A Review of Selected Energy-Related Data Sets

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SUMMARY

DOE's Office of Planning and Assessment (OPA) performs crosscutting technical, policy, and environmental assessments of energy technologies and markets. To support these efforts, OPA is in the process of creating a data base management system (DBMS) that will include relevant data compiled from other sources. One of the first steps is a review of selected data sets that may be considered for inclusion in the DBMS.

The review covered data sets in five categories: buildings-specific data, industry-specific data, transportation-specific data, utilities-specific data, and crosscutting/general data. Reviewed data sets covered a broad array of energy efficiency, renewable, and/or benchmark technologies. Most data sets reviewed in this report are sponsored by Federal government entities and major industry organizations. Additional data sets reviewed are sponsored by the states of California and New York and regional entities in the Pacific Northwest.

Prior to full review, candidate data sets were screened for their utility to OPA. Screening criteria included requirements that a data set be particularly applicable to OPA's data needs, documented, current, and obtainable.

To fully implement its DBMS, OPA will need to expand the review to other data sources, and must carefully consider the implications of differing assumptions and methodologies when comparing data.

TABLE OF CONTENTS

	<u>PAGE</u>
1.0 OVERVIEW	1
1.1 Purpose of the Review	1
1.2 Relationship to Other OPA Activities	1
2.0 APPROACH	2
2.1 Introduction	2
2.2 Identification/Screening	3
2.3 Evaluation	5
3.0 SUMMARY OF DATA REVIEW	10
3.1 Data Observations	10
3.2 DBMS Implications	10

APPENDIX A: SUMMARIES OF REVIEWED DATA SETS

A1 - BUILDINGS

Bonneville Power Administration

The Commercial Audit Database: A Descriptive Summary, Volumes I and II	A1-2
Commercial Equipment Loads (ELCAP)	A1-3
Description of Electric Energy Use in Commercial Buildings in the Pacific Northwest	A1-4
Description of Electric Energy Use in Single-Family Residences in the Pacific Northwest	A1-5
Pacific Northwest Non-Residential/Commercial Energy Survey	A1-6

U.S. Department of Energy -- Energy Information Administration

Commercial Buildings Characteristics 1989	A1-7
Commercial Buildings Consumption and Expenditures 1989	A1-8
Household Energy Consumption and Expenditures 1987, Parts 1 and 2	A1-9
Housing Characteristics 1987	A1-10

U.S. Department of Energy

Buildings Energy Use Compilation and Analysis (BECA)	A1-11
The Potential for Electricity Efficiency Improvements in the U.S. Residential Sector (with support from EPA)	A1-12
Residential and Commercial Buildings Data Book - 3rd Edition	A1-13
Technical Support Document: Energy Conservation Standards for Consumer Products: Dishwashers, Clothes Washers, and Clothes Dryers	A1-14
Technical Support Document: Energy Conservation Standards for Consumer Products: Refrigerators and Furnaces	A1-15

U.S. Department of Housing and Urban Development/

U.S. Department of Commerce

American Housing Survey for the United States in 1987	A1-16
Characteristics of New Housing: Current Construction Reports	A1-17

A2 - INDUSTRY

Bonneville Power Administration

Industrial Conservation Supply Curve Model Enhancement and Reference Database	A2-2
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Electric Power Research Institute

Electrotechnology Reference Guide - Revision 1	A2-3
Industrial Demand Side Planning Data Project	A2-4

Gas Research Institute

Projected Total Energy and Natural Gas Demand in the Industrial Sector	A2-5
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U.S. Department of Commerce

1987 Census of Construction Industries, United States Summary:	
Establishments with and without Payroll	A2-6
1987 Census of Manufactures: Subject Series, General Summary	A2-7
1987 Census of Mineral Industries: Fuels and Electric Energy Consumed	A2-8
1989 Annual Survey of Manufactures: Statistics for Industry Groups and Industries	A2-9
Current Industrial Reports: Pollution Abatement Costs and Expenditures 1989	A2-10
Manufacturing Energy Database (MED)	A2-11
National Energy Accounts	A2-12

U.S. Department of Energy -- Energy Information Administration

Energy Use in Industry: Pulp and Paper; Aluminum; Cement; and Glass	A2-13
Industrial Fuel Switching	A2-14
Manufacturing Energy Consumption Survey: Changes in Energy Intensity in the Manufacturing Sector 1980-1988	A2-15
Manufacturing Energy Consumption Survey: Consumption of Energy 1988	A2-16
Manufacturing Energy Consumption Survey: Manufacturing Fuel Switching Capability 1988	A2-17

U.S. Department of Energy

Energy Analysis and Diagnostic Center (EADC) Manufacturers Data Base	A2-18
Energy Analysis of 108 Industrial Processes	A2-19
INDUST (and other sponsors)	A2-20

U.S. Environmental Protection Agency

Characterization of Municipal Solid Waste in the United States: 1990 Update	A2-21
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A3 - TRANSPORTATION

U.S. Department of Energy -- Energy Information Administration

Household Vehicles Energy Consumption 1988	A3-2
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U.S. Department of Energy

Alternative Fuels Data Center	A3-3
Highway Vehicle MPG and Market Shares Report: Model Year 1990	A3-4
Properties of Alcohol Transportation Fuels	A3-5
Transportation Energy Data Book	A3-6

U.S. Department of Transportation

1990 Nationwide Personal Transportation Study	A3-7
Highway Statistics 1991	A3-8
National Transportation Statistics	A3-9

U.S. Environmental Protection Agency

Analysis of the Economic and Environmental Effects of Compressed Natural Gas, Ethanol, and Methanol as a Vehicle Fuel	A3-10
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A4 - UTILITIES

Bonneville Power Administration

1989 Pacific Northwest Loads and Resources Study	A4-2
Draft Generation Resource Supply Document	A4-3
Environmental Data for Thermal Resources	A4-4
Estimating Environmental Costs and Benefits for Five Generating Sources--Final Report: Description of Generic Generating Resources, Their Likely Significant Effects, and the Economic Value of Those Effects	A4-5

California Energy Commission

California Energy Demand: 1991-2011, Volumes I-XV	A4-6
Technology Characterizations - Final Report	A4-7

Edison Electric Institute

1990 Capacity and Generation of Non-Utility Sources of Energy	A4-8
1990 Electric Power Equipment Report	A4-9
1991 EEI Environmental Directory of U.S. Power Plants	A4-10
Statistical Yearbook of the Electric Utility Industry	A4-11
Statistics of Non-Investor Owned Electric Utilities	A4-12
Statistics on Fuel Used to Generate Electricity by the Electric Utility Industry: 1986-1990	A4-13

Electric Power Research Institute

The EPRI Regional Systems Database	A4-14
Technical Assessment Guides (TAG) -- Volume 1: Electricity Supply Volume 2: Electricity End Use, Part 1: Residential Electricity Use - 1987, Part 2: Commercial Electricity Use 1988, Part 3: Industrial Electricity Use 1987. Volume 3: Fundamentals and Methods: Supply. Volume 4: Fundamentals and Methods: End Use	A4-15

New York Energy Research and Development Authority (w/U.S. DOE)

Environmental Costs of Electricity	A4-16
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North American Electric Reliability Council

Electricity Supply and Demand for 1991-2000 for the Regional Reliability Councils of the North American Electric Reliability Council	A4-17
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U.S. Department of Energy -- Energy Information Administration

Annual Outlook for U.S. Electric Power 1991: Projections Through 2010	A4-18
Electricity Supply: Supporting Analysis for the NES	A4-19
Electric Plant Cost and Power Production Expenses 1989	A4-20
Electric Power Annual 1989 (including Electric Power Monthly)	A4-21
Inventory of Power Plants in the United States 1990	A4-22

U.S. Department of Energy

Comparative Analysis of Monetary Estimates of External Environmental Costs Associated with Combustion of Fossil Fuels	A4-23
Renewable Energy Technology Characterizations	A4-24
Renewable Energy Technology Evolution Rationales	A4-25

A-5 - CROSS-CUTTING/GENERAL

American Gas Association

Gas Facts	A5-3
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Bonneville Power Administration

Conservation Resources Supply Document	A5-4
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California Energy Commission

Energy Efficiency Report	A5-5
Energy Technology Status Report	A5-6

Council of Economic Advisers

Economic Report of the President 1992	A5-7
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Electric Power Research Institute

Biomass State-of-the-Art Assessment: Volumes 1 and 2	A5-8
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Gas Research Institute

The 1992 Edition of the GRI Baseline Projection of U.S. Energy Supply and Demand to 2010 and the Baseline Projection Data Book	A5-9
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Northwest Power Planning Council

Northwest Conservation and Electric Power Plan: Volume II	A5-10
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Union of Concerned Scientists

America's Energy Choices: Investing in a Strong Economy and a Clean Environment	A5-11
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U.S. Department of Agriculture

Agriculture Statistics	A5-12
Forest Statistics of the U.S. 1987	A5-13

U.S. Department of Commerce

CENDATA: The Census Bureau Online	A5-14
Projections of the Population of the States by Age, Sex, and Race: 1989-2010	A5-15
Statistical Abstract of the United States: 1991	A5-16

U.S. Department of Energy -- Energy Information Administration

Annual Energy Outlook with Projection to 2010	A5-17
Annual Energy Review 1990	A5-18
Coal Production 1990	A5-19
Energy Consumption and Conservation Potential: Supporting Analysis for the National Energy Strategy	A5-20
Estimates of U.S. Biofuels Consumption	A5-21
Historical Monthly Energy Review: 1973-1988	A5-22
Monthly Energy Review	A5-23
Natural Gas Annual 1990: Volumes 1 and 2	A5-24
Petroleum Supply Annual 1990: Volume 1 and 2	A5-25
Potential Costs of Restricting Chlorofluorocarbon Use	A5-26
Renewable Energy Excursion: Supporting Analysis for the NES	A5-27
State Energy Data Report: Consumption Estimates 1960-1989	A5-28
State Energy Price and Expenditure Report 1989	A5-29

U.S. Department of Energy

Annual Report to Congress on Federal Government Energy Management and Conservation Programs: Fiscal Year 1990	A5-30
Characterization of U.S. Energy Resources and Reserves	A5-31
Current Emission Trends for Nitrogen Oxides, Sulfur Dioxides, and Volatile Organic Compounds by Month and State: Methodology and Results	A5-32
Effects of Energy Technology on Global CO ₂ Emissions	A5-33
Energy Efficiency: How Far Can We Go?	A5-34
Energy Technologies and the Environment - Environmental Information Handbook	A5-35
Energy Technology Characterization Handbook: Environmental Pollution and Control Factors	A5-36

Environmental Consequences of, and Control Processes for, Energy Technologies	A5-37
Estimates of CO2 Emissions from Fossil Fuel Burning and Cement Manufacturing Based on the United Nations Energy Statistics and the U.S. Bureau of Mines, Cement Manufacturing Data	A5-38
Insolation Data Manual and Direct Solar Radiation Data Manual	A5-39
National Energy Strategy: Technical Annex 2 - Integrated Analysis Supporting the National Energy Strategy, Assumptions and Results	A5-40
The Potential of Renewable Energy: An Interlaboratory White Paper	A5-41
Wind Energy Resource Atlas of the U.S.	A5-42

U.S. Environmental Protection Agency

The 1985 NAPAP Emissions Inventory (Version 2): Development of the Annual Data and Modelers' Tape	A5-43
Acidic Deposition: State of Science and Technology: Report 1. Emissions Involved in Acidic Deposition Processes	A5-44
Compilation of Air Pollutant Emission Factors: (Fourth Edition. Volumes I and II, Supplements A&B)	A5-45
Emissions and Cost Estimates for Globally Significant Anthropogenic Combustion Sources of NOx, SO2, CH4, CO, and CO2	A5-46
National Air Quality and Emissions Trends Report, 1990	A5-47
National Air Pollutant Emission Estimates, 1940-1989	A5-48
Toxics in the Community: National and Local Perspectives	A5-49

APPENDIX B: BIBLIOGRAPHY OF REVIEWED DATA SETS	B-1
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APPENDIX C: IDENTIFIED DATA SET OPTIONS FOR FUTURE REVIEW	C-1
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APPENDIX D: DATA REVIEWS BY OTHERS FOR FUTURE REVIEW	D-1
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A REVIEW OF SELECTED ENERGY-RELATED DATA SETS

1.0 OVERVIEW

1.1 Purpose of the Review

The development of a strong analytical capability is a key goal of the Office of Planning and Assessment (OPA) within the Office of Conservation and Renewable Energy (CE). A *Review of Selected Energy-Related Data Sets* identifies and provides a review of key data bases or compilations of energy, economic, and environmental data as a step towards development of a data base management system (DBMS) for OPA. The descriptive summaries and bibliographic listings provided in the review may also be of interest to other CE programs, as well as non-CE readers involved in energy efficiency and renewable energy research or policy development. It is anticipated that a follow-on effort will expand the breadth and depth of this review to more fully characterize additional energy-related data sets that may be considered for inclusion in OPA's DBMS.

1.2 Relationship to Other OPA Activities

To enhance its analytic capabilities, OPA, in conjunction with CE sector programs, is embarking on a multi-year effort, consisting of several distinct near and longer term tasks:

Near-Term Tasks

- an assessment of CE corporate analytic needs;
- a review of analytical models;
- an initial data storage and retrieval tool; and
- a review of key energy-related data sets.

Longer Term Tasks

- development of an energy/economic/environmental data and modeling framework, followed by the assembly and use of a comprehensive DBMS and modeling tools; and
- development of an environmental analysis framework, whose components and capabilities will be integrated with OPA's DBMS and modeling tools.

The data sets described in this review -- as well as data sets identified in the future -- will be considered for inclusion, where appropriate, in the DBMS developed for OPA.

2.0 APPROACH

2.1 Introduction

OPA conducts, in collaboration with the CE sector programs and OTFA, cross-cutting technical and policy assessments of energy technologies and markets, as well as assessments of environmental characteristics. In the assessments, OPA focuses on current and future energy efficiency and renewable technologies. This review focuses on technology, market, or environmental data that may be appropriate for use in OPA's cross-cutting DBMS.

The review was divided into five data categories to provide focused coverage of the four major energy sectors which OPA is chartered to consider, as well as general energy-related data sets. The five categories are:

- 1) buildings-specific data;
- 2) industry-specific data;
- 3) transportation-specific data;
- 4) utilities-specific data; and
- 5) cross-cutting/general data.

Although this review covers the energy sectors that match the CE organizational structure, and certain data sets may be of interest to sector analysts, this review is by no means intended to represent all of the available and relevant data sets in any given sector area. The review also intentionally did not pursue data related to a specific technology (e.g., energy efficient lighting, photovoltaics, etc.), but did review data sets that covered a broad array of energy efficiency, renewable, and/or benchmark technologies.

Consistent with OPA's analytical goal, it is anticipated that the initial DBMS will contain, for CE and conventional energy technologies, data on technology characterizations, energy consumption and production, market size and potential, environmental emissions, and other data applicable to the conduct of CE analysis and planning activities. Thus, the data sets that were identified and reviewed are "technical" in nature, meaning they emphasized numeric data appropriate for retrieval and manipulation in an analytical context, with "non-technical data" precluded from immediate consideration.¹

¹ A number of data bases or compendiums were identified that contained "bibliographic" or "programmatic" material. Although many such data sets were reviewed for "technical" citations, such "non-technical" data sets themselves were not reviewed here.

In considering energy, economic, and environmental data sets for review, only data that are embodied in data bases, data compendiums, major analytical documents, or represent a unique set of data were pursued. This approach identified a limited number of data sets.² It is anticipated that niche data will be sought from targeted sources to complement core data reviewed here.

2.2 Identification/Screening

The review team focused initially on departments, administrations, and agencies of the Federal government, their associated national laboratories and contractors, and selected major industry research and trade organizations such as the Electric Power Research Institute and the Gas Research Institute. Deliberately excluded from this initial review were state agencies, industries and their trade groups, utilities, and non-profit organizations, with the exception of the states of California and New York and regional entities in the Pacific Northwest where substantial energy programs exist with associated data. Exhibit I provides a list of all the organizations whose data bases were reviewed for possible inclusion in this report.

Several means of identifying energy-related data sets were used. Major bibliographic data bases, including NTIS and other databases on the Dialog system, the Electric Power Research Institute's *EPRINET* system, the EPA *ACCESS* system, and others were searched for energy-related databases, data compilations, statistical data, and information centers to compile a listing of candidate data sets. Since the automated searches resulted in a large number of citations, only the most promising by title and abstract description were considered. Data sets were also identified through a review of a large number of technical reports and other printed materials - such as the *EIA Publications Directory* -- that often contained extensive bibliographies complementary to the on-line systems. A number of inquiries were also made with personnel within EIA, CE, and the national laboratories for key data sets relative to sector-specific data.

Following identification and preliminary review of abstracts or other supporting information, data sets were culled based on whether they met all of four pre-established screening criteria that were developed in conjunction with OPA staff. Data sets were subjected to full review in the report if they were:

- 1) considered strongly applicable to CE's data needs;
- 2) documented;
- 3) current; and
- 4) obtainable.

² This effort precluded the identification and review of useful data that may be embodied in numerous technical reports, white papers, and other published sources. This review also did not attempt to review the nature of data embedded in various models that are used in the conduct of energy, economic, and environmental analyses, nor did it pursue the characterization of data at Federal and industry research centers unless the data were packaged or self-contained.

EXHIBIT I

DATA SOURCES REVIEWED

Department of Energy Sources

Energy Information Administration (EIA)
National Energy Strategy (NES)
Office of Policy, Planning, and Analysis (PE)
Office of Fossil Energy (FE)
Office of Conservation and Renewable Energy (CE) (including national laboratories/contractors)
 Office of Building Technologies (OBT)
 Office of Industrial Technologies (OIT)
 Office of Transportation Technologies (OTT)
 Office of Utility Technologies (OUT)
 Office of Technical and Financial Assistance (OTFA)
 Office of Planning and Assessment (OPA)

External Sources

Environmental Protection Agency (EPA)
Electric Power Research Institute (EPRI)
Edison Electric Institute (EEL)
North American Electric Reliability Council (NERC)
Gas Research Institute (GRI)
American Gas Association (AGA)
Office of Technology Assessment (OTA)
Department of Commerce (including Bureau of Census) (DOC)
Department of Agriculture (USDA)
Department of Transportation (DOT)
Bonneville Power Administration (BPA)
Northwest Power Planning Council (NPPC)
State of California
State of New York
Council of Economic Advisors
Union of Concerned Scientists

Applicability, the most subjective of the four screening criteria, was determined based on the study team's knowledge of OPA and CE. In cases where data sets were considered potentially of interest to OPA or other CE programs, they were cited in Appendix D and may be subjected later to full review. Some level of documentation of the data's origin and derivation, either "full" or "partial," was required. As a general rule, data sets derived before 1985 were not considered current enough to be of high value; therefore, data sets developed after 1985 were sought. However, in certain instances, data generated before 1985 represented the only data sets available for a given topic area and were considered and included on a case-by-case basis [this was especially true for data related to the industrial sector]. The availability of data for OPA use, whether by request, acquisition, or license, was imperative.

2.3 Evaluation

To assist in the collection, summarization, and dissemination of information on energy-related data sets, concise, one-page forms were developed for characterizing data sets for each of the four CE sector areas as well as those considered cross-cutting/general. The forms are intended to provide factual information about the data sets, based on materials provided by their respective data source as well as other supplementary information gathered by the review team. The following is a brief description of each data description element contained in the review forms:

Type of Data: Technology

- **Energy Efficiency and Renewables** -- Refers to whether the data set includes information on energy efficiency or demand-side technologies, including cogeneration. Renewables refers to renewable energy technologies such as wind, solar thermal, photovoltaics, geothermal, hydro, and biomass.
- **Benchmarks** -- Refers to whether the data set includes information on conventional technologies against which CE technologies compete. For a renewable electric supply technology, the "benchmark" may be a 500 MW coal plant. For a compact fluorescent light, the benchmark may be a 75 watt incandescent light bulb.
- **Cost** -- Refers to whether the data set includes information on capital cost of a technology, O&M costs, cost of delivered energy, or other technology specific cost data.
- **Performance, Reliability, and Life** -- Refers to whether the data set includes information on the efficiency, operation and maintenance characteristics, or longevity of the noted technologies.
- **Material Requirement** -- Refers to whether the data set includes information about the types or quantities of material necessary to manufacture, construct, operate, or decommission energy technologies.

Type of Data: Market

- **Size** -- Refers to whether the data set includes information about current or projected market size or share.
- **Economics** -- Refers to whether the data set includes information about energy prices, utility rates, or other general economic information not related to a specific technology.
- **Energy Consumption/Production** -- Refers to whether the data set includes information about the quantity and type of energy consumption and production. Provides an indication of the energy market available to CE and conventional technologies.

Type of Data: Environmental

- **Coefficients** -- Refers to whether the data set includes information on environmental emissions per unit of energy use, such as tons of carbon dioxide per gigawatt-hour.
- **Emissions** -- Refers to whether the data set includes information on environmental emissions at the state, regional, or national level, such as EPA criteria pollutants and greenhouse gases.
- **Impacts** -- Refers to whether the data set includes information on the translation of environmental emissions into physical, health, and aesthetic effects.

Data Origin

- **Primary** -- Refers to whether the data set contains information derived from a primary data collection activity, such as a survey or measurement, and is not a derivation of another source document.
- **Secondary** -- Refers to whether the data set contains information derived from another source document, and is repackaged, compiled, manipulated, or otherwise reused in a different manner than the primary source.
- **Documentation** -- Refers to the level of documentation provided with the data set, and is either "extensive," which indicates that a detailed description of the methods or means used to generate the data are available, or "partial," which indicates that documentation is available, but does not provide sufficient detail to allow replication of the procedure to generate the same data.
- **Data Format** -- Refers to the format in which the data set is presently available.
- **Data Timeperiod** -- Refers to the span of time that the data set describes.

- **Data Access** -- Refers to the general availability of the data set, regardless of cost.
- **Data Structure** -- If the data set is available in electronic format, refers to the storage/retrieval format of the data set.
- **Data Transfer Media** -- If the data set is available in electronic format, refers to the type of media with which information from the data set may be transferred from the data source to other DBMSs.
- **Data Size** -- If the data set is available in electronic format, refers to the relative size or volume of information contained in the data set.

The forms and their contents also provide a graphical representation of the relative (high, average, low) "suitability" of data sets to OPA based on four key criteria:

- 1) type of **peer review** conducted on the collection or the results of the data effort ("high" indicates a peer review of the data development methodology or the data set itself was conducted, "average" indicates no applicability for this criterion, and "low" indicates that a description of a peer review was not available);
- 2) the **update** or maintenance program for the data set ("high" indicates frequent updates, "average" indicates periodic updates, and "low" indicates no scheduled updates);
- 3) the **cost** of obtaining the data set ("high" indicates no cost or nominal cost, "average" indicates a more sizable investment for procurement, and "low" indicates a relatively expensive data set); and
- 4) the level of **geographical** aggregation/disaggregation of the data set ("high" indicates the data is available on both an aggregated and regional basis, "average" indicates data is available on a national basis only, and "low" indicates the data is local/regional only).

The data set reviews are compiled in Appendix A. To provide an overall graphical view of all data sets reviewed in each category, master summary sheets describing the type of data and its rating relative to the four suitability criteria are provided.

Complete bibliographic citations of all data sets reviewed are provided in Appendix B. Many promising data sets from sources outside of the initial review were identified through the

natural course of conducting data searches and are included in Appendix C for information purposes.³

Follow-on review of certain data sets listed in Appendix C is anticipated, along with the review of selected data sets from sources listed in Exhibit II.

³ Some promising data sets from sources listed in Exhibit I are located in Appendix C for the following reasons: (1) the data set is currently being developed; (2) the data set was identified, but a more detailed review was not possible due to slow delivery of publications; (3) identification occurred at such a late date that adequate review was not possible prior to development of this report; (4) redundancy or overlap with other similar data sets; and (5) uncertainty as to the value of the data set to OPA and CE.

EXHIBIT II

FUTURE DATA SOURCE OPTIONS (Non-exhaustive)

States/Regional

National Association of Regulatory Utility
Commissioners

National Association of State Energy Officials

National Association of State Utility Consumer
Advocates

State Energy Offices

State Regulatory Commissions

State Energy Research Groups

North Carolina Alternative Energy Corporation
Wisconsin Demand-Side Research Center
Florida Solar Energy Center

NORDAX

Western Energy Resources Board

Industry

Electric Power Research Institute

Center for Electric End-Use Data (CEED)
Center for Materials Production (CMP)
Center for Materials Fabrication (CMF)
Power Electronics Application Center (PEAC)
Process Industry Offices (PIOs: Textiles,
Pulp/Paper, Chemicals, Food Processing)
The Electric Transportation Information Center
EPRI Demand Side Information Service (DSIS)

ASHRAE/ARI/IES

AHAM/GAMA

NAHB

American Association of Manufacturers

Motor Vehicle Manufacturers Association

National Association of Rural Electric Cooperatives

American Public Power Association
Power Marketing Administrations (other than BPA)

Investor-Owned Utilities (e.g. PG&E)

Solar Energy Industries Association

Independent Energy Producers Association

Commercial Data Vendors

Utility Data Institute

DRI/McGraw-Hill

F.W. Dodge

Wharton Econometric Forecasting Associates

Non-Profit Organizations

Rocky Mountain Institute

Tellus Institute

Resources for the Future

Natural Resources Defense Council

Environmental Defense Fund

American Council for an Energy Efficient
Economy

World Resources Institute

Conservation Law Foundation

International

UNEP

IEA/OECD/CEC

IIASA

3.0 SUMMARY OF DATA REVIEW

3.1 Data Observations

Based on the approach and purview of this effort, several general observations can be made about the status of energy-related data sets of interest to OPA:

- **Volume of Data** -- The data sets reviewed in this effort represent more data than OPA can effectively extract and manage. Based on the exact nature of the OPA-sponsored DBMS, data sets will need to be prioritized, with subsets of data also carefully chosen to meet specific data needs.
- **Type of Data** -- This review of data suggests that data is not available in all areas of interest to OPA. For example, data on technology costs and performance were limited. OPA may wish to consider, in conjunction with other CE programs and EIA, efforts to generate data in deficient areas or seek information from states and private organizations. The buildings and industry data sets reviewed predominantly provided market data, while the transportation, utility, and cross-cutting data sets yielded a mix of technology, market, and environmental data.
- **Sources of Data** -- Depending on the type of data desired, several key sources such as EIA, EPA, Department of Commerce, and the national laboratories yielded a majority of the data sets. Among all the data sets reviewed, EIA, DOC, and Edison Electric Institute data were found to consistently meet the key criteria of peer review, updates, cost, and geographic detail. Future review efforts should seek to expand the list of data sources to include industry or trade association data.
- **Data Redundancy** -- There is considerable commonality of data among certain groups of data sources due to data sharing, repackaging of public domain data, or overlapping efforts by varying organizations.
- **Disaggregation of Data** -- The majority of data is provided only at the national level, making regional or lower level analysis more difficult.

3.2 DBMS Implications

- **Maintenance of Data** -- Data sets reviewed were both static (one time efforts) in nature as well as dynamic (designed to be continually updated). Dynamic data sets, particularly those that are accessible through on-line systems may be particularly valuable to provide periodic updates to the OPA DBMS.
- **Consistency/Normalization of Data** -- If data sets are expected to be used in a comparative or relational manner, care must be taken to consider the assumptions and procedures used to generate data.

