

## Major Assumptions for the Forecasts

**Table G1. Summary of the AEO2004 cases**

Case name	Description	Integration mode	Reference in text	Reference in Appendix G
Reference	Baseline economic growth, world oil price, and technology assumptions.	Fully integrated	—	—
Low Economic Growth	Gross domestic product grows at an average annual rate of 2.4 percent from 2002 through 2025, compared to the reference case growth of 3.0 percent.	Fully integrated	p. 67	—
High Economic Growth	Gross domestic product grows at an average annual rate of 3.5 percent from 2002 through 2025, compared to the reference case growth of 3.0 percent.	Fully integrated	p. 67	—
Low World Oil Price	World oil prices are \$19.04 per barrel in 2025, compared to \$26.57 per barrel in the reference case.	Fully integrated	p. 68	—
High World Oil Price	World oil prices are \$33.05 per barrel in 2025, compared to \$26.57 per barrel in the reference case.	Fully integrated	p. 68	—
Residential: 2004 Technology	Future equipment purchases based on equipment available in 2004. Existing building shell efficiencies fixed at 2004 levels.	With commercial	p. 77	p. 244
Residential: High Technology	Earlier availability, lower costs, and higher efficiencies assumed for more advanced equipment. Heating shell efficiency increases by 13 percent from 2001 values by 2025.	With commercial	p. 77	p. 244
Residential: Best Available Technology	Future equipment purchases and new building shells based on most efficient technologies available. Heating shell efficiency increases by 18 percent from 2001 values by 2025.	With commercial	p. 77	p. 244
Commercial: 2004 Technology	Future equipment purchases based on equipment available in 2004. Building shell efficiencies fixed at 2004 levels.	With residential	p. 78	p. 245
Commercial: High Technology	Earlier availability, lower costs, and higher efficiencies assumed for more advanced equipment. Heating shell efficiencies for new and existing buildings increase by 8.75 and 6.25 percent, respectively, from 1999 values by 2025.	With residential	p. 78	p. 245
Commercial: Best Available Technology	Future equipment purchases based on most efficient technologies available. Heating shell efficiencies for new and existing buildings increase by 10.5 and 7.5 percent, respectively, from 1999 values by 2025.	With residential	p. 78	p. 245
Industrial: 2004 Technology	Efficiency of plant and equipment fixed at 2004 levels.	Standalone	p. 79	p. 246
Industrial: High Technology	Earlier availability, lower costs, and higher efficiencies assumed for more advanced equipment.	Standalone	p. 79	p. 246
Transportation: 2004 Technology	Efficiencies for new equipment in all modes of travel are fixed at 2004 levels.	Standalone	p. 79	p. 248
Transportation: High Technology	Reduced costs and improved efficiencies are assumed for advanced technologies.	Standalone	p. 79	p. 248
Integrated 2004 Technology	Combination of the residential, commercial, industrial, and transportation 2004 technology cases, electricity low fossil technology case, and assumption of renewable technologies fixed at 2004 levels.	Fully integrated	p. 104	—
Integrated High Technology	Combination of the residential, commercial, industrial, and transportation high technology cases, electricity high fossil technology case, high renewables case, and advanced nuclear cost case.	Fully integrated	p. 104	—

## Major Assumptions for the Forecasts

**Table G1. Summary of the AEO2004 cases** (continued)

Case name	Description	Integration mode	Reference in text	Reference in Appendix G
Electricity: Advanced Nuclear Cost	New nuclear capacity is assumed to have 10 percent lower capital and operating costs in 2025 than in the reference case.	Fully integrated	p. 87	p. 250
Electricity: Nuclear AP1000 Case	New nuclear capacity is assumed to have lower capital costs, based on vendor goals for the AP1000 reactor.	Fully integrated	p. 87	p. 250
Electricity: Nuclear Vendor Estimate Case	New nuclear capacity is assumed to have lower capital costs, based on vendor goals for the AP1000 and CANDU reactors.	Fully integrated	p. 58	p. 250
Electricity: High Demand	Electricity demand increases at an annual rate of 2.5 percent, compared to 1.8 percent in the reference case.	Partially integrated	p. 88	p. 251
Electricity: Low Fossil Technology	New advanced fossil generating technologies are assumed not to improve over time from 2004.	Partially integrated	p. 87	p. 251
Electricity: High Fossil Technology	Costs and efficiencies for advanced fossil-fired generating technologies improve by 10 percent in 2025 from reference case values.	Partially integrated	p. 87	p. 251
Electricity: DOE Fossil Goals	Costs and/or efficiencies for advanced fossil-fired generating technologies improve from reference case values, based on Department goals.	Partially integrated	p. 87	p. 252
Renewables: Low Renewables	New renewable generating technologies are assumed not to improve over time from 2004.	Fully Integrated	p. 86	p. 254
Renewables: High Renewables	Levelized cost of energy for nonhydropower renewable generating technologies declines by 10 percent in 2025 from reference case values.	Fully Integrated	p. 86	p. 253
Renewables: DOE Goals	Lower costs and higher efficiencies for central-station renewable generating technologies and for distributed photovoltaics, approximating U.S. Department of Energy goals for 2025. Includes greater improvements in residential and commercial photovoltaic systems, more rapid improvement in recovery of industrial biomass byproducts, and more rapid improvement in cellulosic ethanol production technology.	Fully integrated	p. 86	p. 254
Oil and Gas: Slow Technology	Cost, finding rate, and success rate parameters adjusted for 50-percent slower improvement than in the reference case.	Fully integrated	p. 91	p. 254
Oil and Gas: Rapid Technology	Cost, finding rate, and success rate parameters adjusted for 50-percent more rapid improvement than in the reference case.	Fully integrated	p. 91	p. 254
Coal: Low Mining Cost	Productivity increases at an annual rate of 2.9 percent, compared to the reference case growth of 1.3 percent. Real wages and real mine equipment costs decrease by 0.5 percent annually, compared to constant real wages and equipment costs in the reference case.	Fully integrated	p. 100	p. 258
Coal: High Mining Cost	Productivity decreases at an annual rate of 0.6 percent, compared to the reference case growth of 1.3 percent. Real wages and real mine equipment costs increase by 0.5 percent annually, compared to constant real wages and equipment costs in the reference case.	Fully integrated	p. 100	p. 258