

Discussion of EIA data



For

National Association of Manufacturers

May 26, 2016 / Washington, DC

By

Adam Sieminski, Administrator



Independent Statistics & Analysis

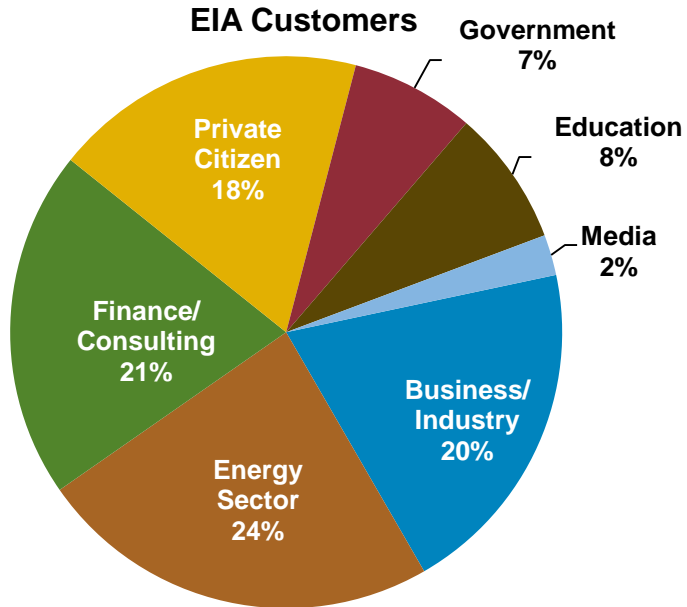
U.S. Energy Information
Administration

Mandate: EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment

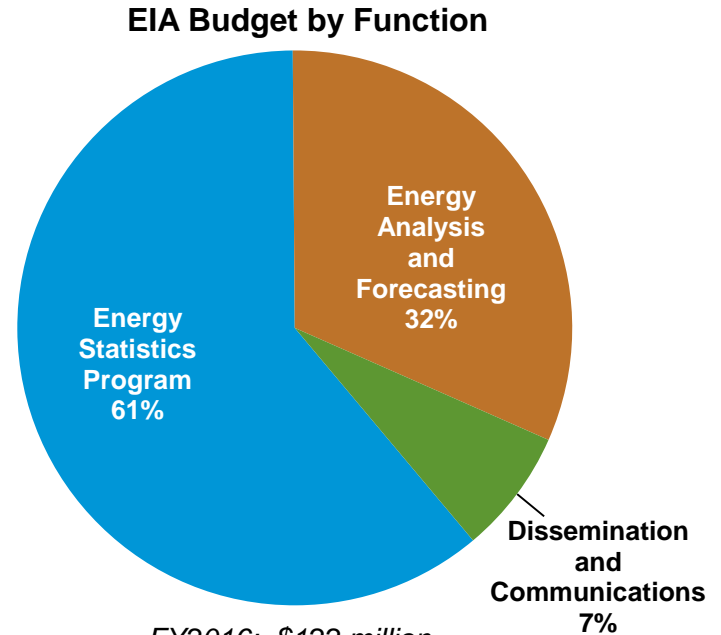
Independence: EIA, an element of the Department of Energy, is one of 14 federal statistical agencies; by law, its data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government

Mission: EIA provides data and analysis to help stakeholders understand the rapidly changing energy landscape across all fuels and all sectors

