

Results from Side Cases

Table D1. Key Results for Residential and Commercial Sector Technology Cases

Energy Consumption	2007	2010				2020			
		2009 Technology	Reference	High Technology	Best Available Technology	2009 Technology	Reference	High Technology	Best Available Technology
Residential									
Energy Consumption (quadrillion Btu)									
Liquefied Petroleum Gases	0.50	0.49	0.49	0.49	0.48	0.50	0.49	0.48	0.46
Kerosene	0.08	0.08	0.08	0.08	0.07	0.08	0.07	0.07	0.06
Distillate Fuel Oil	0.78	0.72	0.72	0.72	0.71	0.62	0.60	0.58	0.54
Liquid Fuels and Other Petroleum	1.35	1.29	1.29	1.28	1.27	1.20	1.16	1.13	1.06
Natural Gas	4.86	4.93	4.92	4.90	4.81	5.25	5.10	4.94	4.24
Coal	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Renewable Energy ¹	0.43	0.43	0.43	0.43	0.42	0.49	0.48	0.47	0.44
Electricity	4.75	4.81	4.80	4.78	4.35	5.26	5.12	4.82	4.04
Delivered Energy	11.40	11.46	11.44	11.39	10.87	12.20	11.86	11.38	9.79
Electricity Related Losses	10.36	10.46	10.44	10.40	9.48	11.11	10.81	10.19	8.53
Total	21.76	21.92	21.88	21.80	20.34	23.31	22.67	21.57	18.32
Delivered Energy Intensity (million Btu per household)	100.2	98.6	98.4	98.0	93.4	94.0	91.4	87.7	75.5
Nonmarketed Renewables Consumption (quadrillion Btu)	0.01	0.01	0.01	0.01	0.01	0.06	0.07	0.08	0.10
Commercial									
Energy Consumption (quadrillion Btu)									
Liquefied Petroleum Gases	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10
Motor Gasoline ²	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Kerosene	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Distillate Fuel Oil	0.41	0.36	0.36	0.36	0.36	0.35	0.34	0.34	0.35
Residual Fuel Oil	0.08	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08
Liquid Fuels and Other Petroleum	0.63	0.58	0.58	0.58	0.58	0.59	0.58	0.58	0.59
Natural Gas	3.10	3.15	3.14	3.12	3.11	3.38	3.34	3.27	3.20
Coal	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Renewable Energy ³	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Electricity	4.58	4.76	4.75	4.74	4.66	5.74	5.57	5.41	4.66
Delivered Energy	8.50	8.67	8.66	8.63	8.53	9.89	9.69	9.45	8.64
Electricity Related Losses	9.99	10.36	10.35	10.32	10.14	12.12	11.77	11.44	9.85
Total	18.49	19.04	19.01	18.95	18.68	22.01	21.46	20.89	18.49
Delivered Energy Intensity (thousand Btu per square foot)	110.0	106.9	106.7	106.3	105.2	107.1	105.0	102.5	93.7
Commercial Sector Generation									
Net Summer Generation Capacity (megawatts)									
Natural Gas	658	697	699	699	700	1039	1244	1454	1464
Solar Photovoltaic	375	749	749	749	749	1190	1275	1434	1717
Wind	18	18	18	18	18	52	64	99	108
Electricity Generation (billion kilowatthours)									
Natural Gas	4.74	5.02	5.03	5.03	5.04	7.48	9.00	10.53	10.60
Solar Photovoltaic	0.59	1.20	1.20	1.20	1.20	1.90	2.06	2.32	2.77
Wind	0.02	0.02	0.02	0.02	0.02	0.07	0.09	0.14	0.16
Nonmarketed Renewables Consumption (quadrillion Btu)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04

¹Includes wood used for residential heating. See Table A4 and/or Table A17 for estimates of nonmarketed renewable energy consumption for geothermal heat pumps, solar thermal hot water heating, and solar photovoltaic electricity generation.

²Includes ethanol (blends of 10 percent or less) and ethers blended into gasoline.

³Includes commercial sector consumption of wood and wood waste, landfill gas, municipal solid waste, and other biomass for combined heat and power.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports. Side cases were run without the fully integrated modeling system, so not all feedbacks are captured. The reference case ratio of electricity losses to electricity use was used to compute electricity losses for the technology cases.

Source: Energy Information Administration, AEO2009 National Energy Modeling System, runs BLDFRZN.D121008A, AEO2009.D120908A, BLDHIGH.D121008A, and BLDBEST.D121008A.

Results from Side Cases

2030				Annual Growth 2007-2030 (percent)			
2009 Technology	Reference	High Technology	Best Available Technology	2009 Technology	Reference	High Technology	Best Available Technology
0.54	0.52	0.49	0.47	0.3%	0.2%	-0.1%	-0.3%
0.08	0.07	0.07	0.05	-0.2%	-0.5%	-0.9%	-1.9%
0.55	0.51	0.49	0.43	-1.5%	-1.8%	-2.0%	-2.5%
1.16	1.10	1.04	0.95	-0.7%	-0.9%	-1.1%	-1.5%
5.36	5.07	4.88	3.64	0.4%	0.2%	0.0%	-1.2%
0.01	0.01	0.01	0.01	-0.5%	-0.8%	-0.9%	-1.0%
0.53	0.50	0.48	0.44	0.9%	0.7%	0.5%	0.1%
6.01	5.69	5.31	4.22	1.0%	0.8%	0.5%	-0.5%
13.07	12.36	11.72	9.26	0.6%	0.4%	0.1%	-0.9%
12.34	11.69	10.90	8.66	0.8%	0.5%	0.2%	-0.8%
25.42	24.05	22.62	17.92	0.7%	0.4%	0.2%	-0.8%
92.6	87.6	83.0	65.6	-0.3%	-0.6%	-0.8%	-1.8%
0.06	0.08	0.11	0.15	10.0%	11.5%	12.9%	14.5%
0.10	0.10	0.10	0.10	0.3%	0.3%	0.3%	0.3%
0.05	0.05	0.05	0.05	0.4%	0.4%	0.4%	0.4%
0.01	0.01	0.01	0.01	1.4%	1.4%	1.4%	1.4%
0.35	0.34	0.34	0.35	-0.7%	-0.8%	-0.8%	-0.6%
0.08	0.08	0.08	0.08	0.2%	0.3%	0.2%	0.2%
0.59	0.59	0.58	0.60	-0.3%	-0.3%	-0.3%	-0.2%
3.56	3.54	3.52	3.43	0.6%	0.6%	0.6%	0.4%
0.06	0.06	0.06	0.06	-0.0%	-0.0%	-0.0%	-0.0%
0.12	0.12	0.12	0.12	0.0%	0.0%	0.0%	0.0%
6.65	6.31	5.98	4.76	1.6%	1.4%	1.2%	0.2%
10.99	10.62	10.27	8.98	1.1%	1.0%	0.8%	0.2%
13.66	12.96	12.28	9.79	1.4%	1.1%	0.9%	-0.1%
24.65	23.59	22.56	18.77	1.3%	1.1%	0.9%	0.1%
106.4	102.9	99.5	87.0	-0.1%	-0.3%	-0.4%	-1.0%
1991	3524	4897	5147	4.9%	7.6%	9.1%	9.4%
1547	2296	3485	5449	6.4%	8.2%	10.2%	12.3%
214	286	704	1313	11.4%	12.8%	17.3%	20.5%
14.34	25.59	35.57	37.39	4.9%	7.6%	9.2%	9.4%
2.44	3.74	5.72	8.94	6.4%	8.4%	10.4%	12.5%
0.31	0.42	1.01	1.84	11.9%	13.3%	17.7%	20.8%
0.04	0.04	0.05	0.07	1.4%	2.0%	2.9%	4.0%

Results from Side Cases

Table D2. Key Results for Industrial Sector Technology Cases

Consumption and Indicators	2007	2010			2020			2030		
		2009 Technology	Reference	High Technology	2009 Technology	Reference	High Technology	2009 Technology	Reference	High Technology
Value of Shipments (billion 2000 dollars)										
Manufacturing	4261	3963	3963	3963	5150	5150	5150	6671	6671	6671
Nonmanufacturing	1490	1277	1277	1277	1603	1603	1603	1780	1780	1780
Total	5750	5240	5240	5240	6753	6753	6753	8451	8451	8451
Energy Consumption excluding Refining¹ (quadrillion Btu)										
Liquefied Petroleum Gases	2.34	2.01	1.98	1.96	2.04	1.77	1.55	1.95	1.66	1.42
Heat and Power	0.18	0.16	0.15	0.15	0.17	0.15	0.15	0.18	0.16	0.15
Feedstocks	2.16	1.85	1.83	1.80	1.88	1.61	1.40	1.78	1.50	1.27
Motor Gasoline	0.36	0.35	0.34	0.34	0.37	0.34	0.32	0.40	0.36	0.32
Distillate Fuel Oil	1.27	1.17	1.17	1.16	1.28	1.18	1.10	1.39	1.23	1.11
Residual Fuel Oil	0.24	0.15	0.15	0.15	0.18	0.16	0.15	0.19	0.16	0.15
Petrochemical Feedstocks	1.30	1.01	1.01	1.00	1.18	1.13	1.08	1.14	1.05	0.99
Petroleum Coke	0.36	0.27	0.27	0.26	0.33	0.29	0.26	0.38	0.31	0.27
Asphalt and Road Oil	1.19	0.98	0.96	0.95	1.26	1.08	0.93	1.38	1.12	0.92
Miscellaneous Petroleum ²	0.62	0.31	0.30	0.30	0.27	0.21	0.19	0.30	0.21	0.19
Petroleum Subtotal	7.68	6.25	6.18	6.13	6.91	6.15	5.58	7.13	6.10	5.37
Natural Gas Heat and Power	5.14	5.08	5.02	5.01	5.69	4.86	4.79	6.17	5.11	4.97
Natural Gas Feedstocks	0.55	0.51	0.51	0.50	0.59	0.50	0.44	0.54	0.44	0.37
Lease and Plant Fuel ³	1.20	1.27	1.27	1.27	1.33	1.33	1.33	1.47	1.47	1.47
Natural Gas Subtotal	6.89	6.87	6.80	6.79	7.61	6.69	6.56	8.17	7.02	6.81
Metallurgical Coal and Coke ⁴	0.62	0.57	0.56	0.56	0.56	0.50	0.44	0.57	0.49	0.39
Other Industrial Coal	1.15	1.18	1.18	1.17	1.17	1.09	1.05	1.20	1.10	1.03
Coal Subtotal	1.77	1.75	1.74	1.73	1.72	1.60	1.49	1.76	1.59	1.42
Renewables ⁵	1.64	1.48	1.48	1.48	1.61	1.64	1.69	1.88	1.96	2.08
Purchased Electricity	3.27	3.18	3.15	3.10	3.49	3.27	3.06	3.83	3.45	3.11
Delivered Energy	21.26	19.53	19.36	19.24	21.34	19.35	18.38	22.77	20.11	18.79
Electricity Related Losses	7.13	6.91	6.86	6.75	7.38	6.91	6.66	7.87	7.09	6.76
Total	28.40	26.44	26.22	25.99	28.72	26.25	25.04	30.65	27.20	25.56
Delivered Energy Use per Dollar of Shipments (thousand Btu per 2000 dollar)										
	3.70	3.73	3.69	3.67	3.16	2.86	2.72	2.69	2.38	2.22
Onsite Industrial Combined Heat and Power										
Capacity (gigawatts)	22.02	23.00	23.04	23.13	25.60	25.84	26.71	28.38	29.16	31.42
Generation (billion kilowatthours)	119.66	125.89	126.15	126.80	144.22	145.85	151.51	163.93	169.15	183.55

¹Fuel consumption includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

²Includes lubricants and miscellaneous petroleum products.

³Represents natural gas used in the field gathering and processing plant machinery.