- **Acquisition of Data Sets** -- A majority of the data sets reviewed in the initial review are publicly available as they are largely derived from government sources. To obtain and use data sets from non-government sources, OPA will have to purchase or obtain licenses to use restricted data sets. Some data sets are available, but at a considerable cost.
- **Data Entry** -- The data sets reviewed are stored or presented in a variety of formats, both electronic and hard copy. In concert with prioritization of data subsets, electronic filtering or culling mechanisms and automated data entry procedures (e.g., electronic scanning) will be required to avoid excessive manual entry of data. Depending on data sets selected for use, OPA's DBMS will require the capabilities to work with a number of file formats (e.g., dBase, spreadsheet, ASCII, etc.) and storage mediums (e.g., diskette, CD-ROM, tape).

APPENDIX A

SUMMARIES OF REVIEWED DATA SETS

For All Sheets

= Applicable

= Not Applicable

For Key Criteria

= High Suitability

= Average Suitability

= Low Suitability

Buildings Summary

Data Information		Type of Data			Key Criteria			
Data Sponsor	Data Title	Tech- nology	Market	Enviro- nment	Peer Review	Updates	Cost	Geo. Detail
BPA	The Commercial Audit Database							
	Commercial Equipment Loads (ELCAP)							
	Desc. of Elec. Energy Use in Commercial Bld...							
	Desc. of Elec. Energy Use in Single-Family ...							
	Pacific Northwest Non-Residential/Comm...							
U.S. DOE/EIA	Commercial Blds. Characteristics 1989							
	Commercial Blds. Consumption & Expend. 1989							
	Household Energy Consumption & Expend...							
	Housing Characteristics 1987							
	Blds. Energy Use Compilation & Analysis ...							
U.S. DOE	Potential for Elec. Efficiency Improvements ...							
	Residential & Commercial Blds. Data Book							
	Technical Support Document (Dishwashers)							
	Technical Support Document (Refrigerators)							
	American Housing Survey for the U.S. in 1987							
U.S. HUD/DOC	Characteristics of New Housing							

Buildings

Title: The Commercial Audit Database: A
Descriptive Data Summary, Vol. I & II

Date/Version #: 1989

Sponsor: U.S. Department of Energy
Developer: Bonneville Power Administration

Contact: Roger H. Moore, BPA
P.O. Box 3621-RPEE
Portland, OR 97208
(503) 230-4264

Data Format	Data Structure (If Electronic)
Data Base ☒	DBMS (or Compatible) ☐
Model ☐	Spreadsheet (or Compatible) ☐
Report/Table ☒	Other (eg ASCII) ☒

Data Timeperiod	Data Tran. Media (If Electronic)
Historical ☐	Diskette ☐
Present ☒	CD-ROM ☐
Projections ☐	Tape ☒

Data Access	Data Size (If Electronic)
Open ☒	< 10 mB ☐
Restricted ☐	< 100 mB ☒
Licensable ☐	> 100 mB ☐

Type of Data
Technology
En. Efficiency ☐
Renewables ☐
Benchmarks ☐
Cost ☐
Performance ☐
Reliability-Life ☐
Material Req. ☐
Market
Size ☒
Economics ☐
En. Consump. ☒
Environmental
Coefficients ☐
Emissions ☐
Impacts ☐

Data Origin
Primary ☒ Secondary ☐
Measured ☐
Estimated ☐
Modelled ☐
Surveyed ☒

Documentation
Extensive ☐
Partial ☒

Key Criteria	Suitability
Peer Review	
Industry ☐	☐
Govt-Labs-Univ ☐	
None Described ☒	
Updates	
> 1 per Year ☐	☐
1 per 1-5 Years ☐	
None ☒	
Cost	
No Cost - \$1000 ☒	☒
\$1000 - \$5000 ☐	
> \$5000 ☐	
Geographic Detail	
National Only ☐	☐
All Regions ☐	
Regional/Local ☒	

☒ = High ☐ = Ave. ☐ = Low

Explanatory Notes: Peer review not mentioned.

Data Description: Provides summary data collected during Bonneville Power's Commercial Audit Program. Data covering 266 variables (72 confidential) related to energy use and efficiency were collected from 3900 buildings on 3800 sites in the Pacific Northwest. This report displays and describes data from 3718 single-building sites in terms of 3 datasets derived from the raw data: 1) Primary--194 variables from 3718 buildings; 2) Double-Keyed--194 variables from 287 buildings (checked and verified); and 3) 48 variables deemed most important to energy conservation professionals from a set of 3718 buildings. Volume I gives summary data from the third set (in terms of frequencies). Volume II gives frequencies for the first two datasets. Variables reported include square footage, U values for walls, fuel consumption, end-use fuel consumption, and a variable noting energy conservation measure installation rates for consumers without utility incentives. Included in Volume II is a list of variables reported, a list of number of buildings audited by type, and a list of energy conservation measures checked. Electronic data is in the form of a SAS database.

Buildings

Title: Commercial Equipment Loads (ELCAP) Date/Version #: July 1990 Sponsor: Bonneville Power Administration Developer: Pacific Northwest Laboratory Contact: Diane Hollister, BPA P.O. Box 3621-RPEE Portland, OR 97208 (503) 230-4372		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐		Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☒ Estimated ☐ Modelled ☐ Surveyed ☒		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes:					

Data Description: Provides detailed information on electricity consumption of miscellaneous equipment (all commercial end-uses except heating, ventilation, air con., and central lights) from the commercial portion of ELCAP database. 11 building types and 17 equipment types are covered. Hourly energy end-use data were gathered from an 86 building subset of the 126 building ELCAP project. The Quality of the ELCAP Engineering Data Set - Background Issues is an important reference. Three main properties for each equipment category are broken down by building type. Chapter 5 gives equipment average capacity densities (watts/sq.ft.) and equipment device densities (devices/1000 sq.ft.). Chapter 6 reports equipment utilization factors. Chapter 7 includes energy use intensities (EUIs-kWh/sq.ft.-yr.) and regional potential conservation targets. Appendix D contains the data set used for the regressions, and E presents the EUIs in a different format.

Buildings

Title: Description of Electric Energy Use in Commercial Buildings in the Pacific Northwest

Date/Version #: Decemer 1989

Sponsor: Bonneville Power Administration

Developer: Pacific Northwest Laboratory

Contact: Megan Taylor, BPA

Box 3621-RPEE

Portland, OR 97208

(503) 230-5458

Data Format		Data Structure (If Electronic)		Type of Data	Key Criteria		Suitability	
Data Base ☐	Model ☐	Report/Table ☒	DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐		Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒		Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐
Data Timeperiod		Data Tran. Media (If Electronic)		Data Origin		☒ = High ☐ = Ave. ☐ = Low		
Historical ☒ Present ☐ Projections ☐		Diskette ☐ CD-ROM ☐ Tape ☐		Primary ☒ Secondary ☐ Measured ☒ Estimated ☐ Modelled ☐ Surveyed ☒		Explanatory Notes: Peer review not mentioned.		
Data Access		Data Size (If Electronic)		Documentation				
Open ☒ Restricted ☐ Licensable ☐		< 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Extensive ☒ Partial ☐				

Data Description: Provides detailed summary information related to end-uses in commercial buildings. Hourly end-use data for 9 building types were collected from 1984- 1988 under the ELCAP program. Focuses on the Base Study, which was designed to develop a basic characterization of end-use loads and conservation potential in the Pacific Northwest. Most of the information provided is in graphic, not numeric form. Data in tabular form are in monthly or annual aggregations. For more specific data, the End-Use Research Section of BPA should be contacted. Appendix C does give monthly and annual energy use intensity (kWh/sq.ft.) means, medians, standard deviations, sample sizes, and tabulations of end-use shares.

Buildings

Title: Description of Electric Use in Single-Family Residences in the Pacific Northwest Date/Version #: April 1989 Sponsor: Bonneville Power Administration Developer: Pacific Northwest Laboratory Contact: Megan Taylor, BPA P.O. Box 3621-RPEE Portland, OR 97208 (503) 230-5458		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☒ Estimated ☐ Modelled ☐ Surveyed ☒		● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size < 10 mF ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes: Peer review not mentioned.	

Data Description: Covers 11 end uses in 499 residences, using hourly end-use data gathered under the ELCAP program. Provides background information on the different residential studies and acts as a sourcebook of summarized residential end-use data, which includes survey-derived demographic data. Most of the end-use information provided is graphic, not numeric. Specific numbers for summaries and individual homes are available from the End-Use Research Section of BPA's Office of Energy Resources. The tables included give mean annual end-use loads (kWh) and standard deviations categorized by various characteristics. Notes that the ELCAP data set is too large to easily work with all the data. Small portions and aggregations are less complicated to use.

Buildings

Title: Pacific Northwest Non-Residential/ Commercial Energy Survey Date/Version #: December 1991 Sponsor: Bonneville Power Administration Developer: BR Associates Contact: Diane Hollister, BPA Box 3621-RPEE Portland, OR 97208 (503) 230-4372		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒	Suitability <div style="text-align: center;">○</div> <div style="text-align: center;">○</div> <div style="text-align: center;">●</div> <div style="text-align: center;">○</div>
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	<div style="text-align: center;"> ● = High ● = Ave. ○ = Low </div>		
Data Timeperiod Historical ☐ Present ☒ Projections ☐	Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒	Explanatory Notes: Peer review not mentioned.	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒		

Data Description: Reports results of two phases. Phase I was a statistical sample of 15,250 non-residential buildings in the Northwest. Information collected includes: floor area, primary business activity, number of stories, number of tenants, type of use, type of development, age of building, and utility type (public or private). Phase II involved detailed surveys of 621 of the Phase I buildings. This additional data was collected: a) predominant fuel and equipment type used for heating, cooling, and water heating, b) heated, cooled, and refrigerated floor area, c) indoor and outdoor lighting capacity, d) wall, door, window, roof, and skylight area and material. From the collected data, estimates of building characteristics of the entire Northwest were derived. Estimates based on Phase I are in Appendix A while Phase II estimates are found in Chapter 3. Results are broken down by primary business activity and utility type.

Buildings

Title: Commercial Buildings Characteristics 1989 Date/Version #: June 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Nancy L. Leach, Chief Residential and Commercial Branch EIA (202) 586-1114		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability <div style="text-align: center;"> </div>	
Data Format Data Base ☒ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒					
Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☒ CD-ROM ☐ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒		<div style="text-align: center;"> = High = Ave. = Low </div>	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes: Peer review not mentioned. Data available on tape/disk.	

Data Description: Covers aggregated physical and operating characteristics affecting energy use for the U.S. commercial building stock. Data are collected from a random sample of the U.S. building population and reported at both the national and the Census region level. Characteristics related to the following categories are provided: building use; building size; location; energy sources; energy end uses; conservation features; heating, cooling, and lighting equipment; percent of floorspace heated, cooled, and lit; and building structure. For the first time, data related to CFC use, asbestos, and fuel switching capabilities are included. The numerous tables contain cross tabulations of the various characteristics.

Buildings

Title: Commercial Buildings Consumption and Expenditures 1989 Date/Version #: 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Nancy L. Leach, Chief Residential and Commercial Branch EIA (202) 586-1114		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS ☒ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☒		Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media (If Electronic) Diskette ☒ CD-ROM ☐ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒		Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐

= High
 = Ave.
 = Low

Explanatory Notes: Peer review not mentioned. Data available on tape/disk.

Data Description: Provides data on the U.S. commercial buildings stock's energy consumption and expenditures. Data are collected from a random sample of the U.S. building population and reported at both the national and the Census region level. Contains annual consumption and expenditure estimates based on billings for electricity, natural gas, fuel oil (including kerosene), LPG, and district heat (steam or hot water). Wood, and coal use are reported, but are not based on billing data, and limited statistics on district chilled water are presented. Estimates are broken down by building characteristics from the following categories: building floorspace; year constructed; building use; location; energy sources and end uses; heating and cooling equipment and practices; lighting equipment and practices; and building structure. Statistics are reported in delivered BTUs for all fuel types, but are also given in each fuel's more typical measure (kWh, electricity; cubic feet, natural gas; gallons, fuel oil; pounds, district heat; gallons, propane).

Buildings

Title: Household Energy Consumption & Expenditures 1987, Parts 1 and 2 Date/Version #: 1989 and 1990 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Nancy L. Leach, Chief Residential and Commercial Branch EIA (202) 586-1114		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☒ Projections ☐		
Data Tran. Media <small>(If Electronic)</small> Diskette ☒ CD-ROM ☐ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒	Explanatory Notes: Peer review not mentioned. Data available on tape/disk.	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐	Legend: = High = Ave. = Low	

Data Description: Part 1 provides baseline data on how U.S. households use energy. Data collected on a randomly selected set of various types of housing units through surveys of households and energy suppliers. Report is divided into two groups of tables. Both sets report consumption in delivered BTUs, break data down by household characteristics, present it in aggregate totals and household averages, and provide information on the Relative Standard Errors. First set covers household energy consumption, expenditures, and prices related to natural gas, electricity, fuel oil, kerosene, LPG, and data on wood consumption. Second set contains estimates of consumption and expenditures for four end uses of residential energy: space heating, air conditioning, water heating, and appliances. This set also provides heating and air conditioning intensities, or ratios of consumption to weather and floorspace. These are either in BTUs or cents per Heating (Cooling) Degree Day and per heated (cooled) square foot. Part 2 contains much of the same information as Part 1, but is broken down first into four Census regions, and then into nine Census divisions. As in Part 1, consumption, expenditure, and price data related to electricity, natural gas, fuel oil, kerosene, and LPG are presented by various housing characteristics. Wood consumption data are reported, also. Consumption is in delivered BTUs. Appendix B contains data covering consumption from 1978 to 1987 for the purpose of examining trends. Information useful in calculating the Relative Standard Errors is provided.

Buildings

Title: Housing Characteristics 1987 Date/Version #: 1989 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Nancy L. Leach, Chief Residential and Commercial Branch EIA (202) 586-1114		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒					
Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media (If Electronic) Diskette ☒ CD-ROM ☐ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes: Peer review not mentioned. Data available on tape/disk.	

Data Description: Provides baseline data on household energy use over a cross-section of housing types. Covers descriptive characteristics of the residential building stock that affect energy use. Housing characteristics described include: physical characteristics of housing unit, such as type, size, and age of structure; fuel usage and fuel equipment characteristics, such as the type of main and secondary space heating fuel, type and age of heating/cooling equipment, types of appliances; thermal characteristics, such as insulation and retrofits; and behavioral characteristics, such as thermostat settings and how equipment is used. Household characteristics such as family income and number and age of household members are reported and linked to geographic characteristics, such as Census regions or divisions and climate zones. The detailed data tables consist of various cross-tabulations of these characteristics.

Buildings

Title: Buildings Energy Use Compilation Analysis (BECA) Date/Version #: Ongoing Sponsor: U.S. Department of Energy Developer: Lawrence Berkeley Laboratory Contact: Mary Ann Piette (510) 486-6286		Type of Data Technology En. Efficiency ☒ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☒ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒	Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☒ Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Tran. Media (If Electronic) Diskette ☒ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☒ Estimated ☐ Modelled ☐ Surveyed ☐	Legend: = High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size (If Electronic) < 10 mB ☒ < 100 mB ☐ > 100 mB ☐	Explanatory Notes: 		
Data Description: BECA data bases are a compilation and analysis of measured energy performance data from primary data sources for residential and commercial buildings and equipment. Data obtained from published and unpublished sources, researchers, utilities, architects, government authorities, and others. Contains data compiled since 1982 from over 3000 buildings in seven individual data bases, organized by sector: 1) new, low-energy houses; 2) existing, retrofitted houses; 3) new, low-energy commercial buildings; 4) retrofits in existing commercial buildings; 5) efficient appliances and equipment; 6) load management of electricity in commercial buildings; 7) validation of models. Each compilation is independent but all share emphasis of verified, measured data and normalized performance indicators. Minimum data record for each building includes: a physical description, energy design strategy, incremental cost of the conservation measure, weather data, and measured energy use. Buildings are mostly in U.S. but are also projects from Canada and Western Europe. Data bases are computerized and available for on-line remote access. Many reports have been published based on BECA findings.				

Buildings

Title: The Potential for Electricity Efficiency Improvements in the U.S. Residential Sector Date/Version #: July 1991 Sponsor: U.S. Environmental Protection Agency U.S. Department of Energy Developer: Lawrence Berkeley Laboratory Contact: Jon G. Koomey LBL-Univ. of California Berkeley, CA 94720 (510) 486-5974		Type of Data Technology En. Efficiency ☒ Renewables ☐ Benchmarks ☒ Cost ☒ Performance ☐ Reliability-Life ☒ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(if Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☒ Data Tran. Media <small>(if Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size <small>(if Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		
Data Origin Primary ☐ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☒		Documentation Extensive ☒ Partial ☐

= High
 = Ave.
 = Low

Explanatory Notes: Methodology peer review.

Data Description: Provides supply curve data for various electrical energy conservation options in the residential sector for the years 2000 and 2010. Purpose of report was to provide enough detail to estimate cost of reducing carbon emissions. Appendix 2a contains a conservation measure database for a maximum technical potential efficiency supply curve in 2000. It reports incremental costs/unit in \$1989, energy savings in kWh/unit and TWh, cost of conserved energy (CCE) in cents/kWh, and an estimate of the applicable stock. Appendix 2b provides the same information for 2010. Appendix 3 contains sources of data for each measure. Also includes energy consumption (kWh) and lifetime for baseline items, and energy savings (kWh), lifetime, percent of applicable stock, and incremental cost (\$1989) for conservation measures. Forecasts of end-use energy (TWh/year) in 1990, 2000, and 2010 in a frozen-efficiency case are found in Appendix 4. Appendix 5 contains supply curve data sorted by end-use category (space conditioning, refrigeration, water heating, lighting, and other).

Buildings

Title: Residential and Commercial Buildings Data Book Date/Version #: February 1988, 3rd Edition Sponsor: U.S. Department of Energy Developer: Pacific Northwest Laboratory Contact: Andrew K. Nicholls, Battelle, PNL 901 D Street, SW Washington, DC 20024 (202) 646-5238		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☒ Projections ☐		
Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐	Explanatory Notes: Peer review not mentioned.	

Data Description: Compilation of data from other sources. Gathered mainly from Bureau of the Census and EIA documents. Divided into several sections, each of which is described below. Characteristics of Residential Building Stock--provides energy related characteristics, including house type, fuel usage, and heating and cooling equipment, as of 1985. Characteristics of New Single Family Construction--reports similar information on housing built between 1973 and 1986. Characteristics of New Multi-Family Construction--provides similar data on units constructed between 1971 and 1986. Household Appliances--contains data on possession and energy efficiency of appliance stock, including heating and cooling equipment, for 1972 to 1983. Residential Sector Energy Consumption and Prices--provides amount and type of fuels consumed, prices, and total energy-related expenditures for 1960 to 1985. Characteristics of Commercial Building Stock--data similar to Residential Stock chapter. Commercial Buildings Sector Energy Consumption, Prices, and Expenditures-- similar to Residential Sector chapter. Data is often divided by four census regions: Northeast, North Central, South, and West. Consumption is reported in BTUs, but is unclear in many of the tables if it is primary or delivered.

Buildings

Title: Technical Support Document: Energy Conservation Standards for Consumer Products: Dishwashers, Clothes Washers, and Clothes Dryers

Date/Version #: 1990

Sponsor: U.S. Department of Energy

Developer: Lawrence Berkeley Laboratory

Contact: Michael J. McCabe

Director, Office of Codes & Standards

U.S. DOE

(202) 586-9127

Data Format	Data Structure (If Electronic)
Data Base ☐	DBMS (or Compatible) ☐
Model ☐	Spreadsheet (or Compatible) ☐
Report/Table ☒	Other (eg ASCII) ☐

Data Timeperiod	Data Tran. Media (If Electronic)
Historical ☐	Diskette ☐
Present ☒	CD-ROM ☐
Projections ☒	Tape ☐

Data Access	Data Size (If Electronic)
Open ☒	< 10 mB ☐
Restricted ☐	< 100 mB ☐
Licensable ☐	> 100 mB ☐

Type of Data
Technology
En. Efficiency ☐
Renewables ☐
Benchmarks ☒
Cost ☒
Performance ☒
Reliability-Life ☒
Material Req. ☐
Market
Size ☒
Economics ☒
En. Consump. ☒
Environmental
Coefficients ☐
Emissions ☐
Impacts ☐

Data Origin
Primary ☐ Secondary ☒
Measured ☐
Estimated ☐
Modelled ☒
Surveyed ☐

Documentation
Extensive ☐
Partial ☒

Key Criteria	Suitability
Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒
Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒
Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐
Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐

= High = Ave. = Low

Explanatory Notes: Update, peer review not mentioned.

Data Description: Contains baseline forecasts of variables related to energy consumption by dishwashers, clothes washers, and clothes dryers under current legislation. Projections from 1988 to 2015 for a number of demographic, economic, and energy variables, including energy prices, household income, housing stock, housing starts, mix of house types, building and shell thermal characteristics, appliance purchases, equipment prices, unit energy consumption, and aggregated residential energy consumption by fuel type are made. Section 4.1 contains many of the necessary economic and demographic assumptions (population, disposable personal income, annual housing starts, energy prices (\$/MMBTU), and equipment lifetime). Other economic data, such as equipment price, initial market shares, elasticities, efficiency choices, and usage behavior are included in Appendix B. LBL's Residential Energy Model was used to forecast demand based on these inputs. Reference case projections of unit energy consumption (UEC)(kWh/yr), efficiency factors, annual appliance installations, annual residential energy consumption (primary BTUs), and prices of purchased appliances (\$1987) are given in section 4.2. Variations in equipment prices, UECs and AFUEs, due to changes in several input variables, are presented in section 4.3. Appendix B contains all of the necessary demographic, economic, and engineering input data, which is also available electronically for PC-compatible computers.

Buildings

Title: Technical Support Document: Energy Conservation Standards for Consumer Products: Refrigerators and Furnaces

Date/Version #: 1990

Sponsor: U.S. Department of Energy

Developer: Lawrence Berkeley Laboratory

Contact: Michael J. McCabe

Director, Office of Codes & Standards

U.S. DOE

(202) 586-9127

Data Format	Data Structure (If Electronic)
Data Base ☐	DBMS (or Compatible) ☐
Model ☐	Spreadsheet (or Compatible) ☐
Report/Table ☒	Other (eg ASCII) ☐

Data Timeperiod	Data Tran. Media (If Electronic)
Historical ☐	Diskette ☐
Present ☒	CD-ROM ☐
Projections ☒	Tape ☐

Data Access	Data Size (If Electronic)
Open ☒	< 10 mB ☐
Restricted ☐	< 100 mB ☐
Licensable ☐	> 100 mB ☐

Type of Data
Technology
En. Efficiency ☐
Renewables ☐
Benchmarks ☒
Cost ☒
Performance ☒
Reliability-Life ☒
Material Req. ☐
Market
Size ☒
Economics ☒
En. Consump. ☒
Environmental
Coefficients ☐
Emissions ☐
Impacts ☐

Data Origin
Primary ☐ Secondary ☒
Measured ☐
Estimated ☐
Modelled ☒
Surveyed ☐

Documentation
Extensive ☐
Partial ☒

Key Criteria	Suitability
Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒	
Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒	
Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐	
Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	

= High
 = Ave.
 = Low

Explanatory Notes: Update, peer review not mentioned.

Data Description: Contains baseline forecasts of variables related to energy consumption by refrigerators and furnaces under current legislation. Projections from 1988 to 2015 for a number of demographic, economic, and energy variables, including energy prices, household income, housing stock, housing starts, mix of house types, building and shell thermal characteristics, appliance purchases, equipment prices, unit energy consumption, and aggregated residential energy consumption by fuel type are made. Section 4.1 contains many of the necessary economic and demographic assumptions (population, disposable personal income, annual housing starts, energy prices (\$/MMBTU), and equipment lifetime). Other economic data, such as equipment price, initial market shares, elasticities, efficiency choices, and usage behavior are included in Appendix B. LBL's Residential Energy Model was used to forecast demand based on these inputs. Reference case projections of unit energy consumption (UEC)(kWh/yr) or average unit efficiency, annual appliance installations, annual residential energy consumption (primary BTUs), prices of purchased appliances (\$1987), and operation expenses are given in section 4.2. Variations in equipment prices, UECs and AFUEs, due to changes in several input variables, are presented in section 4.3. Appendix B contains all of the necessary demographic, economic, and engineering input data, which is also available electronically for PC- compatible computers.

Buildings

Title: American Housing Survey for the United States in 1987 Date/Version #: 1989 Sponsor: U.S. Department of Housing & Urban Development Developer: U.S. Department of Commerce Bureau of the Census Contact: Superintendent of Documents U.S. Government Printing Office Washington, DC 20402 (202) 783-3238		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(if Electronic)</small> DBMS ☐ <small>(or Compatible)</small> Spreadsheet ☐ <small>(or Compatible)</small> Other (eg ASCII) ☒	Data Timeperiod Historical ☐ Present ☒ Projections ☐		
Data Tran. Media <small>(if Electronic)</small> Diskette ☐ CD-ROM ☒ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	= High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(if Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐		

Explanatory Notes: Peer review not mentioned.

Data Description: Presents statistics on housing and household characteristics from a 1987 sample of 55,800 housing units nationwide. Survey is repeated every two years in odd-numbered years. Areas covered are the U.S., inside and outside metropolitan areas, urban and rural, and the four census regions. Chapters are broken down by race, area, age of owner, and type of occupant. Information provided includes: 1) size and composition of housing inventory, 2) characteristics of occupants, including finances, 3) changes in inventory resulting from new construction, 4) indicators of housing and neighborhood quality, 5) and characteristics of recent movers. Data on fuel types and existing equipment (heating, air-conditioning, water heating and refrigeration) are reported, as well. Numerous tables present cross-tabulations of various characteristics. Appendix B contains an explanation of the sampling and estimation procedure. Computerized microdata (individual respondent records) from metropolitan and national samples are available on CD-ROM, tape, or microfiche by contacting Data User Services Division, Customer Services (data medium), Bureau of the Census, Washington, DC 20233 (phone: 301-763-4100).

Buildings

Title: Characteristics of New Housing: Current Construction Reports Date/Version #: 1990 Sponsor: U.S. Department of Housing & Urban Development Developer: U.S. Department of Commerce Bureau of the Census Contact: U.S. Department of Commerce Bureau of the Census Washington, DC 20233		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes: Peer review not mentioned.	

Data Description: Presents statistics on financial and physical aspects of new housing in the United States. Based on the Survey of Construction, Survey of New Mobile Home Placements, and the Survey of Market Absorption. Report divided into sections on characteristics of single and multifamily housing completed, one-family houses sold, contractor-built houses started, new mobile home placements, and a supplement on types and characteristics of apartments units completed in buildings having five units or more. Data reported include fuel types, type of heating equipment, existence of air-conditioning, square footages, and prices. Estimates are generally given for the U.S., four census regions, and inside and outside metropolitan survey areas. Data for 1986 through 1990 are provided. Appendices explain surveys and discuss data quality.