EIA customers and budget



2015 Customer Satisfaction Survey

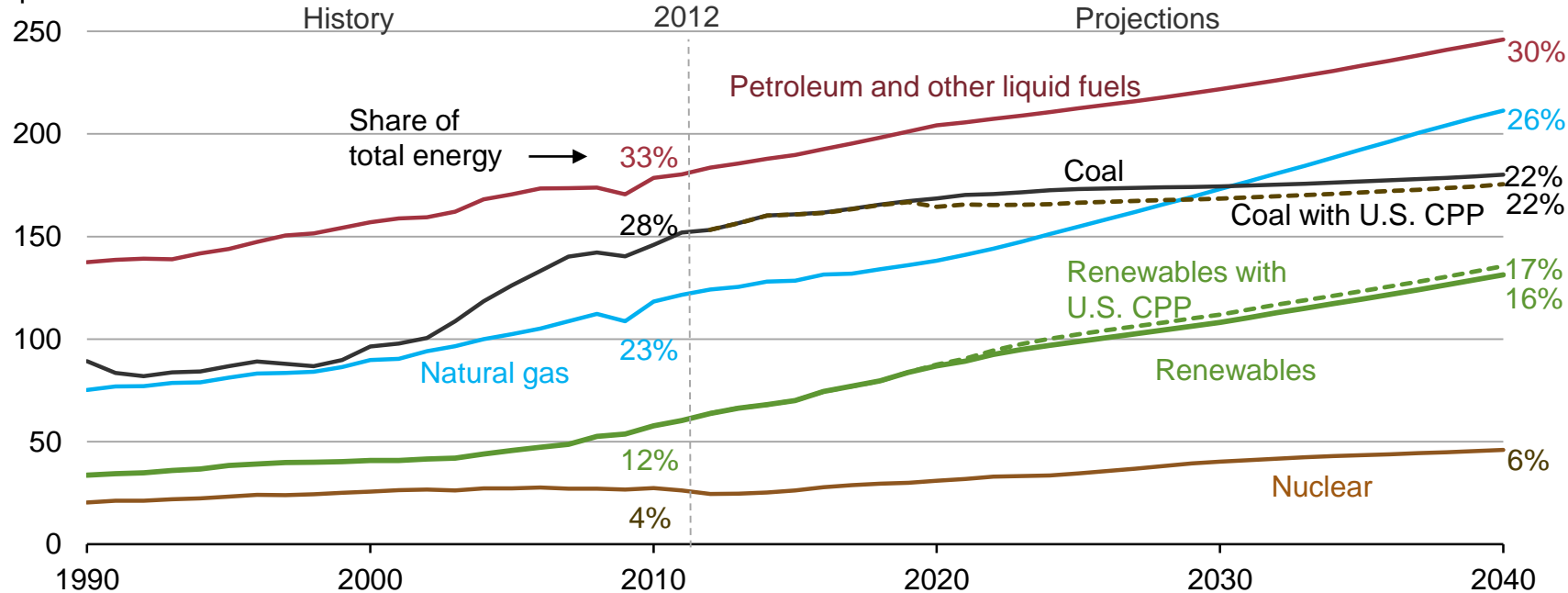


FY2016: \$122 million

Globally, renewables grow fastest, coal use plateaus, natural gas surpasses coal by 2030, and oil maintains its leading share