⁴Includes net coal coke imports.

⁵Includes consumption of energy from hydroelectric, wood and wood waste, municipal solid waste, and other biomass.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports. Side cases were run without the fully integrated modeling system, so not all feedbacks are captured. The reference case ratio of electricity losses to electricity use was used to compute electricity losses for the technology cases.

Source: Energy Information Administration, AEO2009 National Energy Modeling System runs INDFRZN.D121608A, AEO2009.D120908A, and INDHIGH.D121608A.

Results from Side Cases

Table D3. Key Results for Transportation Sector Technology Cases

Consumption and Indicators	2007	2010			2020			2030		
		Low Technology	Reference	High Technology	Low Technology	Reference	High Technology	Low Technology	Reference	High Technology
Level of Travel										
(billion vehicle miles traveled)										
Light-Duty Vehicles less than 8,500 . . .	2702	2747	2747	2747	3155	3161	3165	3813	3827	3837
Commercial Light Trucks ¹	72	67	67	67	85	85	85	105	105	105
Freight Trucks greater than 10,000 . . .	248	232	232	232	303	303	303	378	378	378
(billion seat miles available)										
Air	1036	951	951	951	1138	1138	1138	1410	1410	1410
(billion ton miles traveled)										
Rail	1733	1664	1664	1664	1927	1927	1927	2193	2193	2193
Domestic Shipping	662	629	629	629	744	744	744	839	839	839
Energy Efficiency Indicators										
(miles per gallon)										
Tested New Light-Duty Vehicle ²	26.3	26.9	26.9	27.2	34.6	35.5	36.0	36.9	38.0	39.0
New Car ²	30.3	30.6	30.7	31.4	38.1	39.1	40.2	40.4	41.4	43.2
New Light Truck ²	23.1	23.6	23.6	23.6	30.6	30.7	30.9	32.5	33.1	33.7
Light-Duty Stock ³	20.6	20.7	20.7	20.7	24.4	24.7	25.0	28.3	28.9	29.5
New Commercial Light Truck ¹	15.4	15.6	15.7	15.7	19.5	19.6	19.8	19.8	20.3	20.9
Stock Commercial Light Truck ¹	14.4	14.8	14.8	14.8	17.4	17.6	17.7	19.5	19.8	20.1
Freight Truck	6.0	6.0	6.0	6.0	6.3	6.5	6.8	6.5	6.9	7.2
(seat miles per gallon)										
Aircraft	62.8	64.4	64.4	64.5	67.8	68.1	68.8	72.1	73.6	75.3
(ton miles per thousand Btu)										
Rail	2.9	2.9	2.9	2.9	2.9	3.0	3.1	2.9	3.0	3.2
Domestic Shipping	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.2
Energy Use (quadrillion Btu)										
by Mode										
Light-Duty Vehicles	16.47	16.21	16.20	16.19	16.01	15.80	15.66	16.83	16.51	16.22
Commercial Light Trucks ¹	0.62	0.57	0.57	0.57	0.61	0.61	0.60	0.68	0.67	0.66
Bus Transportation	0.27	0.27	0.27	0.27	0.28	0.27	0.26	0.30	0.28	0.27
Freight Trucks	5.15	4.82	4.81	4.80	6.01	5.79	5.59	7.25	6.90	6.58
Rail, Passenger	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06
Rail, Freight	0.59	0.57	0.57	0.57	0.66	0.65	0.63	0.75	0.73	0.69
Shipping, Domestic	0.34	0.32	0.32	0.32	0.38	0.37	0.36	0.43	0.42	0.38
Shipping, International	0.88	0.80	0.80	0.80	0.90	0.90	0.89	0.91	0.91	0.90
Recreational Boats	0.25	0.25	0.25	0.25	0.26	0.26	0.26	0.28	0.28	0.28
Air	2.71	2.45	2.45	2.45	2.89	2.87	2.84	3.61	3.54	3.46
Military Use	0.70	0.74	0.74	0.74	0.74	0.74	0.74	0.78	0.78	0.78
Lubricants	0.14	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15
Pipeline Fuel	0.64	0.64	0.64	0.64	0.69	0.69	0.69	0.72	0.72	0.72
Total	28.82	27.82	27.81	27.78	29.63	29.15	28.72	32.74	31.94	31.14
by Fuel										
Liquefied Petroleum Gases	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01
E85 ⁴	0.00	0.00	0.00	0.00	0.88	0.85	0.85	2.32	2.18	2.19
Motor Gasoline ⁵	17.29	16.94	16.93	16.92	15.72	15.56	15.42	14.63	14.49	14.24
Jet Fuel ⁶	3.23	3.00	3.00	3.00	3.43	3.42	3.39	4.19	4.12	4.04
Distillate Fuel Oil ⁷	6.48	6.14	6.13	6.12	7.63	7.36	7.11	9.54	9.09	8.64
Residual Fuel Oil	0.95	0.86	0.86	0.86	0.98	0.98	0.97	1.01	1.00	0.99
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Petroleum ⁸	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18
Liquid Fuels and Other Petroleum . . .	28.14	27.13	27.11	27.09	28.84	28.36	27.94	31.89	31.09	30.29
Pipeline Fuel Natural Gas	0.64	0.64	0.64	0.64	0.69	0.69	0.69	0.72	0.72	0.72
Compressed Natural Gas	0.02	0.03	0.03	0.03	0.07	0.07	0.06	0.09	0.09	0.08
Electricity	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05
Delivered Energy	28.82	27.82	27.81	27.78	29.63	29.15	28.72	32.74	31.94	31.14
Electricity Related Losses	0.05	0.05	0.05	0.05	0.06	0.07	0.07	0.09	0.10	0.11
Total	28.87	27.82	27.86	27.78	29.63	29.22	28.72	32.74	32.05	31.14

¹Commercial trucks 8,500 to 10,000 pounds.

²Environmental Protection Agency rated miles per gallon.

³Combined car and light truck "on-the-road" estimate.

⁴E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.

⁵Includes ethanol (blends of 10 percent or less) and ethers blended into gasoline.

⁶Includes only kerosene type.

⁷Diesel fuel for on- and off- road use.

⁸Includes aviation gasoline and lubricants.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports. Side cases were run without the fully integrated modeling system, so not all feedbacks are captured. The reference case ratio of electricity losses to electricity use was used to compute electricity losses for the technology cases.

Source: Energy Information Administration, AEO2009 National Energy Modeling System runs TRNLOW.D011409A, AEO2009.D120908A, and TRNHIGH.D011409A.

Results from Side Cases

Table D4. Key Results for Integrated Technology Cases

Consumption and Emissions	2007	2010			2020			2030		
		2009 Technology	Reference	High Technology	2009 Technology	Reference	High Technology	2009 Technology	Reference	High Technology
Energy Consumption by Sector (quadrillion Btu)										
Residential	11.40	11.46	11.44	11.40	12.13	11.86	11.44	12.97	12.36	11.82
Commercial	8.50	8.67	8.66	8.63	9.78	9.69	9.56	10.86	10.62	10.40
Industrial ¹	25.29	24.05	23.83	23.72	26.64	24.73	23.89	28.97	26.33	25.13
Transportation	28.82	27.83	27.81	27.78	29.59	29.15	28.76	32.61	31.94	31.23
Electric Power ²	40.67	41.18	41.02	40.82	45.26	44.22	42.90	49.50	48.03	46.13
Total	101.89	100.24	99.85	99.50	108.82	105.44	102.85	118.38	113.56	109.77
Energy Consumption by Fuel (quadrillion Btu)										
Liquid Fuels and Other Petroleum ³	40.75	37.97	37.89	37.82	40.14	38.93	38.06	43.36	41.60	40.13
Natural Gas	23.70	23.26	23.20	22.98	25.44	24.09	22.87	27.81	25.04	23.52
Coal	22.74	22.93	22.91	22.85	24.50	23.98	23.34	27.16	26.56	25.38
Nuclear Power	8.41	8.45	8.45	8.45	9.01	8.99	9.20	8.81	9.47	9.72
Renewable Energy ⁴	6.05	7.42	7.20	7.19	9.53	9.26	9.21	10.89	10.67	10.88
Other ⁵	0.23	0.21	0.21	0.21	0.22	0.19	0.17	0.36	0.22	0.14
Total	101.89	100.24	99.85	99.50	108.82	105.44	102.85	118.38	113.56	109.77
Energy Intensity (thousand Btu per 2000 dollar of GDP)	8.84	8.51	8.48	8.45	7.03	6.79	6.61	5.90	5.65	5.45
Carbon Dioxide Emissions by Sector (million metric tons)										
Residential	346	351	351	349	360	351	343	363	344	333
Commercial	216	215	214	213	225	226	224	236	236	236
Industrial ¹	987	974	965	962	1055	973	943	1145	1030	980
Transportation	2009	1888	1886	1884	1969	1937	1908	2122	2075	2021
Electric Power ⁶	2433	2383	2385	2373	2550	2497	2398	2840	2729	2574
Total	5991	5810	5801	5782	6159	5982	5817	6705	6414	6144
Carbon Dioxide Emissions by Fuel (million metric tons)										
Petroleum	2580	2399	2396	2393	2485	2427	2386	2654	2564	2485
Natural Gas	1237	1221	1218	1207	1335	1265	1202	1462	1318	1238
Coal	2162	2178	2176	2171	2327	2278	2217	2577	2521	2410
Other ⁷	12	12	12	12	12	12	12	12	12	12
Total	5991	5810	5801	5782	6159	5982	5817	6705	6414	6144
Carbon Dioxide Emissions (tons per person)	19.8	18.7	18.6	18.6	18.0	17.5	17.0	17.9	17.1	16.4

¹Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

²Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

³Includes petroleum-derived fuels and non-petroleum derived fuels, such as ethanol and biodiesel, and coal-based synthetic liquids. Petroleum coke, which is a solid, is included. Also included are natural gas plant liquids, crude oil consumed as a fuel, and liquid hydrogen.

⁴Includes grid-connected electricity from conventional hydroelectric; wood and wood waste; landfill gas; biogenic municipal solid waste; other biomass; wind; photovoltaic and solar thermal sources; and non-electric energy from renewable sources, such as active and passive solar systems, and wood; and both the ethanol and gasoline components of E85, but not the ethanol component of blends less than 85 percent. Excludes electricity imports using renewable sources and nonmarketed renewable energy.

⁵Includes non-biogenic municipal waste and net electricity imports.

⁶Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

⁷Includes emissions from geothermal power and nonbiogenic emissions from municipal solid waste.

Btu = British thermal unit.

GDP = Gross domestic product.

Note: Includes end-use, fossil electricity, and renewable technology assumptions. Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2009 National Energy Modeling System runs LTRKITE.D011509A, AEO2009.D120908A, and HTRKITE.D011509A.