Industry Summary

Data Information		Type of Data			Key Criteria			
Data Sponsor	Data Title	Tech- nology	Market	Envi- ronment	Peer Review	Update	Cost	Geo- Detail
BPA	Industrial Conservation Supply Curve Model ...	☒	☐	☐	☒	☐	☒	☐
EPRI	Electrotechnology Reference Guide - Rev. 1	☒	☒	☐	☐	☐	☒	☐
	Industrial Demand Side Planning Data Project	☐	☒	☐	☐	☐	☒	☒
GRI	Projected Total Energy & Natural Gas ...	☐	☒	☐	☒	☐	☒	☒
U.S. DOE	1987 Census of Construction Industries ...	☐	☒	☐	☒	☐	☒	☐
	1987 Census of Manufacturers Subject Series	☐	☒	☐	☒	☐	☒	☐
	1987 Census of Mineral Industries	☐	☒	☐	☒	☐	☒	☐
	1989 Annual Survey of Manufacturers	☐	☒	☐	☒	☐	☒	☐
	Current Industrial Reports 1989	☒	☐	☒	☒	☐	☒	☒
	Manufacturing Energy Database (MED)	☐	☒	☐	☒	☐	☐	☐
	National Energy Accounts	☐	☒	☐	☒	☐	☒	☐
U.S. DOE/EIA	Energy Use in Industry	☒	☒	☐	☐	☐	☒	☐
	Industrial Fuel Switching	☐	☒	☐	☐	☐	☒	☒
	MECS: Changes in Energy Intensity ...	☐	☒	☐	☒	☐	☒	☐
	MECS: Consumption of Energy 1988 ...	☐	☒	☐	☒	☐	☒	☐
	MECS: Manufact. Fuel Switching Cap. 1988 ...	☐	☒	☐	☒	☐	☒	☐
U.S. DOE	EADC Manufacturers Data Base	☒	☒	☐	☐	☐	☒	☐
	Energy Analysis of 108 Industrial Processes	☐	☒	☒	☐	☐	☐	☒
	INDUST (and other sponsors)	☐	☒	☐	☐	☐	☐	☒
U.S. EPA	Characterization of Municipal Solid Waste ...	☐	☐	☒	☐	☐	☒	☐
		☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐
		☐	☐	☐	☐	☐	☐	☐

Industry

Title: Industrial Conservation Supply Curve Model Enhancement & Reference Database Date/Version #: December 1991 Sponsor: Bonneville Power Administration Developer: ADM Associates RCG/Hagler Bailly, Inc. Contact: Janette Schmidt, BPA Box 3621 RPED Portland, OR 97208 (503) 230-3098		Type of Data Technology En. Efficiency ☒ Renewables ☐ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☒ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☒ Surveyed ☐			
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒

= High
 = Ave.
 = Low

Explanatory Notes: Methodology peer reviewed.

Data Description: Three volume database containing data on 70 electrical ECMs divided into 9 families. The electronic version can be loaded on a 285 PC with 640K and Q and A database software. A volume of documentation is also available. Chapter 3 discusses the development of the database and Appendix A explains the database in detail. In addition to KWh saved, the following data are contained in the database: total installed cost for incumbent and ECM (\$), average system efficiency before and after (%), nominal efficiency before (%), effective input power to ECM (kW), expected useful life of incumbent and ECM (yrs.), average equipment load factor when in use (%), nominal power rating of incumbent (kW), change in O&M costs (\$), input power saved by ECM (%), average Utilization Ratio (%), Applicability and Penetration Factors (%), and average hours of operating time.

Industry

Title: Electrotechnology Reference Guide - Revision 1 Date/Version #: September 1988 Sponsor: Electric Power Research Institute Developer: Resource Dynamics Corp. Contact: Leslie Harry Customer Systems, EPRI (415) 855-2558		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒		● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Cost - \$200	

Data Description: Data compiled on industrial electricity use from several government and private sources, including the ASM, the EEI Statistics Yearbook, the DOE Monthly Energy Review, and the Federal Reserve Board. Data gathered on natural gas from the Gas Research Institute and the American Gas Association. Data grouped by two digit SIC sectors (20-39). For data on electrotechnologies and their end uses, EPRI reports, industry experts, and equipment suppliers and users were consulted. Using Commerce statistics for economic growth, electrotechnologies are categorized by industrial sector and determine the national electricity consumption of each technology. A three-level overview of industrial electricity use is presented: 1) Industry Analysis showing that the 20 standard manufacturing sectors accounted for 88% of U.S. industrial electricity consumption; 2) Electrotechnology Analysis indicating that electrolytic technologies were the greatest users of electricity, with electrolytic reduction and separation consuming 92.7 billion kWh in 1985; 3) End-Use Applications Analysis suggesting that heating offers the most promising opportunity for electricity substitution.

Industry

Title: Industrial Demand Side Planning Data Project Date/Version #: Ongoing (most recent update is 1987) Sponsor: Electric Power Research Institute Developer: Battelle Columbus Laboratories Contact: Paul Meagher (415) 855-2420		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐		Data Structure (If Electronic) DBMS ☒ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐		● = High ● = Ave. ○ = Low	
Data Access Open ☐ Restricted ☒ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☒ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Available to EPRI members only. Data is accessible via modem.	

Data Description: Many products associated with this ongoing effort. Project offers advances in database management systems, intelligent database interface mechanisms, and expert systems for industrial marketing. The essence of the project lies in data integration and development. Ongoing tasks include: 1) identification, review, and synthesis of industry data into a data base; 2) the Industrial Data Sources Handbook; and 3) a scoping study for future efforts. The data base contains and enhances data available to utilities (MECS, Commerce, and other) for planning and implementing programs beneficial to both utility and industrial customers. Energy consumption patterns and economic parameters (value added, employment, etc.) are given for selected 2, 3, and 4 SIC industries. At the 4-digit SIC level, aggregated data at the national level are presented for kWh purchases and Btu purchases of gas, oil, coal, and other fuels for the years 1977, 1982, and 1987. Dollar amounts for all these fuels are also available. 4-digit data are aggregated to the 3-digit SIC level and presents energy consumption data by state. 2-digit SIC data are also presented at the state level and contain electricity purchases by gas, coal, oil and other fuels. Efforts are being made to package the data so it will be available to non-utility entities.

Industry

Title: Projected Total Energy and Natural Gas Demand in the Industrial Sector Date/Version #: April 1991 Sponsor: Gas Research Institute Developer: Energy & Environmental Analysis, Inc. Contact: Marie Lihn Gas Research Institute (202) 662-8989		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐		Data Timeperiod Historical ☐ Present ☐ Projections ☒		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☒ Surveyed ☐		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Data derived from ISTIM model.					

Data Description: Provides information on industrial energy use by fuel type, functional end-use, industry group, and region. The results of this study will be used as a basis to revise GRI's projections of energy service demands and total energy use in the industrial sector; these will be reflected in the 1992 edition of the GRI Baseline Projection of Energy Supply and Demand to 2010, which is used as a strategic input for planning the GRI R&D program. The main objectives of this study were to identify and discuss the salient trends in future industrial total energy and natural gas demand and to analyze the basic factors underlying those trends. The overview of industrial energy use contains historical industrial gas use, demand projections of overall industrial energy use, and a comparison of primary energy demand projections with the industrial production growth rate forecasts by industry group. The Functional end-use of energy section contains information on steam and power generation, process heat applications, feedstocks, and others categories. Data is in British Thermal Units.

Industry

Title: 1987 Census of Construction Industries,
U.S. Summary: Establishment with and
without Payroll

Date/Version #: March 1990

Sponsor: U.S. Department of Commerce

Developer: Bureau of the Census

Contact: Construction Statistics Division
(301) 763-7546

Data Format	Data Structure (If Electronic)
Data Base ☐	DBMS (or Compatible) ☐
Model ☐	Spreadsheet (or Compatible) ☐
Report/Table ☒	Other (eg ASCII) ☒

Data Timeperiod	Data Tran. Media (If Electronic)
Historical ☒	Diskette ☒
Present ☐	CD-ROM ☒
Projections ☐	Tape ☒

Data Access	Data Size (If Electronic)
Open ☒	< 10 mB ☐
Restricted ☐	< 100 mB ☐
Licensable ☐	> 100 mB ☐

Type of Data

Technology	
En. Efficiency	☐
Renewables	☐
Benchmarks	☐
Cost	☐
Performance	☐
Reliability-Life	☐
Material Req.	☐
Market	
Size	☐
Economics	☒
En. Consump.	☐
Environmental	
Coefficients	☐
Emissions	☐
Impacts	☐

Data Origin

Primary	☒
Secondary	☒
Measured	☐
Estimated	☐
Modelled	☐
Surveyed	☒

Documentation

Extensive	☐
Partial	☒

Key Criteria

Peer Review	
Industry	☒
Govt-Labs-Univ	☒
None Described	☐
Updates	
> 1 per Year	☐
1 per 1-5 Years	☒
None	☐
Cost	
No Cost - \$1000	☒
\$1000 - \$5000	☐
> \$5000	☐
Geographic Detail	
National Only	☒
All Regions	☐
Regional/Local	☐

● = High ● = Ave. ○ = Low

Explanatory Notes:

Data Description: Summarizes data previously published in 27 separate industry reports covering construction establishments with payroll. Limited data on construction establishments with no payroll during 1987, obtained from administrative records of the Federal Government, are included. Covers all employer establishments (establishments with payroll) engaged in contract construction, construction for sale, or in subdividing real property into lots as defined in the 1987 SIC Manual. Each establishment was requested to report the percent of total dollar value of business done for each kind of business activity engaged during 1987. Statistics reflect not only the primary activity of the establishments in the industry, but also their secondary activities. Data covering establishments with payroll were obtained from a sample survey. Dollar values are shown in current dollars for the years specified and have not been adjusted for inflation. Relative standard errors are shown in tables and measure sampling variability. Descriptions of the sampling and estimating procedures, and data reliability, are included. For establishments without payroll, only information on total value of business done was available from administrative records.

Industry

Title: 1987 Census of Manufactures Subject Series: General Summary Date/Version #: March 1991 Sponsor: U.S. Department of Commerce Developer: Bureau of the Census Contact: Bruce Goldhirsch, Chief Special Reports (301) 763-1503		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☒ CD-ROM ☒ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		● = High ● = Ave. ○ = Low Explanatory Notes: National data as well as selected states and offshore areas.	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒			

Data Description: The economic censuses have been taken together as an integrated program at 5-year intervals since 1967, and before that for 1963, 1958, and 1954. This report from the 1987 Census of Manufactures presents data from retail trade, wholesale trade, selected service industries, mineral industries, and construction industries, approximately 60% of the \$4,497 billion gross domestic product. Statistics were collected or derived based on census of manufactures (including the Annual Survey of Manufactures) report forms. Data are presented by industry group/sector, and at both the national and state levels. Statistics include operations, employment, capital investment, value added, cost of materials, distribution of establishments by employment-size, class, and major group, and historical statistics for product classes.

Industry

Title: 1987 Census of Mineral Industries: Fuels and Electric Energy Consumed Date/Version #: December 1990 Sponsor: U.S. Department of Commerce Developer: Bureau of the Census Contact: John McNamee Industry Division (301) 763-5938		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media (If Electronic) Diskette ☒ CD-ROM ☒ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☒ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: National data as well as selected states and offshore areas.	

Data Description: The economic censuses have been taken together as an integrated program at 5-year intervals since 1967, and before that for 1963, 1958, and 1954. Presents data from 1987 Census of Mineral Industries on quantity and cost of fuels and electric energy used in mining. The 1987 Census of Mineral Industries covers all establishments with one paid employee or more primarily engaged in mining as defined in the 1987 Standard Industrial Classification (SIC) Manual. For most industries, separate quantity and cost figures were provided on purchased coal, distillate and residual fuel oil, gas, gasoline and electric energy. Only cost figures were obtained for other fuels and undistributed fuels. The cost for liquefied petroleum gas, coke, wood, and other minor fuels are also given. Undistributed fuels include the cost of fuels for establishments that reported a total cost of fuels but failed to report detailed fuels data and cost estimates for establishments which were not mailed report forms. Additional data were obtained on the quantity of fuels produced and consumed for heat or power (coal, crude petroleum, and natural gas). For electric energy, quantity figures were collected for total generated electric energy and electric energy sold. In order to provide figures by industry and geographic area on the basis of a comparable unit of energy used, data on fuels consumed were converted to British thermal units (Btu).

Industry

Title: 1989 Annual Survey of Manufactures:
Statistics for Industry Groups and
Industries

Date/Version #: June 1991

Sponsor: U.S. Department of Commerce

Developer: Bureau of Census

Contact: Michael Zampogna, Chief
Non-durables Branch
Dept. of the Census, ASM
(301) 763-2510

Data Format		Data Structure (if Electronic)	
Data Base ☐		DBMS (or Compatible) ☒	
Model ☐		Spreadsheet (or Compatible) ☐	
Report/Table ☒		Other (eg ASCII) ☒	

Data Timeperiod		Data Tran. Media (if Electronic)	
Historical ☒		Diskette ☒	
Present ☐		CD-ROM ☒	
Projections ☐		Tape ☐	

Data Access		Data Size (if Electronic)	
Open ☒		< 10 mB ☐	
Restricted ☐		< 100 mB ☐	
Licensable ☐		> 100 mB ☒	

Type of Data		Key Criteria		Suitability	
Technology		Peer Review
En. Efficiency ☐		Industry ☒			
Renewables ☐		Govt-Labs-Univ ☒			
Benchmarks ☐		None Described ☐			
Cost		Updates
Performance ☐		> 1 per Year ☐			
Reliability-Life ☐		1 per 1-5 Years ☒			
Material Req. ☐		None ☐			
Market		Cost
Size ☐		No Cost - \$1000 ☒			
Economics ☒		\$1000 - \$5000 ☐			
En. Consump. ☒		> \$5000 ☐			
Environmental		Geographic Detail
Coefficients ☐		National Only ☒			
Emissions ☐		All Regions ☐			
Impacts ☐		Regional/Local ☐			

Data Origin	
Primary ☒	Secondary ☐
Measured ☐	
Estimated ☐	
Modelled ☐	
Surveyed ☒	

Documentation	
Extensive ☐	
Partial ☒

= High
 = Ave.
 = Low

Explanatory Notes: Conducted annually. Sample is a subset of the Census of Manufacturers, surveyed every 5 years.

Data Description: Manufacturing establishments statistics for industry groups and industries from the 1989 ASM. Based on reports from a representative sample of about 55,000 establishments. Tables provide a variety of 1989 and 1988 data including economic data on purchased fuels and electric energy used for heat and power by industry group and industry. Purchased fuels and electric energy data are presented in table four and give both quantity (in kWh) and cost (in million dollar units) data by 2, 3, and 4-digit SIC classification. Also presents employment and labor statistics including costs for operating manufacturing establishments and auxiliaries by major group, capital expenditures for plant and equipment, and value of manufacturers' inventories by stage of fabrication.

Industry

Title: Current Industrial Reports: Pollution Abatement Costs & Expenditures, 1989 Date/Version #: November 1991 Sponsor: U.S. Department of Commerce Developer: Bureau of the Census Contact: Elinor Champion Branch Chief, Special Surveys (202) 763-5616		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☒ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒		= High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes: Data collected annually. Primary data estimated to state and national level.	

Data Description: The 1989 survey results are based upon a probability sample panel of approximately 17,000 establishments selected as a subsample of the 1989 Annual Survey of Manufactures. Survey results are represented at the 2-digit SIC level. Both air and water pollution abatement capital expenditures are separated on the basis of abatement technique, distinguishing between end-of-line (EOL) and changes-in production process (CIPP) techniques. Separate expenditure data also are shown in these tables for major types of air pollutants abated such as particulate, sulfur oxides, nitrogen oxides and carbon monoxides, hydrocarbons, volatile organic compounds, lead, hazardous air pollutants, and other. Pollution abatement operating cost data are also given. Data show that major pollution abatement capital expenditures are spent on EOL techniques. Four major industry groups accounted for approximately 66% of new capital expenditures for pollution abatement (groups are by SIC). Four states accounted for approximately 32% of new pollution abatement capital expenditures.

Industry

Title: Manufacturing Energy Database (MED) Date/Version #: Ongoing Sponsor: Energy Information Administration DOE Office of Industrial Technologies Developer: Bureau of the Census Contact: Mark Doms Census Bureau (301) 763-4183		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☐ \$1000 - \$5000 ☐ > \$5000 ☒ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure <i>(If Electronic)</i> DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Tran. Media <i>(If Electronic)</i> Diskette ☒ CD-ROM ☒ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	● = High ● = Ave. ○ = Low	
Data Access Open ☐ Restricted ☒ Licensable ☐	Data Size <i>(If Electronic)</i> < 10 mB ☐ < 100 mB ☐ > 100 mB ☒	Documentation Extensive ☒ Partial ☐	Explanatory Notes: Plant specific, state, and sector data that can be aggregated to national level. Data available on optical disk. Plant-specific data is normally suppressed.	

Data Description: Extension of the Longitudinal Research Database (LRD). A comprehensive plant level dataset on energy efficiency and consumption in U.S. manufacturing. Integrates existing Census Bureau plant level datasets on energy consumption with plant level datasets on production activity. Includes state level energy prices. The production portion of MED comes from the LRD- a concatenation of the quincennial Census of Manufacturers (ASM) between 1972 and 1988. The LRD contains plant level data on many production activity items such as outputs, inventories, new machinery investment, employment, and inputs used in production. The LRD also contains limited energy information: quantity and value of purchased electricity, and cost of purchased fuels. Except for electricity, the LRD does not possess data on the types, quantities, and unit values of fuels used by manufacturing plants. More extensive energy data is included in MED. MED includes both detailed energy data for plants from ASM (1974-81) and the 1985 & 1988 MECS. They provide plant level unit value data for various fuel types. ASM data contain value and quantity detail for the six most widely used fuel types, in addition to the detailed electricity data gathered every year. MECS collects data on over 20 fuel types, as well as data on fuel switching capability, energy produced, and storage capacity. Another component of MED provides state, year, and fuel type price data.

Industry

Title: National Energy Accounts Date/Version #: 1989 Sponsor: U.S. Department of Commerce Developer: Office of Business Analysis U.S. Department of Commerce Contact: Robert Wendling (202) 377-1431		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒		Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☒ CD-ROM ☐ Tape ☒		Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		= High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☒		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Although published in 1989, data is based on the 1985 EIA Manufacturing Energy Consumption Survey and Census' Annual Survey of Manufacturing.					

Data Description: Shows energy use by 122 sectors of the economy, by 64 energy products, and by 28 functional use categories for 1958-1985. The data are largely consistent with the concepts and conventions of the economic interindustry accounts (U.S. Input-Output Tables) maintained by the Bureau of Economic Analysis. The data are also consistent with the production and consumption data at EIA. Major, primary inputs to the National Energy Accounts include Census' Annual Survey of Manufacturing and the 1985 MECS. The most detailed format for this data is useful for analyzing the changes in both industry- specific consumption and cost of energy in a particular end-use. It shows for each sector and functional use how much of each energy product was consumed in terms of BTUs and physical units. Also shown are purchasers' and producers' values in both current and constant (1982=100) dollars. The tabulations can be used to compare relative costs of various energy types, to analyze industry distribution of a given energy product, to identify the types of energy used by specific industry, and to analyze alternative energy product prices.

Industry

Title: Energy Use in Industry: Pulp & Paper; Aluminum; Cement; & Glass Date/Version #: June 1991 Sponsor: U.S. Department of Energy Energy Information Administration Developer: Arthur D. Little, Inc. Contact: Lem Kusik Director, Process Technologies (617) 864-5770		Type of Data Technology En. Efficiency ☒ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS ☐ <small>(or Compatible)</small> Spreadsheet ☐ <small>(or Compatible)</small> Other (eg ASCII) ☐		Data Timeperiod Historical ☒ Present ☐ Projections ☒		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐		● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Draft data					

Data Description: Energy use profile for key manufacturing industry sectors (SIC 20-39). Includes energy use per unit of output (Btu/ton and kWh/ton) and an energy form database. Six industries account for about 88% of total energy usage: food; pulp and paper; chemicals; petroleum and coal products; stone, clay and glass; and primary metals. Estimates future energy use and intensity for the six industries due to two major factors: 1) structural changes and 2) technological changes. Data produced from this profile will be used by EIA in an industrial sector energy forecasting model. Major end uses of energy in each sector are electric energy, steam, direct uses of fuels, and feedstocks. Information developed for 1985 assuming constant outputs. A base year of 1985 was used for this database because: 1) it was the last year in which a complete set of MECS and industry data had been published, and 2) it represented a fairly average year in the industrial business cycle. Estimates of the end uses of steam are made separately from direct fired fuels since steam can be generated by process boilers or cogenerated.

Industry

Title: Industrial Fuel Switching Date/Version #: February 1987 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: John Holt Office of Energy Markets & End Use (202) 586-1471		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability <div style="text-align: center;">○</div> <div style="text-align: center;">○</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div>
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Tran. Media Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☒ Surveyed ☒	● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒	Explanatory Notes:	

Data Description: Presents an analysis of both actual and potential fuel substitution in the manufacturing sector. Volume of potential fuel switching in the industrial boiler market, effect of potential fuel switching on the natural gas and residual oil markets, and a summary of the 1983 and 1984 fuel switching and fuel use experience. Data provides for the analysis of plant-level data which are useful in understanding fuel choice behavior. Does not provide fuel consumption totals accurate enough to show aggregate trends because it is not based on a statistically designed survey, a standardized list of establishments, or a completely documented methodology. Chapt. 2-relative residual oil and natural gas shares in boilers are compared to relative fuel prices in boilers that can burn both natural gas and residual oil. Chapt. 3-looks at short-term potential for fuel switching rather than realized changes in fuel shares. Appendix A: aggregate summary of industrial energy use data in the MIPD. Appendix B: Census division level data. Appendix C: cross reference of fuel use by the major consuming industries. This analysis is based on the 1984 Dun & Bradstreet Major Industrial Plant Database (MIPD) - a licensable data base containing detailed energy use information for the 20,000 largest energy consuming manufacturing plants. Data was collected in a variety of methods. MIPD is now housed by Petroleum Information, TX. IFS provides a summary of the MIPD at both the national and Census region level and compares the Dun and Bradstreet data to other available data sources.

Industry

Title: Manufacturing Energy Consumption
Survey: Changes in Energy Intensity
in the Manufacturing Sector 1980-1988

Date/Version #: Decemer 1991

Sponsor: U.S. Department of Energy
Developer: Energy Information Admr.inistration

Contact: John L. Preston
MECS Survey Manager
(202) 586-1128

Data Format	Data Structure (If Electronic)
Data Base ☐	DBMS (or Compatible) ☐
Model ☐	Spreadsheet (or Compatible) ☐
Report/Table ☒	Other (eg ASCII) ☒

Data Timeperiod	Data Tran. Media (If Electronic)
Historical ☒	Diskette ☐
Present ☐	CD-ROM ☐
Projections ☐	Tape ☐

Data Access	Data Size (If Electronic)
Open ☐	< 10 mB ☒
Restricted ☒	< 100 mB ☐
Licensable ☐	> 100 mB ☐

Type of Data
Technology
En. Efficiency ☐
Renewables ☐
Benchmarks ☐
Cost ☐
Performance ☐
Reliability-Life ☐
Material Req. ☐
Market
Size ☐
Economics ☒
En. Consump. ☒
Environmental
Coefficients ☐
Emissions ☐
Impacts ☐

Data Origin
Primary ☒ Secondary ☐
Measured ☐
Estimated ☐
Modelled ☐
Surveyed ☒

Documentation
Extensive ☒
Partial ☐

Key Criteria	Suitability
Peer Review	
Industry ☒	☒
Govt-Labs-Univ ☒	
None Described ☐	
Updates	
> 1 per Year ☐	☐
1 per 1-5 Years ☒	☒
None ☐	
Cost	
No Cost - \$1000 ☒	☒
\$1000 - \$5000 ☐	
> \$5000 ☐	
Geographic Detail	
National Only ☒	☒
All Regions ☐	
Regional/Local ☐	

☒ = High ☐ = Ave. ☐ = Low

Explanatory Notes: Original data can only be accessed for research on a cost-reimbursable basis by submitting proposals to the MECS Office in EIA.

Data Description: This report is a continuation of a data series on energy intensity change and follows the results of the 1985 MECS. The 1985 publication presented changes in energy intensities from 1980 to 1985. This publication extends that analysis to 1988 and is the third of a series based on the results of the 1988 MECS. The 1991 MECS is currently underway. Much of the data in the report was aggregated from the Industry Division of the Bureau of the Census' Annual Survey of Manufactures (ASM). All data reported to the Bureau of the Census are confidential. The purpose of this report is to present the MECS/ASM estimates of the changes in energy intensity by manufacturing industry groups between 1980 and 1988. MECS samples establishments in all the major manufacturing industry groups. MECS does not include energy data for mining, agriculture, construction, fishing, forestry activities, or electric utilities. The primary unit of measure for this document is the Btu. The findings of this report suggest that the mid-1980s mark the start of a period of generally diminished energy efficiency gains in manufacutring. The Industry Division of the Bureau of Census serves as EIA's data collecting and compiling agent for MECS.

Industry

Title: Manufacturing Energy Consumption Survey: Consumption of Energy 1988 Date/Version #: May 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: John L. Preston MECS Survey Manager (202) 586-1128		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒		Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		● = High ● = Ave. ○ = Low Explanatory Notes: Original data can only be accessed for research on a cost-reimbursable basis by submitting proposals to the MECS office in EIA.	
Data Access Open ☐ Restricted ☒ Licensable ☐		Data Size < 10 mB ☒ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐							

Data Description: The estimates in this report are based on data collected in the 1988 Manufacturing Energy Consumption Survey (MECS). EIA conducts this national sample survey of manufacturing energy consumption on a triennial basis. The 1991 MECS is currently underway. MECS is the only comprehensive source of national-level data on energy-related information for the manufacturing industries. This report is the first of a series that include reports on fuel-switching capabilities and changes in energy efficiency. The purpose of this report is designed to produce high-quality estimates of energy consumption and related information for industry categories within the manufacturing division between 1980 and 1988. MECS samples establishments in all the major manufacturing industry groups. Electric utilities, mining operations, agriculture, forestry and fishery operations, and construction are not included in the manufacturing division. Data are represented using appropriate measurements: British thermal units (Btu), barrels or gallons of fuel, or Kilowatthours (kWh). The Industry Division of the Bureau of the Census serves as EIA's data collecting and compiling agent for the MECS.

Industry

Title: Manufacturing Energy Consumption
Survey: Manufacturing Fuel
Switching Capability 1988

Date/Version #: September 1991

Sponsor: U.S. Department of Energy
Developer: Energy Information Administration

Contact: John L. Preston
MECS Survey Manager
(202) 586-1128

Data Format	Data Structure (If Electronic)
Data Base ☐	DBMS (or Compatible) ☐
Model ☐	Spreadsheet (or Compatible) ☐
Report/Table ☒	Other (eg ASCII) ☒

Data Timeperiod	Data Tran. Media (If Electronic)
Historical ☒	Diskette ☐
Present ☐	CD-ROM ☐
Projections ☐	Tape ☐

Data Access	Data Size (If Electronic)
Open ☐	< 10 mB ☒
Restricted ☒	< 100 mB ☐
Licensable ☐	> 100 mB ☐

Type of Data
Technology
En. Efficiency ☐
Renewables ☐
Benchmarks ☐
Cost ☐
Performance ☐
Reliability-Life ☐
Material Req. ☐
Market
Size ☐
Economics ☐
En. Consump. ☒
Environmental
Coefficients ☐
Emissions ☐
Impacts ☐

Data Origin
Primary ☒ Secondary ☐
Measured ☐
Estimated ☐
Modelled ☐
Surveyed ☒

Documentation
Extensive ☒
Partial ☐

Key Criteria	Suitability
Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐
Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐
Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐
Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐

= High
= Ave.
= Low

Explanatory Notes: Original data are proprietary to Census and can only be accessed for research on a cost-reimbursable basis by submitting proposals to the MECS office in EIA.