world energy consumption

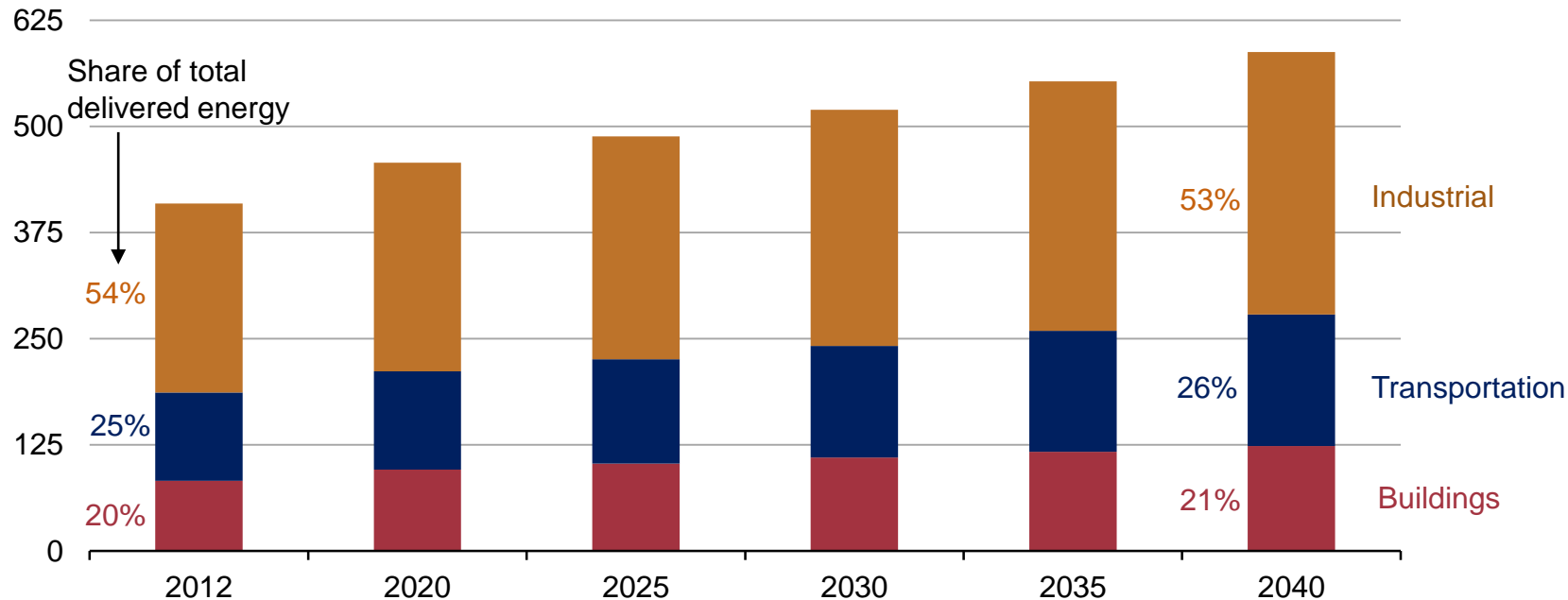
quadrillion Btu



Source: EIA, International Energy Outlook 2016 and EIA, Analysis of the Impacts of the Clean Power Plan (May 2015)

As world total energy consumption grows, shares by end-use sector remain relatively unchanged

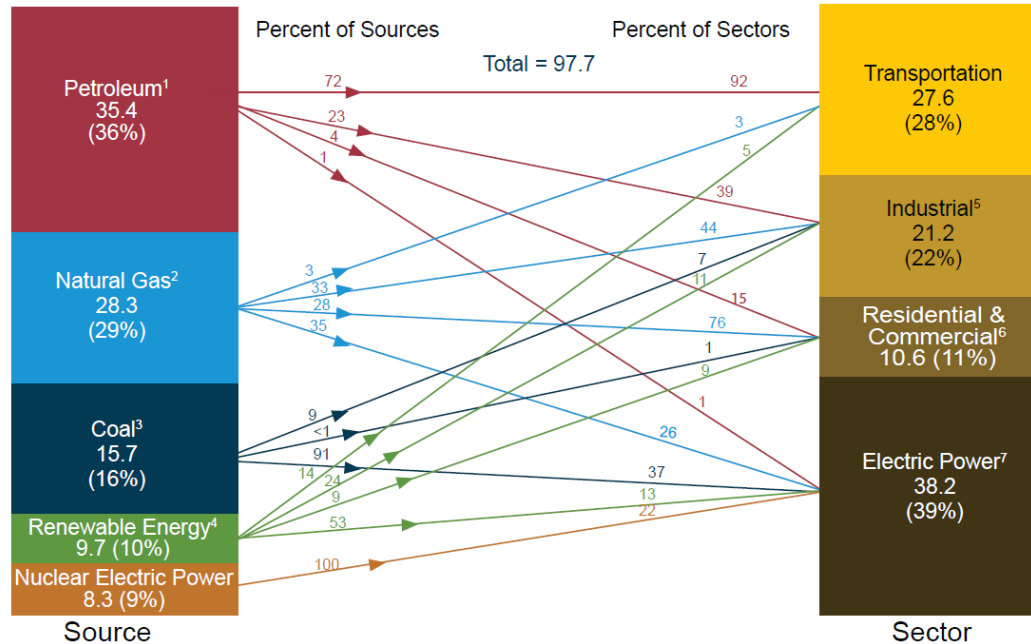
world delivered energy consumption by end-use sector
quadrillion Btu



Source: EIA, International Energy Outlook 2016

In the United States, natural gas and petroleum account for the greatest share of industrial sector primary energy consumption