Table D5. Key Results for Advanced Nuclear Cost Cases
(Gigawatts, Unless Otherwise Noted)

Net Summer Capacity, Generation, Emissions, and Fuel Prices	2007	2010			2020			2030		
		High Nuclear Cost	Reference	Low Nuclear Cost	High Nuclear Cost	Reference	Low Nuclear Cost	High Nuclear Cost	Reference	Low Nuclear Cost
Capacity										
Coal Steam	311.2	321.0	321.0	321.0	327.1	327.0	327.0	364.0	352.5	338.7
Oil and Natural Gas Steam	118.8	118.4	118.4	118.4	101.3	101.8	101.8	100.6	100.5	100.3
Combined Cycle	181.0	194.8	194.8	194.8	205.2	202.7	199.9	260.0	237.7	231.6
Combustion Turbine/Diesel	133.3	142.0	142.1	142.2	155.2	155.8	155.2	198.2	201.0	204.3
Nuclear Power	100.5	101.2	101.2	101.2	105.1	108.4	113.8	74.3	112.6	132.2
Pumped Storage	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources	101.5	115.5	115.6	115.5	122.7	122.3	122.4	142.3	138.8	136.9
Distributed Generation (Natural Gas)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3
Combined Heat and Power ¹	27.8	32.5	32.6	32.5	47.3	47.3	47.3	62.8	62.6	62.3
Total	995.6	1046.9	1047.1	1047.0	1085.3	1086.8	1088.8	1223.8	1227.4	1228.0
Cumulative Additions										
Coal Steam	0.0	11.3	11.3	11.3	18.0	18.0	18.0	55.0	43.6	29.7
Oil and Natural Gas Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Combined Cycle	0.0	13.8	13.8	13.8	24.1	21.7	18.8	79.0	56.6	50.5
Combustion Turbine/Diesel	0.0	9.1	9.1	9.2	27.1	27.8	27.1	70.0	73.0	76.3
Nuclear Power	0.0	0.0	0.0	0.0	1.2	4.5	9.9	1.2	13.1	32.7
Pumped Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources	0.0	14.0	14.1	14.0	21.2	20.9	21.0	40.8	37.4	35.4
Distributed Generation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3
Combined Heat and Power ¹	0.0	4.7	4.8	4.7	19.5	19.5	19.5	35.0	34.8	34.6
Total	0.0	52.9	53.1	53.1	111.2	112.4	114.4	281.3	258.7	259.5
Cumulative Retirements	0.0	2.3	2.3	2.3	24.8	24.5	24.5	56.4	30.2	30.4
Generation by Fuel (billion kilowatthours)										
Coal	2002	2038	2038	2038	2127	2125	2118	2464	2367	2252
Petroleum	61	43	43	43	45	45	44	46	46	46
Natural Gas	814	738	737	738	816	801	771	1037	880	858
Nuclear Power	806	809	809	809	840	862	903	594	907	1062
Pumped Storage	0	1	1	1	1	1	1	1	1	1
Renewable Sources	318	415	415	415	550	549	548	629	614	610
Distributed Generation	0	0	0	0	0	0	0	0	0	0
Combined Heat and Power ¹	153	174	174	175	237	237	237	338	337	336
Total	4155	4217	4217	4218	4616	4618	4622	5109	5153	5163
Carbon Dioxide Emissions by the Electric Power Sector (million metric tons)²										
Petroleum	66	38	38	38	40	39	41	41	41	41
Natural Gas	376	341	341	341	362	357	346	431	378	370
Coal	1980	1995	1995	1995	2090	2089	2080	2375	2299	2203
Other ³	12	12	12	12	12	12	12	12	12	12
Total	2433	2385	2385	2385	2503	2497	2477	2858	2729	2625
Prices to the Electric Power Sector² (2007 dollars per million Btu)										
Petroleum	9.42	13.60	13.64	13.57	19.01	19.01	19.01	21.20	21.28	21.18
Natural Gas	7.02	6.59	6.59	6.58	7.24	7.15	7.02	9.29	8.70	8.65
Coal	1.78	1.89	1.89	1.89	1.92	1.92	1.92	2.08	2.04	2.01

¹Includes combined heat and power plants and electricity-only plants in commercial and industrial sectors. Includes small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

²Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

³Includes emissions from geothermal power and nonbiogenic emissions from municipal solid waste.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2009 National Energy Modeling System runs HCNUC09.D121108A, AEO2009.D120908A, and LCNUC09.D121108A.

Results from Side Cases

Table D6. Key Results for Electric Power Sector Fossil Technology Cases
(Gigawatts, Unless Otherwise Noted)

Net Summer Capacity, Generation Consumption, and Emissions	2007	2010			2020			2030		
		High Fossil Cost	Reference	Low Fossil Cost	High Fossil Cost	Reference	Low Fossil Cost	High Fossil Cost	Reference	Low Fossil Cost
Capacity										
Pulverized Coal	310.7	320.5	320.5	320.5	324.1	324.0	324.3	327.0	345.6	369.5
Coal Gasification Combined-Cycle	0.5	0.5	0.5	0.5	3.0	3.0	3.0	3.0	6.9	20.0
Conventional Natural Gas Combined-Cycle	181.0	194.8	194.8	194.8	196.3	196.4	196.6	196.6	196.5	196.9
Advanced Natural Gas Combined-Cycle	0.0	0.0	0.0	0.0	2.5	6.3	12.1	29.8	41.1	47.4
Conventional Combustion Turbine	133.3	139.6	140.6	140.9	136.5	138.5	138.8	145.6	140.9	138.9
Advanced Combustion Turbine	0.0	1.5	1.5	1.5	16.9	17.3	20.7	62.7	60.1	51.9
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear	100.5	101.2	101.2	101.2	110.2	108.4	105.1	119.1	112.6	100.7
Oil and Natural Gas Steam	118.8	118.4	118.4	118.4	99.9	101.8	103.9	99.8	100.5	100.2
Renewable Sources/Pumped Storage	122.9	137.0	137.0	137.0	143.7	143.6	143.4	170.0	160.1	155.0
Distributed Generation	0.0	0.0	0.0	0.0	0.1	0.0	0.0	1.8	0.3	0.0
Combined Heat and Power ¹	27.8	32.5	32.6	32.5	47.4	47.3	47.2	62.9	62.6	61.7
Total	995.6	1046.0	1047.1	1047.3	1080.6	1086.6	1094.9	1218.3	1227.2	1242.3
Cumulative Additions										
Pulverized Coal	0.0	11.3	11.3	11.3	16.6	16.6	16.8	19.6	38.2	62.5
Coal Gasification Combined-Cycle	0.0	0.0	0.0	0.0	1.4	1.4	1.4	1.4	5.4	18.0
Conventional Natural Gas Combined-Cycle	0.0	13.8	13.8	13.8	15.3	15.4	15.6	15.5	15.5	15.9
Advanced Natural Gas Combined-Cycle	0.0	0.0	0.0	0.0	2.5	6.3	12.1	29.8	41.1	47.4
Conventional Combustion Turbine	0.0	6.6	7.6	8.0	9.0	10.5	10.1	18.0	12.9	10.2
Advanced Combustion Turbine	0.0	1.5	1.5	1.5	16.9	17.3	20.7	62.7	60.1	51.9
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear	0.0	0.0	0.0	0.0	6.3	4.5	1.2	19.6	13.1	1.2
Oil and Natural Gas Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources	0.0	14.1	14.1	14.1	21.1	20.9	20.7	47.3	37.4	32.3
Distributed Generation	0.0	0.0	0.0	0.0	0.1	0.0	0.0	1.8	0.3	0.0
Combined Heat and Power ¹	0.0	4.7	4.8	4.7	19.6	19.5	19.4	35.1	34.8	33.9
Total	0.0	52.0	53.1	53.4	108.7	112.4	117.8	250.9	258.7	273.3
Cumulative Retirements	0.0	2.3	2.3	2.3	26.8	24.5	21.6	31.4	30.2	29.7
Generation by Fuel (billion kilowatthours)										
Coal	2002	2038	2038	2038	2122	2125	2129	2225	2367	2596
Petroleum	61	43	43	43	45	45	45	46	46	46
Natural Gas	814	737	737	737	786	801	822	908	880	808
Nuclear Power	806	809	809	809	875	862	840	959	907	817
Renewable Sources/Pumped Storage	319	416	415	416	551	549	549	654	615	605
Distributed Generation	0	0	0	0	0	0	0	3	0	0
Combined Heat and Power ¹	153	174	174	174	237	237	237	339	337	333
Total	4155	4217	4217	4217	4616	4618	4622	5134	5153	5206
Fuel Consumption by the Electric Power Sector (quadrillion Btu)²										
Coal	20.84	21.03	21.03	21.03	21.97	22.01	22.05	23.09	24.25	26.03
Petroleum	0.67	0.49	0.49	0.49	0.51	0.51	0.51	0.52	0.53	0.53
Natural Gas	7.06	6.43	6.42	6.43	6.64	6.73	6.85	7.39	7.12	6.55
Nuclear Power	8.41	8.45	8.45	8.45	9.13	8.99	8.77	10.01	9.47	8.53
Renewable Sources	3.45	4.43	4.42	4.42	5.81	5.79	5.79	6.73	6.43	6.33
Total	40.56	40.95	40.94	40.94	44.19	44.16	44.09	47.86	47.93	48.10
Carbon Dioxide Emissions by the Electric Power Sector (million metric tons)²										
Coal	1980	1995	1995	1994	2085	2089	2092	2190	2299	2464
Petroleum	66	38	38	38	40	40	40	40	41	41
Natural Gas	376	341	341	341	352	357	363	392	378	348
Other ³	12	12	12	12	12	12	12	12	12	12
Total	2433	2385	2385	2385	2488	2497	2507	2634	2729	2864

¹Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors. Includes small on-site generating systems in the residential, commercial, and industrial sectors used primarily for on-site use generation, but which may also sell some power to the grid. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

²Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

³Includes emissions from geothermal power and nonbiogenic emissions from municipal solid waste.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2009 National Energy Modeling System runs HCF0SS09.D121108A, AEO2009.D120908A, and LCF0SS09.D121608A.

Results from Side Cases

Table D7. Key Results for Electric Power Sector Plant Capital Cost Cases
(Gigawatts, Unless Otherwise Noted)

Net Summer Capacity, Generation Consumption, and Emissions	2007	2020				2030			
		Falling Plant Costs	Reference	Frozen Plant Costs	High Plant Costs	Falling Plant Costs	Reference	Frozen Plant Costs	High Plant Costs
Capacity									
Pulverized Coal	310.7	324.1	324.0	324.1	324.0	348.3	345.6	335.5	324.4
Coal Gasification Combined-Cycle	0.5	3.0	3.0	3.0	3.0	13.1	6.9	6.0	3.0
Conventional Natural Gas Combined-Cycle	181.0	196.4	196.4	196.7	196.5	196.5	196.5	197.2	197.0
Advanced Natural Gas Combined-Cycle	0.0	8.9	6.3	8.4	6.4	39.8	41.1	53.6	56.0
Conventional Combustion Turbine	133.3	139.1	138.5	137.4	135.2	138.9	140.9	143.8	144.6
Advanced Combustion Turbine	0.0	20.1	17.3	14.9	14.1	60.2	60.1	59.5	63.5
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear	100.5	111.4	108.4	105.1	105.1	121.6	112.6	100.7	100.7
Oil and Natural Gas Steam	118.8	103.0	101.8	99.9	99.9	99.5	100.5	99.8	99.8
Renewable Sources/Pumped Storage	122.9	143.8	143.6	143.5	143.1	174.4	160.1	155.8	151.4
Distributed Generation	0.0	0.1	0.0	0.0	0.0	1.6	0.3	0.0	0.0
Combined Heat and Power ¹	27.8	47.2	47.3	47.3	47.4	61.6	62.6	63.0	63.4
Total	995.6	1097.1	1086.6	1080.4	1074.7	1255.5	1227.2	1214.9	1203.9
Cumulative Additions									
Pulverized Coal	0.0	16.6	16.6	16.6	16.6	40.9	38.2	28.0	17.0
Coal Gasification Combined-Cycle	0.0	1.4	1.4	1.4	1.4	11.5	5.4	4.4	1.4
Conventional Natural Gas Combined-Cycle	0.0	15.4	15.4	15.7	15.5	15.5	15.5	16.2	16.0
Advanced Natural Gas Combined-Cycle	0.0	8.9	6.3	8.4	6.4	39.8	41.1	53.6	56.0
Conventional Combustion Turbine	0.0	10.5	10.5	9.4	8.6	11.1	12.9	15.8	18.0
Advanced Combustion Turbine	0.0	20.1	17.3	14.9	14.1	60.2	60.1	59.5	63.5
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear	0.0	7.5	4.5	1.2	1.2	22.1	13.1	1.2	1.2
Oil and Natural Gas Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources	0.0	21.1	20.9	20.8	20.4	51.7	37.4	33.1	28.7
Distributed Generation	0.0	0.1	0.0	0.0	0.0	1.6	0.3	0.0	0.0
Combined Heat and Power ¹	0.0	19.4	19.5	19.5	19.6	33.8	34.8	35.2	35.6
Total	0.0	121.0	112.4	107.9	103.8	288.2	258.7	247.0	237.5
Cumulative Retirements	0.0	22.6	24.5	26.3	27.8	31.3	30.2	30.8	32.4
Generation by Fuel (billion kilowatthours)									
Coal	2002	2123	2125	2125	2125	2425	2367	2282	2168
Petroleum	61	45	45	45	45	47	46	46	46
Natural Gas	814	784	801	817	817	773	880	1021	1103
Nuclear Power	806	884	862	840	840	979	907	817	817
Renewable Sources/Pumped Storage	319	550	549	550	549	657	615	604	596
Distributed Generation	0	0	0	0	0	1	0	0	0
Combined Heat and Power ¹	153	237	237	237	237	333	337	339	341
Total	4155	4623	4618	4614	4614	5214	5153	5108	5071
Fuel Consumption by the Electric Power Sector (quadrillion Btu)²									
Coal	20.84	22.00	22.01	22.01	22.01	24.67	24.25	23.52	22.55
Petroleum	0.67	0.51	0.51	0.51	0.51	0.53	0.53	0.52	0.52
Natural Gas	7.06	6.58	6.73	6.82	6.84	6.35	7.12	8.03	8.63
Nuclear Power	8.41	9.23	8.99	8.77	8.77	10.21	9.47	8.53	8.53
Renewable Sources	3.45	5.80	5.79	5.80	5.79	6.83	6.43	6.34	6.27
Total	40.56	44.24	44.16	44.04	44.05	48.72	47.93	47.07	46.62
Carbon Dioxide Emissions by the Electric Power Sector (million metric tons)²									
Coal	1980	2087	2089	2089	2089	2338	2299	2230	2139
Petroleum	66	39	40	40	40	41	41	40	40
Natural Gas	376	349	357	362	363	337	378	426	458
Other ³	12	12	12	12	12	12	12	12	12
Total	2433	2487	2497	2502	2503	2727	2729	2709	2649
Average Electricity Price (cents per kilowatthour)	9.1	9.3	9.4	9.4	9.5	9.9	10.4	10.7	10.9