Data Description: Data for industry groups are presented as National aggregates. Some data are also given for Census regions. Estimates are based on data collected on the 1988 MECS Forms 846 (A through C) and are presented using the SIC system. Report measures the short-term capability of manufacturing establishments to have used alternative energy sources in place of those actually consumed in 1988 to meet requirements for heat and power, while keeping production constant. Fuel-switching capability was determined for six major energy sources: electricity receipts, natural gas, distillate fuel oil, residual fuel oil, liquefied petroleum gases (LPG), and coal and coke combined. For each of these energy sources, switching capability for combustible energy sources are based on the MECS measure of total inputs of energy for heat, power, and electricity generation. Data are presented for industry, industry groups, and Census regions. Industries are also grouped according to selected economic characteristics including value of shipments and employment size. The Industry Division of the Bureau of the Census serves as EIA's data collecting and compiling agent for MECS.

Industry

Title: Energy Analysis and Diagnostic Center (EADC) Manufacturers Data Base Date/Version #: January 1992 Sponsor: U.S Department of Energy, CE-OIT Developer: University City Science Center Contact: Implementation & Deploy. Div., OIT Charles J. Glaser, DOE/CE-223 (202) 586-1298		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒		Suitability <div style="text-align: center;">○</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div> <div style="text-align: center;">○</div>					
Data Format Data Base ☒ Model ☐ Report/Table ☐		Data Structure (If Blank) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒		Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media (If Blank) Diskette ☒ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐		<div style="text-align: center;"> ● = High ● = Ave. ○ = Low </div>	
Data Access Open ☐ Restricted ☒ Licensable ☐		Data Size (If Blank) < 10 mB ☒ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Data measure: audited. Periodic data updates.					

Data Description: EADC program is overseen by the Implementation and Deployment Division, DOE/CE-223 and is conducted by 18 colleges and universities across the country. Data are collected by teams of engineers who conduct energy audits of small and medium-size manufacturing plants (2445 reports between 1981 and 1989). Energy supply, process efficiency, equipment changes (actual/potential), and other potentials for cost savings are represented. Plant level data from many different regions of the nation on costing and payback analysis. The reports represent a collection of factual findings about existing conditions, recommendations for change, and the cost-savings actually realized by implementing those recommendations. Plants classified by 2-digit SIC code. Energy-conserving and cost-saving measures recommended and implemented use the Directory of Industrial Energy Conservation Opportunities (DIECO) system. Efforts are underway to prepare data for public use.

Industry

Title: Energy Analysis of 108 Industrial Processes Date/Version #: September 1985 Sponsor: U.S. Department of Energy Developer: Drexel University Contact: Drexel University Project Team Dept. of Mechanical Engineering & Mechanics (H. Brown & B. Hamel) (215) 895-2000		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☐		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes:	

Data Description: Purpose- to provide a preliminary assessment of the quantity and quality of waste energy which may be economically practical to recover in the industrial sector. To characterize the type and state condition of waste streams realistically and to make accurate estimates of recovery potential require data at the four-digit level. This industrial data base consists of energy utilization data for 60 four-digit SIC industries. Selected on the basis of energy consumption, these industries represent over 70% of the U.S. industrial manufacturing energy consumption. Based on energy consumed as purchased fuels. Several of the four-digit industries included in the data base were further desegregated to accurately represent all relevant processes. In total, 108 industrial processes are defined in the data base and are given five-digit designations. The 108 processes account for approximately 72% of the industrial manufacturing energy consumption. Process flow sheets, industrial consultants, Census of Manufacturers data, other reports and secondary and tertiary sources were used to obtain aggregated data at the SIC level desired. Energy measures are in British Thermal Units.

Industry

Title: INDUST Date/Version #: Ongoing Sponsor: U.S. Department of Energy (and other sponsors) Developer: Battelle Pacific Northwest Laboratory Contact: Pete Wilfert Pacific Northwest Laboratory Tech. Tracking Program (509) 376-4561		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☐ \$1000 - \$5000 ☐ > \$5000 ☒ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure (If Electronic) DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
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Data Access Open ☐ Restricted ☐ Licensable ☒	Data Size (If Electronic) < 10 mB ☐ < 100 mB ☒ > 100 mB ☐	Documentation Extensive ☐ Partial ☒		

Explanatory Notes: Periodically updated. Data are contained in a variety of electronic media.

Data Description: INDUST is a multi-component information base supporting industrial sector analysis for the most energy intensive industrial groups in the manufacturing sector. Provides an overall framework for organizing specific industrial data and related information. Framework subdivides into four broad areas of data and information: 1) Plants- 70,000 plants, location, types of industrial products produced, employment and sales, cost of electric power and natural gas. 2) Processes- energy flow at process level and at each unit of operation within process, measured in BTUs 3) Equipment- energy-intensive equipment used within a specific manufacturing plant site, and 4) Advanced Technologies- applicable to manufacturing process and equipment, that may substitute existing equipment and processes. Individual data bases have been compiled in each of these areas. Databases can be linked. INDUST covers plant information from throughout the nation, process/unit operation information for typical plants, identification of energy intense equipment, and advanced competing technologies. None of the databases within INDUST are funded directly, therefore upgrading of the databases is not supported on a routine basis nor is it hardwired for continuous independent access. Instead, the databases are upgraded on as needed basis to support specific research needs of a funded project. Coverage ranges from individual plant information to national level information. Data can be aggregated from small geographic areas to larger ones. Portions are available in electronic format.

Industry

Title: Characterization of Municipal Solid Waste in the U.S.: 1990 Update Date/Version #: June 1990 Sponsor: U.S. Environmental Protection Agency Developer: Contact: Jan Canterbury Waste Reduction Management Branch (202) 260-2349		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
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Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media (If Database) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐		● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Database) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Periodically updated.	

Data Description: This report is the most recent in a series of EPA reports to characterize municipal solid waste (MSW). It characterizes the national waste stream based on data through 1988 and includes: MSW generation from 1960 to 1988; information on recovery for recycling, composing, and combustion from 1960 to 1988; characterizes MSW by volume as well as by weight; projections for MSW generation to the year 2010; projections for MSW combustion through 2000; projections for recovery and recycling through 1995. Characterizes for the nation as a whole. May not correlate with individual state or local estimates of waste generation and management. Uses "material flow methodology." Based on production data (by weight) for the materials and products in the waste stream, with adjustments for imports, exports, and product lifetimes. Estimates how much municipal solid waste (MSW) is generated, recycled, combusted, and disposed of in landfills. Determining the makeup of the waste stream, waste characterizations also provide valuable data for setting waste management goals, tracking progress toward goals, and supporting planning at the national, state, and local levels.

Transportation Summary

Data Information		Type of Data			Key Criteria			
Data Sponsor	Data Title	Tech- nology	Market	Environ- ment	Peer Review	Updates	Cost	Geo. Detail
U.S. DOE/EIA	Household Vehicles Energy Consumption 1988	☐	☒	☐	☒	☐	☒	☒
U.S. DOE	Alternative Fuels Data Center	☒	☒	☒	☒	☒	☒	☒
	Highway Vehicle MPG & Market Shares Rpt.	☒	☒	☐	☒	☐	☒	☐
	Properties of Alcohol Transportation Fuels	☒	☐	☒	☒	☐	☒	☐
	Transportation Energy Data Book - Ed. 11	☒	☒	☒	☒	☐	☒	☐
U.S. DOT	1990 Nationwide Personal Transportation Std.	☐	☒	☐	☒	☐	☒	☐
	Highway Statistics 1991	☐	☒	☐	☐	☐	☒	☐
	National Transportation Statistics	☐	☒	☐	☐	☐	☒	☐
U.S. EPA	Analysis of the Econ. & Envir. Effects of ...	☒	☒	☒	☒	☐	☒	☐
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Transportation

Title: Household Vehicles Energy Consumption 1988 Date/Version #: February 1990 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Nancy Leach Energy End Use Division Washington, DC (202) 586-1114		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☒ Projections ☐ Data Tran. Media <small>(If Electronic)</small> Diskette ☒ CD-ROM ☐ Tape ☒ Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size <small>(If Electronic)</small> < 10 mB ☒ < 100 mB ☐ > 100 mB ☐ Documentation Extensive ☒ Partial ☐

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Explanatory Notes: Tape: mainframe
 EBCDIC, Diskette: DBase III, or
 ASCII

Data Description: The document is the primary publication from the 1988 Residential Transportation Energy Consumption Survey (RTECS). The RTECS provides baseline information on motor vehicle use in the residential sector, and is a subsample of the Residential Energy Consumption Survey (RECS) and is an integral part of a series of surveys designed by the EIA to collect data on energy use in the residential sector. This report is primarily a descriptive profile of personal vehicle transportation in 1988 in the residential sector. Included are data about: the number and type of vehicles in the residential sector, characteristics of those vehicles (including based on vehicle identification number), the total annual vehicle miles traveled (VMT) (from actual odometer readings at two points in time), the per household and per vehicle VMT, the vehicle fuel consumption and expenditures, and vehicle fuel efficiencies in miles per gallon. Data are based on household telephone interviews conducted during 1988. The 1988 RTECS represents 91.6 million households and 147.5 million household motor vehicles in the 50 States and the District of Columbia. Previous RTECS were conducted monthly from June 1979 to September 1981, and then annually in 1983 and 1985. The next RTECS is scheduled in 1991. The data provides objective and timely energy information for a wide audience including Congress, Federal and State agencies, industry and the general public.

Transportation

Title: Alternative Fuels Data Center Date/Version #: As of February 1992 Sponsor: U.S. Department of Energy Developer: National Renewable Energy Laboratory Contact: Robert Wooley, NREL Golden, CO (303) 231-7191		Type of Data Technology En. Efficiency ☒ ☐ Renewables ☒ Benchmarks ☒ Cost ☐ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☒ Emissions ☒ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☐		
Data Tran. Media Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☒ Estimated ☐ Modelled ☐ Surveyed ☐	● = High ● = Ave. ○ = Low Explanatory Notes: ORACLE, Updated Weekly	
Data Access Open ☐ Restricted ☒ Licensable ☐	Data Size < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☐		

Data Description: Operated and managed by NREL, the AFDC will gather and analyze information on the fuel consumption, emissions, operation, and durability of three vehicle types (light-duty vehicles, light-duty trucks, and heavy-duty vehicles) using the alternative fuels, methanol, ethanol, and natural gas. AFDC was established as a directive of The Alternative Motor Fuels Act (AMFA) (Public Law 100-494) established in 1988, which encourages the production and use of motor vehicles designed to operate on alternative fuels. The database will be designed as a multi-user network with remote access facility. Periodic reports will describe significant events and conclusions from data analysis and field-site information. AFDC became operational in September 1991. Access is currently available to Ford/GM/DOE. Expanded access and documentation is planned. Data are currently available in the following databases: Alternative Fuels Refueling Sites Database – tracks information on alternative fuels refueling sites (i.e. name, location, phone, contact), detailed information on specific types of fuel, types of fuel dispensers, number of dispensers, etc.; Alternative Fuels Utilization Database – tracks the results of alternative fuels vehicles tests which are vital to assessing their effectiveness; and Alternative Fuels Vehicles Database – tracks information and manufacturer plans for developing alternative fuel vehicles.

Transportation

Title: Highway Vehicle MPG and Market Shares Report: Model Year 1990 Date/Version #: April 1991 Sponsor: U.S. Department of Energy Developer: Oak Ridge National Laboratory Contact: Patricia Hu Oak Ridge, TN (615) 574-5284		Type of Data Technology En. Efficiency ☒ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☒ Projections ☐		
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☐ Secondary ☒ Measured ☒ Estimated ☐ Modelled ☒ Surveyed ☐	Data Size <small>(If Electronic)</small> < 10 mB ☒ < 100 mB ☐ > 100 mB ☐
		Documentation Extensive ☒ Partial ☐	Explanatory Notes:

= High
 = Ave.
 = Low

Data Description: Formerly called the Light-duty Vehicle MPG and Market Shares Report, this document estimates sales-weighted fuel economies, sales, market shares and other vehicle characteristics of new automobiles and light trucks on a make and model basis, from model year 1976 to model year 1990. This addition includes vehicle stock statistics. Vehicle sales data are used as weighing factors in the sales-weighted estimation procedure. Thus, the estimates represent averages of the overall new vehicle fleet, reflecting the composition of the fleet. Highlights are provided on the trends in automobile engine size, curb weight, interior space, wheel base; and light truck engine size from one model year to the next. Analyses are also made on the fuel economy changes to determine the factors which caused the changes. Data is accessible electronically on a PC in SAS with CE approval.

Transportation

Title: Properties of Alcohol Transportation Fuels Date/Version #: July/May 1991 Sponsor: U.S. Department of Energy Developer: Meridian Corporation Contact: Meridian Corporation Alexandria, VA 22302 Tony Alvarez (703) 998-3600		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☒ Cost ☐ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☒ Model ☒ Report/Table ☐		Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐		Data Timeperiod Historical ☒ Present ☒ Projections ☐		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐		Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		● = High ● = Ave. ○ = Low Explanatory Notes:	

Data Description: First in a series of Alcohol Fuel Reference Works targeted to public decision-makers. The document presents a compilation of current scientific and engineering information on the characteristics of alcohol fuels, primarily ethanol (ethyl alcohol) and methanol (methyl alcohol). Other alcohol or alcohol-based fuels are considered. A separate section has been included on ethyl tertiary butyl ether (ETBE). Research findings and data from the period 1985 to 1990 are emphasized although more generic information on characteristics such as basic chemistry has also been included from standard chemistry, engineering and petrochemical reference texts published prior to 1985. The document is divided into the following sections: basic chemistry of alcohol fuels, internal combustion engine, volatility of transportation fuels, compatibility of alcohols with other fuels in blends, engine and vehicle operation issues (including the impact of engine and fuel parameters on emissions), cleaning and corrosion characteristics of alcohol, new directions for reformulating alcohol fuels to overcome operational problems, ethyl tertiary butyl ether (ETBE), and health and safety issues.

Transportation

Title: Transportation Energy Data Book Date/Version #: January 1991/Ed. 11 Sponsor: U.S. Department of Energy Office of Transportation Technologies Developer: Oak Ridge National Laboratory Contact: Stacy Davis Oak Ridge, TN (615) 574-5957		Type of Data Technology En. Efficiency ☒ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☒ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(if different)</small> DBMS ☐ <small>(or Compatible)</small> Spreadsheet ☐ <small>(or Compatible)</small> Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☒ Projections ☐		
Data Tran. Media <small>(if different)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐	Legend: = High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(if different)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐	Explanatory Notes: Primary data on scrapage rate is included.	

Data Description: Presents statistics and information that characterize transportation activity, and presents data on other factors that influence transportation energy use. Most data are provided from 1973 (or 1970) to 1989. Presents data in graphs and tables. Includes comparisons of U.S. transportation data with data from seven other countries (fuel consumption by fuel type in gallons, vehicle registrations, fuel economy, annual miles per vehicle); aggregate energy use and energy supply data for all transportation modes (energy consumption by mode and fuel type in BTUs and barrels per day of fuel equivalent, fleet by use and by registration); federal standards (CAFE vs sales-weighted fuel economies, emission control requirements); fuel economies (model year sales, market sales and sales-weighted fuel economies); household data (financial and vehicle profile of the population, annual miles per vehicle age, passenger travel and energy use by mode, energy intensities per passenger and vehicle mile by mode, distribution of trips by purpose, transportation GNP, personal consumption expenditures, consumer price indices related to transportation); highway and non-highway modes (vehicle price, operating costs, stock, sales, registrations, survival probabilities and fuel economies); and information on alternative fuels and alternatively-fueled vehicles (gallons of gasohol consumed by reporting states, vapor pressure, number of vehicles in select countries, U.S. production, trade, consumption, price, state tax exemptions and demonstration fleet findings). The only primary data included are automobile and truck scrapage and survival rates; this is the only modeled data. Limited data on renewables are included; this section will be expanded.

Transportation

Title: 1990 Nationwide Personal Transportation Study Date/Version #: August 1991/Early Results Sponsor: U.S. Department of Transportation Federal Highway Administration Developer: FHA/Office of Highway Information Management Contact: Susan Liss, Washington, DC (202) 366-0160		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☒		Data Timeperiod Historical ☒ Present ☒ Projections ☐		Data Tran. Media (If Electronic) Diskette ☒ CD-ROM ☐ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes: Surveyed at 7 yr. intervals.					

Data Description: The NPTS is a national survey of trips and travel that provides data needed at the Federal level to assess the relative use of various modes of travel and to provide information on the characteristics of those travelling and the characteristics of the trips taken, such as trip purpose, length, time, time of day and vehicle occupancy. NPTS collects the characteristics of all trips (regardless of purpose or length), by all modes (except boat or ship), for all household members age 5 and older. Funded by five DOT agencies. The previous surveys in the series (1969, 1977 and 1983) were conducted by the Bureau of the Census. The 1990 survey was conducted by telephone using CATI (computer-assisted telephone interviewing) by Research Triangle Institute in North Carolina; 48,400 persons in 22,300 households were interviewed, 84 percent of all eligible households contacted participated. The data are available in Statistical Analysis System (SAS), standard EBCDIC format, or diskette. User-specified tabulations can be run for a fee.

Transportation

Title: Highway Statistics 1991 Date/Version #: 1991 Sponsor: U.S. Department of Transportation Federal Highway Administration Developer: FHA/Office of Highway Information Management Contact: Walter Hagen Washington, DC (202) 366-3208		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒	Data Structure <small>(if applicable)</small> DBMS ☒ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☒ Projections ☐		
Data Tran. Media <small>(if applicable)</small> Diskette ☒ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒	● = High ● = Ave. ○ = Low Explanatory Notes: D-Base III plus, Online, State-level	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(if applicable)</small> < 10 mB ☒ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐		

Data Description: The 46th of an annual series, it presents 1990 analyzed statistics of general interest on U.S. motor fuel use, vehicle registrations, driver licensing, highway-user taxation, State highway finance, highway mileage, and Federal aid for highways; and 1989 highway finance data for municipalities, counties, townships, and other units of local government. Statistical tabulations include (1) highway use--the ownership and operation of motor vehicles; (2) highway finance--the receipts and expenditures for highways by public agencies; and (3) the highway plant--the extent, characteristics, and performance of the public highways, roads, and streets in the nation. Using an IBM compatible PC with a modem with the software Carbon Copy Plus version 60, registered users can access the document on line at no fee. Data and user built data files can be downloaded on diskette. The database will eventually handle regional statistics.

Transportation

Title: National Transportation Statistics Date/Version #: July 1990 Sponsor: U.S. Department of Transportation Research & Special Programs Administration Developer: RSPA/ Transportation Systems Ctr. Contact: Kathleen Bradley Cambridge, MA (617) 494-2614		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (if Database) DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐ Data Tran. Media Diskette ☐ CD-ROM ☐ Tape ☐ Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒ Data Access Open ☐ Restricted ☐ Licensable ☐ Data Size (if Database) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐ Documentation Extensive ☒ Partial ☐

= High
 = Ave.
 = Low

Explanatory Notes:

Data Description: This document is a compendium of selected national transportation, and transportation-related energy data from a wide variety of government and private sources. It includes data profiles of transportation activity for the major transportation modes – air, automobile, bus, truck, local transit, rail, water, and pipeline; basic descriptors such as operating revenues and expenses, number of vehicles and employees, vehicle- and passenger-miles, and passenger and freight operations; and transportation trends in performance, safety, and motor vehicle sales, production, and costs. Supplementary sections include Transportation and the Economy, and Energy in Transportation which is divided into Energy Consumption, Energy Intensiveness, Energy Transport and Energy Supply and Demand. This report contains summary statistics for the years 1978-1988, and 1989 when available for the transportation industry. Transportation energy data cover the same period and in some instances extend back to 1955. As of 2/12/92, no funds were available to update this report.

Transportation

Title: Analysis of the Economic and Environmental Effects of Compressed Natural Gas, Ethanol and Methanol as a Vehicle Fuel

Date/Version #: 1989-1990

Sponsor: U.S. Environmental Protection Agency

Developer: Office of Mobile Sources

Contact:

Data Format	Data Structure (if Electronic)
Data Base ☐	DBMS (or Compatible) ☐
Model ☐	Spreadsheet (or Compatible) ☐
Report/Table ☒	Other (eg ASCII) ☐

Data Timeperiod	Data Tran. Media (if Electronic)
Historical ☐	Diskette ☐
Present ☒	CD-ROM ☐
Projections ☒	Tape ☐

Data Access	Data Size (if Electronic)
Open ☒	< 10 mB ☐
Restricted ☐	< 100 mB ☐
Licensable ☐	> 100 mB ☐

Type of Data
Technology
En. Efficiency ☐
Renewables ☒
Benchmarks ☒
Cost ☒
Performance ☒
Reliability-Life ☐
Material Req. ☐
Market
Size ☐
Economics ☒
En. Consump. ☐
Environmental
Coefficients ☐
Emissions ☒
Impacts ☐

Data Origin
Primary ☐ Secondary ☒
Measured ☐
Estimated ☐
Modelled ☐
Surveyed ☐

Documentation
Extensive ☐
Partial ☒

Key Criteria	Suitability
Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐
Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒
Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐
Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐

= High
 = Ave.
 = Low

Explanatory Notes:

Data Description: A series of reports released by EPA Office of Mobile Sources on the economic and environmental issues associated with candidate alternative fuels to reduce air emissions. Projections assume the full implementation of the President's Alternative Fuels Program. Analysis of the Economic and Environmental Effects of Methanol as an Automotive Fuel – Includes a review of current and projected market prices; port prices; vehicle costs; and analysis of methanol use effects on urban ozone, air toxics, global warming, and other issues. Analysis of the Economic and Environmental Effects of Ethanol as an Automotive Fuel – Includes information on properties of ethanol; economic analysis of domestic ethanol fermentation from grain, production from natural gas and petroleum, and non-food biomass; imports; transportation and marketing costs; vehicle hardware and operating costs; analysis of ethanol use on urban ozone and PAN levels, air toxics, global warming, agriculture, and health/safety issues (spills, leaks, fire and ingestion). Analysis of the Economic and Environmental Effects of Compressed Natural Gas as a Vehicle Fuel – Volume I analyzes the use of compressed natural gas as a fuel for passenger cars and light trucks. Volume II considers the use of compressed natural gas as a heavy-duty vehicle fuel. Discussion includes: potential markets; current technology of the engine, fuel storage, emissions, efficiency and in-use performance; optimized vehicle projections of emissions, efficiency and safety.

Utilities Summary

Data Information		Type of Data			Key Criteria			
Data Sponsor	Data Title	Technology	Market	Environment	Peer Review	Updates	Cost	Geo. Detail
BPA	1989 Pacific NW Loads and Resource Study	■	■	□	○	○	●	○
	Dft. Generation Resource Supply Document	■	□	■	○	○	●	○
	Environmental Data for Thermal Resources	■	□	■	○	○	●	●
	Est. Envir. Costs & Benefits for Five ...	■	□	■	○	○	●	○
	California Energy Demand	■	■	□	●	○	●	○
CEC	Technology Characterization - Final Report	■	□	■	○	○	●	○
	1990 Capacity & Generation of Non-Utility ...	■	■	□	●	●	●	●
	1990 Electric Power Equipment Report	■	■	□	●	●	●	●
EEI	1991 EEI Envir. Directory of U.S. Power Plant	■	□	■	●	●	●	●
	Statistical Yearbook of the Electric Utility Ind.	□	■	□	●	●	●	●
	Statistics of Non-Investor Owned Electric Util.	□	■	□	●	●	●	●
	Statics of Fuel used to Generate Electricity ...	□	■	□	●	●	●	●
	The EPRI Regional Systems Database	□	■	□	●	○	○	●
EPRI	Technical Assessment Guide (TAG) - Vol. 1-4	■	□	□	●	○	○	○
	Environmental Costs of Electricity	■	□	■	●	○	●	○
	Elec. Supply & Demand for 91-2000 for the ...	□	■	□	●	●	●	●
U.S. DOE/EIA	Annual Outlook for U.S. Electric Power 91	■	■	■	●	●	●	●
	Electricity Supply: Support. Analysis for the NES	■	■	■	●	○	●	●
	Electric Plant Cost & Power Production Exp.	■	□	□	●	●	●	●
	Electric Power Annual 1989	■	■	■	●	●	●	●
	Inventory of Power Plants in the U.S. 1990	■	■	□	●	●	●	●
	Comparative Analysis of Monetary Est. ...	■	□	■	○	○	●	○
U.S. DOE	Renewable Energy Tech. Characterization	■	□	□	●	○	●	●
	Renewable Energy Tech. Evolution Rationales	■	□	□	●	○	●	●

Utilities

Title: 1989 Pacific Northwest Loads and Resources Study Date/Version #: November 1989 Sponsor: Bonneville Power Administration Developer: BPA/Northwest Power Planning Council Contact: Bonneville Power Administration P.O. Box 3621 Portland, OR 97232 1-800-547-6048		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(if Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☐ Present ☐ Projections ☒		Data Tran. Media <small>(if Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☒ Surveyed ☐		● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(if Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Peer review not mentioned.	

Data Description: Summarizes Federal system and Pacific Northwest region (including Federal system) loads and resources. Presents data for a range of forecasted electricity consumption. Five load scenarios are used: high, medium-high, medium, medium-low, and low. For both the Federal system and the region, projects the yearly average energy loads (average MW) and resource availability (by resource) for operating years 1990-91 through 2009-10. A surplus or deficit figure is provided. Monthly capacity surpluses/deficits (MW) are summarized for 20 operating years (through 2009-10) for both the region and Federal system. Load forecasts are produced jointly by Bonneville Power and the Northwest Power Planning Council, taking energy prices, changes in technology and conservation, effects of employment, population, and household growth into account. Also available is the Technical Appendix, which details loads and resources for each major Pacific Northwest generating utility.

Utilities

Title: Draft Generation Resource Supply Document Date/Version #: 1992 Sponsor: Bonneville Power Administration Developer: Bonneville Power Administration Contact: Michael Berger Bonneville Power Administration P.O. Box 3621 - RPE Portland, OR 97208 (503) 230-5877		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☐ Reliability-Life ☒ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Blank, enter)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☐ Projections ☒		
Data Tran. Media <small>(If Blank, enter)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☒ Surveyed ☐	● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Blank, enter)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒		

Explanatory Notes: Peer review not mentioned.

