

# **Energy, Transportation & the Environment:**

**A Statistical Sourcebook and  
Guide to Government Data**

**2008 Edition**

**Essential Topics Series**

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# Introduction

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*Energy, Transportation & the Environment: A Statistical Sourcebook and Guide to Government Data* is a new annual reference publication from Information Publications. It is the inaugural volume in Information Publications' new **Essential Topics Series**, which examines current issues and topics that are particularly relevant. While information on energy, transportation, and the environment is available in a variety of reference sources, this volume pulls together a cross-section of the available information, and serves as a guide to further research.

The overall goal of *Energy, Transportation & the Environment* is to bring together a variety of diverse information into a single volume, presented in a clear, comprehensible format. The Internet and the exploding amount of information available online have changed the face of research. However, finding the information you need can be a difficult and time-consuming task, and much of the data available is of questionable reliability. The federal government, through the Bureau of the Census and several other departments, collects a truly staggering amount of data, and much of that is available online; however, much of it is poorly indexed, and difficult to find if you do not know exactly what you are looking for.

This volume, then, is not intended as a detailed research tool, but rather as an introduction to the available resources. The goal is to provide a broad cross-section of information, and speed up the reader's ability to find more extensive data on a desired topic. To that end, each of the tables contained in this volume contains a citation that leads back to the original source, and a source guide at the end of the book contains a description of each source used and the type of information contained therein. This volume should serve as a ready-reference source, and a good place to begin any research project.

Another reason for collecting this data on energy, transportation, and the environment in a single volume is that, while each of these three vital topics could fill several books in its own right, in the United States these topics are also inextricably linked to each other. A high percentage of America's energy consumption is spent on transportation. The burning of fossil fuels in cars and for electricity production is a major source of pollution and greenhouse gases. The search for alternative sources of energy that will not harm the environment impacts our transportation options. The condition of the environment affects our health. Energy prices are a major factor in the economy, and our reliance on oil has important implications for our foreign policy.

### Organization

This book is divided into fourteen chapters in four parts:

**Part I: Energy**

Chapter 1: Energy Production & Consumption

Chapter 2: Alternative Fuels & Renewable Energy

Chapter 3: International Energy

**Part II: Transportation**

Chapter 4: Cars & Driving

Chapter 5: Public Transportation

Chapter 6: Transportation Safety

Chapter 7: Travel & Shipping

Chapter 8: Roads & Infrastructure

**Part III: Environment**

Chapter 9: Natural Resources

Chapter 10: Greenhouse Gases & Climate Change

Chapter 11: Pollution & Chemical Exposure

Chapter 12: Waste & Recycling

**Part IV: Special Topics**

Chapter 13: Economy & Employment

Chapter 14: Government Funding

Each of Parts I–III focuses on a single topic (although as we will see, separating them entirely is not possible, so there will be some overlap between topics). Tables in each chapter present a comprehensive review of available federal government statistical information on particular aspect of energy, transportation, or the environment. Each table presents pertinent information from the source or sources in a clear, comprehensible fashion. Part IV focuses on two topics: economic impact and government funding, that cut across all three subject areas.

The information selected for presentation was chosen for its broad scope and general appeal for a diverse group of readers, ranging from students and li-

barians to business planners, from social scientists to marketers, all with different needs and interests.

### The Sources

Almost all of the information in *Energy, Transportation & the Environment* is either collected directly or republished by US Government sources (or in several cases, partnerships between private organizations and government departments). In turn, most of the federal information is from either the Department of Energy, Department of Transportation, or the Environmental Protection Agency.

For the chapters on energy, by far the most comprehensive source is the Energy Information Administration's (EIA) annual report—in this case, the *Annual Energy Review 2006*. This report serves as a clearinghouse for the Department of Energy's other data-collection and reporting programs: the *Annual Energy Review* contains excerpts of the data available in most of these reports, as well as several private sources, in order to present as complete a picture of the state of energy in the United States as possible. It also contains historical time series for most data, in many cases going back over 50 years. Any detailed research into energy should begin with this report. The sources cited in the tables present a logical next step for further information. EIA also produces several other useful reports, including the *International Energy Annual*, and the *Annual Energy Outlook*, which contains projections for energy statistics through 2030.

