

Appendix C

Model Results: Carbon Dioxide Emissions Limit Case Comparisons

Table C1. Total Energy Supply and Disposition Summary
(Quadrillion Btu per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2000	Projections							
		2005		2010		2015		2020	
		Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit
Production									
Crude Oil and Lease Condensate . . .	12.33	11.38	11.38	10.80	11.13	12.05	12.59	12.20	12.76
Natural Gas Plant Liquids	2.71	3.13	3.14	3.55	3.56	3.90	3.98	4.22	4.35
Dry Natural Gas	19.59	22.13	22.18	25.46	25.61	28.58	29.26	30.97	32.08
Coal	22.58	20.67	20.63	15.49	15.47	14.90	14.57	14.18	13.92
Nuclear Power	8.03	8.10	8.10	8.03	8.03	7.98	7.98	7.98	7.98
Renewable Energy ¹	6.46	7.84	7.84	9.35	9.34	12.00	11.91	14.27	14.09
Other ²	1.10	0.66	0.66	0.37	0.37	0.75	0.89	0.42	0.85
Total	72.80	73.91	73.92	73.06	73.51	80.16	81.19	84.24	86.03
Imports									
Crude Oil ³	19.69	22.28	22.28	24.37	24.03	23.75	23.29	24.45	23.97
Petroleum Products ⁴	4.73	5.45	5.43	7.64	7.67	10.31	10.10	12.55	12.07
Natural Gas	3.85	5.01	4.99	6.67	6.63	7.18	6.85	7.45	7.00
Other Imports ⁵	0.76	1.30	1.30	1.10	1.10	1.10	1.07	0.84	0.84
Total	29.04	34.03	34.01	39.78	39.43	42.34	41.32	45.30	43.88
Exports									
Petroleum ⁶	2.15	1.68	1.68	1.88	1.89	2.03	2.05	2.13	2.15
Natural Gas	0.25	0.41	0.41	0.63	0.63	0.66	0.66	0.56	0.56
Coal	1.53	1.42	1.42	1.46	1.46	1.34	1.34	1.38	1.38
Total	3.93	3.51	3.51	3.96	3.98	4.02	4.05	4.07	4.09
Discrepancy⁷	-1.37	0.05	0.05	0.18	0.13	0.30	0.09	-0.05	0.02
Consumption									
Petroleum Products ⁸	38.63	40.93	40.92	44.97	44.96	48.86	48.81	52.02	51.95
Natural Gas	23.43	27.00	27.03	31.21	31.30	34.85	35.20	37.57	38.23
Coal	22.34	19.52	19.49	14.16	14.22	13.53	13.54	13.01	12.88
Nuclear Power	8.03	8.10	8.10	8.03	8.03	7.98	7.98	7.98	7.98
Renewable Energy ¹	6.48	7.84	7.84	9.36	9.34	12.01	11.92	14.28	14.10
Other ⁹	0.38	0.99	0.99	0.97	0.97	0.93	0.91	0.65	0.65
Total	99.29	104.38	104.38	108.69	108.82	118.17	118.36	125.51	125.79
Net Imports - Petroleum	22.28	26.04	26.03	30.13	29.81	32.04	31.33	34.88	33.89
Prices (2000 dollars per unit)									
World Oil Price (dollars per barrel) ¹⁰ . .	27.72	22.73	22.73	23.36	23.36	24.00	24.00	24.68	24.68
Natural Gas Wellhead Price (dollars per thousand cubic feet) ¹¹ . .	3.60	2.79	2.78	3.81	3.69	3.37	3.23	3.72	3.57
Coal Minemouth Price (dollars per ton)	16.45	15.58	15.59	13.79	13.85	13.23	13.32	12.54	12.61
Average Electricity Price (cents per kilowatthour)	6.9	8.6	8.6	9.1	9.0	8.5	8.5	8.3	8.2

¹Includes grid-connected electricity from conventional hydroelectric; wood and wood waste; landfill gas; municipal solid waste; other biomass; wind; photovoltaic and solar thermal sources; 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 components of blends less than 85 percent. Excludes electricity imports using renewable sources and nonmarketed renewable energy.

²Includes liquid hydrogen, methanol, supplemental natural gas, and some domestic inputs to refineries.

³Includes imports of crude oil for the Strategic Petroleum Reserve.

⁴Includes imports of finished petroleum products, imports of unfinished oils, alcohols, ethers, and blending components.

⁵Includes coal, coal coke (net), and electricity (net).

⁶Includes crude oil and petroleum products.

⁷Balancing item. Includes unaccounted for supply, losses, gains, net storage withdrawals and heat loss when natural gas is converted to liquid fuel.

⁸Includes natural gas plant liquids, crude oil consumed as a fuel, and nonpetroleum-based liquids for blending, such as ethanol.

⁹Includes net electricity imports, methanol, and liquid hydrogen.

¹⁰Average refiner acquisition cost for imported crude oil.

¹¹Represents lower 48 onshore and offshore supplies.

OCS = Outer continental shelf.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2000 are model results and may differ slightly from official EIA data reports.