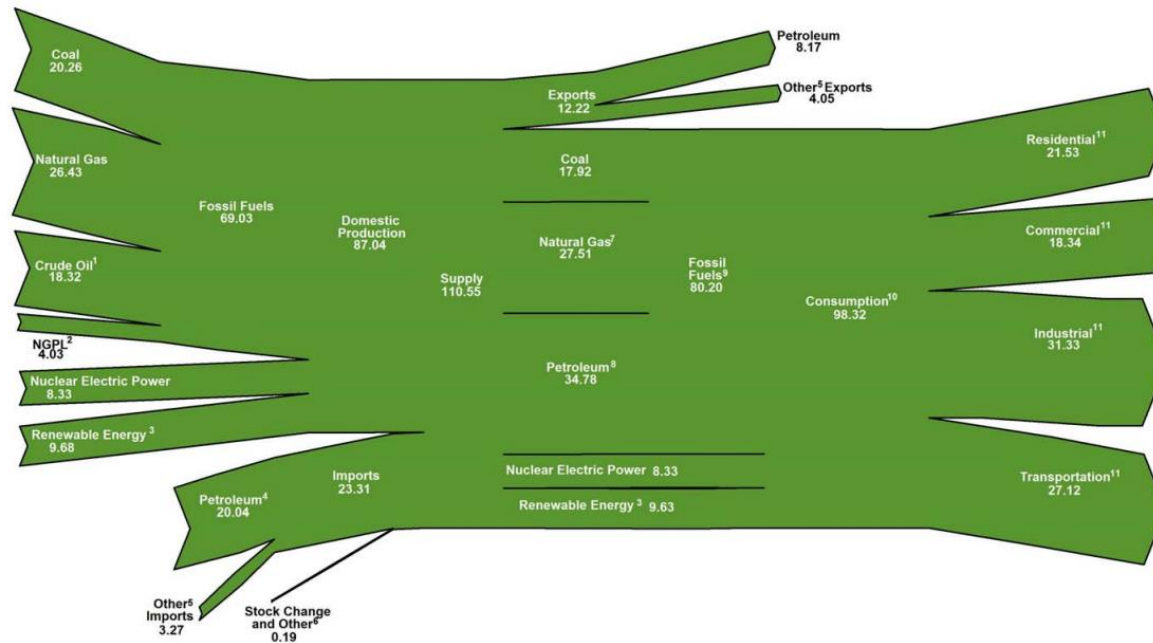
primary energy consumption by source and sector, 2015
quadrillion Btu



Source: EIA Monthly Energy Review

The industrial sector accounts for nearly a third of primary energy consumption in the United States

primary energy consumption by source and sector, 2014
quadrillion Btu



Source: EIA Monthly Energy Review

U.S. Manufacturing Energy Use

U.S. manufacturing energy use – key takeaways



- manufacturing energy consumption represents 27% of total U.S. delivered energy use
- four energy-intensive industries account for 80% of total manufacturing energy use: petroleum and coal products (NAICS 324), chemicals (NAICS 325), paper (NAICS 322), and primary metals (NAICS 331)
- energy accounts for 2.5% of overall manufacturing costs; however, for some industries, the energy cost share exceeds 30%

<http://www.eia.gov/consumption/manufacturing/index.cfm>

Manufacturing energy use – key takeaways (continued)

- manufacturing fuel use accounts for roughly 76% of total manufacturing energy use; remainder nonfuel use, principally chemical feedstocks
- fuel intensity in manufacturing continues to decline, but the rate of decline has slowed, in part reflecting shifts in the composition of manufacturing activity
- the price of natural gas used by manufacturers has declined, while other energy prices have risen; EIA estimates natural gas to account for a greater share of manufacturing fuel

What is collected on the MECS?