The one completely private organization that supplies energy data for this volume is the oil and gas company BP, which produces the *BP Statistical Review of World Energy for 2007*. Data from that report is used here with permission.

As with energy, statistics for transportation have a single comprehensive source that is the logical place to start any research project. In this case, it is the annual *National Transportation Statistics* report, compiled by the Department of Transportation's Bureau of Transportation Statistics. This report also contains excerpts from many other sources on transportation, and often saves the reader a good deal of time by bringing together data from several different sources in the same table (for example, a table on modes of shipping could contain automobile, airplane, railroad, and pipeline data, all from different sources). *National Transportation Statistics* also collects information from several private organizations, much of which would not be accessible or reproducible otherwise), and time series data that would often require going

back to several years' editions of a single report to obtain. The report's sources and citations also contain many good ideas for further research.

Data for the environment is more scattered. The Environmental Protection Agency is the preeminent source for information, but there is no single summary publication like those for energy and transportation. Statistics on the environment are spread out in publications on individual topics, contained under the EPA's primary subject headings (i.e., water, waste, greenhouse gas). Besides the EPA, several other government agencies, such as the Department of the Interior's Fish & Wildlife Service and the Department of Agriculture's Natural Resource Conservation Service, also collect information.

One other publication is not used heavily in this volume, but deserves further mention. The *Statistical Abstract of the United States* is the US Census Bureau's major annual overview of all the government's publications, and collectively presents a thorough profile of the United States and its population, economy, and government. While most of the *Abstract's* information on energy, transportation, and the environment is taken from the sources listed above, it also contains information on just about every possible topic, and is a useful place to start any research project, often containing data that is not available elsewhere.

One final note about sources: because of its resources, and the size and scope of its data-collecting apparatus, the federal government is considered the most reliable source of information. For this reason, Information Publications draws as much of its data as possible from federal government sources, and makes no assumptions about the validity, reliability, or motivations behind the presentation of the data. As with any statistical analysis, due care must be taken in its use and interpretation.

### The Tables

This section details how the tables have been prepared and presented.

Table titles are the first source of valuable information:

#### **Table 6.04: Motor Vehicle Fatalities, by State, 2005 and 2006**

The table number contains the chapter number to the left of the decimal and the location of the table within the chapter to the right of the decimal. Thus Table 6.04 is the fourth table of Chapter 6.

The table title first presents the general topic of the table, followed by the detail presented about the general topic (i.e., the data is presented by state, mode

of transport, energy source, economic sector, etc.), and the years for which data is presented. In most cases, the tables retain the original terms used in the source material to make the book compatible with the original sources.

Along the left margin of each table appears a column of line descriptors. Here, after a general heading, subgroups of the heading are shown. In general, counts and quantities appear first, followed by percentages, rates, per capita amounts, medians, and means.

Wherever available and appropriate, a time series of data is presented in order to provide readers with a historical context for the information. However, readers should be cautioned that the years selected have been chosen from no special knowledge of the subject, nor to make any specific point. The fact that there has been an increase or decrease in a given indicator for the period displayed does not mean that the same trend will continue, or that it represents the continuation of a historical trend, or even that which appears to be a trend within this period actually is one. Many apparent changes are merely the result of an agency's redefining its terms: for example, certain sources of energy may be grouped under different types of energy depending on the year, or the agency collecting the data. For this reason, readers are advised to use caution when comparing figures across different time periods or different agencies. In general, information in tables and across each chapter is presented with the oldest, most general information first, followed by newer, more specific information.

The notation "NA" stands for "not available." Although we strive to obtain all available data, there are several reasons for data not being available. Some categories have come into existence (in terms of providing data) fairly recently: for example, some sources of alternative energy only have data available for recent years. Other times, the data was simply not provided in the original source for any one of a variety of reasons. Finally, the data item simply may not apply for the category given, such as the number of lane-miles of rural roads in Washington, DC, which contains no rural areas.

### Table Notes

The bottom of each table contains three key paragraphs: Source, Notes, and Units. The **Source** paragraph lists the source of the data presented in the table. When more than one source was used, the sources are listed in the same order in which the data itself appears in the table. As almost all sources are government publications, the issuing agency is listed as the author. Citations provide

the table number (or page number, if table numbers are not available) in the source from which the material was taken. An increasing number of sources are now available on the internet, and in many cases, only on the internet. For tables pulled exclusively from online sources, the Universal Resource Locator (URL) is listed as the source, along with the date it was accessed.