Sources: 2000 natural gas values: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2001/06) (Washington, DC, June 2001). 2000 petroleum values: EIA, *Petroleum Supply Annual 2000*, DOE/EIA-0340(2000/1) (Washington, DC, June 2001). Other 2000 values: EIA, *Annual Energy Review 2000*, DOE/EIA-0384(2000) (Washington, DC, August 2001) and EIA, *Quarterly Coal Report*, DOE/EIA-0121(2000/4Q) (Washington, DC, October-December 2000). Projections: EIA, AEO2002 National Energy Modeling System runs CAPE2002.D111101A, ACCHDEM.D111101A.

Table C2. Natural Gas Supply and Disposition
(Trillion Cubic Feet per Year)

Supply and Disposition	2000	Projections							
		2005		2010		2015		2020	
		Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit
Production									
Dry Gas Production ¹	19.08	21.55	21.59	24.79	24.93	27.83	28.49	30.16	31.23
Supplemental Natural Gas ²	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Net Imports	3.52	4.50	4.48	5.90	5.86	6.37	6.05	6.73	6.28
Canada	3.46	4.08	4.07	5.44	5.43	5.40	5.34	5.58	5.39
Mexico	-0.09	-0.22	-0.22	-0.42	-0.45	-0.29	-0.47	-0.20	-0.38
Liquefied Natural Gas	0.16	0.64	0.64	0.87	0.87	1.26	1.18	1.35	1.27
Total Supply	22.69	26.16	26.19	30.81	30.90	34.31	34.66	37.00	37.63
Consumption by Sector									
Residential	5.00	5.38	5.38	5.39	5.40	5.73	5.76	6.04	6.08
Commercial	3.27	3.68	3.68	3.91	3.92	4.57	4.60	5.20	5.23
Industrial ³	8.41	8.88	8.88	9.07	9.10	9.93	10.07	10.35	10.53
Electric Generators ⁴	4.24	6.23	6.25	9.51	9.52	10.86	10.93	11.92	12.20
Lease and Plant Fuel ⁵	0.02	0.05	0.05	0.08	0.08	0.12	0.12	0.14	0.14
Pipeline Fuel	0.77	0.81	0.81	0.93	0.93	1.04	1.06	1.11	1.14
Transportation ⁶	1.12	1.29	1.29	1.56	1.57	1.75	1.81	1.90	1.98
Total	22.83	26.32	26.35	30.44	30.54	34.00	34.34	36.65	37.30
Natural Gas to Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discrepancy ⁷	-0.14	-0.16	-0.16	0.36	0.37	0.31	0.32	0.35	0.33

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 consumption by cogenerators.

⁴Includes all electric power generators except cogenerators, which produce electricity and other useful thermal energy. Includes small power producers and exempt wholesale generators.

⁵Represents natural gas used in the field gathering and processing plant machinery.

⁶Compressed natural gas used as vehicle fuel.

⁷Balancing 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, 2000 values include net storage injections.

OCS = Outer continental shelf.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2000 are model results and may differ slightly from official EIA data reports.

Sources: 2000 supplemental natural gas: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2001/06) (Washington, DC, June 2001). 2000 transportation sector consumption: EIA, AEO2002 National Energy Modeling System run AEO2002D102001B. Other 2000 consumption: EIA, *Short-Term Energy Outlook, October 2001*, <http://www.eia.doe.gov/pub/forecasting/steo/oldsteos/oct01.pdf> with adjustments to end-use sector consumption levels for consumption of natural gas by electric wholesale generators based on EIA, AEO2002 National Energy Modeling System run AEO2002.D102001B. **Projections:** EIA, AEO2002 National Energy Modeling System runs CAPE2002.D111101A, ACCHDEM.D111101A.