- for all burnable energy sources:
 - purchases and expenditures
 - transfers in (or receipts coming from other than purchases)
 - onsite production
 - how much used for fuel and non-fuel purposes
 - for some energy sources: how much shipped offsite
- in addition, for electricity, steam, and other boiler output (hot water):
 - onsite generation (CHP, conventional, and renewables)
 - sold or transferred out

What is collected on the MECS? (continued)

- manufacturer energy characteristics
 - for most widely used energy sources, breakouts of end-uses (e.g., boiler fuel, process heat, building HVAC)
 - fuel-switching capacity
 - energy management program participation
 - technologies
- Census frame data records
 - value of shipments
 - total employment
 - value added (shipments minus costs)

Industries and NAICS codes in MECS

NAICS Code	Subsector and Industry	NAICS Code	Subsector and Industry	NAICS Code	Subsector and Industry
311	Food	325	Chemicals		
3112	Grain and Oilseed Milling	325110	Petrochemicals		
311221	Wet Corn Milling	325120	Industrial Gases	331314	Secondary Smelting and Alloying of Aluminum
31131	Sugar Manufacturing	325181	Alkalies and Chlorine	331315	Aluminum Sheet, Plate and Foils
3114	Fruit and Vegetable Preserving and Specialty Foods	325182	Carbon Black	331316	Aluminum Extruded Products
3115	Dairy Products	325188	Other Basic Inorganic Chemicals	3314	Nonferrous Metals, except Aluminum
3116	Animal Slaughtering and Processing	325192	Cyclic Crudes and Intermediates		
312	Beverage and Tobacco Products	325193	Ethyl Alcohol		
3121	Beverages	325199	Other Basic Organic Chemicals	331419	Primary Smelting and Refining of Nonferrous Metals, except Copper and Aluminum
3122	Tobacco	325211	Plastics Materials and Resins	3315	Foundries
313	Textile Mills	325212	Synthetic Rubber	331511	Iron Foundries
314	Textile Product Mills	325222	Noncellulosic Organic Fibers	331521	Aluminum Die-Casting Foundries
315	Apparel	325311	Nitrogenous Fertilizers	331524	Aluminum Foundries, except Die-Casting
316	Leather and Allied Products	325312	Phosphatic Fertilizers		
321	Wood Products	3254	Pharmaceuticals and Medicines	332	Fabricated Metal Products
321113	Sawmills	325412	Pharmaceutical Preparation	333	Machinery
3212	Veneer, Plywood, and Engineered Woods	325992	Photographic Film, Paper, Plate, and Chemicals	334	Computer and Electronic Products
321219	Reconstituted Wood Products	326	Plastics and Rubber Products	334413	Semiconductors and Related Devices
3219	Other Wood Products	327	Nonmetallic Mineral Products	335	Electrical Equip., Appliances, and Components
322	Paper	327121	Brick and Structural Clay Tile	336	Transportation Equipment
322110	Pulp Mills	327211	Flat Glass	336111	Automobiles
322121	Paper Mills, except Newsprint	327212	Other Pressed and Blown Glass and Glassware	336112	Light Trucks and Utility Vehicles
322122	Newsprint Mills	327213	Glass Containers	3364	Aerospace Product and Parts
322130	Paperboard Mills	327215	Glass Products from Purchased Glass	336411	Aircraft
323	Printing and Related Support	327310	Cements		
324	Petroleum and Coal Products	327410	Lime		
324110	Petroleum Refineries	327420	Gypsum		
324121	Asphalt Paving Mixture and Block	327993	Mineral Wool	337	Furniture and Related Products
324191	Petroleum Lubricating Oil and Grease	331	Primary Metals	339	Miscellaneous
324199	Other Petroleum and Coal Products	331111	Iron and Steel Mills		
		331112	Electrometallurgical Ferroalloy Products		
		3312	Steel Products from Purchased Steel		
		3313	Alumina and Aluminum		

New Reports and Tools

Commercial Building Energy Consumption Survey (CBECS)

The screenshot shows the '2012 CBECS Survey Data' page. At the top, there are navigation tabs for 'OVERVIEW', 'DATA', and 'ANALYSIS & PROJECTIONS'. Below this, the page is divided into sections. On the left, under 'Building Characteristics', there is a list of categories: Summary tables, Geographic region, Size and age, Building activity, Employment and occupancy, Energy sources and end uses, Floorspace heated, cooled, and lit, and End-use equipment. On the right, there is a 'Background Information' sidebar with links to 'About the CBECS', 'CBECS Survey Forms', 'CBECS Maps', 'CBECS Terminology', 'Survey Background & Technical Information', 'Building Type Definitions', and 'Archived Reports'. Below this sidebar is a 'Features' section with links to 'Energy Usage Summary (2012)', 'A Look at the U.S. Commercial Building Stock (2012)', 'Large Hospital Report (2007)', and 'Water Data Collection (2007)'. At the bottom left, contact information for Joelle Michaels, Survey Manager, is provided.

