8	3.8
Italy	8.3	6.2	5.7	5.7	5.7	5.6
Med/E Europe	9.4	10.1	10.8	15.3	18.0	19.8
Asia	123.7	138.5	149.3	160.4	172.2	184.2
Japan	73.3	68.1	66.4	64.7	63.7	62.8
East Asia	26.3	24.8	25.3	27.8	30.1	32.5
China/Hong Kong	4.3	20.0	28.7	35.9	43.9	52.0
ASEAN	0.0	0.0	0.0	0.0	0.0	0.0
Indian Sub	19.8	25.6	28.9	32.0	34.5	36.9
Total	201.7	214.9	224.6	240.4	256.1	274.0

[1]Import Regions: **South America:** Argentina, Brazil, Chile, Puerto Rico; **Scandinavia:** Denmark, Finland, Norway, Sweden; **Other NW Europe:** Belgium, France, Luxembourg, Netherlands; **Iberia:** Portugal, Spain; **Med/E Europe:** Algeria, Bulgaria, Croatia, Egypt, Greece, Israel, Malta, Morocco, Romania, Tunisia, Turkey; **East Asia:** North Korea, South Korea, Taiwan; **ASEAN:** Malaysia, Philippines, Thailand; **Indian Sub:** Bangladesh, India, Iran, Pakistan, Sri Lanka.

[2] The base year of the world trade forecast for coal is 2005.

Notes: One "metric ton of coal equivalent" contains 27.78 million Btu. Totals may not equal sum of components due to independent rounding.

Source: Projections: Energy Information Administration, Office of Integrated Analysis and Forecasting.

Table 71. Production, Heat Content, and Sulfur, Mercury and Carbon Dioxide Emission Factors by Coal Type and Region

Coal Supply Region	Coal Rank and Sulfur Level	Mine Type	2005 Production (Million Short tons)	Heat Content (Million Btu per Short Ton)	Sulfur Content (Pounds Per Million Btu)	Mercury Content (Pounds Per Trillion Btu)	CO_2 (Pounds Per Million Btu)
Northern Appalachia	Metallurgical	Underground	3.5	27.43	0.74	N/A	205.4
	Mid-Sulfur Bituminous	All	75.0	25.16	1.28	11.17	205.4
	High-Sulfur Bituminous	All	61.6	24.69	2.52	11.67	203.6
	Waste Coal (Gob and Culm)	Surface	13.4	12.08	2.75	63.9	203.6
Central Appalachia	Metallurgical	Underground	39.2	27.43	0.63	N/A	203.8
	Low-Sulfur Bituminous	All	47.1	24.92	0.54	5.61	203.8
	Mid-Sulfur Bituminous	All	149.4	24.55	0.92	7.58	203.8
Southern Appalachia	Metallurgical	Underground	8.1	27.43	0.51	N/A	203.3
	Low-Sulfur Bituminous	All	0.5	24.82	0.53	3.87	203.3
	Mid-Sulfur Bituminous	All	12.9	25.13	1.24	10.15	203.3
East Interior	Mid-Sulfur Bituminous	All	29.3	22.49	1.05	5.6	202.9
	High-Sulfur Bituminous	All	63.6	22.83	2.64	6.35	202.6
	Mid-Sulfur Lignite	Surface	3.6	10.19	0.91	14.11	211.4
West Interior	High-Sulfur Bituminous	Surface	2.6	22.74	2.30	21.55	202.4
Gulf Lignite	Mid-Sulfur Lignite	Surface	23.3	13.32	1.25	14.11	211.4
	High-Sulfur Lignite	Surface	26.8	12.98	2.28	15.28	211.4
Dakota Lignite	Mid-Sulfur Lignite	Surface	30.3	13.27	1.06	8.38	216.6
Western Montana	Low-Sulfur Subbituminous	Underground	0.2	20.90	0.48	5.06	207.5
	Low-Sulfur Subbituminous	Surface	20.4	18.69	0.38	5.06	211.3
	Mid-Sulfur Subbituminous	Surface	19.4	17.17	0.77	5.47	211.3
Northern Wyoming	Low-Sulfur Subbituminous	Surface	149.0	16.89	0.39	7.08	210.6
	Mid-Sulfur Subbituminous	Surface	3.6	16.22	0.79	7.55	210.6
Southern Wyoming	Low-Sulfur Subbituminous	Surface	237.5	17.62	0.32	5.22	210.6
Western Wyoming	Low-Sulfur Subbituminous	Underground	0.4	18.78	0.46	2.19	204.4
	Low-Sulfur Subbituminous	Surface	3.6	18.95	0.51	4.06	210.6
	Mid-Sulfur Subbituminous	Surface	10.2	19.24	0.73	4.35	210.6
Rocky Mountain	Low-Sulfur Bituminous	Underground	53.0	22.97	0.48	3.82	203.0
	Low-Sulfur Subbituminous	Surface	10.1	20.51	0.41	2.04	210.6
Southwest	Low-Sulfur Bituminous	Surface	17.4	21.25	0.47	4.66	205.4
	Mid-Sulfur Subbituminous	Surface	15.3	18.02	0.93	7.18	206.7
	Mid-Sulfur Bituminous	Underground	7.9	19.23	0.80	7.18	206.7
Northwest	Mid-Sulfur Subbituminous	Surface	6.7	15.66	0.92	6.99	207.9

N/A = not available.

*Indicates that the quantity is less than 50,000 short tons.

Source: Energy Information Administration, Form EIA-3, "Quarterly Coal Consumption Report—Manufacturing Plants"; Form EIA-5, "Quarterly Coal Consumption and Quality Report, Coke Plants"; Form EIA-6A, "Coal Distribution Report—Annual"; Form EIA-7A, "Coal Production Report", and Form EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report." Federal Energy Regulatory Commission, Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants." U.S. Department of Commerce, Bureau of the Census, "Monthly Report EM-545." U.S. Environmental Protection Agency, Emission Standards Division, *Information Collection Request for Electric Utility Steam Generating Unit, Mercury Emissions Information Collection Effort* (Research Triangle Park, NC, 1999). B.D. Hong and E.R. Slatick, "Carbon Dioxide Emission Factors for Coal," in Energy Information Administration, *Quarterly Coal Report*, January-March 1994, DOE/EIA-0121 (94/Q1) (Washington, DC, August 1995).