Table C3. Natural Gas Supply, Prices, Reserves, and Reserve Additions

Production Supply, Prices, and Reserves	2000	2005		2010		2015		2020	
		Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit
Lower 48 Average Wellhead Price¹ (2000 dollars per thousand cubic feet)	3.60	2.79	2.78	3.81	3.69	3.37	3.23	3.72	3.57
Dry Production (trillion cubic feet)²									
U.S. Total	19.08	21.55	21.59	24.79	24.93	27.83	28.49	30.16	31.23
Lower 48 Onshore	13.31	14.94	14.98	17.68	17.71	19.12	19.34	21.16	21.73
Associated-Dissolved ³	1.79	1.63	1.63	1.45	1.44	1.40	1.39	1.39	1.38
Non-Associated	11.52	13.31	13.35	16.24	16.27	17.72	17.95	19.78	20.35
Conventional	6.89	7.27	7.27	8.51	8.28	9.40	9.26	10.49	10.55
Unconventional	4.63	6.03	6.08	7.72	7.99	8.32	8.69	9.29	9.80
Lower 48 Offshore	5.34	6.12	6.11	6.58	6.69	6.53	6.96	6.77	7.28
Associated-Dissolved ³	1.16	1.19	1.19	1.22	1.24	1.29	1.35	1.26	1.32
Non-Associated	4.18	4.92	4.92	5.36	5.45	5.24	5.62	5.51	5.96
Alaska	0.43	0.50	0.50	0.53	0.53	2.19	2.19	2.22	2.22
Lower 48 End of Year Dry Reserves² (trillion cubic feet)	162.31	166.38	167.50	173.57	179.42	185.93	194.76	195.63	204.00
Supplemental Gas Supplies⁴	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Total Lower 48 Wells (thousands)	24.05	23.68	24.07	29.21	29.78	27.42	27.72	35.41	36.09
Lower 48 Dry Natural Gas Reserves (trillion cubic feet)									
Lower 48 Total	162.3	166.4	167.5	173.6	179.4	185.9	194.8	195.6	204.0
Lower 48 Onshore	132.2	132.6	133.7	139.6	142.2	151.2	154.4	160.7	163.2
Associated-Dissolved ³	15.0	13.7	13.7	12.2	12.1	11.7	11.7	11.6	11.6
Non-Associated	117.2	118.9	120.0	127.4	130.0	139.4	142.7	149.0	151.6
Conventional	64.0	60.4	60.4	59.4	60.0	64.2	65.3	66.9	68.2
Unconventional	53.1	58.5	59.6	68.0	70.0	75.2	77.5	82.2	83.5
Lower 48 Offshore	30.1	33.8	33.8	34.0	37.3	34.8	40.3	34.9	40.8
Associated-Dissolved ³	7.0	7.2	7.2	7.3	7.4	7.7	8.1	7.6	7.9
Non-Associated	23.2	26.6	26.6	26.6	29.8	27.0	32.2	27.4	32.9
Lower 48 Dry Natural Gas Reserve Additions (trillion cubic feet)									
Lower 48 Total	22.5	22.5	22.8	26.6	27.6	26.8	27.7	29.6	30.4
Lower 48 Onshore	17.1	15.6	16.0	20.0	20.5	21.0	21.2	22.6	22.8
Associated-Dissolved ³	1.2	1.1	1.1	1.3	1.3	1.3	1.3	1.4	1.4
Non-Associated	15.8	14.6	14.9	18.7	19.2	19.7	19.9	21.2	21.4
Conventional	9.6	6.9	6.9	8.8	8.8	10.6	10.6	10.5	10.5
Unconventional	6.2	7.7	8.1	10.0	10.5	9.1	9.3	10.6	10.9
Lower 48 Offshore	5.4	6.9	6.8	6.6	7.1	5.8	6.5	7.0	7.6
Associated-Dissolved ³	1.0	1.2	1.2	1.2	1.3	1.4	1.5	1.1	1.2
Non-Associated	4.4	5.7	5.7	5.4	5.8	4.4	5.0	5.9	6.4

¹Represents lower 48 onshore and offshore supplies.

²Marketed production (wet) minus extraction losses.

³Gas which occurs in crude oil reserves either as free gas (associated) or as gas in solution with crude oil (dissolved).

⁴Synthetic 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.

Btu = British thermal unit.

OCS = Outer continental shelf.

Note: Totals may not equal sum of components due to independent rounding. Data for 2000 are model results and may differ slightly from official EIA data reports.

Sources: 2000 lower 48 onshore, lower 48 offshore, and Alaska crude oil production: Energy Information Administration (EIA), *Petroleum Supply Annual 2000*, DOE/EIA-0340(2000/1) (Washington, DC, June 2001). 2000 natural gas lower 48 average wellhead price, Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2001/06) (Washington, DC, June 2001). Other 2000 values: EIA, Office of Integrated Analysis and Forecasting. Projections: EIA, AEO2002 National Energy Modeling System runs CAPE2002.D111101A, ACCHDEM.D111101A.

Table C4. Lower 48 Natural Gas Production and Wellhead Prices by Supply Region

Production and Prices	2000	Projections							
		2005		2010		2015		2020	
		Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Rocky Mountain and OCS Access with Carbon Dioxide Emissions Limit
Dry Production (trillion cubic feet)¹									
Lower 48 Total	18.65	21.06	21.10	24.26	24.40	25.64	26.31	27.94	29.01
Lower 48 Onshore									
Northeast	0.93	1.18	1.18	1.65	1.67	1.94	2.00	2.29	2.36
Gulf Coast	4.81	5.28	5.27	5.90	5.70	6.51	6.36	6.61	6.59
Midcontinent	2.58	3.00	2.99	3.31	3.25	3.35	3.31	3.74	3.78
Southwest	1.61	1.60	1.60	2.08	2.05	2.22	2.20	2.36	2.34
Rocky Mountain	3.08	3.56	3.60	4.38	4.68	4.70	5.09	5.72	6.21
West Coast	0.31	0.33	0.33	0.36	0.36	0.39	0.39	0.45	0.45
Lower 48 Offshore									
Gulf	5.28	6.06	6.06	6.52	6.51	6.47	6.62	6.70	6.91
Pacific	0.06	0.06	0.06	0.06	0.11	0.06	0.18	0.07	0.21
Atlantic	0.00	0.00	0.00	0.00	0.07	0.00	0.16	0.00	0.16
Natural Gas Wellhead Prices (2000 dollars per thousand cubic feet)									
Lower 48 Average	3.60	2.79	2.78	3.81	3.69	3.37	3.23	3.72	3.57
Lower 48 Onshore									
Northeast	4.17	3.08	3.07	4.10	4.02	3.90	3.78	4.05	3.94
Gulf Coast	3.74	2.83	2.82	3.82	3.73	3.48	3.36	3.93	3.77
Midcontinent	3.56	2.86	2.86	3.94	3.85	3.42	3.30	3.85	3.64
Southwest	3.71	2.76	2.76	3.64	3.59	3.43	3.29	3.76	3.62
Rocky Mountain	3.26	2.64	2.61	3.43	3.25	2.86	2.71	3.31	3.14
West Coast	3.76	3.04	3.02	3.51	3.35	2.61	2.63	3.70	3.58
Lower 48 Offshore									
Gulf	3.54	2.74	2.73	3.97	3.90	3.46	3.32	3.65	3.58
Pacific	4.26	2.89	2.87	3.82	1.33	2.83	3.15	4.02	3.37
Atlantic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹Marketed production (wet) minus extraction losses.
OCS = Outer continental shelf.