¹Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors. Includes small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

²Includes electricity-only and combined heat and power plants whose primary business to sell electricity, or electricity and heat, to the public.

³Includes emissions from geothermal power and nonbiogenic emissions from municipal solid waste.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2009 National Energy Modeling System runs DECCST09.D121108A, AEO2009.D120908A, FRZCST09.D121108a, and INCCST09.D121208A.

Results from Side Cases

Table D8. Key Results for Greenhouse Gas Cases

Emissions, Prices, and Consumption	2007	2010			2020			2030		
		No GHG Concern	Reference	LW110	No GHG Concern	Reference	LW110	No GHG Concern	Reference	LW110
Greenhouse Gas Emissions (million metric tons carbon dioxide equivalent)										
Energy-related Carbon Dioxide	5990.8	5805.0	5801.4	5699.4	6044.5	5982.3	5436.0	6745.0	6414.4	4614.8
Other Covered Emissions	334.9	334.8	334.8	334.8	376.6	376.7	346.1	432.5	432.6	388.1
Total	6325.7	6139.8	6136.2	6034.2	6421.1	6358.9	5782.2	7177.6	6847.0	5002.9
Total Greenhouse Gas Emissions	7282.3	7120.4	7116.7	7014.7	7546.3	7483.9	6766.8	8501.7	8170.5	6177.9
Emissions Cap Assumed	--	--	--	--	--	--	4924.0	--	--	3860.0
Covered Emissions Net of Offsets	6368.8	6139.8	6136.2	6034.2	6421.1	6358.9	4671.8	7177.6	6847.0	3845.4
Difference (banking)	--	--	--	--	--	--	252.2	--	--	14.6
Emission Allowance Price (2007 dollars per metric ton carbon dioxide equivalent)	--	--	--	--	--	--	36.03	--	--	73.57
Energy Prices (2007 dollars per unit)										
Liquid Fuels (dollars per gallon)										
Transportation										
Motor Gasoline ¹	2.82	2.79	2.84	2.79	3.59	3.60	3.85	3.79	3.88	4.37
Jet Fuel ²	2.17	2.11	2.16	2.11	2.97	2.99	3.30	3.24	3.32	3.95
Diesel ³	2.87	2.69	2.75	2.69	3.54	3.57	3.87	3.80	3.92	4.53
Natural Gas (dollars per thousand cubic feet)										
Wellhead Price ⁴	6.39	6.02	6.05	5.99	6.57	6.75	6.21	8.02	8.40	7.38
Residential	13.05	12.40	12.43	12.37	12.64	12.85	14.84	14.29	14.71	18.97
Electric Power ⁵	7.22	6.74	6.77	6.70	7.15	7.35	9.01	8.47	8.94	12.51
Coal (dollars per million Btu)										
Minemouth ⁶	1.27	1.44	1.44	1.43	1.41	1.39	1.38	1.54	1.46	1.38
Electric Power ⁵	1.78	1.89	1.89	1.85	1.94	1.92	5.25	2.16	2.04	8.72
Electricity (cents per kilowatthour)	9.1	9.0	9.0	9.0	9.3	9.4	10.2	10.1	10.4	12.7
Energy Consumption (quadrillion Btu)										
Liquid Fuels and Other Petroleum ⁷	40.75	37.93	37.89	37.91	38.97	38.93	38.35	41.66	41.60	39.87
Natural Gas	23.70	23.22	23.20	22.98	23.78	24.09	22.88	24.02	25.04	22.45
Coal ⁸	22.74	22.90	22.91	21.93	24.80	23.98	20.30	30.62	26.56	16.40
Nuclear Power	8.41	8.45	8.45	8.45	8.77	8.99	9.36	8.58	9.47	12.21
Renewable/Other ⁹	6.28	7.40	7.41	8.67	9.46	9.45	11.38	10.87	10.90	15.68
Total	101.89	99.89	99.85	99.95	105.78	105.44	102.29	115.75	113.56	106.59

¹Sales weighted-average price for all grades. Includes Federal, State and local taxes.

²Includes only kerosene type.

³Diesel fuel for on-road use. Includes Federal and State taxes while excluding county and local taxes.

⁴Represents lower 48 onshore and offshore supplies.

⁵Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

⁶Includes reported prices for both open market and captive mines.

⁷Includes petroleum-derived fuels and non-petroleum derived fuels, such as ethanol and biodiesel, and coal-based synthetic liquids. Petroleum coke, which is a solid, is included. Also included are natural gas plant liquids, crude oil consumed as a fuel, and liquid hydrogen.

⁸Excludes coal converted to coal-based synthetic liquids.

⁹Includes grid-connected electricity from landfill gas; municipal waste; wind; photovoltaic and solar thermal sources; and non-electric energy from renewable sources, such as active and passive solar systems. Includes net electricity imports.

-- = Not applicable.

GHG = Greenhouse gas.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2009 National Energy Modeling System runs NORSEK2009.D120908A, AEO2009.D120908A, and CAP2009.D010909A.

Table D9. Key Results for Greenhouse Gas Cases
(Gigawatts, Unless Otherwise Noted)

Net Summer Capacity, Generation Consumption, and Emissions	2007	2010			2020			2030		
		No GHG Concern	Reference	LW110	No GHG Concern	Reference	LW110	No GHG Concern	Reference	LW110
Capacity										
Pulverized Coal	310.7	320.5	320.5	320.4	333.6	324.0	301.2	380.5	345.6	216.7
Coal Gasification Combined-Cycle	0.5	0.5	0.5	0.5	3.4	3.0	14.5	17.2	6.9	100.5
Conventional Natural Gas Combined-Cycle	181.0	194.8	194.8	194.8	196.3	196.4	196.6	196.6	196.5	196.8
Advanced Natural Gas Combined-Cycle	0.0	0.0	0.0	0.0	1.8	6.3	6.4	22.2	41.1	36.9
Conventional Combustion Turbine	133.3	140.7	140.6	138.9	137.3	138.5	134.5	138.3	140.9	134.4
Advanced Combustion Turbine	0.0	1.5	1.5	1.5	17.4	17.3	4.4	55.7	60.1	13.9
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear	100.5	101.2	101.2	101.2	105.1	108.4	113.0	101.4	112.6	146.3
Oil and Natural Gas Steam	118.8	118.4	118.4	118.4	102.6	101.8	94.9	100.6	100.5	91.7
Renewable Sources/Pumped Storage	122.9	136.8	137.0	145.4	143.4	143.6	154.4	156.4	160.1	225.7
Distributed Generation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0
Combined Heat and Power ¹	27.8	32.5	32.6	32.4	49.1	47.3	46.6	75.4	62.6	61.9
Total	995.6	1046.9	1047.1	1053.4	1090.0	1086.6	1066.4	1244.5	1227.2	1224.8
Cumulative Additions										
Pulverized Coal	0.0	11.3	11.3	11.3	26.3	16.6	28.1	73.2	38.2	114.1
Coal Gasification Combined-Cycle	0.0	0.0	0.0	0.0	1.9	1.4	1.4	15.7	5.4	1.4
Conventional Natural Gas Combined-Cycle	0.0	13.8	13.8	13.8	15.3	15.4	17.7	15.6	15.5	33.1
Advanced Natural Gas Combined-Cycle	0.0	0.0	0.0	0.0	1.8	6.3	4.3	22.2	41.1	19.5
Conventional Combustion Turbine	0.0	7.7	7.6	5.9	9.0	10.5	5.9	10.0	12.9	6.0
Advanced Combustion Turbine	0.0	1.5	1.5	1.5	17.4	17.3	4.4	55.7	60.1	13.9
Fuel Cells	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nuclear	0.0	0.0	0.0	0.0	1.2	4.5	9.1	1.9	13.1	46.8
Oil and Natural Gas Steam	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Renewable Sources	0.0	13.9	14.1	22.5	20.7	20.9	31.7	33.7	37.4	103.0
Distributed Generation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0
Combined Heat and Power ¹	0.0	4.7	4.8	4.6	21.3	19.5	18.8	47.6	34.8	34.1
Total	0.0	53.0	53.1	59.6	114.7	112.4	121.4	275.7	258.7	372.0
Cumulative Retirements	0.0	2.3	2.3	2.4	23.5	24.5	53.7	29.9	30.2	145.9
Generation by Fuel (billion kilowatthours)										
Coal	2002	2037	2038	1944	2192	2125	1822	2633	2367	1600
Petroleum	61	43	43	43	45	45	42	48	46	40
Natural Gas	814	741	737	711	755	801	735	724	880	675
Nuclear Power	806	809	809	809	840	862	897	822	907	1170
Renewable Sources/Pumped Storage	319	415	415	538	551	549	715	613	615	927
Distributed Generation	0	0	0	0	0	0	0	0	0	0
Combined Heat and Power ¹	153	174	174	173	249	237	231	432	337	326
Total	4155	4219	4217	4218	4632	4618	4442	5272	5153	4737
Fuel Consumption by the Electric Power Sector (quadrillion Btu)²										
Coal	20.84	21.03	21.03	20.06	22.59	22.01	18.58	26.35	24.25	14.82
Petroleum	0.67	0.49	0.49	0.49	0.51	0.51	0.48	0.54	0.53	0.46
Natural Gas	7.06	6.45	6.42	6.22	6.41	6.73	6.25	6.05	7.12	5.74
Nuclear Power	8.41	8.45	8.45	8.45	8.77	8.99	9.36	8.58	9.47	12.21
Renewable Sources	3.45	4.41	4.42	5.68	5.80	5.79	7.51	6.47	6.43	10.28
Total	40.56	40.95	40.94	41.02	44.22	44.16	42.31	48.11	47.93	43.63
Carbon Dioxide Emissions by the Electric Power Sector (million metric tons)²										
Coal	1980	1994	1995	1903	2142	2089	1685	2494	2299	868
Petroleum	66	38	38	38	40	40	37	42	41	36
Natural Gas	376	342	341	330	340	357	325	321	378	260
Other ³	12	12	12	12	12	12	12	12	12	13
Total	2433	2386	2385	2282	2534	2497	2059	2869	2729	1176

¹Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors. Includes small on-site generating systems in the residential, commercial, and industrial sectors used primarily for on-site generation, but which may also sell some power to the grid. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

²Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

³Includes emissions from geothermal power and nonbiogenic emissions from municipal solid waste.

