

Preface

The *Annual Energy Outlook 2006* (AEO2006), prepared by the Energy Information Administration (EIA), presents long-term forecasts of energy supply, demand, and prices through 2030. The projections are based on results from EIA's National Energy Modeling System (NEMS).

The report begins with an "Overview" summarizing the AEO2006 reference case and comparing it with the AEO2005 reference case. The next section, "Legislation and Regulations," discusses evolving legislation and regulatory issues, including recently enacted legislation and regulation, such as the Energy Policy Act of 2005, and some that are proposed. "Issues in Focus" includes a discussion of the basis of EIA's substantial revision of the world oil price trend used in the projections. It also examines the following topics: implications of higher oil price expectations for economic growth; differences among types of crude oil available on world markets; energy technologies on the cusp of being introduced; nonconventional liquids technologies beginning to play a larger role in energy markets; advanced vehicle technologies included in AEO2006; mercury emissions control technologies; and U.S. greenhouse gas intensity. "Issues in Focus" is followed by "Energy Market Trends," which provides a summary of the AEO2006 projections for energy markets.

The analysis in AEO2006 focuses primarily on a reference case, lower and higher economic growth cases, and lower and higher energy price cases. In addition, more than 30 alternative cases are included in AEO2006. Readers are encouraged to review the full range of cases, which address many of the uncertainties inherent in long-term forecasts. Complete tables for the five primary cases are provided in Appendixes

A through C. Major results from many of the alternative cases are provided in Appendix D. Appendix E briefly describes NEMS and the alternative cases.

The AEO2006 projections are based on Federal, State, and local laws and regulations in effect on or before October 31, 2005. The potential impacts of pending or proposed legislation, regulations, and standards (and sections of existing legislation requiring funds that have not been appropriated) are not reflected in the projections. For example, the AEO2006 reference case does not include implementation of the proposed, but not yet final, increase in corporate average fuel economy (CAFE) standards based on vehicle footprint for light trucks—including pickups, sport utility vehicles, and minivans. In general, historical data used in the AEO2006 projections are based on EIA's *Annual Energy Review 2004*, published in August 2005; however, data are taken from multiple sources. In some cases, only partial or preliminary 2004 data were available. Historical data are presented in this report for comparative purposes; documents referenced in the source notes should be consulted for official data values. The projections for 2005 and 2006 incorporate the short-term projections from EIA's September 2005 *Short-Term Energy Outlook* where the data are comparable.

Federal, State and local governments, trade associations, and other planners and decisionmakers in the public and private sectors use the AEO2006 projections. They are published in accordance with Section 205c of the Department of Energy Organization Act of 1977 (Public Law 95-91), which requires the EIA Administrator to prepare annual reports on trends and projections for energy use and supply.

The projections in the *Annual Energy Outlook 2006* are not statements of what will happen but of what might happen, given the assumptions and methodologies used. The projections are business-as-usual trend estimates, given known technology, technological and demographic trends, and current laws and regulations. Thus, they provide a policy-neutral reference case that can be used to analyze policy initiatives. EIA does not propose, advocate, or speculate on future legislative and regulatory changes. All laws are assumed to remain as currently enacted; however, the impacts of emerging regulatory changes, when defined, are reflected.

Because energy markets are complex, models are simplified representations of energy production and consumption, regulations, and producer and consumer behavior. Projections are highly dependent on the data, methodologies, model structures, and assumptions used in their

development. Behavioral characteristics are indicative of real-world tendencies rather than representations of specific outcomes.

Energy market projections are subject to much uncertainty. Many of the events that shape energy markets are random and cannot be anticipated, including severe weather, political disruptions, strikes, and technological breakthroughs. In addition, future developments in technologies, demographics, and resources cannot be foreseen with certainty. Many key uncertainties in the AEO2006 projections are addressed through alternative cases.

EIA has endeavored to make these projections as objective, reliable, and useful as possible; however, they should serve as an adjunct to, not a substitute for, a complete and focused analysis of public policy initiatives.