Note: Supply regions are defined in *Documentation of the Oil and Gas Supply Module*, Energy Information Administration (EIA), DOE/EIA-M063(2000) (Washington, DC, January 2000). Totals may not equal sum of components due to independent rounding. Data for 2000 are model results and may differ slightly from official EIA data reports.

Sources: 2000: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2001/06) (Washington, DC, June 2001). Projections: EIA, AEO2002 National Energy Modeling System runs CAPE2002.D111101A, ACCHDEM.D111101A.

Table C5. Total Energy Supply and Disposition Summary
(Quadrillion Btu per Year, Unless Otherwise Noted)

Supply, Disposition, and Prices	2000	Projections					
		2005			2010		
		Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit
Production							
Crude Oil and Lease Condensate	12.33	11.38	11.38	11.38	10.80	10.80	10.80
Natural Gas Plant Liquids	2.71	3.13	3.14	3.14	3.55	3.52	3.53
Dry Natural Gas	19.59	22.13	22.14	22.16	25.46	25.18	25.27
Coal	22.58	20.67	20.66	20.65	15.49	15.51	15.51
Nuclear Power	8.03	8.10	8.10	8.10	8.03	8.03	8.03
Renewable Energy ¹	6.46	7.84	7.83	7.84	9.35	9.32	9.36
Other ²	1.10	0.66	0.66	0.65	0.37	0.37	0.37
Total	72.80	73.91	73.91	73.92	73.06	72.73	72.87
Imports							
Crude Oil ³	19.69	22.28	22.28	22.28	24.37	24.38	24.38
Petroleum Products ⁴	4.73	5.45	5.44	5.44	7.64	7.69	7.69
Natural Gas	3.85	5.01	5.01	5.01	6.67	6.81	6.61
Other Imports ⁵	0.76	1.30	1.30	1.30	1.10	1.10	1.10
Total	29.04	34.03	34.03	34.04	39.78	39.98	39.78
Exports							
Petroleum ⁶	2.15	1.68	1.68	1.68	1.88	1.88	1.87
Natural Gas	0.25	0.41	0.41	0.41	0.63	0.63	0.63
Coal	1.53	1.42	1.42	1.42	1.46	1.46	1.46
Total	3.93	3.51	3.51	3.51	3.96	3.97	3.96
Discrepancy⁷	-1.37	0.05	0.05	0.06	0.18	0.13	0.02
Consumption							
Petroleum Products ⁸	38.63	40.93	40.92	40.93	44.97	45.00	45.01
Natural Gas	23.43	27.00	27.01	27.03	31.21	31.07	30.94
Coal	22.34	19.52	19.52	19.50	14.16	14.22	14.35
Nuclear Power	8.03	8.10	8.10	8.10	8.03	8.03	8.03
Renewable Energy ¹	6.48	7.84	7.84	7.84	9.36	9.33	9.37
Other ⁹	0.38	0.99	0.99	0.99	0.97	0.97	0.97
Total	99.29	104.38	104.38	104.39	108.69	108.61	108.67
Net Imports - Petroleum	22.28	26.04	26.04	26.04	30.13	30.19	30.20
Prices (2000 dollars per unit)							
World Oil Price (dollars per barrel) ¹⁰ . .	27.72	22.73	22.73	22.73	23.36	23.36	23.36
Natural Gas Wellhead Price (dollars per thousand cubic feet) ¹¹ . .	3.60	2.79	2.79	2.79	3.81	3.81	3.86
Coal Minemouth Price (dollars per ton)	16.45	15.58	15.57	15.55	13.79	13.85	13.89
Average Electricity Price (cents per kilowatthour)	6.9	8.6	8.6	8.6	9.1	9.1	9.1

¹Includes grid-connected electricity from conventional hydroelectric; wood and wood waste; landfill gas; municipal solid waste; other biomass; wind; photovoltaic and solar thermal sources; 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 components of blends less than 85 percent. Excludes electricity imports using renewable sources and nonmarketed renewable energy.

²Includes liquid hydrogen, methanol, supplemental natural gas, and some domestic inputs to refineries.

³Includes imports of crude oil for the Strategic Petroleum Reserve.

⁴Includes imports of finished petroleum products, imports of unfinished oils, alcohols, ethers, and blending components.

⁵Includes coal, coal coke (net), and electricity (net).

⁶Includes crude oil and petroleum products.