Data Description: Summarizes all of the generation resource cost and supply assumptions used by Bonneville Power. Chapter 2 characterizes the resources that are considered available in their Resource Program. Operating life, unit size (MW), capital cost (\$/kW), fixed O&M (\$/kW/yr), variable O&M (mills/kWh), fuel costs (\$/MMBtu), leadtime, levelized nominal and real costs (mills/kWh), and regional and BPA supply forecast (aMW) are presented for each of the following resources: biomass, coal gasification, combustion turbines and displaceable resources, geothermal, hydroelectric, municipal solid waste, solar, wind, and WNP 1 & 3 (nuclear). Chapter 3 covers resources that are not included in the resource program. Data are much less detailed for these: aeroderivative combustion turbines; coal, conventional and advanced; fuel cells; hydrogen; oil and gas combustion; ocean technologies; other hydroelectric technologies; and storage systems. Appendix A provides emissions (lbs/MMBtu and lbs/MWh) of CO₂, SO_x, NO_x, VOC, CO, TSP, and PM₁₀ for the resources described in Chapter 2. Appendix C contains detailed data sheets used in the ISAAC model to generate the data for the Chapter 2 resources. Here regional and BPA supply (aMW) by year to 2010 is reported.

Utilities

Title: Environmental Data for Thermal Resources Date/Version #: 1991 Sponsor: Bonneville Power Administration Developer: Fluor Daniel, Inc. Contact: Bonneville Power Administration P.O. Box 3621 Portland, OR 92708 1-800-547-6048		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability <div style="text-align: center;">○</div> <div style="text-align: center;">○</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div>	
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☒		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Peer review not mentioned.	

Data Description: Quantifies emissions and wastes and documents type, cost, and performance specifications of control technologies for various thermal generation resources. Data are collected from vendors, technical publications, and internal sources. Air emissions (CO₂, SO_x, NO_x, VOC, CO, particulates (including metals)), solid wastes and heavy metals within them, and waste waters and metals within them are all quantified in lbs/MMBtu and lbs/MWh. These are reported for a base case in which minimal or no emission control exists. Incremental emission control technologies are imposed on the basecase, with the incremental costs provided for each control technology, along with the new emissions levels. Incremental installed cost and incremental fixed and variable O&M (excluding fuel costs) are reported for each level of control. As a result, the cost of each level of emission reduction can be calculated. This is done for the following generating resources: pulverized coal boilers, fluidized bed combusters, and gasification combined cycle for various levels of sulfur removal; natural gas and distillate fuel simple and combined cycle combustion turbines; wood waste, forest residue; agricultural residue; cogeneration for natural gas, and fuel oils #2, #6; natural gas combustion turbines; municipal solid waste; geothermal; landfill gas; black liquor; carbonate fuel cells; and pulverized coal boilers using lignite coal.

Utilities

Title: Estimating Environmental Costs and Benefits for Five Generating Resources Date/Version #: March 1986 Sponsor: Bonneville Power Administration Developer: EcoNW, Ltd.; Shapira & Assoc.; Seton, Johnson & Odell, Inc. Contact: Bonneville Power Administration P.O. Box 3621 Portland, OR 97208 1-800-547-6048		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☒ Impacts ☒		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒		Suitability <div style="text-align: center;">○</div> <div style="text-align: center;">○</div> <div style="text-align: center;">●</div> <div style="text-align: center;">○</div>					
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐		Data Timeperiod Historical ☐ Present ☒ Projections ☒		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐		<div style="text-align: center;"> ● = High ● = Ave. ○ = Low </div>	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Peer review not mentioned.					

Data Description: This report estimates the value of significant environmental effects due to five electricity-generating resources: cogeneration from biomass, cogeneration from municipal solid waste (MSW), geothermal, solar, and wind. The goal of this project is to develop a generic model allowing the Bonneville Power Administration to estimate environmental costs in leveled mills per kWh. Seven areas of impact seen as significant are explored. These are air quality, water quality, land productivity, solid waste disposal, endangered species, aesthetic qualities of landscapes, and cultural values of Native Americans. Appendix C contains the various data tables characterizing the facilities, emissions, dispersion, and quantifies the general effects. This data is then used to calculate the valuations. Appendix D reports current populations for the counties in the three Northwest states and projects future populations for the year 2000. The actual valuations of the impacts of these facilities are contained in Appendix D. Present discounted value (1986\$), annualized PDVs, and a leveled PDV (mills/kWh) are presented.

Utilities

Title: California Energy Demand: 1991-2011, Volumes I-XV Date/Version #: 1991 Sponsor: California Energy Commission Developer: CEC and California Utilities Contact: Richard Rohrer Demand Forecast Office (916) 654-4898		Type of Data Technology En. Efficiency ☒ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <i>(If Electronic)</i> DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☒ Projections ☒		
Data Tran. Media <i>(If Electronic)</i> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☒ Estimated ☒ Modelled ☒ Surveyed ☒	● = High ● = Ave. ○ = Low Explanatory Notes: Incorporates a variety of primary data source. Some data proprietary to individual utilities.	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <i>(If Electronic)</i> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐		

Data Description: Volumes III-X contain forecasts by planning area – PG&E; SMUD; SCE; LADWP; SDGE; Burbank, Glendale and Pasadena; and the Other Planning Areas. Volume II explains the CEC staff forecasting methodology. Volume XI explains the conservation program savings incorporated into the forecasts. Volume XII describes the development of the staff's economic and demographic projections. Volume XIII deals with California municipal utilities. Volume XIV explains the methodology used to estimate impacts from air-quality related measures. Volume XV summarizes customer surveys that were used to estimate the appliance stocks, fuel saturation and other factors incorporated into the forecasting model. Together these volumes provide detailed data on historical and projected energy consumption, economic growth, demographic, peak demand and technological factors affecting California's energy demand. Volume I compiles the results of the other 10 reports, and presents generic issues common to the more detailed planning area reports presented in the other volumes. The planning area data includes historical and projected electricity demand to 2011 broken down into 8 types of demands, plus an unclassified demand sector and losses. Accompanying tables detail electricity demand by appliance by sector, peak demand impacts, assumed electric vehicle demand, employment and shipments by industry, number of drivers, electricity rates, etc., for both California as a whole and for the individual planning areas. The methodology and results of the forecasting methodology are extensively documented and have undergone considerable peer review as part of the public hearing and commission review process.

Utilities

Title: Technology Characterizations-Final Rpt. Date/Version #: November 1991 Sponsor: California Energy Commission Developer: California Energy Commission Contact: California Energy Commission 1516 9th St. Sacramento, CA 95814 Alec Jenkins (916) 654-4287		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☒ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☐ Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		
Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐		Documentation Extensive ☐ Partial ☒

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Explanatory Notes: Peer review not mentioned.

Data Description: Provides data on commercially available generation technologies (combined cycles and steam injected gas turbines, low NOx simple cycle gas turbines, liquid geothermal, out of state pulverized coal, wind, parabolic trough solar thermal electric systems, continued use of existing utility boilers, repowering of existing utility boilers), commercially available emissions reduction technologies (low NOx burners, urea injection, selective catalytic reduction), and promising noncommercial generation and storage technologies (advanced gas turbines, fuel cell power plants, compressed air energy storage, photovoltaic power plants, solar central receivers, combined cycle integrated coal gasification). Estimates of the capital and O&M costs (\$/kW or kWh), performance characteristics, and atmospheric emissions (PPM or lb/MMBtu), are presented for each technology. Levelized electricity costs and input data are included. Reports estimates of resource potential for solar, wind, biomass, and liquid geothermal.

A4-8

Utilities

Title: 1990 Electric Power Equipment Report Date/Version #: 1990 Sponsor: Edison Electric Institute Developer: Edison Electric Institute Contact: Edison Electric Institute 701 Pennsylvania Ave., NW Washington, DC 20004 James Kihgery (202) 508-5576		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☒ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (if Business) DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐ Data Tran. Media (if Business) Diskette ☐ CD-ROM ☐ Tape ☐ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size (if Business) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		
Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒ Documentation Extensive ☒ Partial ☐		= High = Ave. = Low Explanatory Notes: Cost - \$20.		

Data Description: This report replaces the former ELECTRIC POWER ANNUAL REPORT. It presents information on electric power supply, addition of new electric generation facilities, and orders for and shipments of heavy electric power equipment in the U.S., as of the end of 1990. Part I covers the history of electric power supply for 1986-90, presenting data on peak load and capability installed to meet load. Percentage capacity margins and energy requirements are presented for all nine NERC regions. This data is derived from form IE - 411, submitted to EIA and NERC, and covers the total contiguous U.S. electric power industry. Some industrial power installations interconnected with utilities area included. Stand alone systems are not. The specific data breakdown includes 1990 capacity additions by prime mover of 1 mW or larger by NERC region and ownership category, changes in scheduled operation data for fossil fired and nuclear generating plants, scheduled additions to generating capability by prime mover type by year for 1991-2008, and totals for that time period by NERC region, and by ownership category. Other tables include scheduled additions to generating capability by NERC region, individual utility, prime mover and fuel type, and capacity as of January 1991. Part II covers historical (1986-1990) and planned (as of January 1991) domestic manufacture and importation of heavy electric power equipment. Data is derived from an annual EEI survey of domestic and foreign manufacturers of heavy electric power equipment. Individual tables include orders by and shipments to U.S. electric utilities for various types of electric power equipment, including conventional steam turbines, nuclear steam turbines, hydro, combustion turbines, and diesel engine systems. Scheduled shipments of generating equipment to industrial customers are also presented by state and prime mover.

Utilities

Title: 1991 EEI Environmental Directory of U.S. Power Plants Date/Version #: Annual 1991 Sponsor: Edison Electric Institute Developer: Utility Data Institute, Inc. Contact: Utility Data Institute, Inc. 1700 K St., NW, Suite 400 Washington, DC 20006 (202) 466-3660		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☒ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒	Data Structure (if Electronic) DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☐		
Data Tran. Media (if Electronic) Diskette ☒ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	Explanatory Notes: \$225 nonmembers - this is a subpart of the EEI power directory database.	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size (if Electronic) < 10 mB ☐ < 100 mB ☒ > 100 mB ☐	Documentation Extensive ☒ Partial ☐		

Data Description: Previously published as the EEI Power Directory, this publication contains data on 2,553 generating units at 933 steam-electric plants totaling 627 gigawatts in the U.S. and its territories. Units covered include those currently in commercial operation, under construction, in design, or on standby or economic reserve (but not retired). Plants are grouped by type of utility ownership. The report was generated from EEI's Power Statistics Data Base that is based on federal forms, other utility reports, and direct surveys. Steam-electric units are listed alphabetically by state and operating utility, with the following: size, status, service year, fuel, air pollution control equipment, cooling system type and age, and combustion by-product disposal. Parent companies of operating utilities are noted. Coal-fired generating capacity is shown for three major SO₂ control categories: scrubbers (flue gas desulfurization units), compliance fuel/State Implementation Plan (SIP), and compliance fuel/New Source Performance Standards (NSPS). Other control methods (e.g., coal blending) are included. Particulate control equipment installed on coal-fired units are portrayed, including electrostatic precipitators (hot side and cold side), baghouses, combination systems and particulate scrubbers. Oil-fired plant particulate control systems are characterized. NO_x control methods are quantified, including BOOS (burners out of service), overfire air, and various specially designed burners. Cooling water systems are shown by marine, estuarine, lacustrine, riverine, and other, by plant age. Collection, handling, and disposal of combustion by-products (fly ash, bottom ash, slag, sludge) is described for coal-fired plants. Environmental managers and key staff are listed for more than 300 utilities.

Utilities

Title: Statistical Yearbook of the Electric Utility Industry Date/Version #: 1991 Sponsor: Edison Electric Institute Developer: Edison Electric Institute Contact: Edison Electric Institute 701 Pennsylvania Ave., NW Washington, DC 20004-2696 (202) 508-5576		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☒ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Tran. Media <small>(If Electronic)</small> Diskette ☒ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☒ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐	Explanatory Notes: Weekly and quarterly updates, advance and final of Annual Yearbook (Yearbook - \$65, Disks - \$45).	

Data Description: Yearbook data was compiled from company reports and other sources on operation and financial aspects of the total electric utility industry. Generating capacity data covers U.S. installed capacity (total and by type of prime mover) by ownership category for 1970-90, and installed investor-owned generation by prime mover for each state and EEI region for 1989-90. Data on actual generation covers total U.S. capacity, seasonal capability, and seasonal peak for 1970-90, generation by prime mover and by ownership category and state for 1970-90, U.S. total and investor-owned generation by prime mover by month for 1987-90, and total U.S. generation by week for 1988-90. Actual generation data is also presented on U.S. total and state generation by fuel type (kWh and percentage) for 1970-90, fossil fuel consumption by fuel type for generation by state for 1990, nuclear fuel cost by region for 1987-1990 and by state for 1990. Total U.S. energy production and supply are shown by fuel type for 1970-90 and consumption by fuel type by sector for 1985-1990. Electricity sales data is presented for the U.S. total and investor-owned utilities by end-use sectors by state for 1989-90. The number of customers is presented by sector and by state for U.S. total and investor-owned utilities for 1989-90. Revenues are shown by sector for U.S. total and investor-owned utilities (dollars and percentage of all revenue) by year for 1970-90, by quarter for 1985-90, and for individual states by sector for 1989-90. U.S. total and investor-owned average per kWh cost and total revenue per kWh are presented by sector for 1970-90 and for individual states for 1989-90. Construction expenditures for investor-owned utilities are shown by expenditure category for 1970-90 and combined balance sheets, income statements, O & M expenses, taxes and capitalization are shown for 1985-90.

Utilities

Title: Statistics of Non-Investor Owned Electric Utilities Date/Version #: 1991 Sponsor: Edison Electric Institute Developer: EEI Statistics Department Contact: Edison Electric Institute 701 Pennsylvania Ave., NW Washington, DC 20004 (202) 508-5576		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability <div style="text-align: center;">●</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div>
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS ☐ <small>(or Compatible)</small> Spreadsheet ☐ <small>(or Compatible)</small> Other (eg ASCII) ☐	<div style="text-align: center;"> ● = High ● = Ave. ○ = Low </div>		
Data Timeperiod Historical ☒ Present ☐ Projections ☐	Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	Explanatory Notes: Annual \$20 mostly reformatted EIA and REA data pub. no. 01-91-06.	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒		

Data Description: This publication provides financial and operating data on government-owned (municipal, state/public power district and federal) and government-financed (cooperative) electric power systems. Data sources include various EIA Forms (412, 860, 861) and EEI surveys, and REA Bulletin 1-1. Financial data is presented, although not for coops whose loans have been repaid. Operating data include installed generating capacity and generation. Comparable data on investor-owned electric utilities are published in EEI's "Statistical Yearbook of the Electric Utility Industry." Specific data in this report include installed generating capacity and generation (for total and by prime mover) for electric utilities, including total industry, investor-owned, cooperatives, municipals, federal (including PMAs), and public power districts/state projects by year for 1965, 1970, 1975 and 1981-90. The number of electric generating plants is shown by utility category and type of prime mover for each state. Detailed energy sales, total revenue, and revenue per kWh information are shown for each type of non-investor owned utility types by customer category for each state for 1989 and 1990. Average revenue per kWh is given for individual REA borrowers for 1985 and 1990, as are financial statistics for REA borrowers by state for 1990. Long term REA financing approvals for distribution and generation/transmission are shown, as well as loans approved and advanced, by interest rate category, for 1980-90. Energy sales and revenue are shown by customer category for each of the federal PMAs for 1990.

Utilities

Title: Statistics on Fuel Used to Generate Electricity by the Electric Utility Industry: 1986-1990 Date/Version #: December 1991 Sponsor: Edison Electric Institute Developer: Edison Electric Institute Contact: Edison Electric Institute 701 Pennsylvania Avenue Washington, DC (202) 508-5576		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability <div style="text-align: center;">●</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div>
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(if Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒	<div style="text-align: center;">● = High ● = Ave. ○ = Low</div>		
Data Timeperiod Historical ☒ Present ☐ Projections ☐	Data Tran. Media <small>(if Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	Explanatory Notes: Cost - \$15, 75 pages	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(if Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☐		

Data Description: Data in this report is based on Schedule E-19 of the Uniform Statistical Report and requested data from 360 utilities, including municipals, cooperatives, state and federal projects and smaller investor-owned companies, capturing 97.8 percent of all fossil fuel and 99 percent of all nuclear fuel used to generate electricity. Summary data on total fuel cost, Btus consumed, net generation, and composite averages is presented by state and region for 1990. Data on generation by fossil fuel type showing percentage of generation and cost is presented by state and region for 1990. KiloWatt hour of generation, fuel volume, total cost, cost per kWh and Btu per kWh is presented for coal, oil, and gas for each state and region for 1990 for the total industry and investor-owned utilities. Movement of fuel oil between PAD districts is reported for 1986-90. Residual fuel oil imports are reported by PAD district by sulfur content for 1990, along with ending year stocks. Nuclear fuel use is reported in terms of net generation, total Btus consumed, total cost, cost per kWh and million Btu's and Btus per kWh for each state and district for 1986-90. Summary statistics showing average fuel cost per net kWh, Btu per net kWh, average cost of fuel per million Btus, average fuel cost for coal, oil, and gas, and cost and Btu content per standard unit (pound, gallon, cubic foot) are presented for coal, oil, and gas for 1986-90 by state and region. Total utility receipt of fossil fuels is shown by fuel type for 1986-90 by region. Quality (Btu content, % ash, % sulfur) and cost per MMBtu and unit is shown for coal, oil, and gas for 1986-90. Coal sulfur content is further broken down into three categories showing quantity and cost by region for 1990.

Utilities

Title: The EPRI Regional Systems Database (ERS) Date/Version #: 1989 (Version 3.0) Sponsor: Electric Power Research Institute Developer: COECORP Contact: Electric Power Software Center 1930 Hi Line Drive Dallas, TX 75207 (214) 655-8838		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☐ \$1000 - \$5000 ☒ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☒ Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Tran. Media Diskette ☒ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☒ Surveyed ☐	Explanatory Notes: Rpt. EPRI p. 6211 - \$62.50, 12 5 1/4 disk - \$2,000 plus distribution fee of \$200, 2 disks for each EPRI Region(s) = 12 disks.	
Data Access Open ☐ Restricted ☐ Licensable ☒	Data Size < 10 mB ☒ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐

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Data Description: The ERS database groups information on generation supply, end-use, and systems load shapes for six U.S. regions representing 20% of all generating units currently operating, under construction, or planned. Version 3.0 updates the 1981 database. Data are in comma delimited ASCII and can be imported to spreadsheet and database programs. Fossil and nuclear plant data were obtained from the Utility Data Institute's EEI Power Statistics database. Hydroelectric data is also included. End-use loads are from synthesized load shape data for residential, commercial, and institutional users. Generation additions, load growth, and unit outage rates were recalibrated to NERC data. The Supply System Database includes generating unit name and designation, fuel type and net generation, flue gas scrubber data, first commercial service date, heat rates, maximum capacity factor per season, operating and maintenance costs, cost of consumables, fuel costs and escalation, construction time and cost profiles, and capital cost. Residential load data include electrical space heating and cooling, water heating, cooking range, and all other. Commercial load data cover office buildings, retail and wholesale buildings, and all other. Industrial load data covers largest and second largest electricity users per region. Load data provides weekly load cycles for each month and monthly peaks for each end use, and annual demand. ERS data are intended for broad studies using planning software to develop economically attractive alternatives and assessing market shares of these alternatives. Data is not sufficient for analyzing individual utilities or interconnections. End-use data are sparse and dated. Transmission and distribution data are not included.

Utilities

Title: TAG Technology Assessment Guides - Vol. 1-4 Date/Version #: 1986, 1987, 1988 Sponsor: Electric Power Research Inst. (EPRI) Developer: Several Contact: EPRI Research Reports Center P.O. Box 50490 Palo Alto, CA 94303 (415) 965-4081		Type of Data Technology En. Efficiency ☒ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☒ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☐ \$1000 - \$5000 ☒ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☒ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Tran. Media Diskette ☒ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☒ Surveyed ☒	● = High ● = Ave. ○ = Low Explanatory Notes: Vol. 1 - \$250, Vol 2 - \$300 for each Part, Vol 3 - \$50, and Vol 4 - ?	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐		

Data Description: The EPRI TAG provides a methodology for determining the relative cost to electric utility customers of the potential results of alternative R&D efforts. Volume 1, Electric Supply, provides a summary of the revenue requirements methodology of analysis, including investments and expenses, discount rates, present value, and inflation. Cost and performance data are provided for a wide range of mature, demonstration, and research stage fossil fuel, nuclear, and renewable generating technologies. TAG methods and data are broad in scope, therefore useful for generic comparisons and preliminary resource planning, not for site-specific studies. The target audience is EPRI staff and contractors preparing engineering and economic analyses for EPRI. Volume 2, Electricity End Use, is divided into three parts covering the residential, commercial, and industrial sectors. Describes the levelized annual cost method for making comparisons among technologies from the end-user's point of view. Each part describes established and emerging technologies for end-use services in such applications as space conditioning, lighting, and metals fabrication, and details a methods for preparing consistent costs comparison. For the residential sector, the emphasis is on space conditioning and water heating. For commercial sector it is on space conditioning, water heating, lighting, and refrigeration. The industrial part describes differences by industry, process, and technology. Detailed data also gathered on 44 cities in the seven North American Electric Reliability Council regions and on more than 100 residential, commercial, and industrial applications. Data files for all three parts are available on diskettes in Lotus 1-2-3-compatible files. Volume 3, Fundamentals and Methods, Supply, provides a detailed explanation of the revenue requirements method. Volume 4, Fundamentals and Methods, End Uses, presents a detailed explanation of economic analysis procedures for electric end-use technologies. A series of application programs integrated around a common random access data base form the TAG Information System (TAGIS) used to maintain technical data, conduct sensitivity studies, and compare technology and fuel characteristics.

Utilities

Title: Environmental Costs of Electricity Date/Version #: 1990 Sponsor: U.S. Department of Energy NY State Energy Research & Development Authority Developer: Pace University Contact: Pace University Richard Ottinger		Type of Data Technology En. Efficiency ☒ Renewables ☒ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☒ Impacts ☒	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☒ Report/Table ☒	Data Structure <small>(if Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☒ Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☐		
Data Tran. Media <small>(if Electronic)</small> Diskette ☒ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☐	= High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(if Electronic)</small> < 10 mB ☒ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐		

Explanatory Notes: Compilation of various source materials.

Data Description: Lotus 1-2-3 spreadsheet and 94 tables of data on fossil, nuclear, and renewable energy electric generating technology emissions and environmental costs. Raw emissions data includes emission loadings by technology and fuel per watt-hour of output. The methodology and sources for environmental cost estimations are extensively explained and documented. Emissions data include major air pollutants including SO_x, NO_x, CO, and Particulates (NO_x, CO, and VOC impacts are treated together as ozone precursors). Carbon dioxide is also addressed, but not methane releases or other important greenhouse gases. Water pollution emissions include thermal discharges and discussion of the impacts of hydroelectric dams. Land use impacts are also discussed. Data tables on land and water impacts are more limited than the values for air emissions. The most extensive data is on fossil fuel technology, with much less quantity and consistency in the data on renewables and nuclear. The spreadsheet model incorporates the emissions data and cost estimates into a structure that is then related to dose-response and exposure values to derive cost estimates. All of the data in the report is secondary, with no primary research. Some of the major sources of data underlying the values in the report include the TEMIS model and the DOE Energy Technology Characterization Handbook.

Utilities

Title: Electric Supply & Demand for 1991-2000 for the Regional Reliability Councils of the North Amer. Electric Reliability Council Date/Version #: 1991 Annual Sponsor: North American Electric Reliability Council Developer: NERC Contact: NERC 101 College Road E. Princeton, NJ 08540 (609) 452-8060		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability <div style="text-align: center;"> </div>	
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		<div style="text-align: center;"> = High = Ave. = Low </div>	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes: Free	

Data Description: The North American Electric Reliability Council's (NERC) 1991 Electricity Supply and Demand report includes projections for the nine Regional Reliability Councils, part of Alaska, the United States, Canada, and the northern portion of Baja California, Mexico for the 1991-2000 period. Data on peak demand, load management, interruptible demand, net energy for load, capacity resources, capacity margins, and planned additions and retirements of generating units was extracted from the Coordinated Bulk Power Supply Program (IE-311) reports submitted to DOE. Data on generating capacity, electrical energy production, fossil fuel requirements, and existing and planned addition of transmission lines was reported by the Councils to NERC. Forecasts include 50% high and low "bandwidths" around the equal probability projections for peak demand and annual net energy. Summer and winter peak demand data include 1985-90 actual and 1991-2000 forecasts by Region and subregion (major power pool). Forecast demands have been adjusted for load management. Annual net energy for load (NEL), adjusted for line loss and hydro pumping, is presented for the same time periods as demand data. Fossil fuel requirements are given by fuel type. Capacity resource data covers installed generation resources, estimated margins, projected additions, percentage growth, planned generation by prime mover by year, all for summer and winter, and planned transmission line miles by voltage category, by Region and subregion for 1991-2000. Installed generating capacity data includes existing units, those under construction, and reratings (increases and decreases) and removals. Only non-utility generators that sell or are projected to sell to electric utilities are included.

Utilities

Title: Annual Outlook for U.S. Electric Power 1991: Projections Through 2010 Date/Version #: July 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Office of Coal, Nuclear, Electric and Alternate Fuels Washington, DC 20585 (202) 254-5310		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☒ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability <div style="text-align: center;"> </div>	
Data Format Data Base ☒ Model ☐ Report/Table ☐		Data Structure (If Electronic) DBMS ☒ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☒		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☒ Surveyed ☐		<div style="text-align: center;"> = High = Ave. = Low </div>	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes: Annual Energy Outlook Forecasting System Model used.	

Data Description: This report presents highlights of major events and data for the electric power industry for 1990 and provides national and regional level projections of sources and uses of electricity through 2010 including comparisons with other projections. The projections in this report were made using the Annual Energy Outlook (AEO) 1991 Forecasting System. It addresses demand for and supplies of oil, gas, coal, refined products, and imports. Conversion activities addressed include refining and electric generation from fossil fuel, hydro, and nuclear. The model is composed of an integrating procedure and modules for electric utilities, natural gas, coal, demand(s), and macroeconomics. The 1991 AEO covers four scenarios: a reference case, low oil prices, high oil prices, and high economic growth, and where applicable data is generally presented for each scenario. Data is presented on cumulative capacity as of 1989. Current and future capability and electricity consumption are presented for 1989, 1990, 2000, and 2010, as are fossil fuel consumption and prices. Electric power and price projections from different sources are compared for 2000 and 2010. Life extension and plant retirement data is given for 1991-2010. World oil prices are forecast for 1990-2010. Renewable technology generation forecasts are given in mW and average annual capacity factors. Construction and O&M costs are forecast for fossil, nuclear, and hydro plants. Electric power data and projections and impact of the Clean Air Act are presented by Federal region through 2010.

Utilities

Title: Electricity Supply: Supporting Analysis for the NES Date/Version #: Janaury 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: U.S. Department of Energy Energy Information Administration		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☒ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (If Electronic) DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☒ Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐ Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☒ Surveyed ☐ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐ Documentation Extensive ☐ Partial ☒

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Explanatory Notes: Results based on Argonne Utility Simulation Model.

Data Description: Provides the results of a NES projection of electricity supply using the ARGUS model and three scenarios: Clean Air Act Amendments, Nuclear Life Extension and New Nuclear Orders, and Combined Nuclear and Accelerated Fossil Fuel Technology Development. Data include the baseline assumptions on generating capacity by technology based on the different scenarios, regional emission reductions for SO₂, energy price assumptions, economic and performance characteristics of new fossil and nuclear units, electricity demand by region and power pools, life extension cost assumptions, retirement age assumptions, compliance costs, scrubber retrofits, and low-sulfur coal switching and impacts on coal production by region. The quality of the projected data depends on the validity of the underlying assumptions and the ARGUS model. Differences between the model parameters and the final CAA provisions are noted in the discussion of the modelling effort. Documentation is adequate. Review has been mostly limited to EIA and those involved in the modelling effort.