GHG = Greenhouse gas.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2009 National Energy Modeling System runs NORSK2009.D120908A, AEO2009.D120908A, and CAP2009.D010909A.

Results from Side Cases

Table D10. Key Results for Renewable Technology Cases

Capacity, Generation, and Emissions	2007	2010			2020			2030		
		High Renewable Cost	Reference	Low Renewable Cost	High Renewable Cost	Reference	Low Renewable Cost	High Renewable Cost	Reference	Low Renewable Cost
Net Summer Capacity (gigawatts)										
Electric Power Sector¹										
Conventional Hydropower	76.72	76.73	76.73	76.73	77.02	77.02	77.16	77.20	77.58	78.54
Geothermal ²	2.36	2.53	2.53	2.53	2.64	2.66	2.64	2.64	3.00	3.03
Municipal Waste ³	3.43	3.97	4.04	4.04	4.06	4.12	4.07	4.15	4.15	4.07
Wood and Other Biomass ⁴	2.18	2.20	2.20	2.20	3.97	4.22	5.58	5.00	8.86	27.00
Solar Thermal	0.53	0.54	0.54	0.54	0.81	0.81	0.81	0.86	0.86	0.86
Solar Photovoltaic	0.04	0.06	0.06	0.06	0.21	0.21	0.21	0.38	0.38	0.38
Wind	16.19	29.43	29.46	29.46	33.68	33.07	33.05	41.34	43.80	60.75
Total	101.46	115.46	115.57	115.56	122.39	122.12	123.51	131.57	138.63	174.63
End-Use Sector⁵										
Conventional Hydropower	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste ⁶	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Wood and Other Biomass	4.64	4.65	4.65	4.65	7.08	7.28	7.56	12.74	13.23	14.03
Solar Photovoltaic	0.43	1.73	1.73	1.74	8.81	9.72	12.45	9.25	11.78	17.50
Wind	0.04	0.04	0.04	0.04	0.07	0.09	0.12	0.24	0.31	0.70
Total	6.15	7.45	7.45	7.46	17.00	18.12	21.16	23.27	26.35	33.26
Generation (billion kilowatthours)										
Electric Power Sector¹										
Coal	2002	2040	2038	2035	2129	2125	2121	2374	2367	2258
Petroleum	61	43	43	43	45	45	45	47	46	46
Natural Gas	814	738	737	737	801	801	797	883	880	871
Total Fossil	2877	2820	2818	2816	2975	2970	2963	3304	3293	3175
Conventional Hydropower	245.86	268.05	268.05	268.05	296.37	296.29	296.96	297.40	298.97	303.84
Geothermal	14.84	17.78	17.78	17.78	18.91	19.11	18.91	18.94	21.80	22.06
Municipal Waste ⁷	14.42	18.71	19.30	19.30	19.45	19.95	19.50	20.15	20.17	19.50
Wood and Other Biomass ⁴	10.38	26.35	28.07	30.80	113.21	117.82	130.90	131.41	140.44	261.52
Dedicated Plants	8.41	12.88	12.85	12.87	25.96	28.74	39.05	34.57	62.27	193.82
Cofiring	1.97	13.47	15.22	17.93	87.25	89.08	91.85	96.85	78.17	67.70
Solar Thermal	0.60	0.99	0.99	0.99	1.88	1.88	1.88	2.02	2.02	2.02
Solar Photovoltaic	0.01	0.14	0.14	0.14	0.49	0.49	0.49	0.94	0.94	0.94
Wind	32.14	80.39	80.50	80.49	94.62	92.45	93.20	120.48	129.38	188.34
Total Renewable	318.25	412.42	414.82	417.54	544.94	547.99	561.84	591.34	613.71	798.22
End-Use Sector⁵										
Total Fossil	101	110	110	110	141	141	140	195	194	192
Conventional Hydropower ⁸	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste ⁶	2.01	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
Wood and Other Biomass	28.13	28.19	28.20	28.22	46.00	47.17	48.82	87.93	90.81	95.83
Solar Photovoltaic	0.68	2.77	2.78	2.79	14.15	16.02	20.34	14.82	19.49	28.92
Wind	0.06	0.06	0.06	0.06	0.10	0.12	0.17	0.35	0.45	1.00
Total Renewable	33.33	36.22	36.24	36.27	65.46	68.51	74.54	108.30	115.95	130.95
Carbon Dioxide Emissions by the Electric Power Sector (million metric tons)¹										
Coal	1979.7	1996.7	1995.0	1992.3	2091.9	2088.5	2083.4	2300.5	2299.0	2209.9
Petroleum	65.7	38.0	38.0	38.0	39.6	39.5	39.5	41.1	40.9	40.4
Natural Gas	376.5	341.2	340.7	341.0	357.1	356.9	355.4	378.3	377.9	375.0
Other ⁹	11.6	11.6	11.6	11.6	11.7	11.7	11.7	11.7	11.7	11.7
Total	2433.4	2387.5	2385.4	2382.9	2500.2	2496.6	2489.9	2731.5	2729.5	2637.1

¹Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

²Includes hydrothermal resources only (hot water and steam).

³Includes all municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.

⁴Includes projections for energy crops after 2010.

⁵Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors; and small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

⁶Includes municipal waste, landfill gas, and municipal sewage sludge. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.

⁷Includes biogenic municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities.

⁸Represents own-use industrial hydroelectric power.

⁹Includes emissions from geothermal power and nonbiogenic emissions from municipal solid waste.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2009 National Energy Modeling System runs HIRENCST09.D011309B, AEO2009.D120908A, and LORENCST09.D011509B.

Table D11. Key Results for Production Tax Credit Case

Capacity, Generation, and Emissions	2007	2010		2020		2030	
		Reference	Production Tax Credit Extension	Reference	Production Tax Credit Extension	Reference	Production Tax Credit Extension
Net Summer Capacity (gigawatts)							
Electric Power Sector¹							
Conventional Hydropower	76.72	76.73	76.73	77.02	77.03	77.58	77.47
Geothermal ²	2.36	2.53	2.53	2.66	2.64	3.00	2.72
Municipal Waste ³	3.43	4.04	3.81	4.12	4.09	4.15	4.14
Wood and Other Biomass ⁴	2.18	2.20	2.20	4.22	4.67	8.86	9.18
Solar Thermal	0.53	0.54	0.54	0.81	0.81	0.86	0.86
Solar Photovoltaic	0.04	0.06	0.06	0.21	0.21	0.38	0.38
Wind	16.19	29.46	33.33	33.07	49.65	43.80	52.08
Total	101.46	115.57	119.20	122.12	139.09	138.63	146.83
End-Use Sector⁵							
Conventional Hydropower	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste ⁶	0.34	0.34	0.34	0.34	0.34	0.34	0.34
Wood and Other Biomass	4.64	4.65	4.65	7.28	7.28	13.23	13.23
Solar Photovoltaic	0.43	1.73	1.73	9.72	9.72	11.78	11.76
Wind	0.04	0.04	0.04	0.09	0.09	0.31	0.31
Total	6.15	7.45	7.45	18.12	18.12	26.35	26.33
Generation (billion kilowatt-hours)							
Electric Power Sector¹							
Coal	2002	2038	2039	2125	2137	2367	2360
Petroleum	61	43	43	45	45	46	46
Natural Gas	814	737	727	801	767	880	876
Total Fossil	2877	2818	2809	2970	2948	3293	3283
Conventional Hydropower	245.86	268.05	268.05	296.29	296.26	298.97	298.29
Geothermal	14.84	17.78	17.78	19.11	18.91	21.80	19.58
Municipal Waste ⁷	14.42	19.30	17.48	19.95	19.65	20.17	20.11
Wood and Other Biomass ⁴	10.38	28.07	26.51	117.82	97.83	140.44	138.81
Dedicated Plants	8.41	12.85	12.81	28.74	31.42	62.27	64.28
Cofiring	1.97	15.22	13.70	89.08	66.41	78.17	74.54
Solar Thermal	0.60	0.99	0.99	1.88	1.88	2.02	2.02
Solar Photovoltaic	0.01	0.14	0.14	0.49	0.49	0.94	0.94
Wind	32.14	80.50	93.73	92.45	149.09	129.38	157.85
Total Renewable	318.25	414.82	424.68	547.99	584.11	613.71	637.60
End-Use Sector⁵							
Total Fossil	101	110	110	141	141	194	193
Conventional Hydropower ⁸	2.45	2.45	2.45	2.45	2.45	2.45	2.45
Geothermal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Waste ⁶	2.01	2.75	2.75	2.75	2.75	2.75	2.75
Wood and Other Biomass	28.13	28.20	28.20	47.17	47.18	90.81	90.86
Solar Photovoltaic	0.68	2.78	2.78	16.02	16.01	19.49	19.46
Wind	0.06	0.06	0.06	0.12	0.12	0.45	0.44
Total Renewable	33.33	36.24	36.24	68.51	68.52	115.95	115.96
Carbon Dioxide Emissions by the Electric Power Sector (million metric tons)¹							
Coal	1979.7	1995.0	1995.4	2088.5	2098.8	2299.0	2292.5
Petroleum	65.7	38.0	38.0	39.5	39.4	40.9	40.8
Natural Gas	376.5	340.7	336.9	356.9	343.3	377.9	376.2
Other ⁹	11.6	11.6	11.6	11.7	11.7	11.7	11.7
Total	2433.4	2385.4	2381.9	2496.6	2493.2	2729.5	2721.1

¹Includes electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

²Includes hydrothermal resources only (hot water and steam).

³Includes all municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.

⁴Includes projections for energy crops after 2010.

⁵Includes combined heat and power plants and electricity-only plants in the commercial and industrial sectors; and small on-site generating systems in the residential, commercial, and industrial sectors used primarily for own-use generation, but which may also sell some power to the grid. Excludes off-grid photovoltaics and other generators not connected to the distribution or transmission systems.

⁶Includes municipal waste, landfill gas, and municipal sewage sludge. All municipal waste is included, although a portion of the municipal waste stream contains petroleum-derived plastics and other non-renewable sources.

⁷Includes biogenic municipal waste, landfill gas, and municipal sewage sludge. Incremental growth is assumed to be for landfill gas facilities.

⁸Represents own-use industrial hydroelectric power.

⁹Includes emissions from geothermal power and nonbiogenic emissions from municipal solid waste.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Source: Energy Information Administration, AEO2009 National Energy Modeling System runs AEO2009.D120908A, and PTC09.D010709A.