⁷Balancing item. Includes unaccounted for supply, losses, gains, net storage withdrawals and heat loss when natural gas is converted to liquid fuel.

⁸Includes natural gas plant liquids, crude oil consumed as a fuel, and nonpetroleum-based liquids for blending, such as ethanol.

⁹Includes net electricity imports, methanol, and liquid hydrogen.

¹⁰Average refiner acquisition cost for imported crude oil.

¹¹Represents lower 48 onshore and offshore supplies.

Btu = British thermal unit.

LNG = Liquefied natural gas.

Note: Totals may not equal sum of components due to independent rounding. Data for 2000 are model results and may differ slightly from official EIA data reports.

Sources: 2000 natural gas values: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2001/06) (Washington, DC, June 2001). 2000 petroleum values: EIA, *Petroleum Supply Annual 2000*, DOE/EIA-0340(2000/1) (Washington, DC, June 2001). Other 2000 values: EIA, *Annual Energy Review 2000*, DOE/EIA-0384(2000) (Washington, DC, August 2001) and EIA, *Quarterly Coal Report*, DOE/EIA-0121(2000/4Q) (Washington, DC, October-December 2000). Projections: EIA, AEO2002 National Energy Modeling System runs CAPE2002.D111101A, LCSTHDEM.D111201B, HCSTHDEM.D111201A.

Supply, Disposition, and Prices	Projections					
	2015			2020		
	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit
Production						
Crude Oil and Lease Condensate . . .	12.05	12.05	12.07	12.20	12.32	12.24
Natural Gas Plant Liquids	3.90	3.86	3.93	4.22	4.19	4.22
Dry Natural Gas	28.58	28.30	28.81	30.97	30.80	31.02
Coal	14.90	14.75	14.78	14.18	14.34	14.32
Nuclear Power	7.98	7.98	7.98	7.98	7.98	7.98
Renewable Energy ¹	12.00	11.94	11.93	14.27	14.16	14.23
Other ²	0.75	0.87	0.49	0.42	0.47	0.42
Total	80.16	79.75	79.98	84.24	84.28	84.44
Imports						
Crude Oil ³	23.75	23.75	23.74	24.45	24.35	24.43
Petroleum Products ⁴	10.31	10.22	10.49	12.55	12.51	12.57
Natural Gas	7.18	7.51	6.77	7.45	7.77	7.03
Other Imports ⁵	1.10	1.10	1.11	0.84	0.85	0.86
Total	42.34	42.58	42.12	45.30	45.47	44.88
Exports						
Petroleum ⁶	2.03	2.03	2.03	2.13	2.13	2.12
Natural Gas	0.66	0.66	0.66	0.56	0.56	0.56
Coal	1.34	1.34	1.34	1.38	1.38	1.38
Total	4.02	4.03	4.03	4.07	4.08	4.07
Discrepancy⁷	0.30	0.17	0.10	-0.05	0.37	-0.22
Consumption						
Petroleum Products ⁸	48.86	48.79	48.92	52.02	51.99	52.05
Natural Gas	34.85	34.95	34.65	37.57	37.77	37.18
Coal	13.53	13.53	13.53	13.01	12.72	13.34
Nuclear Power	7.98	7.98	7.98	7.98	7.98	7.98
Renewable Energy ¹	12.01	11.95	11.94	14.28	14.17	14.24
Other ⁹	0.93	0.94	0.95	0.65	0.66	0.67
Total	118.17	118.14	117.96	125.51	125.30	125.47
Net Imports - Petroleum	32.04	31.94	32.20	34.88	34.72	34.87
Prices (2000 dollars per unit)						
World Oil Price (dollars per barrel) ¹⁰ . .	24.00	24.00	24.00	24.68	24.68	24.68
Natural Gas Wellhead Price (dollars per thousand cubic feet) ¹¹ . .	3.37	3.33	3.50	3.72	3.63	3.79
Coal Minemouth Price (dollars per ton)	13.23	13.27	13.33	12.54	12.49	12.55
Average Electricity Price (cents per kilowatthour)	8.5	8.6	8.7	8.3	8.3	8.4

Table C6. Natural Gas Supply and Disposition
(Trillion Cubic Feet per Year)

Supply and Disposition	2000	Projections					
		2005			2010		
		Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit
Production							
Dry Gas Production ¹	19.08	21.55	21.56	21.58	24.79	24.52	24.61
Supplemental Natural Gas ²	0.10	0.11	0.11	0.11	0.11	0.11	0.11
Net Imports	3.52	4.50	4.50	4.50	5.90	6.03	5.84
Canada	3.46	4.08	4.08	4.08	5.44	5.43	5.43
Mexico	-0.09	-0.22	-0.22	-0.22	-0.42	-0.42	-0.42
Liquefied Natural Gas	0.16	0.64	0.64	0.64	0.87	1.02	0.83
Total Supply	22.69	26.16	26.17	26.19	30.81	30.67	30.56
Consumption by Sector							
Residential	5.00	5.38	5.38	5.38	5.39	5.38	5.38
Commercial	3.27	3.68	3.68	3.68	3.91	3.91	3.91
Industrial ³	8.41	8.88	8.88	8.88	9.07	9.03	9.02
Electric Generators ⁴	4.24	6.23	6.24	6.27	9.51	9.44	9.32
Lease and Plant Fuel ⁵	0.02	0.05	0.05	0.05	0.08	0.08	0.08
Pipeline Fuel	0.77	0.81	0.81	0.81	0.93	0.91	0.92
Transportation ⁶	1.12	1.29	1.29	1.29	1.56	1.54	1.55
Total	22.83	26.32	26.33	26.35	30.44	30.31	30.18
Natural Gas to Liquids	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discrepancy ⁷	-0.14	-0.16	-0.16	-0.16	0.36	0.36	0.38

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 consumption by cogenerators.