Utilities

Title: Electric Plant Cost and Power Production Expenses 1989 Date/Version #: 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Electric Power Division Contact: Data Systems Branch Office of Coal, Nuclear, Elect. & Alternative Fuels		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☒ Performance ☐ Reliability-Life ☒ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☒	Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	Documentation Extensive ☒ Partial ☐
Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		= High = Ave. = Low Explanatory Notes:		

Data Description: Previously titled Historical Plant Cost and Annual Production Expenses for Selected Electric Plants, this annual report presents electric utility statistics on power production expenses and construction expenses of electric generating plants. Expenses for major investor-owned utilities are summarized, and plant specific data are presented for a selection of both investor owned and publicly owned plants. The summary data are presented for hydroelectric, fossil fueled steam, nuclear steam, and gas turbine and small scale plants. Plant level data are presented for both investor and publicly owned facilities covering 50 conventional hydroelectric plants, 22 pumped storage hydroelectric plants, 50 fossil fueled steam plants, 71 nuclear steam electric plants, and 50 gas turbine plants. Data is derived from FERC Form 1, and EIA Forms 412, 759, 860, and 767. Plant specific data are presented by state, utility, and plant, and include net generation, capacity, net capability, historical plant cost, production expenses, fuel consumption, heat rates, physical and operating plant characteristics. Historical plant data summarizes the utility's net cumulative to-date actual total expenditures for land, buildings, and equipment in service. Annual operating expense data includes plant operation and maintenance and fuel costs (except hydro). Operating costs reported do not include interest, return on equity, depreciation, amortization, or taxes. Other physical characteristics reported for each plant include the number of generating units at the plant, and the average number of employees.

Utilities

Title: Electric Power Annual 1989 Date/Version #: January 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Electric Power Division Contact: Office of Coal, Nuclear, Electric and Alternative Fuels Washington, DC 20585 (202) 254-5640		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☒ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☒ Projections ☒ Data Tran. Media Diskette ☐ CD-ROM ☐ Tape ☒ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		
Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		= High = Ave. = Low Explanatory Notes: The contents of the annual are published in monthly installments as "Electric Power Monthly."		
Documentation Extensive ☒ Partial ☐				

Data Description: This publication presents a summary of national, regional state electric utility statistics. A review of key staticstics for the year is presented, along with general industry projections through 2010. Data are compiled from two montly reports, EIA Form 759 and FERC Form 423, and seven annual reports, EIA Forms 860, 861, 412, and 767, DOE Forms IE-411 and FE-417R, and FERC Form 1. Detailed data include: U.S. electric power summary statistics for 1988-89 showing generating capability, generation, consumption, and financial data, and projections through 2010 in five year increments. Generating capability in total number of plants and mW, is shown by state and census region for 1988 and 1989 and by fuel source for 1989. Planned additions are shown by energy source for 1990-99 and by total mW for NERC regions, and by energy source for each state and Census region for that period. Net generation is shown by energy source for 1985-89, and by prime mover and energy source by state and Census region for 1988 and 1989. Total utility consumption of fossil fuels, stocks of coal and petroleum, and receipts and average delivered cost of fossil fuels are shown for 1985-89. Sales to ultimate consumers and associated revenue and average revenue per kWh are given by sector for 1985-89. Sales to ultimate consumers and average revenue per kWh are also given for each sector by state and census region for 1988 and 1989. Emissions data include SOx, NOx, and CO2 from steam electric, and coal, oil, and gas fired plants by state and census region for 1986-89. The number of plants equipped with different environmental equipment is shown by state and census region for 1989. Transactions between power pools, outages, and financial data are also presented.

Utilities

Title: Inventory of Power Plants in the United States 1990 Date/Version #: 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Electric Power Division Contact: Office of Coal, Nuclear, Elec., & Alternative Fuels Washington, DC 20585 Neal Moerschel (202) 254-5640		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure <small>(If Electronic)</small> DBMS ☒ <small>(or Compatible)</small> Spreadsheet ☐ <small>(or Compatible)</small> Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☒		
Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	= High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐	Explanatory Notes: 	

Data Description: This publication provides year-end statistics about electric generating units operated in operation or planned to be placed in operation within 10 years by U.S. electric utilities. Data was derived from Form EIA-860, "Annual Electric Generator Report." Summary data aggregates capacity at the national and various regional levels for operating and planned units, and anticipated retirements. National data is presented by energy source and prime mover, regional data by energy source only. Detailed data is provided for each electric generating unit which was operable or retired from service during the year, and for units scheduled by electric utilities to start operation between 1991 and 2000. Information presented includes the name of the electric utility that operates the unit, the unit's location, the type of prime mover, the primary and alternate energy sources, the installed generator nameplate capacity, the net summer capability, the net winter capability, and the initial year of operation. Operable capacity listed, as of year-end 1990, totals 690,465 mW. Projected 2000 capacity is mW, based on 42,835 mW of additions and mW of retirements. Data is generally organized alphabetically by State and electric utility, with appendices presenting data in other formats, including by NERC regions and Census divisions. Non-utility generators are not included, except for some cases of utility operated, jointly owned capacity. A detailed description of the data collection methods is provided.

Utilities

Title: Comparative Analysis of Monetary Estimates of External Environmental Cost Assoc. with the Combustion of Fossil Fuels Date/Version #: July 1990 Sponsor: U.S. Department of Energy Developer: Lawrence Berkeley Laboratory Contact: Energy and Environment Division Lawrence Berkeley Laboratory Berkeley, CA 94720, (510) 486-4000		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(if different)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☐ Data Tran. Media <small>(if different)</small> Diskette ☐ CD-ROM ☐ Tape ☐ Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size <small>(if different)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐ Documentation Extensive ☒ Partial ☐

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Explanatory Notes: Peer review not mentioned.

Data Description: This document analyzes ten different estimates and regulatory determinations of external environmental costs and attempts to compare them using consistent assumptions about emissions factors, heat rates, and resource costs. Power plant combustion of oil, coal, and natural gas, as well as direct combustion of natural gas and oil are studied. SO₂, NO_x, CO₂, reactive organic gases, CH₄, N₂O, and particulates are covered. However, only costs related to SO₂, NO_x, and CO₂ emissions are reported throughout the study. Tables provided within the document include the following: value of incremental emissions reductions (1989\$/Lb); externalities from new National Source Performance Standards power plants (1989 cents/kWh and as a % of delivered cost); external costs from existing U.S. steam power plants in 1988 (1989 cents/kWh and as a % of delivered cost); externalities from direct use of fossil fuels (\$/MMBTU of fuel input and as a % of 1988 price); emissions factors (Lbs/MMBTU of fuel use); and supply costs of new fossil fuel technologies.

Utilities

Title: Renewable Energy Technology Characterizations Date/Version #: September 1990 Draft Sponsor: U.S. Department of Energy Developer: Science Applications International Contact: Science Applications International McLean, VA		Type of Data Technology En. Efficiency ☒ Renewables ☒ Benchmarks ☐ Cost ☒ Performance ☒ Reliability-Life ☒ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Blank)</small> DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐			
Data Timeperiod Historical ☐ Present ☒ Projections ☐	Data Tran. Media <small>(If Blank)</small> Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☒ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐	= High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Blank)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒	Explanatory Notes: 	

Data Description: A compilation of data prepared as technical background for the National Energy Strategy (NES). Data is an adjunct to other NES planning documents including detailed "Technology Rationales" documenting the technology projections. Data includes baseline 1990 technology status data. For generation technologies, the basic data set includes capital cost, operation and maintenance costs and capacity factor (energy output). For other technologies, the information needed can become more extensive as auxiliary fuel requirements, multiple end-products, capital replacement costs, and various other factors must be accounted for in the analyses. Includes some regional information by Federal regions. Real world 1990 data is cited whenever possible for current system status, and published reports outlining research results provide the basis for projections. Detailed data is included for the following technologies: biofuels, geothermal, solar buildings, solar thermal, photovoltaics, wind, oceans, hydropower, storage, and electrical energy systems. Data projected to 2030 presented in the following sections: technology summaries by region (capital cost, operating and maintenance costs, level COE and other costs per unit of energy); projected system description; cost and performance summary; performance description; cost details in constant 1990 dollars; financial analysis; and references/assumptions.

Utilities

Title: Renewable Energy Technology Evolution Rationales Date/Version #: October 5, 1990 - Draft Sponsor: U.S. Department of Energy Developer: National Renewable Energy Laboratory Contact: Lynn R. Coles Golden, CO (303) 231-7098		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☐ Cost ☒ Performance ☒ Reliability-Life ☒ Material Req. ☒ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐		Data Timeperiod Historical ☒ Present ☒ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: 					

Data Description: As part of the NES process, the purpose of this effort was to provide consistent, explanatory and in-depth documentation of how renewable technologies can be expected to evolve over time. The report includes cost and performance estimates on over 30 renewable and storage technologies for the 1990-2030 period by component and for the 10 Federal regions. It provides detailed justifications for the technology evolution projections for current levels of Federal R&D support continuing into the foreseeable future, and for increased R&D funding, at least in the near- to mid-term. Document is closely tied to the document entitled "Renewable Energy Technology Characterizations" prepared by SAIC with substantial CE and laboratory input. Key technologies covered include electric generating technologies (biomass electric, geothermal-hydrothermal, hydropower, photovoltaics, solar thermal, and wind); biomass fuel technologies (ethanol and methanol); and solar buildings technologies.

Cross-Sector/General Summary

Data Information		Type of Data			Key Criteria			
Data Sponsor	Data Title	Technology	Market	Environment	Peer Review	Updates	Cost	Geo. Detail
AGA	Gas Facts	■	■	□	●	○	●	●
BPA	Conservation Resources Supply Document	■	□	□	○	○	●	○
CEC	Energy Efficiency Report	■	■	□	○	○	●	○
	Energy Tech. Status Report, 1990	■	■	■	○	○	●	○
CEA	Economic Report of the President 1992	□	■	□	○	○	●	○
EPRI	Biomass State-of-the-Art Assessment	■	■	■	●	○	●	○
GRI	92 Edition of the GRI Baseline Projection ...	■	■	□	○	●	●	●
NPPC	NW Conservation & Electric Power Plan	■	□	■	●	●	●	○
UCS	America's Energy Choices	■	■	■	●	○	●	○
USDA	Agriculture Statistics	□	■	□	○	○	●	●
	Forest Statistics of the U.S. 1987's	□	■	□	●	○	●	●
U.S. DOC	CENDATA	□	■	□	●	●	●	●
	Projections of the Population of the States ...	□	■	□	●	○	●	●
	Statistical Abstract of the U.S. 1991	□	■	■	●	○	●	●
U.S. DOE/EIA	Annual Energy Outlook with Projection to 2010	□	■	■	●	●	●	●
	Annual Energy Review 1990	□	■	□	●	●	●	○
	Coal Production 1990	■	■	□	●	●	●	●
	Energy Consumption & Conservation Potential	■	■	□	●	○	●	○
	Estimates of U.S. Biofuels Consumption	■	■	□	●	○	●	●
	Historical Monthly Energy Review	□	■	□	●	●	●	○
	Monthly Energy Review	□	■	□	●	●	●	●
	Natural Gas Annual 1990	■	■	□	●	●	●	●
	Petroleum Supply Annual 1990	■	■	□	●	●	●	●
	Potential Costs of Restricting CFC Use	■	■	■	●	○	●	○

Cross-Sector/General Summary (Cont.)

Data Information		Type of Data			Key Criteria			
Data Sponsor	Data Title	Technology	Market	Environment	Peer Review	Updates	Cost	Geo. Detail
U.S. DOE/EIA (Cont.)	Renewable Energy Excursion	☒	☒	☐	☒	☐	☒	☐
	State Energy Data Report	☐	☒	☐	☒	☒	☒	☒
	State Energy Price & Expenditure Rpt. 1989	☐	☒	☐	☒	☒	☒	☒
	Annual Rpt. to Congress on Federal ...	☐	☒	☐	☐	☐	☒	☐
U.S. DOE	Characterization of U.S. Energy Resources ...	☐	☐	☐	☒	☐	☒	☐
	Current Emission Trends for Nitrogen Oxides ...	☒	☐	☐	☒	☐	☒	☒
	Eff. of Energy Tech. on Global CO2 Emissions	☒	☒	☐	☐	☐	☒	☐
	Energy Efficiency: How Far Can We Go?	☒	☒	☐	☒	☐	☒	☒
	Energy Technologies & the Environment ...	☒	☒	☐	☒	☐	☒	☐
	Energy Tech. Characterization Handbook	☒	☐	☐	☐	☐	☒	☒
	Envir. Consequences of, & Control Process ...	☐	☐	☐	☒	☐	☒	☐
	Estimates of CO2 Emissions from Fossil ...	☐	☐	☐	☒	☐	☒	☐
	Insulation Data Manual	☒	☐	☐	☒	☐	☒	☒
	National Energy Strategy	☐	☒	☐	☒	☐	☒	☐
	The Potential of Renewable Energy	☒	☒	☐	☒	☐	☒	☐
	Wind Energy Resource Atlas of the U.S.	☒	☐	☐	☒	☐	☒	☒
U.S. EPA	The 85 NAPAP Emissions Inventory ...	☐	☐	☐	☒	☐	☒	☒
	Acidic Deposition	☐	☐	☐	☐	☐	☒	☒
	Compilation of Air Pollutant Emission Factors	☒	☐	☐	☐	☐	☒	☐
	Emissions and Cost Est. for Globally ...	☒	☐	☐	☐	☐	☒	☒
	National Air Quality and Emis. Trends Rpt. 1990	☐	☐	☐	☐	☐	☒	☒
	National Air Pollutant Emission Estimates	☐	☐	☐	☐	☐	☒	☐
	Toxics in the Community	☐	☐	☐	☐	☐	☒	☒
		☐	☐	☐	☐	☐	☐	☐

Cross-Cutting/General

Title: Gas Facts Date/Version #: 1990 Sponsor: American Gas Association Developer: American Gas Association Contact: American Gas Association Department of Statistics 1515 Wilson Blvd. Arlington, VA 22209 (703) 841-8502		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(if applicable)</small> DBMS ☐ <small>(or Compatible)</small> Spreadsheet ☐ <small>(or Compatible)</small> Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Tran. Media <small>(if applicable)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	● = High ● = Ave. ○ = Low Explanatory Notes: Cost: \$25	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(if applicable)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐		

Data Description: Gas Facts contains detailed statistics for 1990 and summary statistics for 1975-90 for the gas utility industry, including natural gas transmission and distribution companies. Report data is taken from the Uniform Statistical Report prepared annually by electric and gas utilities, from reports filed with regulatory commissions and government agencies, and financial reports. Over 98% of gas utility industry sales are included. Except where noted otherwise, data is generally presented by company or region and state for 1975, 1980, and 1985-90. Energy reserves data covers natural gas and natural gas liquids proved reserves for 1960-90 and by state for 1990. Canadian gas reserves are also characterized. Natural gas supply and disposition of gas for the U.S. are shown for 1967- 88, and gross and net wellhead and marketed production are shown by state for 1975-89. Annual U.S. production of all types of fossil fuel and electricity from hydro and nuclear are shown for 1975-90. Natural gas production purchased by interstate pipelines is shown for 1967-90. New field wildcats, success rates, completion by well type, and other drilling statistics are shown for 1971-90 and by state for 1990. Demographic and appliance saturation data are presented on housing units, space heating, water heating, cooking fuel, and clothes drying. Extensive industry data are presented on income and accounts, balance sheets, analytical ratios, security issues, construction expenditures, and personnel. Individual gas utilities are listed by category; transmission, distribution, integrated, or combination.

Cross-Cutting/General

Title: Conservation Resources Supply Document Date/Version #: Draft 1992 Sponsor: Bonneville Power Administration Developer: Bonneville Power Administration Contact: Holly Frazier, BPA Box 3621, RPED Portland, OR 97208 (503) 230-4596		Type of Data Technology En. Efficiency ☒ Renewables ☐ Benchmarks ☐ Cost Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☐ Present ☐ Projections ☒		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐		● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Peer review not mentioned.	

Data Description: This document provides supply curve information for conservation resources from 1994 to 2010. The estimates of conservation supply are broken down into the following sectors: existing residential space heating, new residential space heating, residential appliances, residential water heating, commercial, industrial, and utilities. Estimates for both regional and BPA supply are given in average megawatts (aMW). Three different scenarios are based on low, medium, and high load forecasts. Aggregate information covering all sectors is also provided.

Cross-Cutting/General

Title: Energy Efficiency Report Date/Version #: October 1990 Sponsor: California Energy Commission Developer: California Energy Commission Contact: Gary Klein, Project Manager (916) 654-4258		Type of Data Technology En. Efficiency ☒ Renewables ☐ Benchmarks ☒ Cost ☒ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☒ Projections ☒ Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		
Data Origin Primary ☐ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐		Documentation Extensive ☐ Partial ☒

= High
 = Ave.
 = Low

Explanatory Notes: Peer review not mentioned.

Data Description: Covers a wide spectrum of material addressing all energy sectors. The useful data are found in Chapter 3, and appendices A and C. Chapter 3 provides tables with committed natural gas and electricity savings (in GWh and millions of therms) through the year 2009. Uncommitted, or potential, electricity savings are projected to the year 2009. Appendix A is broken into several sections. A-1 provides compound annual energy growth in California's non-transportation sectors for 1973-1987 (natural gas and electricity). A-2 contains statewide demographic and general economic data for 1960-1988. A-3 give energy consumption estimates by source and sector for coal(short tons), natural gas(cubic feet), petroleum(barrels) and electricity(kWh) for 1960-1988. This appendix also has estimates for energy inputs at electric utilities. A-4 contains primary energy use in the state for 1987 by sector, fuel type, and end use (Btus). A-5 ranks primary 1987 energy use by end use. Finally, A-6 gives committed electricity savings by various utilities since 1977. This is broken down by sector and is done for both energy (GWh) and peak demand (MW). Appendix C provides supply curve information such as cost of measure, and energy consumption and savings (kWh), for electric conservation options. Least-cost supply curves for all options, residential lighting and appliances, commercial lighting, and commercial display refrigeration are included.

Cross-Cutting/General

Title: Energy Technology Status Report, 1990 Date/Version #: June 1990 Sponsor: California Energy Commission Developer: California Energy Commission Contact: California Energy Commission 1516 9th Street Sacramento, CA 95814 SamRashkin (916) 654-4618		Type of Data Technology En. Efficiency ☒ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☒ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☒ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☐ Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐ Data Origin Primary ☐ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☒ Surveyed ☐ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐ Documentation Extensive ☐ Partial ☒

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Explanatory Notes: Peer review not mentioned.

Data Description: Appendices contains the unabridged research work carried out for the Energy Technology Status Report. Includes technology evaluations for over 230 electrical generation and fossil or electrical end-use technologies. Rather than collecting new data, the report compiles the best available data. Four appendices are available. Level of detail varies with the availability of existing data. Appendix A contains detailed information regarding generation technologies. For key technologies, economic worksheets, including major parameters used for levelized cost analysis, and technology characterization worksheets, including performance and environmental data, are provided. Data commonly provided include capacity ratings (kW), efficiency, emission levels for SO_x, NO_x, PM, CO, CO₂, and HC, (ppm or lb/MMBtu), capital and O&M costs (\$/kW or kwh), plant life, and levelized costs. Appendix B covers both fossil and electrical end-uses. Most sections include economic worksheets and levelized costs. Capital and O&M costs, system life, capacity (kW or Btu), fuel cost, efficiency, and energy use (kwh/yr, electric; Btu/yr, fossil) are generally provided. Appendix C is a reference for computer models and the inputs for levelized cost calculations. Economic assumptions and levelized cost calculations are explained. Appendix E presents estimates of the levelized cost of energy produced or saved for 70 generation and 41 end-use technologies. All dollars throughout the report are constant 1987 dollars. In addition to the full report and the appendices, a summary volume, which contains conclusions and a technology evaluation summary, is available.

Cross-Cutting/General

Title: Economic Report of the President Date/Version #: 1992 Sponsor: Council of Economic Advisers Developer: Council of Economic Advisers Contact: U.S. Government Printing Office Superintendent of Documents Mail Stop: SSOP Washington, DC 20402-9328		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS ☐ <small>(or Compatible)</small> Spreadsheet ☐ <small>(or Compatible)</small> Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐			
Data Trans. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒			
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒

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Explanatory Notes: Peer review not mentioned.

Data Description: Contains the U.S. government's estimates of numerous statistics related to the general health of the nation's economy. Some state and local data are included, but are aggregated. Appendix B contains the statistical tables. Where applicable, data are given in both nominal and real formats. Data are broken down into ten areas: 1) National Income or Expenditures, 2) Population, Employment, Wages, and Productivity, 3) Production and Business Activity, 4) Prices, 5) Money Stock, Credit, and Finance, 6) Government Finance, 7) Corporate Profits and Finance, 8) Agriculture, 9) International Statistics, 10) National Wealth.

Cross-Cutting/General

Title: Biomass State-of-the-Art Assessment: Volumes 1 and 2 Date/Version #: 1991 Sponsor: Electric Power Research Institute Developer: Research Triangle Institute, Inc. Contact: Electric Power Research Institute P.O. Box 50490 Palo Alto, CA 94303 (415) 965-4081		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☒	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(if applicable)</small> DBMS ☐ (or Compatible) Spreadsheet ☒ (or Compatible) Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☐		
Data Tran. Media <small>(if applicable)</small> Diskette ☒ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒	= High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(if applicable)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐	Explanatory Notes: Volume 1, 196 pages and Volume 2, 192 pages.	

Data Description: This report assesses the potential and availability of biomass-derived fuels (except for municipal solid waste) for power generation and transportation in the United States. The biomass resource base was estimated from published reports, interviews with experts, and by the authors. Information is presented on the availability of resources, growth rates, and other ecological variables. Existing and emerging technologies for converting biomass to usable energy are assessed, along with the economic viability of biomass derived fuels for power generation and transportation. The largest stock of biomass energy identified is natural forests, with a maximum of approximately 5.0 quads available annually. Other stocks noted are wood residue with an annual potential of 1.2 quad, crop residues with .8 quad, and animal wastes with .34 quad. Other resources assessed include short rotation wood crops and annual crops. Strengths and weaknesses of each biomass resource are discussed. Computer software for project analysis is provided, along with a list of data sources. Wood resources currently providing approximately 2.6 quads or 3% of overall U.S. energy consumption are identified. Volume 2 is an information compendium providing detailed resource data. Direct combustion of wood and anaerobic digestion of animal wastes are identified as the most attractive power generation options, with syngas noted as a potentially attractive process if sufficient low cost wood residues are available.

Cross-Cutting/General

Title: The 1992 Edition of the GRI Baseline Projection of U.S. Energy Supply & Demand to 2010 & the Baseline Projection Data Book Date/Version #: 1992 Edition Sponsor: Gas Research Institute Developer: Gas Research Institute Contact: Gas Research Institute 1331 Pennsylvania Ave., NW, St. 730N Washington, DC 20004 (202) 662-8989		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <i>(If Electronic)</i> DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐			
Data Timeperiod Historical ☒ Present ☒ Projections ☒	Data Tran. Media <i>(If Electronic)</i> Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☒ Surveyed ☒	● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <i>(If Electronic)</i> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐	Explanatory Notes: Annual document is free.	

Data Description: The GRI baseline projection of U.S. energy supply and demand is primarily a planning tool for GRI's research and development program. The projection seeks to portray a supply/demand equilibrium for the U.S. in which gas supply outlook is consistent with the competitive situation in end-use markets. The projection is prepared independently by GRI using publicly available data and a framework of commercially available models that GRI has developed. It is not derived from the views of GRI members. Although the focus is on gas, GRI's methodology incorporates an extensive modeling effort covering all energy sectors that yields a wide range of detailed data. Gas production data was developed using the GRI Hydrocarbon Model. In addition to production, gas acquisition prices, transportation charges, and end-use prices are calculated. The model has a detailed description of the gas resource base and drilling and exploration activities, including an Enhanced Recovery Model that calculates the effect of technology on the recovery of hydrocarbons in place. The resource base of oil, gas, and natural gas liquids is described for 13 onshore and 3 offshore unique regions, and by onshore and offshore field depth. Resources described include those remaining to be discovered in unknown fields, and remaining to be proved in known fields or formations. Gas resources affected by advanced production technology are characterized, including Devonian shale, coalbed methane, low-permeability reservoirs, and coproduction reservoirs. Background macroeconomic factors are modeled using the DRI macroeconomic model. Market demand for gas is projected for industrial, residential, commercial, and electric utility sectors with the DRI U.S. energy model. Data is presented down to the appliance/end-use category for 1988-91 and 1995, 2000, and 2010. Summary data and price projections are given by region.

Cross-Cutting/General

Title: Northwestern Conservation and Electric Power Plan: Volume II Date/Version #: 1991 Sponsor: Northwest Power Planning Council Developer: Northwest Power Planning Council Contact: Margie Gardner, NPPC 851 SW 6th Avenue, Suite 1100 Portland, OR 97204 (503) 222-5161		Type of Data Technology En. Efficiency ☒ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☐ Regional/Local ☒	Suitability
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Explanatory Notes: Peer review not mentioned.

Data Description: Contains data on nearly all aspects of energy issues. Chapter 4 appendices give tables listing regional generating resources' capacities (MW) and energy (MWh) and summaries of peaking capacity and energy imports and exports. Chapter 5 and its appendices contain forecasted demographic and economic data for the region. The predictions are based on various levels of economic growth. Employment, production, population, household size, housing stock, alternative fuel prices, and personal income are projected to 2010. Electricity demand forecasts are found in chapter 6. Demand projections are broken down by sector and end-use. Units are MWh and kWh. Electricity costs (cents/kWh) are forecast for 2010. Appendix 6A contains price effects, sales, and frozen-efficiency forecasts. 6C holds very detailed forecast tables for the calendar year, operating year, and fiscal year (MWh). Conservation resource data are in chapter 7. For residential end-uses, ECM costs, resulting energy use or savings (kWh), levelized cost (mills/kWh), and sometimes present value are reported. For the commercial sector, the power plan gives EUIs by end-use and building type, annual energy use by building type, and tables of each ECM's present value, levelized cost (mills/kWh), lifespan, O&M costs, capital cost, and kWh savings. For the industrial sector, levelized cost and total potential are reported. Chapter 8 covers the following generating resources: biomass, coal, cogeneration, geothermal, hydroelectric, municipal solid waste, nonfirming strategies, nuclear, ocean resources, solar, system efficiency improvements, and wind. In addition to providing total generating resource cost (cents/kWh) and availability (MWh) by source type, this chapter gives fuel costs, characteristics of the total resource (cost, capacity, etc.), and cost and performance of a typical plant. Chapter 9 quantifies environmental impacts from energy production. Pollutants emitted by technology (ton/MW-yr.) are reported. Impacts from typical coal and nuclear plants are included.