The **Notes** paragraph includes pertinent facts about the data. One general note will apply to all tabular data: detail (subgroups) may not add to the total shown, due to either rounding or the fact that only selected subgroups are displayed.

The final paragraph of a table, **Units**, identifies the units used, specifically stating that the quantity is billions of Btu's, thousands of vehicles, dollars spent per capita, etc. Readers are urged to pay special attention to the units when a percent, rate, per capita amount, mean, or median is provided. When dollar amounts are involved, this book uses constant (inflation-adjusted) dollars whenever possible to facilitate comparisons; however, in many cases, figures are only given in current dollars, so readers are advised to check the 'notes' section of the table and proceed with caution in making comparisons between different time periods. If the type of dollars is not explicitly stated or available, the figures are most likely given in current dollars.

### Guide to Sources

*Energy, Transportation & the Environment* also presents a complete guide to sources. Sources are sorted alphabetically by the name of the publication, with the issuing department or group appearing next. Each entry gives a description of the source, in particular how it was used in the present volume and what information it might present for further research, as well as the online location where the data or report can be accessed.

### Glossary

This book contains definitions for any specialized terms that are needed to understand the data. The tables contain short, clear definitions with only as much background material as necessary to make a term understandable in a general sense. However, for many tables, when it is not possible to adequately define a term in the table notes, the glossary provides a full definition and serves as an important tool in using the tables.

Before drawing any conclusions from the data, it is vital to understand the meaning of all terms used in a table. Certain terms require some methodological background in order to accurately understand the material present-

ed. Other terms require some technical expertise: for example, the differences between anthracite and lignite coal, or distillate oil and fuel oil, the details of different methods for treating and managing hazardous waste, or the different products that are considered sources of biomass energy. Agencies all have their own specialized, clearly-defined terms, and different agencies may not necessarily use the terms to mean the same thing. The same data can look quite different when presented in a different set of units or conventions (such as tons of CO<sub>2</sub> equivalent vs tons of emissions for greenhouse gases). In the data tables and glossary, we try to provide enough background information for readers to make sense of the information presented, using our best understanding of the terms and definitions used; however, some terms and concepts may require an expert to provide a full explanation. In this case, readers requiring detailed definitions and an understating of the technical and methodological detail should refer to the sources given at the end of the tables.

### **Index**

Most key terms from the tables have been indexed. Readers should note that the index provides table numbers as opposed to page numbers. Cross-references are provided whenever they are deemed helpful.

### **A Suggestion on How to Use This Book**

One way to use this book is by locating the subject of general interest in the Table of Contents, and turning to that chapter. While the Table of Contents is detailed enough to narrow a search, and the index can speed access to specific items, sometimes paging through the dozen or so tables in a given field uncovers unexpected information that can prove useful. It is just this type of serendipity that has led to the inclusion of information in this book, and sometimes such an unexpected find can greatly enhance a research project.

### Disclaimer

*Energy, Transportation & the Environment* contains thousands of pieces of information. Every reasonable precaution, along with a good deal of care, was taken in its preparation. Despite our efforts it is possible that some of the information contained in this book may not be accurate. Some errors may be due to errors in the original source materials, others may have been made by the compilers of this volume. An incorrect spelling may occur, a figure may be inverted, or similar mistakes may exist. The compilers, editors, typists, printers and others are all human, and in a work of this magnitude the possibility of error can never be fully eliminated.

The publisher is also aware that some users may apply the data in this book in various remunerative projects. Although we have taken all reasonable, responsible measures to insure accuracy, we cannot take responsibility for liability or losses suffered by users of the data. No other guarantees are made or implied.

**The publisher assumes no liability for losses incurred by users, and warrants only that diligence and due care were used in the production of this volume.**

### A Final Word

As this book is updated on an annual basis, questions, comments, and criticisms from users are vital to making informed editorial choices about succeeding editions. If you have a suggestion or comment, be assured that it will be both appreciated and carefully considered. If you should find an error here, please let us know so that it may be corrected. Our goal is to provide accurate, easy to use, statistical compendia that serve our readers' needs. Your help enables us to do our job better. If you know how this book could become more useful to you, please contact us.

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