Results from Side Cases

Table D12. Natural Gas Supply and Disposition, Oil and Gas Technological Progress Cases
(Trillion Cubic Feet per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	2010			2020			2030		
		Slow Technology	Reference	Rapid Technology	Slow Technology	Reference	Rapid Technology	Slow Technology	Reference	Rapid Technology
Natural Gas Prices										
(2007 dollars per million Btu)										
Henry Hub Spot Price	6.96	6.68	6.66	6.57	7.96	7.43	7.04	10.27	9.25	8.60
Average Lower 48 Wellhead Price ¹ ..	6.22	5.90	5.88	5.81	7.03	6.56	6.22	9.07	8.17	7.59
(2007 dollars per thousand cubic feet)										
Average Lower 48 Wellhead Price ¹ ..	6.39	6.06	6.05	5.97	7.23	6.75	6.39	9.33	8.40	7.81
Dry Gas Production²	19.30	20.36	20.38	20.41	20.76	21.48	21.94	22.06	23.60	25.03
Lower 48 Onshore	15.91	16.74	16.75	16.75	15.63	16.11	16.41	15.22	16.76	17.91
Associated-Dissolved	1.39	1.41	1.41	1.41	1.32	1.37	1.40	1.22	1.32	1.35
Non-Associated	14.51	15.33	15.34	15.34	14.30	14.74	15.00	14.00	15.44	16.56
Conventional	5.36	4.72	4.70	4.69	3.46	3.36	3.30	2.31	2.18	2.15
Unconventional	9.15	10.62	10.64	10.65	10.84	11.38	11.70	11.70	13.26	14.41
Gas Shale	1.17	2.26	2.31	2.31	2.54	2.97	3.05	3.36	4.15	4.48
Coalbed Methane	1.84	1.80	1.79	1.80	1.73	1.78	1.88	1.76	2.01	2.23
Tight Gas	6.15	6.56	6.54	6.54	6.57	6.62	6.78	6.57	7.10	7.70
Lower 48 Offshore	2.97	3.25	3.26	3.28	3.99	4.23	4.39	4.87	4.88	5.15
Associated-Dissolved	0.62	0.71	0.72	0.72	0.98	1.00	1.06	1.06	1.16	1.23
Non-Associated	2.35	2.53	2.55	2.56	3.01	3.23	3.34	3.81	3.72	3.92
Alaska	0.42	0.37	0.37	0.37	1.14	1.14	1.14	1.96	1.96	1.96
Supplemental Natural Gas ³	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Net Imports	3.79	2.51	2.50	2.49	2.01	1.86	1.83	0.91	0.66	0.84
Pipeline ⁴	3.06	2.03	2.02	2.02	0.56	0.48	0.50	-0.01	-0.18	0.03
Liquefied Natural Gas	0.73	0.48	0.47	0.47	1.46	1.38	1.33	0.92	0.85	0.80
Total Supply	23.15	22.93	22.94	22.96	22.84	23.40	23.84	23.03	24.33	25.93
Consumption by Sector										
Residential	4.72	4.78	4.79	4.79	4.92	4.96	4.99	4.86	4.93	4.97
Commercial	3.01	3.05	3.06	3.06	3.21	3.25	3.28	3.37	3.44	3.49
Industrial ⁵	6.63	6.56	6.59	6.58	6.58	6.65	6.69	6.67	6.85	6.94
Electric Power ⁶	6.87	6.26	6.25	6.27	6.16	6.54	6.85	6.04	6.93	8.25
Transportation ⁷	0.02	0.03	0.03	0.03	0.07	0.07	0.07	0.09	0.09	0.09
Pipeline Fuel	0.62	0.62	0.62	0.62	0.66	0.67	0.68	0.67	0.70	0.73
Lease and Plant Fuel ⁸	1.17	1.24	1.24	1.24	1.27	1.29	1.32	1.36	1.43	1.49
Total	23.05	22.55	22.57	22.59	22.87	23.43	23.87	23.06	24.36	25.96
Discrepancy⁹	0.09	0.38	0.37	0.38	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
Lower 48 End of Year Reserves	225.18	229.03	230.11	231.42	200.96	213.14	222.92	184.54	211.98	233.91

¹Represents lower 48 onshore and offshore supplies.

²Marketed production (wet) minus extraction losses.

³Synthetic natural gas, propane air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

⁴Includes any natural gas regasified in the Bahamas and transported via pipeline to Florida.

⁵Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

⁶Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

⁷Compressed natural gas used as a vehicle fuel.

⁸Represents natural gas used in field gathering and processing plant machinery.

⁹Balancing item. Natural gas lost as a result of converting flow data measured at varying temperatures and pressures to a standard temperature and pressure and the merger of different data reporting systems which vary in scope, format, definition, and respondent type. In addition, 2007 values include net storage injections.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 supply values: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). 2007 consumption based on: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). Projections: EIA, AEO2009 National Energy Modeling System runs OGLTEC09.D121408A, AEO2009.D120908A, and OGHTEC09.D121408A.

Results from Side Cases

Table D13. Liquid Fuels Supply and Disposition, Oil and Gas Technological Progress Cases
(Million Barrels per Day, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	2010			2020			2030		
		Slow Technology	Reference	Rapid Technology	Slow Technology	Reference	Rapid Technology	Slow Technology	Reference	Rapid Technology
Prices (2007 dollars per barrel)										
Imported Low Sulfur Light Crude Oil ¹	72.33	78.19	80.16	78.00	115.61	115.45	114.58	132.28	130.43	129.33
Imported Crude Oil ¹	63.83	75.49	77.56	75.23	112.58	112.05	109.31	126.43	124.60	119.51
Crude Oil Supply										
Domestic Crude Oil Production ²	5.07	5.58	5.62	5.65	6.12	6.48	6.73	6.65	7.37	7.71
Alaska	0.72	0.69	0.69	0.69	0.71	0.72	0.72	0.57	0.57	0.58
Lower 48 Onshore	2.91	2.90	2.92	2.94	3.16	3.37	3.52	3.47	4.06	4.18
Lower 48 Offshore	1.44	1.99	2.01	2.02	2.24	2.39	2.49	2.61	2.74	2.94
Net Crude Oil Imports	10.00	8.14	8.10	8.07	7.68	7.29	7.17	7.60	6.95	6.64
Other Crude Oil Supply	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Crude Oil Supply	15.16	13.72	13.72	13.73	13.80	13.77	13.90	14.26	14.32	14.34
Other Petroleum Supply										
Natural Gas Plant Liquids	1.78	1.91	1.91	1.91	1.86	1.91	1.94	1.82	1.92	2.03
Net Petroleum Product Imports ³	2.09	1.68	1.66	1.67	1.52	1.49	1.42	1.40	1.40	1.37
Refinery Processing Gain ⁴	1.00	0.98	0.97	0.98	0.93	0.93	0.93	0.89	0.86	0.85
Other Supply ⁵	0.74	1.22	1.22	1.22	1.97	1.98	1.98	3.10	3.08	3.07
Total Primary Supply⁶	20.77	19.50	19.48	19.51	20.07	20.08	20.16	21.46	21.59	21.67
Refined Petroleum Products Supplied										
Residential and Commercial	1.11	1.05	1.05	1.05	0.99	0.99	1.00	0.97	0.97	0.98
Industrial ⁷	5.26	4.47	4.46	4.47	4.34	4.34	4.37	4.29	4.28	4.31
Transportation	14.25	13.97	13.96	13.98	14.64	14.65	14.70	16.08	16.18	16.21
Electric Power ⁸	0.30	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23
Total	20.65	19.71	19.69	19.71	20.20	20.21	20.28	21.57	21.67	21.73
Discrepancy⁹	0.12	-0.21	-0.20	-0.21	-0.13	-0.13	-0.12	-0.11	-0.08	-0.06
Lower 48 End of Year Reserves (billion barrels)²										
	18.62	18.96	19.21	19.41	21.16	22.50	23.48	22.70	25.38	26.45

¹Weighted average price delivered to U.S. refiners.

²Includes lease condensate.

³Includes net imports of finished petroleum products, unfinished oils, other hydrocarbons, alcohols, ethers, and blending components.

⁴The volumetric amount by which total output is greater than input due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.

⁵Includes ethanol (including imports), alcohols, ethers, petroleum product stock withdrawals, domestic sources of blending components, other hydrocarbons, biodiesel (including imports), natural gas converted to liquid fuel, coal converted to liquid fuel, and biomass converted to liquid fuel.

⁶Total crude supply plus natural gas plant liquids, other inputs, refinery processing gain, and net product imports.

⁷Includes consumption for combined heat and power, which produces electricity and other useful thermal energy.

⁸Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

⁹Balancing item. Includes unaccounted for supply, losses and gains.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 product supplied data and imported crude oil price based on: Energy Information Administration (EIA), *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 imported low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2007 data: EIA, *Petroleum Supply Annual 2007*, DOE/EIA-0340(2007)/1 (Washington, DC, July 2008). **Projections:** EIA, AEO2009 National Energy Modeling System runs OGLTEC09.D121408A, AEO2009.D120908A, and OGHTEC09.D121408A.

Results from Side Cases

Table D14. Natural Gas Supply and Disposition, OCS Limited Case
(Trillion Cubic Feet per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	2010		2020		2030	
		Reference	OCS Limited	Reference	OCS Limited	Reference	OCS Limited
Natural Gas Prices							
(2007 dollars per million Btu)							
Henry Hub Spot Price	6.96	6.66	6.62	7.43	7.52	9.25	9.48
Average Lower 48 Wellhead Price ¹	6.22	5.88	5.85	6.56	6.64	8.17	8.38
(2007 dollars per thousand cubic feet)							
Average Lower 48 Wellhead Price ¹	6.39	6.05	6.01	6.75	6.83	8.40	8.61
Dry Gas Production²	19.30	20.38	20.39	21.48	21.27	23.60	23.00
Lower 48 Onshore	15.91	16.75	16.76	16.11	16.14	16.76	16.93
Associated-Dissolved	1.39	1.41	1.41	1.37	1.37	1.32	1.33
Non-Associated	14.51	15.34	15.35	14.74	14.77	15.44	15.60
Conventional	5.36	4.70	4.70	3.36	3.38	2.18	2.25
Unconventional	9.15	10.64	10.64	11.38	11.39	13.26	13.35
Gas Shale	1.17	2.31	2.31	2.97	2.97	4.15	4.22
Coalbed Methane	1.84	1.79	1.80	1.78	1.79	2.01	2.02
Tight Gas	6.15	6.54	6.54	6.62	6.63	7.10	7.11
Lower 48 Offshore	2.97	3.26	3.26	4.23	3.99	4.88	4.11
Associated-Dissolved	0.62	0.72	0.72	1.00	0.95	1.16	0.93
Non-Associated	2.35	2.55	2.55	3.23	3.04	3.72	3.18
Alaska	0.42	0.37	0.37	1.14	1.14	1.96	1.96
Supplemental Natural Gas ³	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Net Imports	3.79	2.50	2.50	1.86	1.94	0.66	0.90
Pipeline ⁴	3.06	2.02	2.02	0.48	0.55	-0.18	0.04
Liquefied Natural Gas	0.73	0.47	0.47	1.38	1.40	0.85	0.86
Total Supply	23.15	22.94	22.95	23.40	23.28	24.33	23.97
Consumption by Sector							
Residential	4.72	4.79	4.79	4.96	4.95	4.93	4.91
Commercial	3.01	3.06	3.06	3.25	3.25	3.44	3.42
Industrial ⁵	6.63	6.59	6.57	6.65	6.63	6.85	6.76
Electric Power ⁶	6.87	6.25	6.27	6.54	6.47	6.93	6.74
Transportation ⁷	0.02	0.03	0.03	0.07	0.07	0.09	0.09
Pipeline Fuel	0.62	0.62	0.62	0.67	0.67	0.70	0.71
Lease and Plant Fuel ⁸	1.17	1.24	1.24	1.29	1.28	1.43	1.37
Total	23.05	22.57	22.57	23.43	23.31	24.36	24.00
Discrepancy⁹	0.09	0.37	0.38	-0.03	-0.03	-0.03	-0.03
Lower 48 End of Year Reserves	225.18	230.11	230.00	213.14	211.41	211.98	209.17

¹Represents lower 48 onshore and offshore supplies.

²Marketed production (wet) minus extraction losses.

³Synthetic natural gas, propane air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

⁴Includes any natural gas regasified in the Bahamas and transported via pipeline to Florida.