Cross-Cutting/General

Title: America's Energy Choices: Investing in a Strong Economy and a Clean Environment Date/Version #: 1991 Sponsor: Union of Concerned Scientists Developer: Alliance to Save Energy, American Council for an Energy-Efficiency Economy, and others Contact: Howard Geller, ACEEE Washington, DC (202) 429-8873		Type of Data Technology En. Efficiency ☒ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☒ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (if Electronic) DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☐ Projections ☒ Data Tran. Media (if Electronic) Diskette ☐ CD-ROM ☐ Tape ☐ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size (if Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		
Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☒ Surveyed ☐		Documentation Extensive ☒ Partial ☐

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Explanatory Notes:

Data Description: The data consists mainly of cost, performance and environmental assumptions for energy technologies which were used as inputs to the Long-Range Energy Alternative Planning (LEAP) system. The projections and scenarios in the study draw on a number of primary data sources. The most significant seem to be the Environmental Database of the Stockholm Environment Institute, which is maintained by the Tellus Institute. The data includes a range of renewable energy and conservation technologies and their conventional competitors. The information spans cost, performance and environmental coefficients, as well as environmental valuations. The market penetration data in the report is subject to the limitations of the modeling technique employed in LEAP. An analysis of the LEAP model and the underlying databases used as inputs to these scenarios would be necessary to fully understand the limitations of the projections used here. Documentation of assumptions and approaches to the analysis is adequate, but the technical appendices will be necessary for a full review. Drafts of the document were reviewed by outside sources, but there is no indication as to whether these reviews covered the methodology used in the report or just its content.

Cross-Cutting/General

Title: Agricultural Statistics Date/Version #: 1990 Sponsor: U.S. Department of Agriculture Developer: National Agriculture Statistics Service Contact: Elaine Carter Washington, DC (202) 720-4066		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☒ Projections ☐		
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒	Documentation Extensive ☐ Partial ☒
Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Legend: = High = Ave. = Low		
Explanatory Notes:				

Data Description: This is a reference book on agriculture production, supplies, consumption, facilities, costs and returns, including farm resources, income and expenses; taxes, credit and loan programs; agriculture conservation and pollution abatement programs; marketing agreements; prices at retail levels; and refrigeration statistics. Most but not all data prepared by USDA. The historical series are generally limited to 1974 or later.

Cross-Cutting/General

Title: Forest Statistics of the United States, 1987 Date/Version #: September 1989 Sponsor: USDA/Forest Service Developer: Southern Forest Research Station Contact: Joanne Faulkner Statesville, MS (601) 324-1611		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☒	Data Origin Primary ☒ Secondary ☒ Measured ☒ Estimated ☐ Modelled ☒ Surveyed ☐	Data Size <small>(If Electronic)</small> < 10 mB ☒ < 100 mB ☐ > 100 mB ☐
		Documentation Extensive ☐ Partial ☐	● = High ● = Ave. ○ = Low Explanatory Notes: ORACLE	

Data Description: Document includes resource data collected from periodic surveys in each State and Forest Service Region including area, volume, removals and timber product outputs. Data are used for planning, resource policy development and management decisionmaking. The information in this document has been extracted from the 1989 Forest and Rangeland Renewable Resources Planning Act (RPA) Assessment. 1986 data includes volume of roundwood products harvested by source material, species group, region and type of use; weight of bark and wood residue from primary wood-using mills by type of material, species group, region and product; and roundwood products, logging residues and other removals from growing stock and other sources by species group and region. An updated version will be available as support for the 1995 planning process and most likely will be published in 1993. Includes historical data for 1952, 1962, 1970 and 1977.

Cross-Cutting/General

Title: CENDATA: The Census Bureau Online Date/Version #: November 1991 Sponsor: U.S. Department of Commerce Developer: Bureau of the Census Contact: J. Paul Wyatt Data User Service Division (301) 763-2074		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review ☐ Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Tran. Media Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	● = High ● = Ave. ○ = Low	
Data Access Open ☐ Restricted ☐ Licensable ☒	Data Size < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐		

Explanatory Notes: Census Bureau does not distribute CENDATA itself. Available via subscription to commercial data base vendors.

Data Description: CENDATA allows electronic online access to a small but growing portion of the Census Bureau's vast data output. CENDATA consists of several hundred thousand records, culled from the censuses and surveys conducted by the Census Bureau. CENDATA is not distributed by the Census Bureau itself, but is available via subscription to commercial data base vendors that carry it, such as DIALOG Information Services and Compuserve. CENDATA is available in menu-driven, command-driven and searchable systems. The data are often available within an hour of their official media release. CENDATA includes data in the following areas: construction and housing, including characteristics of new housing, housing starts and completions, and value of new construction; manufacturing, including 1987 Census of Manufactures, and glass containers; population, including projections by age, sex and race to 2080, and geographic mobility; as well as agriculture, business, foreign trade, genealogical and age information, and the 1990 Census. Updating of individual data series varies widely - monthly, quarterly, annually - depending on frequency of underlying survey or census. Total size of CENDATA and cost of subscription currently unknown.

Cross-Cutting/General

Title: Projections of the Population of the States by Age, Sex, and Race: 1989-2010 Date/Version #: January 1990 Sponsor: U.S. Department of Commerce Developer: Bureau of the Census Contact: Signe I. Wetrogen (301) 763-5002		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (if Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒	Data Timeperiod Historical ☐ Present ☐ Projections ☒		
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Tran. Media (if Electronic) Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐	Data Size (if Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐
		Documentation Extensive ☒ Partial ☐	● = High ● = Ave. ○ = Low Explanatory Notes: Age data not included in report, but are available in electronic format.	

Data Description: This report presents four alternative series of projections of the population of the 50 States and the District of Columbia by race for 1989 through 2010. The four alternative series, A through D, are based on different assumptions on future State-to-State migration; they use only one assumption for future patterns in the other components of population change, such as fertility and mortality rates. To provide some flavor for the difference in assumptions, Series A is a linear trend of the observed internal migration patterns from 1975 to 1988, while Series D assumes no net internal migration. The range of population projections for States in the four series varies widely and depends on past trends in internal migration. The base year from which the projections begin is 1988, so the estimates of State population are not based on the 1990 decennial Census. Methodology and assumptions are heavily documented, and both were peer reviewed by staff in universities and demographic institutions.

Cross-Cutting/General

Title: Statistical Abstract of the United States: 1991 Date/Version #: 1991 Sponsor: U.S. Department of Commerce Developer: Bureau of the Census Contact: Data User Services Division Marshall L. Turner, Jr., Chief		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☒ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(if Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Tran. Media <small>(if Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	Documentation Extensive ☐ Partial ☒

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Explanatory Notes:

Data Description: Published since 1878, it is the standard summary of statistics on the social, political, and economic organization of the United States. Includes a selection of data from many statistical publications, both government and private. Data given in 31 sections including energy, population, geography and environment, science, transportation, mining and mineral products, construction and housing, manufactures, etc. Section 19, Energy, presents statistics on fuel resources, energy production and consumption, electric energy, hydroelectric power, nuclear power, solar energy, wood energy, and the electric and gas utility industries. The principal sources are the U.S. DOE Energy Information Administration (EIA), the Edison Electric Institute, Washington, D.C., and the American Gas Association, Arlington, VA. Various energy sources are converted from original units (e.g., short tons, cubic feet, barrels, kilowatthours) to the thermal equivalent using British thermal units (Btu). Sec. 6 contains selected environmental data including annual emissions for key pollutants (Sulfur oxides, Nitrogen oxides, volatile organic compounds, carbon, heavy metals, and particulate) at both national level and for selected metropolitan areas.

Cross-Cutting/General

Title: Annual Energy Outlook with Projections to 2010 Date/Version #: Januar / 1992 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Demand/Energy Markets: Mark E. Rodekohr, (202) 586-1130 Supply/Conversion: Mary J. Hutzler, (202) 586-2222		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☒ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(if Electronic)</small> DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐	Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☒ Surveyed ☐		
Data Timeperiod Historical ☐ Present ☒ Projections ☒	Data Tran. Media <small>(if Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐	Explanatory Notes: Peer review not mentioned. Updates not mentioned.		
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(if Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒

= High
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Data Description: Contains projections related to energy consumption, supply, and delivered prices to 2010. Five scenarios were used: a reference case; high economic growth; low economic growth; high oil prices; and low oil prices. Using assumptions described in Assumptions for the Annual Energy Outlook, data for each of these scenarios were modelled and presented in five-year increments. Primary and delivered consumption data are reported separately. For each scenario, projects energy supply, disposition, and prices for electricity (billion kWh), petroleum (million barrels per day), natural gas (trillion cubic feet per year), and coal (million short tons per year). Also contains projections of electric generating capacity (MW), renewable energy use (BTUs), and macroeconomic indicators. Energy consumption by end-use sector and fuel source is presented in BTUs. Forecasts are compared with other studies. The supporting document "Assumptions for the Annual Energy Outlook 1991" presents quantitative assumptions for the various scenarios and projections in The Annual Energy Outlook. These include world oil prices, macroeconomic growth, demand model assumptions for each sector, and supply model assumptions for each fuel type. Examples of information contained are end-use efficiencies, fuel production capacities, and vehicle sales. The Supplement provides disaggregated Annual Energy Outlook data and projections by region. Reports 1990 data and makes projections for 2000 and 2010. The following data are reported for ten Federal regions and the U.S. by each scenario: domestic coal supply (short tons), disposition, and prices; electric power data, such as consumption (billion kWh), price, emissions, and generation; end-use energy consumption (quads); and end-use energy prices. Additionally, numbers and net capacity (MW) of commercial nuclear power reactors are reported for each region. Oil and gas supply (barrels, cubic feet) and projections on international flows of coal are also provided.

Cross-Cutting/General

Title: Annual Energy Review 1990 Date/Version #: May 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Samuel E. Brown (202) 586-5103		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (if Electronic) DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☐ Projections ☐ Data Tran. Media Diskette ☒ CD-ROM ☐ Tape ☐ Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size (if Electronic) < 10 mB ☒ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒

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Explanatory Notes:

Data Description: EIA conducts energy-related surveys directed at the suppliers and marketers of specific energy sources. These surveys measure the quantities of specific fuels produced and/or supplied to the market. The data in this report has been aggregated from the various EIA offices and the Bureau of the Census which collect data primarily through peer reviewed surveys. This data is entered into an internal EIA/Census data base (Manufacturing Energy Database) from which the AER is built. The aggregate data presented in this report are available in electronic form from EIA, however, original data are proprietary. The report presents data at the national level and, in some sections, for selected regions. This document presents long-term historical energy data. U.S. energy consumption, production, trade, and prices are included. Data range is 1949-1990. Also covered are consumption indicators (i.e., intensity) and energy resource data (i.e., petroleum, natural gas, coal, electricity, nuclear energy, renewable energy, and international statistics). Data do not include consumption of wood energy (other than that consumed by the electric utility industry). Consumption is presented by energy source and sector. Energy imports, exports, and net imports are also provided. Energy consumption indicators include those for energy intensity as well as household, transportation, buildings, manufacturing and industrial energy use trends. Measurements used in this report include barrels, cubic feet, Btu, kWh, short ton, and dollars. Appendix A gives thermal conversion factors.

Cross-Cutting/General

Title: Coal Production 1990 Date/Version #: September 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Office of Coal, Nuclear, Electric, and Alternate Fuels Contact: Noel C. Balthasar, Director Analysis Systems Branch (202) 254-5400		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☐	Data Structure <small>(if applicable)</small> DBMS ☒ <small>(or Compatible)</small> Spreadsheet ☐ <small>(or Compatible)</small> Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Tran. Media <small>(if applicable)</small> Diskette ☐ CD-ROM ☐ Tape ☒		Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	= High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(if applicable)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐	Explanatory Notes: 	

Data Description: This report provides information about U.S. coal production, the number of mines, prices, productivity, employment, and reserves. Data is derived from EIA Form-7A, covering 3,430 mines. Overview data includes coal production for the total U.S. and the Appalachian, interior, and western regions for 1980, 1985 and 1989. U.S. coal production and number of mines are presented by state and county by type of mining, and by state and coal rank, for 1990. Bituminous, subbituminous and lignite coal production is given by state and coal group for 1990. Pennsylvania anthracite production is given by county for 1990. U.S. coal production is characterized by coalbed thickness and type of mining, and coalbed thickness by major coalbed. Average coal prices are shown by state and type of mining, by state and disposition, by state, county, and number of mines, and by state and coal rank, all for 1990. Mining productivity is presented for underground and surface mining by state for 1990. The average number of miners is presented by state and type of mine, by mine production range and type of mining, and average productivity per miner is shown by mine production range and type of mining, all for 1989 and 1990. Recoverable coal reserves are characterized by state and type of mining, and by mine production range and type of mining for 1989 and 1990, and in several other formats. The demonstrated reserve base of coal is given by rank, and by potential method of mining. Coal production trends are given by state for 1983-90. Coal production and consumption are ranked by state for 1988-90.

Cross-Cutting/General

Title: Energy Consumption & Conservation Potential: Supporting Analysis for the National Energy Strategy Date/Version #: December 1990 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Buildings - Ed Flynn (202) 586-5748 Industry - John Holte (202) 586-1471 Trans. - Barry Cohen (202) 586-5359		Type of Data Technology En. Efficiency ☒ Renewables ☐ Benchmarks ☒ Cost ☐ Performance ☒ Reliability-Life ☒ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(if Electronic)</small> DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☒		
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Tran. Media <small>(if Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☒ Surveyed ☐	Documentation Extensive ☐ Partial ☒
Data Size <small>(if Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Explanatory Notes: 		

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Data Description: This report serves as an auxillary document to Chapter 3 of the National Energy Strategy publication, Improving Technology: Modeling Energy Futures for the National Energy Strategy. Presents a detailed assessment of the conservation potential of the transportation, buildings and industry sectors of the U.S. out to 2030. Presents three projections, a "business as usual" Reference Case, a High Conservation Case, where energy efficient technologies penetrate the market at faster rate, and a Very High Conservation Case, which defines the technological limit for energy savings. To define these Cases, report assesses available data for current, best-off-the-shelf, and potential new technologies; as such, report features many tables that provide good snapshot of available data in selected areas. For example, for buildings, data are provided for stock, average new, and best available efficiencies for appliances, the cost of conserved energy for appliance and shell integrity improvements, and buildings energy consumption by end- use service (heating, cooling, etc.) and fuel type. In transportation, tables provide projections of energy use by fuel type and by travel mode, and of alternate vehicle incremental costs, sales and fuel efficiency. For industry, the report summarizes projections from a number of studies on growth rates of energy intensity by industry category. Not apparent if report was formally peer reviewed, however DOE national labs provided input to EIA in development of the three cases and in supplying data.

Cross-Cutting/General

Title: Estimates of U.S. Biofuels Consumption 1990 Date/Version #: October 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Energy Information Administration Washington, DC 20585 Robert Lowe (202) 254-5557		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (if applicable) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media (if applicable) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (if applicable) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes: A very brief report.	

Data Description: This report quantifies the amount of biofuel derived primary energy used in the U.S. Summary data is followed by more extensive data on wood energy, energy from solid waste, and alcohol fuel. Data was developed from a variety of sources. Industrial wood fuel consumption was based on the 1988 Manufacturing Energy Consumption Survey (MEC), residential fuel wood use was based on the 1987 Residential Energy Consumption Survey, utility wood fuel consumption was based on EIA Form 759, municipal solid waste use was based on the 1990 Resource Recovery Yearbook and 1988-89 Methane Recovery Yearbook, and alcohol fuel use was based on industry estimates. Summary data describes U.S. biofuels consumption by sector, type of fuel, and region for 1990. Detailed data on wood consumption is presented by sector for 1949-90 (5 year increments), and by sector and region for 1990. Industrial wood consumption is further characterized by region and specific SIC codes. Energy from solid waste consumption by region for 1981 - 1990 (three, then two year increments) is characterized by waste subtype and region for 1990. Solid waste subtypes include municipal solid waste, manufacturing waste, landfill gas. Agricultural waste and sewage sludge digestion are discussed but not quantified. Ethanol incentives are quantified by state, and consumption is given by region for 1981-90 (three and two year increments). EIA has initiated a survey of nonutility generators that includes the collection of information from electricity generators using biomass that are not included in the MECS to improve data comprehensiveness.

Cross-Cutting/General

Title: Historical Monthly Energy Review: 1973-1988 Date/Version #: September 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Office of Energy Markets and End Use W. Calvin Kilgore (202) 586-1617		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☐ Projections ☐ Data Tran. Media (If Electronic) Diskette ☒ CD-ROM ☐ Tape ☐ Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size (If Electronic) < 10 mB ☒ < 100 mB ☐ > 100 mB ☐ Documentation Extensive ☐ Partial ☒

= High
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Explanatory Notes:

Data Description: EIA conducts energy-related surveys directed at the suppliers and marketers of specific energy sources. These surveys measure the quantities of specific fuels produced and/or supplied to the market. The data in this report has been aggregated from the various EIA offices and the Bureau of the Census which collect data primarily through peer reviewed surveys. This data is entered into an internal EIA/Census data base (Manufacturing Energy Database) from which the Historical Monthly Energy Review (HMER) has been formed. The aggregate data presented in this report are available in electronic form from EIA, however, original data are proprietary. The HMER puts into one document EIA's best knowledge on monthly data for the 16 years 1973 through 1988. The report acts as a supplement to the Monthly Energy Review (MER), which only carries 2 back years of monthly data per report. The MER data series are paralleled in the HMER, and report layout is coordinated closely. The report is broken down into ten sections: 1) Energy Overview, 2) Energy Consumption, 3) Petroleum, 4) Natural Gas, 5) Oil and Gas Resource Development, 6) Coal, 7) Electricity, 8) Nuclear Energy, 9) Energy Prices, and 10) International Energy. The report also contains an appendix on Conversion Factors. Production trends by source (petroleum, natural gas, coal, hydroelectric power, and nuclear electric power) are detailed for the National level as well as for selected industry groups, geographic regions, and exporting countries. Consumption by end-use sectors (residential, commercial, industrial, transportation, and utilities) are also detailed. Data on electricity generation, sales by end-use sector, and consumption of fossil fuels by utilities are also given. Economic data include price summaries for crude oil, motor gasoline, refiner residual fuel and petroleum products, and retail electricity. Data is represented in Btus, barrels of oil, and kWhs.

Cross-Cutting/General

Title: Monthly Energy Review Date/Version #: January 1992 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Lynda T. Carlson (202) 586-1112		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☐ Projections ☐ Data Tran. Media (If Electronic) Diskette ☒ CD-ROM ☐ Tape ☐ Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒ Documentation Extensive ☐ Partial ☒		
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size (If Electronic) < 10 mB ☒ < 100 mB ☐ > 100 mB ☐	● = High ● = Ave. ○ = Low Explanatory Notes:		

Data Description: EIA conducts energy-related surveys directed at the suppliers and marketers of specific energy sources. These surveys measure the quantities of specific fuels produced and/or supplied to the market. The results of these supply surveys are combined and published in the Monthly Energy Review, and other EIA publications. The aggregate data presented in this report are available in electronic form from EIA, however, original data are proprietary. The January, 1992 Monthly Energy Review contains national energy data for each month since 1989 and is comprehensive in its review of national energy production and consumption trends. Annual aggregates from 1973-1989 are also given. The data encompasses a comprehensive cross section of the National energy profile. The report is broken down into ten sections: 1) Energy Overview, 2) Energy Consumption, 3) Petroleum, 4) Natural Gas, 5) Oil and Gas Resource Development, 6) Coal, 7) Electricity, 8) Nuclear Energy, 9) Energy Prices, and 10) International Energy. The report also contains an appendix on Conversion Factors. Production trends by source (petroleum, natural gas, coal, hydroelectric power, and nuclear electric power) are detailed for the National level as well as for selected industry groups, exporting countries, and four major geographic regions. Consumption by end- use sectors (residential, commercial, industrial, transportation, and utilities) are also detailed. Data on electricity generation, sales by end- use sector, and consumption of fossil fuels by utilities are also given. Economic data include price summaries for crude oil, motor gasoline, refiner residual fuel and petroleum products, and retail electricity. Data is represented in Btu, barrels of oil, and kWh.

Cross-Cutting/General

Title: Natural Gas Annual 1990: Vol. 1&2 Date/Version #: December 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Office of Oil and Gas Research and Natural Gas Division Kendrick Brown (202) 586-6077		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒	Data Structure (if Electronic) DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☒ Projections ☐ Data Trans. Media (if Electronic) Diskette ☐ CD-ROM ☐ Tape ☐ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size (if Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		
Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒ Documentation Extensive ☒ Partial ☐		● = High ● = Ave. ○ = Low Explanatory Notes:		

Data Description: The Natural Gas Annual provides data on gas production and imports, processing, transmission, distribution, and end use by state and census region for 1990. Summary data are provided for 1986-90. Data are taken from surveys by EIA, the U. S. Geological Survey, the U.S. Mineral Management Survey (DOI), the Interstate Oil Compact Commission, FERC reports, and other sources. Volume I provides data on gross withdrawals and marketed production by state (on and off shore), the number of producing wells by state, estimated and proved reserves by state. Other data include wellhead value and marketed production, 1990 volume and average price of purchasers from producers by state, and 1990 interstate and cross border movements by state. Imports and exports are summarized for 1986-90, total consumption and net imports for 1972-90. Underground storage capacity is reported by state for 1990, along with additions and withdrawals. Natural gas processes and liquids extracted are reported by state for 1990, as are supplemental gas supplies for that year. Consumption by category and deliveries to consumers by sector are reported for 1986-90 by state. Average consumer price is reported by sector and state for the same period. Large gas utilities are ranked by volume for 1990 and data on heat content are given by state for 1986-90. Volume II provides historical gas data, including quantity and average U.S. gas price for 1930-90, and gas production, supply, disposition, and consumption by sector for 1967-90, as well as other gas industry data.

Cross-Cutting/General

Title: Petroleum Supply Annual 1990: Vol. 1&2 Date/Version #: May 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Office of Oil and Gas Contact: Petroleum Supply Division Ronald W. O'Neill, Chief Industry Analysis Branch (202) 586-9884		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒	Data Structure (If Electronic) DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☒ Projections ☐		
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Tran. Media (If Electronic) Diskette ☒ CD-ROM ☐ Tape ☒	Data Origin Primary ☐ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒	= High = Ave. = Low
Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		

Data Description: The Petroleum Supply Annual contains information on the supply and disposition of crude oil and petroleum products based on data collected directly by EIA from the petroleum industry using the Petroleum Supply Reporting System. The system consists of a family of data survey forms, processing systems, and publications. Volume I contains final annual summary statistics covering 18 years (monthly since 1988) of supply, disposition, and ending stocks of crude oil, motor gasoline, distillate fuel oil, residual fuel oil, jet fuel, and liquefied petroleum gases. Detailed statistics are provided covering the 1990 petroleum balance, including daily average supply and distribution of crude oil and petroleum products for the U.S. and individual PAD districts, production of crude oil and natural gas liquids by PAD and refinery district, imports of crude oil and petroleum products by country for the U.S. and individual PAD district, exports of crude and petroleum products by PAD district and destination, net imports by country, stocks by PAD district, refinery, and terminal. Movements of crude and petroleum products between PAD districts are also quantified. Refinery data includes the number and capacity of U.S. refiners for 1981-91, and 1991 refinery closings and reactivations. Refinery operable capacity and utilization rates are given by PAD district, by state, and by individual refinery. Storage capacity at refineries and refinery receipts of crude oil by transportation method, are shown by PAD district. Volume II contains monthly data superseding essentially the same data listed above that had been previously published in Petroleum Supply Monthly.

Cross-Cutting/General

Title: Potential Costs of Restricting Chlorofluorocarbon Use Date/Version #: August 1989 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Office of Economic & Statistics Division Contact: Calvin Kilgore, (202) 586-1617 Arthur Anderson, (202) 586-1441 Ronald Earlet, (202) 586-1398		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☒ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☒ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☒		
Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☒ Surveyed ☐	● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒		

Data Description: This report analyzes the economic costs that the United States will incur in phasing out CFC production by the end of the century. In this report, EIA divides CFC uses into two groups: The first group, comprising foams, solvents and firefighting applications is analyzed qualitatively. The second group of applications use CFCs in many types of refrigeration and air conditioning equipment. The report examines technical options and anticipated costs of replacing CFCs in each of the major applications within this group. The report then projects the costs of reducing CFC production toward the goals established by the Montreal Protocol and estimates the costs of phasing out all CFC production by 2000. This report is subject to significant uncertainties: data quality is poor, leading to uncertainties about the actual size of stocks of CFC-using equipment, and their characteristics. EIA commissioned an independent analysis of the potential costs of capital obsolescence from the firm of Putnam, Hayes, & Bartlett, Inc. The Putnam, Hayes, & Bartlett study used differing methods of analysis, and was based upon a different set of underlying data. Their estimates of capital obsolescence costs were very similar to those calculated in this report.

Cross-Cutting/General

Title: Renewable Energy Excursion: Supporting Analysis for the NES Date/Version #: 1991 Sponsor: U.S. Department of Energy Office of Policy, Planning and Analysis Developer: Energy Information Administration Contact: Energy Information Administration		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☐ Cost ☒ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (if Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐		Data Timeperiod Historical ☐ Present ☒ Projections ☒		Data Tran. Media (if Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☒ Surveyed ☐		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (if Electronic) < 10 mB ☒ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Data was largely generated by FOSSIL2 runs.					

Data Description: Data on renewable energy technologies in three categories: grid-connected, dispersed, and liquid fuels. Based on runs of the FOSSIL2 model adapted to estimate renewable energy markets. Underlying data used in FOSSIL2 were derived from the Interlaboratory White Paper and SAIC Renewable Energy Technology Characterizations. The projections extrapolate from present renewable energy use to future market shares based on anticipated technology improvements. Data tables include results of the projections in quads, and a table of capital cost, O&M, and capacity factor assumptions that were used as inputs.

Cross-Cutting/General

Title: State Energy Data Report: Consumption Estimates 1960-1990 Date/Version #: May 1992 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Julia Hutchins Principle Analyst (202) 586-5138		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (in brackets) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Tran. Media (in brackets) Diskette ☒ CD-ROM ☐ Tape ☐	Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒	● = High ● = Ave. ○ = Low Explanatory Notes:
Data Size (in brackets) < 10 mB ☒ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		

Data Description: The State Energy Data Report (SEDR) provides estimates of energy consumption by major end-use sectors developed in the State Energy Data System (SEDS). SEDS estimates the consumption of energy by end-use sectors (residential, commercial, industrial, and transportation) and electric utilities annually by State. It provides a historical data series of estimated end-use consumption by State. Efforts are made to ensure that the sums of the State data give national totals that equal the national totals for each energy type and end-use sector published in other EIA energy summary publications. Estimates in this SEDR are generally comparable to the statistics shown in the Annual Energy Review 1990 and the Monthly Energy Review, March 1991. The input series for the system are provided in broad end-use categories from the data collection forms and are not available by the individual components. SEDS does not provide further desegregated end-use consumption estimates. The industrial sector cannot be broken down into the chemical or rubber industries, manufacturing, or agriculture. Data is represented in barrels of oil, Kilowatthours (kWh), and British thermal units (Btu). Data is also categorized by coal, petroleum & petroleum by-products, and renewables. Appendix D gives thermal conversion factors. A variety of data sources were used to produce this report. Energy Consumption is estimated using existing data surveys that report consumption directly and from sales or distribution surveys at State levels. EIA's Quarterly Coal Report (QCR), Weekly Coal Production database, Form EIA-759 database, Natural Gas Annual (NGA), Petroleum Supply Annual, and Electric Power Annual (EPA) are some of the major sources for this data.