⁴Includes all electric power generators except cogenerators, which produce electricity and other useful thermal energy. Includes small power producers and exempt wholesale generators.

⁵Represents natural gas used in the field gathering and processing plant machinery.

⁶Compressed natural gas used as vehicle fuel.

⁷Balancing 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, 2000 values include net storage injections.

LNG = Liquefied natural gas.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2000 are model results and may differ slightly from official EIA data reports.

Sources: 2000 supplemental natural gas: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2001/06) (Washington, DC, June 2001). 2000 transportation sector consumption: EIA, AEO2002 National Energy Modeling System run AEO2002D102001B. Other 2000 consumption: EIA, *Short-Term Energy Outlook, October 2001*, <http://www.eia.doe.gov/pub/forecasting/steo/oldsteos/oct01.pdf> with adjustments to end-use sector consumption levels for consumption of natural gas by electric wholesale generators based on EIA, AEO2002 National Energy Modeling System run AEO2002.D102001B. Projections: EIA, AEO2002 National Energy Modeling System runs CAPE2002.D111101A, LCSTHDEM.D111201B, HCSTHDEM.D111201A.

Supply and Disposition	Projections					
	2015			2020		
	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit
Production						
Dry Gas Production ¹	27.83	27.55	28.05	30.16	29.99	30.20
Supplemental Natural Gas ² . . .	0.11	0.11	0.11	0.11	0.11	0.11
Net Imports	6.37	6.70	5.97	6.73	7.04	6.32
Canada	5.40	5.41	5.44	5.58	5.50	5.69
Mexico	-0.29	-0.29	-0.29	-0.20	-0.20	-0.20
Liquefied Natural Gas	1.26	1.58	0.83	1.35	1.74	0.83
Total Supply	34.31	34.36	34.14	37.00	37.15	36.63
Consumption by Sector						
Residential	5.73	5.74	5.71	6.04	6.07	6.02
Commercial	4.57	4.59	4.58	5.20	5.24	5.22
Industrial ³	9.93	10.06	9.84	10.35	10.42	10.33
Electric Generators ⁴	10.86	10.82	10.74	11.92	11.99	11.54
Lease and Plant Fuel ⁵	0.12	0.11	0.11	0.14	0.14	0.13
Pipeline Fuel	1.04	1.03	1.05	1.11	1.10	1.12
Transportation ⁶	1.75	1.74	1.77	1.90	1.90	1.91
Total	34.00	34.09	33.80	36.65	36.85	36.27
Natural Gas to Liquids	0.00	0.00	0.00	0.00	0.00	0.00
Discrepancy⁷	0.31	0.27	0.34	0.35	0.30	0.36

Table C7. Natural Gas Supply, Prices, Reserves, and Reserve Additions

Production Supply, Prices, and Reserves	2000	Projections					
		2005			2010		
		Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit
Lower 48 Average Wellhead Price¹ (2000 dollars per thousand cubic feet)	3.60	2.79	2.79	2.79	3.81	3.81	3.86
Dry Production (trillion cubic feet)²							
U.S. Total	19.08	21.55	21.56	21.58	24.79	24.52	24.61
Lower 48 Onshore	13.31	14.94	14.95	14.96	17.68	17.54	17.50
Associated-Dissolved ³	1.79	1.63	1.63	1.63	1.45	1.45	1.45
Non-Associated	11.52	13.31	13.31	13.33	16.24	16.09	16.05
Conventional	6.89	7.27	7.28	7.28	8.51	8.42	8.36
Unconventional	4.63	6.03	6.04	6.04	7.72	7.67	7.69
Lower 48 Offshore	5.34	6.12	6.12	6.13	6.58	6.45	6.58
Associated-Dissolved ³	1.16	1.19	1.19	1.19	1.22	1.22	1.22
Non-Associated	4.18	4.92	4.93	4.93	5.36	5.23	5.36
Alaska	0.43	0.50	0.50	0.50	0.53	0.53	0.53
Lower 48 End of Year Dry Reserves² (trillion cubic feet)	162.31	166.38	166.36	166.35	173.57	174.04	174.05
Supplemental Gas Supplies⁴	0.10	0.11	0.11	0.11	0.11	0.11	0.11
Total Lower 48 Wells (thousands)	24.05	23.68	23.66	23.69	29.21	29.18	29.45
Lower 48 Dry Natural Gas Reserves (trillion cubic feet)							
Lower 48 Total	162.3	166.4	166.4	166.3	173.6	174.0	174.1
Lower 48 Onshore	132.2	132.6	132.6	132.6	139.6	140.0	140.2
Associated-Dissolved ³	15.0	13.7	13.7	13.7	12.2	12.2	12.2
Non-Associated	117.2	118.9	118.9	118.9	127.4	127.9	128.0
Conventional	64.0	60.4	60.4	60.4	59.4	59.9	60.0
Unconventional	53.1	58.5	58.4	58.5	68.0	68.0	68.1
Lower 48 Offshore	30.1	33.8	33.8	33.8	34.0	34.0	33.9
Associated-Dissolved ³	7.0	7.2	7.2	7.2	7.3	7.3	7.3
Non-Associated	23.2	26.6	26.6	26.6	26.6	26.7	26.5
Lower 48 Dry Natural Gas Reserve Additions (trillion cubic feet)							
Lower 48 Total	22.5	22.5	22.5	22.5	26.6	26.5	26.6
Lower 48 Onshore	17.1	15.6	15.6	15.6	20.0	19.9	20.1
Associated-Dissolved ³	1.2	1.1	1.1	1.1	1.3	1.3	1.3
Non-Associated	15.8	14.6	14.6	14.6	18.7	18.7	18.8
Conventional	9.6	6.9	6.9	6.9	8.8	8.8	8.8
Unconventional	6.2	7.7	7.7	7.7	10.0	9.9	10.0
Lower 48 Offshore	5.4	6.9	6.9	6.9	6.6	6.6	6.6
Associated-Dissolved ³	1.0	1.2	1.2	1.2	1.2	1.2	1.2
Non-Associated	4.4	5.7	5.7	5.7	5.4	5.4	5.4