⁵Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

⁶Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

⁷Compressed natural gas used as a vehicle fuel.

⁸Represents natural gas used in field gathering and processing plant machinery.

⁹Balancing item. Natural gas lost as a result of converting flow data measured at varying temperatures and pressures to a standard temperature and pressure and the merger of different data reporting systems which vary in scope, format, definition, and respondent type. In addition, 2007 values include net storage injections.

OCS = Outer continental shelf.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 supply values: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). 2007 consumption based on: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). Projections: EIA, AEO2009 National Energy Modeling System runs AEO2009.D120908A and OCSLIMITED.D120908A.

Results from Side Cases

Table D15. Liquid Fuels Supply and Disposition, OCS Limited Case
(Million Barrels per Day, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	2010		2020		2030	
		Reference	OCS Limited	Reference	OCS Limited	Reference	OCS Limited
Prices (2007 dollars per barrel)							
Imported Low Sulfur Light Crude Oil ¹	72.33	80.16	78.10	115.45	115.56	130.43	131.76
Imported Crude Oil ¹	63.83	77.56	75.40	112.05	112.90	124.60	126.08
Crude Oil Supply							
Domestic Crude Oil Production ²	5.07	5.62	5.61	6.48	6.21	7.37	6.83
Alaska	0.72	0.69	0.69	0.72	0.72	0.57	0.58
Lower 48 Onshore	2.91	2.92	2.92	3.37	3.36	4.06	4.07
Lower 48 Offshore	1.44	2.01	2.01	2.39	2.12	2.74	2.17
Net Crude Oil Imports	10.00	8.10	8.11	7.29	7.58	6.95	7.44
Other Crude Oil Supply	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Total Crude Oil Supply	15.16	13.72	13.72	13.77	13.78	14.32	14.27
Other Petroleum Supply							
Natural Gas Plant Liquids	1.78	1.91	1.91	1.91	1.90	1.92	1.92
Net Petroleum Product Imports ³	2.09	1.66	1.67	1.49	1.51	1.40	1.40
Refinery Processing Gain ⁴	1.00	0.97	0.98	0.93	0.93	0.86	0.86
Other Supply ⁵	0.74	1.22	1.22	1.98	1.97	3.08	3.07
Total Primary Supply⁶	20.77	19.48	19.50	20.08	20.09	21.59	21.51
Refined Petroleum Products Supplied							
Residential and Commercial	1.11	1.05	1.05	0.99	0.99	0.97	0.97
Industrial ⁷	5.26	4.46	4.47	4.34	4.34	4.28	4.29
Transportation	14.25	13.96	13.97	14.65	14.66	16.18	16.10
Electric Power ⁸	0.30	0.22	0.22	0.23	0.23	0.23	0.23
Total	20.65	19.69	19.71	20.21	20.22	21.67	21.59
Discrepancy⁹	0.12	-0.20	-0.21	-0.13	-0.13	-0.08	-0.08
Lower 48 End of Year Reserves							
(billion barrels)²	18.62	19.21	19.18	22.50	21.32	25.38	23.32

¹Weighted average price delivered to U.S. refiners.

²Includes lease condensate.

³Includes net imports of finished petroleum products, unfinished oils, other hydrocarbons, alcohols, ethers, and blending components.

⁴The volumetric amount by which total output is greater than input due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.

⁵Includes ethanol (including imports), alcohols, ethers, petroleum product stock withdrawals, domestic sources of blending components, other hydrocarbons, biodiesel (including imports), natural gas converted to liquid fuel, coal converted to liquid fuel, and biomass converted to liquid fuel.

⁶Total crude supply plus natural gas plant liquids, other inputs, refinery processing gain, and net product imports.

⁷Includes consumption for combined heat and power, which produces electricity and other useful thermal energy.

⁸Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

⁹Balancing item. Includes unaccounted for supply, losses and gains.

OCS = Outer continental shelf.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 product supplied data and imported crude oil price based on: Energy Information Administration (EIA), *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 imported low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2007 data: EIA, *Petroleum Supply Annual 2007*, DOE/EIA-0340(2007)/1 (Washington, DC, July 2008). Projections: EIA, AEO2009 National Energy Modeling System runs AEO2009.D120908A and OCSLIMITED.D120908A.

Results from Side Cases

Table D16. Natural Gas Supply and Disposition, Liquefied Natural Gas Supply Cases
(Trillion Cubic Feet per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	2010			2020			2030		
		Low LNG	Reference	High LNG	Low LNG	Reference	High LNG	Low LNG	Reference	High LNG
Dry Gas Production¹	19.30	20.46	20.38	20.39	21.93	21.48	19.92	23.84	23.60	22.00
Lower 48 Onshore	15.91	16.81	16.75	16.76	16.46	16.11	14.92	16.93	16.76	15.35
Associated-Dissolved	1.39	1.41	1.41	1.41	1.37	1.37	1.37	1.32	1.32	1.32
Non-Associated	14.51	15.40	15.34	15.34	15.10	14.74	13.55	15.61	15.44	14.02
Conventional	5.36	4.72	4.70	4.70	3.44	3.36	3.10	2.17	2.18	2.09
Unconventional	9.15	10.67	10.64	10.64	11.66	11.38	10.45	13.43	13.26	11.94
Gas Shale	1.17	2.32	2.31	2.31	3.08	2.97	2.66	4.25	4.15	3.43
Coalbed Methane	1.84	1.80	1.79	1.79	1.81	1.78	1.67	2.02	2.01	1.92
Tight Gas	6.15	6.56	6.54	6.54	6.77	6.62	6.13	7.16	7.10	6.58
Lower 48 Offshore	2.97	3.28	3.26	3.27	4.32	4.23	3.86	4.94	4.88	4.69
Associated-Dissolved	0.62	0.72	0.72	0.72	1.02	1.00	1.00	1.17	1.16	1.03
Non-Associated	2.35	2.56	2.55	2.55	3.30	3.23	2.86	3.78	3.72	3.66
Alaska	0.42	0.37	0.37	0.37	1.14	1.14	1.14	1.96	1.96	1.96
Supplemental Natural Gas ²	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Net Imports	3.79	2.41	2.50	2.50	1.17	1.86	4.14	0.39	0.66	3.65
Pipeline ³	3.06	2.03	2.02	2.03	0.76	0.48	-0.02	-0.02	-0.18	-0.57
Liquefied Natural Gas	0.73	0.37	0.47	0.47	0.41	1.38	4.15	0.41	0.85	4.22
Total Supply	23.15	22.93	22.94	22.95	23.16	23.40	24.13	24.30	24.33	25.71
Consumption by Sector										
Residential	4.72	4.79	4.79	4.79	4.94	4.96	5.03	4.93	4.93	4.98
Commercial	3.01	3.06	3.06	3.06	3.23	3.25	3.33	3.44	3.44	3.48
Industrial ⁴	6.63	6.55	6.59	6.57	6.55	6.65	6.83	6.81	6.85	7.06
Electric Power ⁵	6.87	6.26	6.25	6.27	6.43	6.54	7.00	6.93	6.93	8.08
Transportation ⁶	0.02	0.03	0.03	0.03	0.07	0.07	0.07	0.09	0.09	0.09
Pipeline Fuel	0.62	0.62	0.62	0.62	0.66	0.67	0.66	0.69	0.70	0.70
Lease and Plant Fuel ⁷	1.17	1.24	1.24	1.24	1.32	1.29	1.23	1.44	1.43	1.35
Total	23.05	22.55	22.57	22.57	23.19	23.43	24.16	24.33	24.36	25.74
Discrepancy⁸	0.09	0.38	0.37	0.38	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
Lower 48 End of Year Reserves	225.18	229.99	230.11	229.92	215.76	213.14	207.10	214.22	211.98	195.62
Natural Gas Prices										
(2007 dollars per million Btu)										
Henry Hub Spot Price	6.96	6.64	6.66	6.62	7.65	7.43	6.44	9.18	9.25	8.84
Average Lower 48 Wellhead Price ¹¹ ..	6.22	5.87	5.88	5.85	6.76	6.56	5.69	8.11	8.17	7.80
(2007 dollars per thousand cubic feet)										
Average Lower 48 Wellhead Price ¹¹ ..	6.39	6.03	6.05	6.01	6.94	6.75	5.85	8.33	8.40	8.02
Delivered Prices										
(2007 dollars per thousand cubic feet)										
Residential	13.05	12.42	12.43	12.40	13.04	12.85	11.91	14.64	14.71	14.30
Commercial	11.30	10.83	10.84	10.81	11.63	11.44	10.50	13.24	13.32	12.90
Industrial ⁴	7.73	7.10	7.10	7.07	7.87	7.69	6.76	9.27	9.33	8.96
Electric Power ⁵	7.22	6.76	6.77	6.74	7.53	7.35	6.52	8.90	8.94	8.73
Transportation ¹⁰	15.89	15.31	15.32	15.29	15.51	15.31	14.45	16.62	16.70	16.33
Average¹¹	9.26	8.79	8.80	8.76	9.57	9.37	8.43	10.99	11.05	10.61

¹Marketed production (wet) minus extraction losses.

²Synthetic natural gas, propane air, coke oven gas, refinery gas, biomass gas, air injected for Btu stabilization, and manufactured gas commingled and distributed with natural gas.

³Includes any natural gas regasified in the Bahamas and transported via pipeline to Florida.

⁴Includes energy for combined heat and power plants, except those whose primary business is to sell electricity, or electricity and heat, to the public.

⁵Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

⁶Compressed natural gas used as vehicle fuel.

⁷Represents natural gas used in field gathering and processing plant machinery.

⁸Balancing item. Natural gas lost as a result of converting flow data measured at varying temperatures and pressures to a standard temperature and pressure and the merger of different data reporting systems which vary in scope, format, definition, and respondent type. In addition, 2007 values include net storage injections.

⁹Represents lower 48 onshore and offshore supplies.

¹⁰Compressed natural gas used as a vehicle fuel. Price includes estimated motor vehicle fuel taxes and estimated dispensing costs or charges.

¹¹Weighted average prices. Weights used are the sectoral consumption values excluding lease, plant, and pipeline fuel.

LNG = Liquefied natural gas.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 supply values: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2008/08) (Washington, DC, August 2008). 2007 consumption based on: EIA, *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). Projections: EIA, AEO2009 National Energy Modeling System runs LOLNG09.D121408A, AEO2009.D120908A, and HILNG09.D121408A.