- national sample survey that collects information on the stock of U.S. commercial buildings, including their energy-related building characteristics and energy usage data
- includes building types that might not traditionally be considered commercial, such as schools, hospitals, correctional institutions, and buildings used for religious worship, in addition to traditional commercial buildings such as stores, restaurants, warehouses, and office buildings


New Microsoft Excel add-in for Windows

U.S. Energy Information Administration (EIA)
Excel Data Add-In

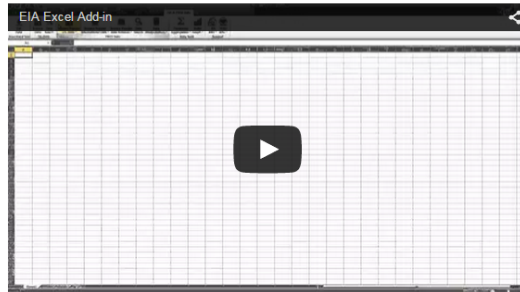
Download the EIA Data Add-In for Microsoft Excel for Windows

By adding an "EIA & FRED" tab to Microsoft Excel, our add-in allows you to download, directly into your spreadsheet, energy data from EIA's data API and economic data from the St. Louis Federal Reserve's Economic Data (FRED) API. Spreadsheets with fetched data series can be saved, opened later, or refreshed with new data by simply clicking the "Get Data" button. This ability to save data and analysis and rerun it later with the latest data is an immense saving of time and effort for analysts performing periodic analyses of statistics and indicators.

Within the spreadsheet, you can browse each data repository by category or search by keywords to find data IDs and to download the series information and data. Once the desired data series are downloaded, all of Excel's rich functionality is available to create analyses and graph results.

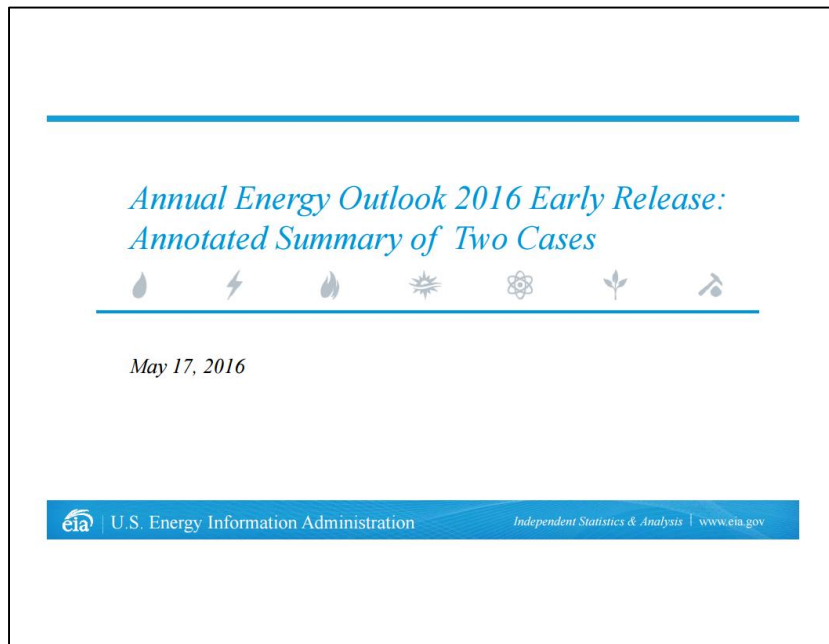
Throughout the EIA website, the symbol  is used to denote a link to a page with the series ID or source key and sample API calls. The series ID can be copied and pasted directly into Excel and the series data fetched with the EIA add-in. This is another way to load data series found on www.eia.gov into your workbook.