¹Represents lower 48 onshore and offshore supplies.

²Marketed production (wet) minus extraction losses.

³Gas which occurs in crude oil reserves either as free gas (associated) or as gas in solution with crude oil (dissolved).

⁴Synthetic 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.

LNG = Liquefied natural gas.

Btu = British thermal unit.

Note: Totals may not equal sum of components due to independent rounding. Data for 2000 are model results and may differ slightly from official EIA data reports.

Sources: 2000 lower 48 onshore, lower 48 offshore, and Alaska crude oil production: Energy Information Administration (EIA), *Petroleum Supply Annual 2000*, DOE/EIA-0340(2000/1) (Washington, DC, June 2001). 2000 natural gas lower 48 average wellhead price, Alaska and total natural gas production, and supplemental gas supplies: EIA, *Natural Gas Monthly*, DOE/EIA-0130(2001/06) (Washington, DC, June 2001). Other 2000 values: EIA, Office of Integrated Analysis and Forecasting. **Projections:** EIA, AEO2002 National Energy Modeling System runs CAPE2002.D111101A, LCSTHDEM.D111201B, HCSTHDEM.D111201A.

Production Supply, Prices, and Reserves	Projections					
	2015			2020		
	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit
Lower 48 Average Wellhead Price¹ (2000 dollars per thousand cubic feet)	3.37	3.33	3.50	3.72	3.63	3.79
Dry Production (trillion cubic feet)²						
U.S. Total	27.83	27.55	28.05	30.16	29.99	30.20
Lower 48 Onshore	19.12	18.93	19.27	21.16	21.12	21.16
Associated-Dissolved ³	1.40	1.40	1.40	1.39	1.38	1.39
Non-Associated	17.72	17.53	17.87	19.78	19.73	19.77
Conventional	9.40	9.26	9.44	10.49	10.42	10.41
Unconventional	8.32	8.27	8.43	9.29	9.32	9.36
Lower 48 Offshore	6.53	6.44	6.59	6.77	6.66	6.82
Associated-Dissolved ³	1.29	1.29	1.29	1.26	1.27	1.27
Non-Associated	5.24	5.15	5.30	5.51	5.39	5.56
Alaska	2.19	2.19	2.19	2.22	2.22	2.22
Lower 48 End of Year Dry Reserves² (trillion cubic feet)	185.93	187.04	186.33	195.63	197.07	197.76
Supplemental Gas Supplies⁴	0.11	0.11	0.11	0.11	0.11	0.11
Total Lower 48 Wells (thousands)	27.42	27.36	27.96	35.41	34.83	36.27
Lower 48 Dry Natural Gas Reserves (trillion cubic feet)						
Lower 48 Total	185.9	187.0	186.3	195.6	197.1	197.8
Lower 48 Onshore	151.2	152.3	151.7	160.7	161.5	162.5
Associated-Dissolved ³	11.7	11.8	11.8	11.6	11.6	11.7
Non-Associated	139.4	140.5	140.0	149.0	149.8	150.8
Conventional	64.2	65.3	64.7	66.9	68.2	67.6
Unconventional	75.2	75.2	75.3	82.2	81.6	83.2
Lower 48 Offshore	34.8	34.8	34.6	34.9	35.6	35.2
Associated-Dissolved ³	7.7	7.7	7.7	7.6	7.6	7.6
Non-Associated	27.0	27.0	26.9	27.4	28.0	27.7
Lower 48 Dry Natural Gas Reserve Additions (trillion cubic feet)						
Lower 48 Total	26.8	26.8	26.9	29.6	29.4	30.0
Lower 48 Onshore	21.0	21.0	21.2	22.6	22.3	22.9
Associated-Dissolved ³	1.3	1.3	1.4	1.4	1.4	1.4
Non-Associated	19.7	19.7	19.9	21.2	21.0	21.5
Conventional	10.6	10.6	10.7	10.5	10.5	10.5
Unconventional	9.1	9.1	9.2	10.6	10.4	10.9
Lower 48 Offshore	5.8	5.7	5.7	7.0	7.0	7.2
Associated-Dissolved ³	1.4	1.4	1.4	1.1	1.1	1.1
Non-Associated	4.4	4.3	4.3	5.9	5.9	6.0