Cross-Cutting/General

Title: State Energy Price and Expenditure Report 1989 Date/Version #: September 1991 Sponsor: U.S. Department of Energy Developer: Energy Information Administration Contact: Office of Energy Markets & End Use W. Calvin Kilgore (202) 586-1617		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☒ 1 per 1-5 Years ☐ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☒					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media Diskette ☒ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☒		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size < 10 mB ☒ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes:	

Data Description: SEPER presents energy price and expenditure estimates for the 50 States, the District of Columbia, and the United States. Estimates are by energy source and economic sector. Consumption estimates used to calculate expenditures are from the State Energy Data Report (SEDR), Consumption Estimates, 1960-1989. Expenditures are calculated by multiplying the price estimates by the consumption estimates, adjusted to remove process fuel and intermediate product consumption. All expenditure are consumer expenditures. Appendix entitled "Additional Measures of Energy Consumption, Expenditures, and Prices" describes the methodology used to develop energy expenditure estimates in constant 1982 dollars, an implicit energy price deflator, and a fixed-weight energy price index. The five economic sectors used in SEPER correspond to those used in SEDR are: Residential Sector, Commercial Sector, Industrial Sector, Transportation Sector, Electric Utility Sector. Estimates and assumptions are applied to fill data gaps and to maintain consistent definitions in the data series over time. Estimates often are based on surrogate measures that are selected on the basis of availability, applicability as indicators, continuity over time, and consistency among the various energy commodities.

Cross-Cutting/General

Title: Annual Report to Congress on Federal Government Energy Management and Conservation Programs, Fiscal Year 1990 Date/Version #: September 1991 Sponsor: U.S. Department of Energy Assistant Secretary, Conservation & Renewable Energy Developer: U.S. Department of Energy Contact: Louis Harris Office of Federal Energy Management (202) 586-9794		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability <div style="text-align: center;">○</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div>	
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Applicable) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media (If Applicable) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☒		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Applicable) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Peer review not mentioned.	

Data Description: Provides data on energy consumption and expenditures in the U.S. government. Data are collected from the various agencies. Figures are in terms of delivered BTUs per fiscal year. Additionally, some totals are given in millions of barrels of oil equivalent (MBOE) and petajoules. Energy use by federal agencies from 1985 to 1990 is broken down by 1) buildings and facilities and 2) general operations (vehicles, equipment, and process operations), although it is also reported in total. The associated costs are provided, and consumption per gross square foot is included for the buildings and facilities sector. Buildings and facilities' petroleum usage from 1985 to 1990 is reported as well as total petroleum usage in 1990. Appendix G contains data on primary energy use by federal agencies, primary consumption per gross square foot, and primary consumption in the buildings and facilities sector. Appendix F provides federal energy expenditures and cost avoidance from 1985 to 1990.

Cross-Cutting/General

Title: Characterization of U.S. Energy Resources and Reserves Date/Version #: December 1989 Sponsor: U.S. Department of Energy Developer: Meridian Corporation Contact: Meridian Corporation Alexandria, VA 22302 Kevin DeGroat (703) 998-3600		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure (If Electronic) DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☐ Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐ Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☐ Data Access Open ☒ Restricted ☐ Licensable ☐ Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐ Documentation Extensive ☒ Partial ☐

= High
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Explanatory Notes:

Data Description: A compilation and analysis of U.S. energy resource data for biomass, solar, wind, geothermal, oil, coal, and natural gas. The information is related to three categories of energy resource: total, accessible, and reserves. The three types of resource are distinguished from each other on technical and economic grounds. The total resource base is all the resource that is physically in existence, encompassing both identified and undiscovered resources, regardless of whether they can be practically or economically extracted. The accessible resource includes only the subset of the total resource that can actually be accessed and extracted with current technology, without regard to economics. The reserve is that portion of the accessible resource that is both technically and economically available. The primary data underlying the report is from a variety of sources, which are documented in the report. The data for renewable energy has been reviewed by the DOE renewable energy program offices. Data for uranium, coal and oil have been reviewed by USGS and by Dr. John Schantz, Jr. of the Colorado School of Mines and by Dr. Richard L. Gordon of Pennsylvania State University.

Cross-Cutting/General

Title: Current Emissions Trends for NO _x , SO ₂ , and VOC by Month and State: Methodology and Results Date/Version #: August 1990 Sponsor: U.S. Department of Energy Developer: Argonne National Laboratory Contact: Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 E.J. Kohort, (708) 972-3759		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: 	

Data Description: This report is the fourth in a series of reports that have examined emission trends by month and state. It presents estimates of monthly sulfur dioxide, nitrogen oxides, and nonmethane volatile organic compound emissions by sector, region, and state in the contiguous United States for the years 1975 through 1988. The updated methodology now used in the Month and State Current Emission Trends (MSCET) program to estimate NO_x, SO₂, and VOC emission trends is described in this report.

Cross-Cutting/General

Title: Effects of Energy Technology on Global CO2 Emissions Date/Version #: April 1986 Sponsor: U.S. Department of Energy Developer: Brookhaven National Laboratory Contact: U.S. Department of Energy Office of Basic Energy Sciences Carbon Dioxide Research Division		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐		Data Timeperiod Historical ☐ Present ☐ Projections ☒		Data Tran. Media Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☒ Surveyed ☐		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: Projections were obtained from the Edmonds and Reilly Energy-Economic Scenario using the Institute for Energy Analysis Energy CO2 model.					

Data Description: Explores the potential for more effective use of energy through improvements in energy technology and to determine the consequent reduction in future buildup of atmospheric CO2. Focuses on how energy is consumed for a specific energy service rather than on technical tradeoffs such as use of mass transit instead of automobiles. Investigates the effects on global energy consumption and CO2 emissions of end-use and electricity-generation technologies, with emphasis on efficiency improvements. Presents global projections by selected countries and regions. For the U.S.A., the detailed energy demand data by service for each fuel type and end-use sector in the U.S. for year 2050 were estimated by following the allocation of energy needs for services in the mid- 1970s, with the patterns of energy use assumed to be constant. Then the high efficiency end-use technologies were applied to the relevant energy services to obtain the associated energy needs and savings for each fuel type and sector in the U.S. for year 2050. End-use sectors include Residential and Commercial, Industrial, and Transportation. Oil, Gas, Coal, and Electricity services are given for each sector. Energy technologies were first grouped by evolutionary stage as: 1) now in use, 2) emerging, and 3) advanced or "far- out." The energy efficiency levels associated with each technology were evaluated in terms of: 1) present, 2) achievable, and 3) theoretical maximum values.

Cross-Cutting/General

Title: Energy Efficiency: How Far Can We Go? Date/Version #: 1990 Sponsor: U.S. Department of Energy Office of Policy, Planning & Analysis Developer: LBL, PNL, ORNL, ANL Contact: Roger S. Carlsmith ORNL (615) 574-5204		Type of Data Technology En. Efficiency ☒ Renewables ☐ Benchmarks ☐ Cost ☒ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS ☐ <small>(or Compatible)</small> Spreadsheet ☐ <small>(or Compatible)</small> Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☒		
Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐	= High = Ave. = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☒ Partial ☐	Explanatory Notes: 	

Data Description: The appendices to this report contain current and projected energy and energy intensity for the buildings, industrial and transportation sector. It also has corresponding energy efficiency data and projections for individual technologies and industries, such as auto, truck, rail, air and pipeline efficiency for transportation; space heat, water heat, refrigeration, air conditioning, ventilation and lighting for buildings; and industrial processes for steel, aluminum and chemicals. It also has data on projected changes in industrial activity. Further residential detail is provided by conservation supply curves for residential electricity and residential gas. Data is derived from a variety of sources and computer models for both the business-as-usual and high-efficiency scenarios. Sources and calculations are well documented in the end-notes for each chapter.

Cross-Cutting/General

Title: Energy Technologies & the Environment - Environmental Information Handbook Date/Version #: October 1988 Sponsor: U.S. Department of Energy, Assistant Secretary for Environment, Safety and Health Developer: Argonne National Laboratory Contact: Dr. Loren Habegger Environmental Assessment & Info. Sciences Division Argonne National Laboratory (708) 252-3761		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☐ Material Req. ☒ Market Size ☒ Economics ☐ En. Consump. ☒ Environmental Coefficients ☒ Emissions ☒ Impacts ☒	Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <i>(If Electronic)</i> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐			
Data Timeperiod Historical ☒ Present ☐ Projections ☒	Data Tran. Media <i>(If Electronic)</i> Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐	● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <i>(If Electronic)</i> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒	Explanatory Notes: 	

Data Description: This report addresses 21 current and developing technologies that are expected to contribute significantly to the production or conservation of energy through the first decade of the 21st century. Wood biomass combustion, alcohol fuels from biomass, and photovoltaic energy systems were considered the major renewable energy technologies for which significant recent advances or changes in development trends have occurred. The two chapters on biomass were revised from the earlier edition and include delivered data on wood energy consumption measured in Btu. This edition of Energy Technologies & the Environment is a revision of the original, published in 1980. Brookhaven National Laboratory, EA-Mueller, Inc., and Argonne National Laboratory all reviewed the revisions and additions.

Cross-Cutting/General

Title: Energy Technology Characterizations Handbook: Environmental Pollution & Control Factors Date/Version #: March 1983 Sponsor: U.S. Department of Energy Developer: The Aerospace Corp. and Mueller Associates, Inc. Contact: Bill Breed U.S. DOE Office of Environmental Analysis (202) 586-4763		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☒ Material Req. ☒ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☒ Impacts ☒	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☐ Present ☒ Projections ☐		
Data Trans. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐	● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒		

Explanatory Notes: Although report is not being updated, data is currently being used and revised by Battelle Pacific Northwest Laboratory (contact: Brad Ashton at (202) 646-5240).

Data Description: Environmental characterization summaries for '79 energy technologies constitute Part 1. The specific energy technologies included are categorized in the following general areas: nuclear, synthetic fuels, coal, petroleum, natural gas, solar, geothermal, and hydroelectric. Each technology is characterized in terms of the resources required, costs, residuals released, energy products, and occupational safety and health data. The information is based on a facility of particular size and design, with data presented on the basis of annual quantities or total facility lifetime quantities, as appropriate. These data are characterized as Btu energy output. Part 2 contains descriptions of environmental controls that are currently in use or under development and experimentation that are applicable to energy systems for control of air, water, and solid waste pollution. The data found in Part 2 focus on the performance, reliability, and costs of controls and in this Third Edition are limited to coverage of coal-fired electrical power plants, industrial boilers, and synthetic fuel plants (coal and oil shale). This revised edition attempts to fill some of the data gaps in the summary data that are evident in the second edition. Some data gaps remain, mainly in the environmental control costs and occupational safety and health data blocks.

Cross-Cutting/General

Title: Environmental Consequences of, and Control Processes for, Energy Technologies Date/Version #: 1990 Sponsor: U.S. Department of Energy Developer: Argonne National Laboratory Contact: Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 (708) 252-2000		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☒ Impacts ☒		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☒ Estimated ☐ Modelled ☐ Surveyed ☐		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐		Explanatory Notes: Update of 1980 Environmental Handbook	

Data Description: Provides background, technical, and environmental impact and control data on 21 energy processes, including: coal mining, coal-fired power plants, FBC, coal gasification, coal liquefaction, oil shale, combined cycle, coal slurry, oil refining, fuel cells, nuclear, LMFBR, fusion, biomass combustion, alcohol fuels, PV, low-heat diesel, and used oil. A summary of federal environmental regulations is included in an appendix. Data is predominately technical information of performance, emissions, production, and technology use in the U.S.

Cross-Cutting/General

Title: Estimates of CO2 Emissions from Fossil Fuel Burning & Cement Manufacturing, Based on U.N. Energy Statistics & the U.S. Bureau of Mines, Cement Manufacturing Data Date/Version #: May 1989 Sponsor: U.S. Department of Energy Developer: Martin Marietta Energy Systems, Inc. Contact: Office of Health and Environmental Research		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☐ Modelled ☐ Surveyed ☐		● = High ● = Ave. ○ = Low Explanatory Notes: Certain sections of the data base were peer reviewed, others were not.	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒			

Data Description: The data presented in this numerical data package include estimates of annual carbon dioxide (CO2) emissions and the data used to make these estimates, including a subset of the UN Energy Data Base and the cement manufacturing data from the U.S. Bureau of Mines. Presents global and national estimates of annual CO2 emissions from fossil fuel burning and cement manufacturing for 1950-1986. Global and national CO2 emissions from fossil fuel consumption and cement production in million metric tons of carbon (per capita in metric tons) are provided.

Cross-Cutting/General

Title: Insolation Data Manual and Direct Solar Radiation Data Manual Date/Version #: July 1990 Sponsor: U.S. Department of Energy Developer: National Renewable Energy Laboratory Resource Assessment Program Contact: NREL Technical Information Program (303) 231-1000		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☒ Model ☐ Report/Table ☒		Data Structure <i>(If Electronic)</i> DBMS (or Compatible) ☒ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media <i>(If Electronic)</i> Diskette ☐ CD-ROM ☒ Tape ☒		Data Origin Primary ☒ Secondary ☐ Measured ☒ Estimated ☐ Modelled ☐ Surveyed ☐		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <i>(If Electronic)</i> < 10 mB ☐ < 100 mB ☐ > 100 mB ☒		Documentation Extensive ☒ Partial ☐		Explanatory Notes: CD-ROM is due to be released shortly. Manual is regularly updated, but not on a set schedule.	

Data Description: Contains data from 248 solar radiation measurement stations compiled over a 25 year period. Values include maximum daily temperatures, minimum daily temperatures, average monthly temperatures, heating degree days, cooling degree days, total global radiation, global KT Cloudiness index, and kWh/square meter. Equivalent metric and english measurements are provided for the data sets. Tables for each station are provided, along with maps summarizing the data nationally. The stations are located throughout the U.S. Documentation of the methodology for measuring radiation and its compilation into the data tables is extensive. The data in this volume is drawn directly from data on computer tape that is available on-line or in mag tape format. The data and a model for extrapolating to points in between stations is under development, and is expected to be available on CD-ROM in 1992.

Cross-Cutting/General

Title: National Energy Strategy: Technical Annex - Integrated Analysis Supporting the NES, Assumptions and Results Date/Version #: 1991 to 1992 First Edition Sponsor: U.S. Department of Energy Developer: U.S. Department of Energy Contact:		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☒ En. Consump. ☒ Environmental Coefficients ☐ Emissions ☒ Impacts ☒		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☐ Present ☐ Projections ☒		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☒ Surveyed ☐		● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes:	

Data Description: Details the analytical process used to estimate the integrated effects of the National Energy Strategy (NES) actions and the results of that analysis. NES uses energy modeling tools to quantitatively assess proposed energy policy actions. The methodologies used in these independent analyses are not described in detail in this report; however, the assumptions used to integrate the results of those analyses, together with their results, are summarized. The focus of the report is the methods used and insights gained regarding the combined effects of the Strategy actions. Provides detailed numerical results of the NES integrated analysis. Projected results of the Strategy are presented in terms of changes relative to either the analytical baseline--the Current Policy Base case--or the base year 1990. Organized into five chapters and seven appendices. Chapt. 1 presents the methodology used in this analytical process--the options integration methodology, and the criteria used to evaluate the actions. Chapt. 2 describes the Current Policy Base case--the baseline analyses and the integration effort. Chapt. 3 describes the combination of actions comprising the final National Energy Strategy--the impacts on energy supply and demand, the environment, and the economy. Chapt. 4 describes the assumptions and methods used to integrate the results of each of the independent Strategy action analyses of the Strategy that addresses uncertainty issues concerning economic growth and world oil prices.

Cross-Cutting/General

Title: The Potential of Renewable Energy: An Interlaboratory White Paper Date/Version #: March 1990 Sponsor: U.S. Department of Energy Office of Policy, Planning and Analysis Developer: NREL Contact: Tom Bath NREL (303) 231-1000		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☐ Cost ☒ Performance ☒ Reliability-Life ☐ Material Req. ☐ Market Size ☒ Economics ☒ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☒ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS ☐ <small>(or Compatible)</small> Spreadsheet ☐ <small>(or Compatible)</small> Other (eg ASCII) ☐		Data Timeperiod Historical ☐ Present ☒ Projections ☒		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☐ Measured ☐ Estimated ☒ Modelled ☒ Surveyed ☐		Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒

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Explanatory Notes:

Data Description: The data appendices provide tables of cost and performance data for current and projected hydropower, biomass, geothermal, ocean, solar, wind, PV and solar heat technologies that provide useful detail on the current and anticipated state of their technological development. Accompanying tables present current and projected market penetrations based on the assumptions used in the analysis. There is limited data on the cost and performance of conventional energy technologies, mostly drawn from the EPRI TAG. Appendix J explains the market construct used for the estimations, including projections of energy prices, generating capacity needs, and energy demand by sector. Most of the energy demand and price assumptions are drawn from EIA models and data sources. The market projections detailed in the paper were produced by runs of the DOE FOSSIL2 model. The paper itself was peer-reviewed by a variety of sources in industry, academia and the national laboratories.

Cross-Cutting/General

Title: Wind Energy Resource Atlas of the U.S. Date/Version #: 1987 Sponsor: U.S. Department of Energy Developer: Pacific Northwest Laboratory Contact: Pacific Northwest Laboratory Dennis Elliott (509) 376-7860		Type of Data Technology En. Efficiency ☐ Renewables ☒ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐		Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐		Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☒ Partial ☐

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Explanatory Notes: Atlas is regularly updated but not on a set schedule.

Data Description: This atlas estimates wind energy resources for the U.S. and its territories, and indicates general areas where a high wind resource may exist. The atlas includes over 100 maps (30 in color) and lists wind resource statistics for over 1000 locations. The distribution of the wind energy resource is depicted both on a national scale and in greater detail for each state or territory.

Cross-Cutting/General

Title: The 1985 NAPAP Emissions Inventory (Ver. 2): Development of the Annual Data and Modelers' Tape Date/Version #: November 1989 Sponsor: U.S. Environmental Protection Agency Developer: Alliance Technology Corporation Chapel Hill, NC Contact: J. David Mobley, Acid Dept. Branch Air & Energy Engineering Res. Lab. Research Triangle Park, NC 27711 (704) 541-2350		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☒ None Described ☐ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS ☐ (or Compatible) Spreadsheet ☐ (or Compatible) Other (eg ASCII) ☐					
Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐		● = High ● = Ave. ○ = Low Explanatory Notes:	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒			

Data Description: This report discusses the development of the current emissions inventory for the base year 1985. The U.S. anthropogenic emissions data were collected through the existing EPA emissions inventory data system known as the National Emissions Data System (NEDS). Annual emissions estimates for natural sources of alkaline particulates for the United States were developed by NAPAP specifically for application to the 1985 NAPAP Emissions Inventory. Environment Canada provided estimates of annual emissions for both Canadian anthropogenic and natural alkaline particulate sources. The emissions estimates were based on source tests, emission factors or material balance.

Cross-Cutting/General

Title: Acidic Deposition: State of Science and Technology: Report 1-Emissions Involved in Acidic Deposition Processes Date/Version #: December 1990 Sponsor: NAPAP Developer: Inter. Agency Task Force on Acid Precipitation Contact: NAPAP 722 Jackson Pl., NW Washington, DC 20503		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☒ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐	Suitability <div style="text-align: center;">○</div> <div style="text-align: center;">○</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div>
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	<div style="text-align: center;">● = High ● = Ave. ○ = Low</div>		
Data Timeperiod Historical ☒ Present ☐ Projections ☐	Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐	Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐	Explanatory Notes: 	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒		

Data Description: This report describes methods used to develop emissions data bases and presents emissions estimates derived from these methods. Methodologies forestimating emissions and their uncertainties are discussed for both natural and anthropogenic sources. The emissions values presented are estimated, not measured.

Cross-Cutting/General

Title: Compilation of Air Pollutant Emission Factors (4th Ed., Volumes I-II, Supplements A&B) Date/Version #: September 1985 Sponsor: U.S. Environmental Protection Agency Developer: Office of Air Quality & Planning Standards Contact: Office of Air Quality & Planning Standards Research Triangle Park, NC 27711 (919) 541-2300		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☒ Reliability-Life ☐ Material Req. ☒ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☐ Impacts ☐	Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐	Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒	Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐	Data Timeperiod Historical ☒ Present ☐ Projections ☐		
Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☒ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐	● = High ● = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐	Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐	Documentation Extensive ☐ Partial ☒		

Explanatory Notes:

Data Description: Volume I contains data on air pollutant emission factors that are averages of all available data of acceptable quality, generally without consideration for the influence of various process parameters such as temperature, reactant concentrations, etc. The factors presented are for facilities having air pollution control equipment in place. These relate to the average level of controls found on existing facilities for which data are available. This report contains both primary and secondary data. The primary data was obtained mainly through source testing, and the secondary through extrapolation. Each table within the report is given a rating which reflects the quality and the amount of data on which the factors are based. Volume II presents data on emissions of atmospheric pollutants for which sufficient information exists to establish realistic emission factors. Part I contains highway source data that are based on MOBIL3, a computer program issued by the EPA in June 1984, which estimates fleet emission rates for hydrocarbons, carbon monoxide and nitrous oxides for any calendar year. Part II contains emission rates for eight types of off-highway mobile sources. The data are both primary and secondary in nature. The data is mainly primary having been obtained through on-going testing of vehicle emissions. The secondary data is both modeled and estimated based on data provided by other EPA offices, government labs and industry.

Cross-Cutting/General

Title: Emissions and Cost Estimates for Globally Significant Anthropogenic Combustion Sources of NO _x , SO ₂ , CH ₄ , CO, and CO ₂ Date/Version #: May 1990 Sponsor: U.S. Environmental Protection Agency Developer: Radian Corporation Contact: Radian Corporation P.O. Box 13000 Research Triangle Park, NC 27709 (919) 541-9100		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☒ Cost ☒ Performance ☒ Reliability-Life ☒ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☒ Emissions ☐ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability <div style="text-align: center;">○</div> <div style="text-align: center;">○</div> <div style="text-align: center;">●</div> <div style="text-align: center;">●</div>					
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐		Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐		<div style="text-align: center;"> ● = High ● = Ave. ○ = Low </div>	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: 					

Data Description: This project is limited to the evaluation of significant combustion sources of greenhouse gases. Only sources and controls for which data are readily available are included in this report. The development of performance and cost estimates for advanced combustion technologies and controls and for non-combustion sources and controls were not included in this study, but are part of another ongoing task. The emission factors developed for this report are intended for use in estimating a global emission inventory of CO₂, CO, CH₄, NO_x, and N₂O. To provide options for stabilization and reduction of emissions of these gases, emission control technologies are identified for the combustion sources. The emission reduction capabilities of emission control technologies can be incorporated into the development of a global emission inventory and into forecasting global emissions under various scenarios.

Cross-Cutting/General

Title: National Air Quality and Emissions Trends Report, 1990 Date/Version #: November 1991 Sponsor: U.S. Environmental Protection Agency Developer: Office of Air & Radiation, Office of Air Quality Planning & Standards Technical Support Division Research Triangle Park, NC 27711 Contact: Dr. Thomas Curran (919) 541-2350		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure <small>(If Electronic)</small> DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐		Data Timeperiod Historical ☒ Present ☐ Projections ☐		Data Tran. Media <small>(If Electronic)</small> Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☒ Secondary ☐ Measured ☒ Estimated ☒ Modelled ☐ Surveyed ☐		● = High ◐ = Ave. ○ = Low	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size <small>(If Electronic)</small> < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes:					

Data Description: This report presents national and regional trends in air quality from 1981 through 1990 for particulate matter, sulfur dioxide, carbon monoxide, nitrogen dioxide, ozone and lead. In addition to ambient air quality, trends are also presented for annual nationwide emissions. The data emissions are estimated using the best available engineering calculations; the ambient levels presented are averages of direct measurements.

Cross-Cutting/General

Title: National Air Pollutant Emission Estimates, 1940-1989 Date/Version #: March 1991, EPA-450/4-91-004 Sponsor: U.S. Environmental Protection Agency Developer: Office of Air Quality Planning and Standards Contact: Technical Support Division National Air Data Branch Research Triangle Park, NC Dr. Thomas C. Curron, (919) 541-2350		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☐ None ☒ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☒ All Regions ☐ Regional/Local ☐		Suitability
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Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒		Explanatory Notes: 					

Data Description: This report presents estimates of trends in nationwide air pollutant emissions for six major pollutants: particulate (PM/TSP and PM10), sulfur oxides, nitrogen oxides, reactive volatile organic compounds, carbon monoxide, and lead. Estimates are provided for major categories of air pollution sources. A short analysis of emission trends is given along with a discussion of methods used to develop the data. The emission estimates presented represent calculated estimates based on standard emissions-estimating procedures. These estimates do not represent a specific program for the measurement of actual emissions.

Cross-Cutting/General

Title: Toxics in the Community 1988: National and Local Perspectives Date/Version #: September 1990 Sponsor: U.S. Environmental Protection Agency Developer: Office of Toxic Substances, EPA Contact: David Sarokin, Project Manager Office of Toxic Substances Economics and Technology Division Washington, DC 20540 (202) 260-6396		Type of Data Technology En. Efficiency ☐ Renewables ☐ Benchmarks ☐ Cost ☐ Performance ☐ Reliability-Life ☐ Material Req. ☐ Market Size ☐ Economics ☐ En. Consump. ☐ Environmental Coefficients ☐ Emissions ☒ Impacts ☐		Key Criteria Peer Review Industry ☐ Govt-Labs-Univ ☐ None Described ☒ Updates > 1 per Year ☐ 1 per 1-5 Years ☒ None ☐ Cost No Cost - \$1000 ☒ \$1000 - \$5000 ☐ > \$5000 ☐ Geographic Detail National Only ☐ All Regions ☒ Regional/Local ☐		Suitability
Data Format Data Base ☐ Model ☐ Report/Table ☒		Data Structure (If Electronic) DBMS (or Compatible) ☐ Spreadsheet (or Compatible) ☐ Other (eg ASCII) ☐					
Data Timeperiod Historical ☐ Present ☒ Projections ☐		Data Tran. Media (If Electronic) Diskette ☐ CD-ROM ☐ Tape ☐		Data Origin Primary ☐ Secondary ☒ Measured ☐ Estimated ☒ Modelled ☐ Surveyed ☐		● = High ● = Ave. ○ = Low Explanatory Notes:	
Data Access Open ☒ Restricted ☐ Licensable ☐		Data Size (If Electronic) < 10 mB ☐ < 100 mB ☐ > 100 mB ☐		Documentation Extensive ☐ Partial ☒			

Data Description: The data in this report were obtained from the Toxics Release Inventory (TRI), the first national database of information on toxic pollution by manufacturing industries. This report contains aggregated information on releases of toxic chemicals to the environment and transfer of these chemicals to off-site locations. TRI only requires facilities to report data that are already known or reasonably ascertainable to them. It does not require companies to measure or verify the data they submit. Much of the data reported were estimated with unknown accuracy.

APPENDIX B

BIBLIOGRAPHY OF REVIEWED DATA SETS

APPENDIX B

BIBLIOGRAPHY OF REVIEWED DATA SETS

BUILDINGS

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APPENDIX C

**IDENTIFIED DATA SET
OPTIONS FOR FUTURE REVIEW**

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IDENTIFIED DATA SET OPTIONS FOR FUTURE REVIEW

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APPENDIX D

**DATA REVIEWS BY OTHERS FOR
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None Identified.

UTILITIES

None Identified.

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