Currently, EIA's data API contains 1.2 million energy series. The St. Louis Federal Reserve's API contains 240,000 economic series. Both organizations offer the data APIs, bulk data downloads, and Excel add-ins free of charge as part of their commitment to open data.



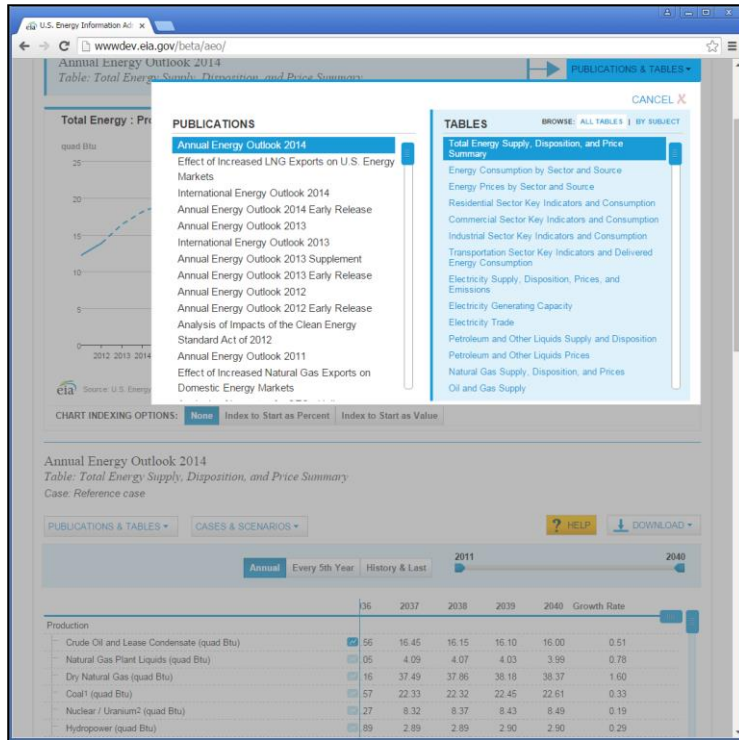
- enables spreadsheet users – inside and outside of EIA – to pull recent EIA/FRED data into their existing workbooks
- <http://www.eia.gov/opendata/excel/>

Annual Energy Outlook (AEO)



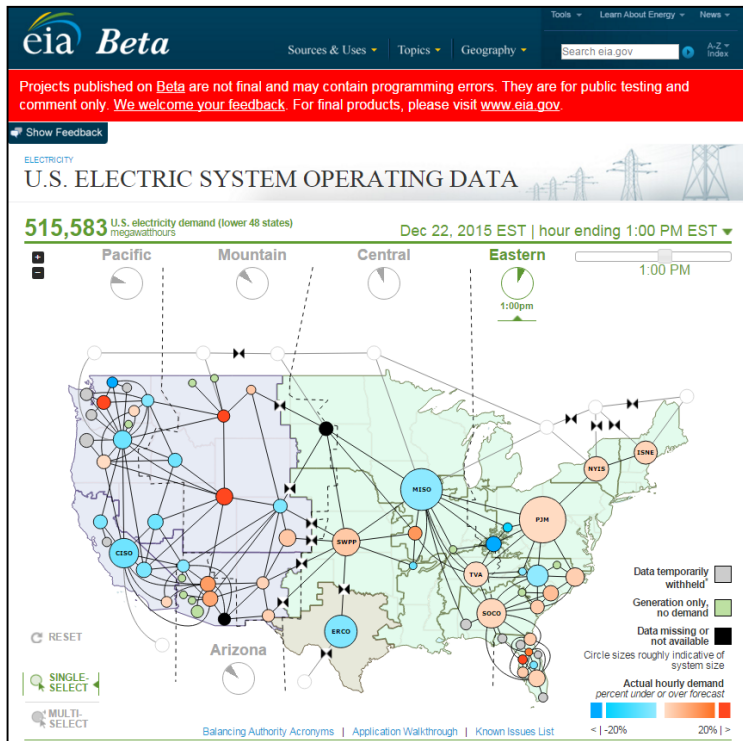
- includes projections of U.S. energy production, generation, and consumption through 2040, accounting for current laws and regulations
- features two cases: the Reference case and a case excluding implementation of the Clean Power Plan (CPP)