Table C8. Lower 48 Natural Gas Production and Wellhead Prices by Supply Region

Production and Prices	2000	Projections					
		2005			2010		
		Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit
Dry Production (trillion cubic feet)¹							
Lower 48 Total	18.65	21.06	21.07	21.08	24.26	23.99	24.08
Lower 48 Onshore							
Northeast	0.93	1.18	1.18	1.18	1.65	1.63	1.64
Gulf Coast	4.81	5.28	5.28	5.29	5.90	5.82	5.74
Midcontinent	2.58	3.00	3.00	3.00	3.31	3.34	3.32
Southwest	1.61	1.60	1.60	1.60	2.08	2.03	2.07
Rocky Mountain	3.08	3.56	3.56	3.56	4.38	4.35	4.36
West Coast	0.31	0.33	0.33	0.33	0.36	0.36	0.36
Lower 48 Offshore							
Gulf	5.28	6.06	6.06	6.07	6.52	6.40	6.52
Pacific	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Atlantic	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas Wellhead Prices (2000 dollars per thousand cubic feet)							
Lower 48 Average	3.60	2.79	2.79	2.79	3.81	3.81	3.86
Lower 48 Onshore							
Northeast	4.17	3.08	3.08	3.09	4.10	4.10	4.15
Gulf Coast	3.74	2.83	2.83	2.83	3.82	3.80	3.79
Midcontinent	3.56	2.86	2.86	2.87	3.94	4.02	3.87
Southwest	3.71	2.76	2.76	2.77	3.64	3.58	3.70
Rocky Mountain	3.26	2.64	2.64	2.65	3.43	3.43	3.47
West Coast	3.76	3.04	3.03	3.04	3.51	3.50	3.49
Lower 48 Offshore							
Gulf	3.54	2.74	2.74	2.74	3.97	3.99	4.17
Pacific	4.26	2.89	2.88	2.89	3.82	3.89	3.95
Atlantic	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹Marketed production (wet) minus extraction losses.

LNG = Liquefied natural gas.

Note: Supply regions are defined in *Documentation of the Oil and Gas Supply Module*, Energy Information Administration (EIA), DOE/EIA-M063(2000) (Washington, DC, January 2000). Totals may not equal sum of components due to independent rounding. Data for 2000 are model results and may differ slightly from official EIA data reports.

Sources: 2000: Energy Information Administration (EIA), *Natural Gas Monthly*, DOE/EIA-0130(2001/06) (Washington, DC, June 2001). Projections: EIA, AEO2002 National Energy Modeling System runs CAPE2002.D111101A, LCSTHDEM.D111201B, HCSTHDEM.D111201A.

Production and Prices	Projections					
	2015			2020		
	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit	Carbon Dioxide Emissions Limit	Low LNG Costs with Carbon Dioxide Emissions Limit	High LNG Costs with Carbon Dioxide Emissions Limit
Dry Production (trillion cubic feet)¹						
Lower 48 Total	25.64	25.36	25.86	27.94	27.77	27.98
Lower 48 Onshore						
Northeast	1.94	1.93	1.98	2.29	2.27	2.31
Gulf Coast	6.51	6.38	6.48	6.61	6.53	6.48
Midcontinent	3.35	3.32	3.43	3.74	3.73	3.78
Southwest	2.22	2.22	2.24	2.36	2.35	2.39
Rocky Mountain	4.70	4.68	4.76	5.72	5.79	5.76
West Coast	0.39	0.39	0.39	0.45	0.44	0.45
Lower 48 Offshore						
Gulf	6.47	6.38	6.53	6.70	6.59	6.75
Pacific	0.06	0.06	0.06	0.07	0.07	0.07
Atlantic	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas Wellhead Prices (2000 dollars per thousand cubic feet)						
Lower 48 Average	3.37	3.33	3.50	3.72	3.63	3.79
Lower 48 Onshore						
Northeast	3.90	3.81	4.06	4.05	3.99	4.11
Gulf Coast	3.48	3.42	3.63	3.93	3.83	3.98
Midcontinent	3.42	3.39	3.57	3.85	3.71	3.96
Southwest	3.43	3.33	3.53	3.76	3.69	3.88
Rocky Mountain	2.86	2.85	2.98	3.31	3.19	3.38
West Coast	2.61	2.59	2.59	3.70	3.65	3.86
Lower 48 Offshore						
Gulf	3.46	3.47	3.60	3.65	3.62	3.72
Pacific	2.83	2.81	2.80	4.02	3.98	4.18
Atlantic	0.00	0.00	0.00	0.00	0.00	0.00