Results from Side Cases

Table D17. Petroleum Supply and Disposition, ANWR Drilling Case
(Million Barrels per Day, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	2010		2020		2030	
		Reference	ANWR	Reference	ANWR	Reference	ANWR
Crude Oil							
Domestic Crude Production ¹	5.07	5.62	5.61	6.48	6.57	7.37	8.08
Alaska	0.72	0.69	0.69	0.72	0.83	0.57	1.30
Lower 48 States	4.35	4.93	4.93	5.76	5.74	6.80	6.78
Net Imports	10.00	8.10	8.11	7.29	7.22	6.95	6.22
Other Crude Supply ²	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Total Crude Supply	15.16	13.72	13.72	13.77	13.80	14.32	14.31
Other Supply							
Natural Gas Plant Liquids	1.78	1.91	1.91	1.91	1.91	1.92	1.97
Net Product Imports ³	2.09	1.66	1.68	1.49	1.50	1.40	1.38
Refinery Processing Gain ⁴	1.00	0.97	0.98	0.93	0.93	0.86	0.89
Ethanol ⁵	0.45	0.84	0.84	1.28	1.28	1.91	1.91
Biodiesel ⁵	0.03	0.06	0.06	0.10	0.10	0.13	0.13
Liquids from Coal	0.00	0.00	0.00	0.10	0.10	0.26	0.26
Liquids from Biomass	0.00	0.00	0.00	0.07	0.07	0.33	0.33
Other ⁶	0.26	0.32	0.32	0.42	0.41	0.45	0.45
Total Primary Supply⁷	20.77	19.48	19.50	20.08	20.12	21.59	21.62
Refined Petroleum Products Supplied							
by Fuel							
Liquefied Petroleum Gases	2.09	1.99	2.00	1.82	1.82	1.74	1.75
E85 ⁸	0.00	0.00	0.00	0.58	0.58	1.50	1.50
Motor Gasoline ⁹	9.29	9.34	9.35	8.60	8.61	8.04	8.01
Jet Fuel ¹⁰	1.62	1.45	1.45	1.65	1.65	1.99	1.99
Distillate Fuel Oil ¹¹	4.20	4.08	4.09	4.62	4.62	5.42	5.43
Residual Fuel Oil	0.72	0.63	0.63	0.70	0.70	0.72	0.72
Other ¹²	2.74	2.19	2.19	2.24	2.25	2.25	2.26
by Sector							
Residential and Commercial	1.11	1.05	1.05	0.99	1.00	0.97	0.98
Industrial ¹³	5.26	4.46	4.47	4.34	4.35	4.28	4.30
Transportation	14.25	13.96	13.97	14.65	14.67	16.18	16.16
Electric Power ¹⁴	0.30	0.22	0.22	0.23	0.23	0.23	0.23
Total	20.65	19.69	19.71	20.21	20.24	21.67	21.66
Discrepancy¹⁵	0.12	-0.20	-0.21	-0.13	-0.12	-0.08	-0.04
Imported Low Sulfur Light Crude Oil Price (2007 dollars per barrel) ¹⁶	72.33	80.16	78.10	115.45	115.06	130.43	128.31
Imported Crude Oil Price (2007 dollars per barrel) ¹⁶	63.83	77.56	75.41	112.05	111.60	124.60	121.74
Import Share of Product Supplied (percent)	58.3	50.1	50.1	44.0	43.6	40.9	37.4
Net Expenditures for Imported Crude Oil and Petroleum Products (billion 2007 dollars)	280.13	261.60	254.68	344.32	340.35	376.65	336.39

¹Includes lease condensate.

²Strategic petroleum reserve stock additions plus unaccounted for crude oil and crude stock withdrawals minus crude product supplied.

³Includes other hydrocarbons and alcohols.

⁴The volumetric amount by which total output is greater than input due to the processing of crude oil into products which, in total, have a lower specific gravity than the crude oil processed.

⁵Includes net imports.

⁶Includes petroleum product stock withdrawals; domestic sources of blending components, other hydrocarbons, alcohols, and ethers.

⁷Total crude supply plus all components of Other Supply.

⁸E85 refers to a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable). To address cold starting issues, the percentage of ethanol varies seasonally. The annual average ethanol content of 74 percent is used for this forecast.

⁹Includes ethanol and ethers blended into gasoline.

¹⁰Includes only kerosene type.

¹¹Includes distillate and kerosene.

¹²Includes aviation gasoline, petrochemical feedstocks, lubricants, waxes, asphalt, road oil, still gas, special naphthas, petroleum coke, crude oil product supplied, and miscellaneous petroleum products.

¹³Includes consumption for combined heat and power, which produces electricity and other useful thermal energy.

¹⁴Includes consumption of energy by electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public. Includes small power producers and exempt wholesale generators.

¹⁵Balancing item. Includes unaccounted for supply, losses, and gains.

¹⁶Weighted average price delivered to U.S. refiners.

ANWR = Arctic National Wildlife Refuge.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 imported crude oil price and petroleum product supplied based on: Energy Information Administration (EIA), *Annual Energy Review 2007*, DOE/EIA-0384(2007) (Washington, DC, June 2008). 2007 imported low sulfur light crude oil price: EIA, Form EIA-856, "Monthly Foreign Crude Oil Acquisition Report." Other 2007 data: EIA, *Petroleum Supply Annual 2007*, DOE/EIA-0340(2007)/1 (Washington, DC, July 2008). Projections: EIA, AEO2009 National Energy Modeling System runs AEO2009.D120908A and ANWR2009.D120908A.

Results from Side Cases

Table D18. Key Results for Coal Cost Cases
(Million Short Tons per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	2015			2030			Growth Rate, 2007-2030		
		Low Coal Cost	Reference	High Coal Cost	Low Coal Cost	Reference	High Coal Cost	Low Coal Cost	Reference	High Coal Cost
Production¹	1147	1218	1206	1172	1482	1341	1076	1.1%	0.7%	-0.3%
Appalachia	378	350	343	341	403	353	344	0.3%	-0.3%	-0.4%
Interior	147	185	192	211	229	252	267	1.9%	2.4%	2.6%
West	621	682	671	619	849	735	464	1.4%	0.7%	-1.3%
Waste Coal Supplied²	14	13	13	13	12	13	20	-0.9%	-0.4%	1.5%
Net Imports³	-25	-36	-28	-15	-38	10	75	1.9%	--	--
Total Supply⁴	1136	1195	1192	1170	1455	1363	1171	1.1%	0.8%	0.1%
Consumption by Sector										
Residential and Commercial	4	3	3	3	3	3	3	-0.4%	-0.4%	-0.4%
Coke Plants	23	20	20	20	19	18	18	-0.8%	-1.0%	-1.0%
Other Industrial ⁵	57	56	56	56	56	57	55	-0.0%	-0.0%	-0.1%
Coal-to-Liquids Heat and Power	0	10	9	9	40	38	35	--	--	--
Coal-to-Liquids Liquids Production	0	8	8	8	34	32	29	--	--	--
Electric Power ⁶	1046	1097	1096	1074	1303	1215	1030	1.0%	0.7%	-0.1%
Total Coal Use	1129	1195	1192	1170	1455	1363	1170	1.1%	0.8%	0.2%
Average Minemouth Price⁷										
(2007 dollars per short ton)	25.82	24.18	28.71	35.11	15.63	29.10	60.12	-2.2%	0.5%	3.7%
(2007 dollars per million Btu)	1.27	1.19	1.42	1.73	0.78	1.46	2.92	-2.1%	0.6%	3.7%
Delivered Prices⁸										
(2007 dollars per short ton)										
Coke Plants	94.97	101.37	115.38	129.63	76.98	115.57	196.08	-0.9%	0.9%	3.2%
Other Industrial ⁵	54.42	49.65	55.54	62.83	37.90	57.22	88.60	-1.6%	0.2%	2.1%
Coal to Liquids	--	14.57	17.14	20.87	8.94	20.96	47.60	--	--	--
Electric Power ⁶										
(2007 dollars per short ton)	35.45	33.56	38.47	45.12	25.52	40.61	70.73	-1.4%	0.6%	3.0%
(2007 dollars per million Btu)	1.78	1.69	1.94	2.27	1.28	2.04	3.42	-1.4%	0.6%	2.9%
Average	37.60	35.21	40.30	47.09	25.83	41.30	72.24	-1.6%	0.4%	2.9%
Exports ⁹	70.25	78.99	88.70	97.22	63.79	80.02	150.83	-0.4%	0.6%	3.4%
Cumulative Electricity Generating Capacity Additions (gigawatts)¹⁰										
Coal	0.0	17.8	17.8	17.8	75.5	47.5	22.6	--	--	--
Conventional	0.0	15.6	15.6	15.6	61.3	37.2	15.6	--	--	--
Advanced without Sequestration	0.0	2.2	2.2	2.2	13.2	9.3	6.0	--	--	--
Advanced with Sequestration	0.0	0.0	0.0	0.0	1.0	1.0	1.0	--	--	--
Petroleum	0.0	1.3	1.3	1.3	1.4	1.4	1.4	--	--	--
Natural Gas	0.0	30.5	30.4	29.9	125.3	136.9	146.2	--	--	--
Nuclear	0.0	1.2	1.2	1.2	5.4	13.1	16.7	--	--	--
Renewables ¹¹	0.0	24.0	23.5	23.9	58.0	57.6	56.5	--	--	--
Other	0.0	2.3	2.2	2.3	2.3	2.3	2.3	--	--	--
Total	0.0	77.1	76.5	76.4	267.9	258.7	245.8			
Liquids from Coal (million barrels per day)	0.00	0.06	0.06	0.06	0.26	0.26	0.26	--	--	--

Results from Side Cases

Table D18. Key Results for Coal Cost Cases (Continued)
(Million Short Tons per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2007	2015			2030			Growth Rate, 2007-2030		
		Low Coal Cost	Reference	High Coal Cost	Low Coal Cost	Reference	High Coal Cost	Low Coal Cost	Reference	High Coal Cost
Cost Indices										
(constant dollar index, 2007=1.000)										
Transportation Rate Multipliers										
Eastern Railroads	1.000	0.990	1.064	1.140	0.780	1.044	1.300	-1.1%	0.2%	1.1%
Western Railroads	1.000	1.010	1.082	1.160	0.890	1.183	1.480	-0.5%	0.7%	1.7%
Mine Equipment Costs										
Underground	1.000	1.008	1.071	1.136	0.867	1.071	1.319	-0.6%	0.3%	1.2%
Surface	1.000	0.948	1.007	1.069	0.815	1.007	1.241	-0.9%	0.0%	0.9%
Other Mine Supply Costs										
East of the Mississippi: All Mines	1.000	1.130	1.201	1.275	0.902	1.114	1.373	-0.4%	0.5%	1.4%
West of the Mississippi: Underground	1.000	1.130	1.201	1.275	0.902	1.114	1.373	-0.4%	0.5%	1.4%
West of the Mississippi: Surface	1.000	0.962	1.022	1.085	0.768	0.948	1.168	-1.1%	-0.2%	0.7%
Coal Mining Labor Productivity										
(short tons per miner per hour)	6.27	7.66	6.25	4.89	12.61	6.02	2.33	3.1%	-0.2%	-4.2%
Average Coal Miner Wage										
(2007 dollars per hour)	21.96	20.66	21.96	23.32	17.79	21.96	27.05	-0.9%	0.0%	0.9%

¹Includes anthracite, bituminous coal, subbituminous coal, and lignite.

²Includes waste coal consumed by the electric power and industrial sectors. Waste coal supplied is counted as a supply-side item to balance the same amount of waste coal included in the consumption data.

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

⁴Production plus waste coal supplied plus net imports.

⁵Includes consumption for combined heat and power plants, except those plants whose primary business is to sell electricity, or electricity and heat, to the public. Excludes all coal use in the coal to liquids process.

⁶Includes all electricity-only and combined heat and power plants whose primary business is to sell electricity, or electricity and heat, to the public.

⁷Includes reported prices for both open market and captive mines.

⁸Prices weighted by consumption tonnage; weighted average excludes residential and commercial prices, and export free-alongside-ship (f.a.s.) prices.

⁹F.a.s. price at U.S. port of exit.

¹⁰Cumulative additions after December 31, 2007. Includes all additions of electricity only and combined heat and power plants projected for the electric power, industrial, and commercial sectors.

¹¹Includes conventional hydroelectric, geothermal, wood, wood waste, municipal waste, landfill gas, other biomass, solar, and wind power. Facilities co-firing biomass and coal are classified as coal.

-- Not applicable.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2007 are model results and may differ slightly from official EIA data reports.

Sources: 2007 data based on: Energy Information Administration (EIA), *Annual Coal Report 2007*, DOE/EIA-0584(2007) (Washington, DC, September 2008); EIA, *Quarterly Coal Report, October-December 2007*, DOE/EIA-0121(2007/4Q) (Washington, DC, March 2008); U.S. Department of Labor, Bureau of Labor Statistics, *Average Hourly Earnings of Production Workers: Coal Mining*, Series ID: ceu1021210008; and EIA, AEO2009 National Energy Modeling System run AEO2009.D120908A. Projections: EIA, AEO2009 National Energy Modeling System runs LCCST09.D121608A, AEO2009.D120908A, and HCCST09.D121608A.