AEO interactive table viewer



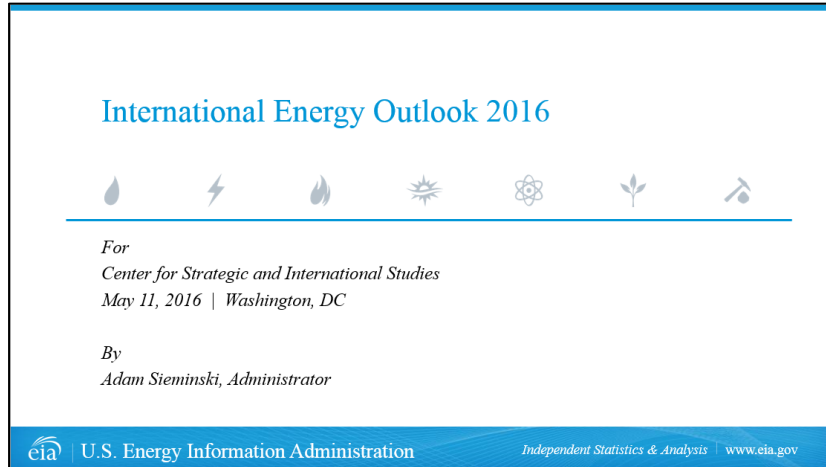
- signature product redeveloped for EIA's state-of-the-art table browser experience
- compares up to 6 cases from AEO
- <http://www.eia.gov/forecasts/aeo/data/browser/>

EIA is collecting near real-time data on the operation of the U.S. electric system (EIA-930)



- EIA is receiving hourly demand data every 60 minutes from the 66 balancing authorities that operate the grid in the contiguous states
- EIA posts data an hour and 20 minutes after the operating hour (For example, demand for the hour ending 1:00 pm is posted around 2:20 pm)

International Energy Outlook (AEO)



- includes projections of U.S. energy production, generation, and consumption through 2040, accounting for current laws and regulations
- features two cases: the Reference case and a case excluding implementation of the Clean Power Plan (CPP)

North American Cooperation on Energy Information (NACEI)



The Energy Ministers from Canada, Mexico and the United States initiated a framework for trilateral consultation and sharing of energy information for the North American region in December 2014. A robust collaboration effort was launched to: improve respective energy import and export data; share publicly available geospatial information related to energy infrastructure; exchange views and projections on cross-border energy flows; and develop a cross reference for terminology, concepts, and definitions.

Information, including data and maps, is available at the following links:



NACEI.org

[YouTube video](#)

[EIA Trilateral page](#)

Goals of trilateral cooperation on energy information

Energy trade statistics

consistent energy trade data across and within jurisdictions; harmonized methods and definitions; aligned international reporting practices

Geographic energy information

fully integrated maps of North American energy infrastructure

Outlooks for energy supply and demand

process for exchanging views and projections of cross-border energy flows

Cross reference for energy terminology

catalogue of concepts, terms and definitions consistent across North America and translated into each country's official language(s)

DOE now releasing annual U.S. Energy and Employment Report



A report prepared for DOE by BW Research

- provides a quantitative lens with which to evaluate the employment impact of new energy technologies, shifting fuels deployment, and evolving transmission and distribution systems during a period of rapid change
- presents a unique snapshot of energy efficiency employment in key sectors of the economy, including construction and manufacturing

<http://www.energy.gov/downloads/us-energy-and-employment-report>

For more information

U.S. Energy Information Administration home page | www.eia.gov

Annual Energy Outlook | www.eia.gov/aeo

Short-Term Energy Outlook | www.eia.gov/steo

International Energy Outlook | www.eia.gov/ieo

Monthly Energy Review | www.eia.gov/mer

Today in Energy | www.eia.gov/todayinenergy

Manufacturing Energy Consumption Survey (MECS) | <https://www.eia.gov/consumption/manufacturing/>

Commercial Building Energy Consumption Survey (CBECS) | <http://www.eia.gov/consumption/commercial/>

International Energy Portal | www.eia.gov/beta/international/?src=home-b1