EIA Data Tools and Browsers

Federal Committee on Statistical Methodology – Geospatial Interest Group
Geospatial Web Applications, Tools and Data workshop.
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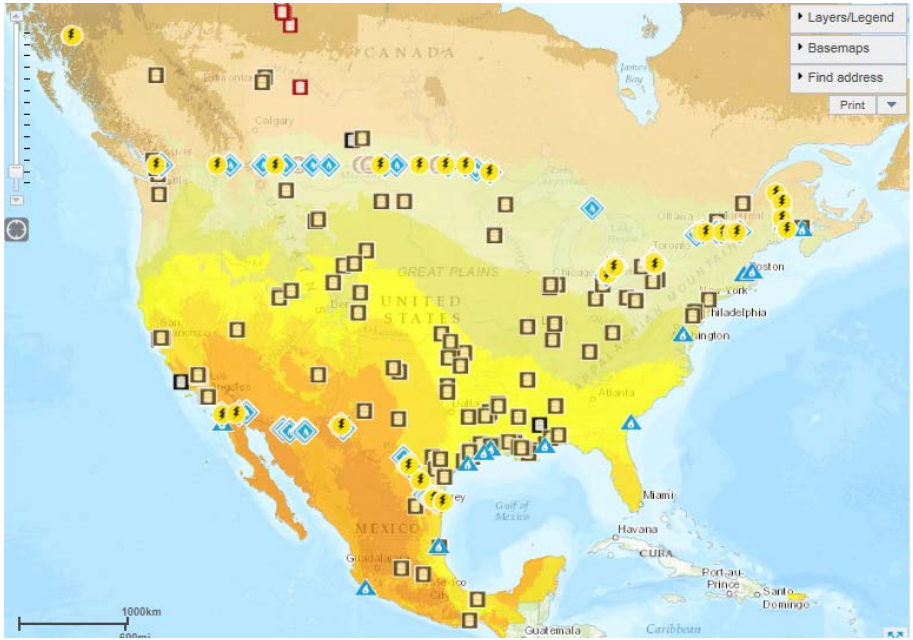
EIA Data Tools and Browsers

- North American Cooperation on Energy Information (NACEI)
  - Full featured, multilayer GIS system
- U.S. Electric System Operating Data
  - Lightweight, data driven geospatial tool

North American Cooperation on Energy Information (NACEI)



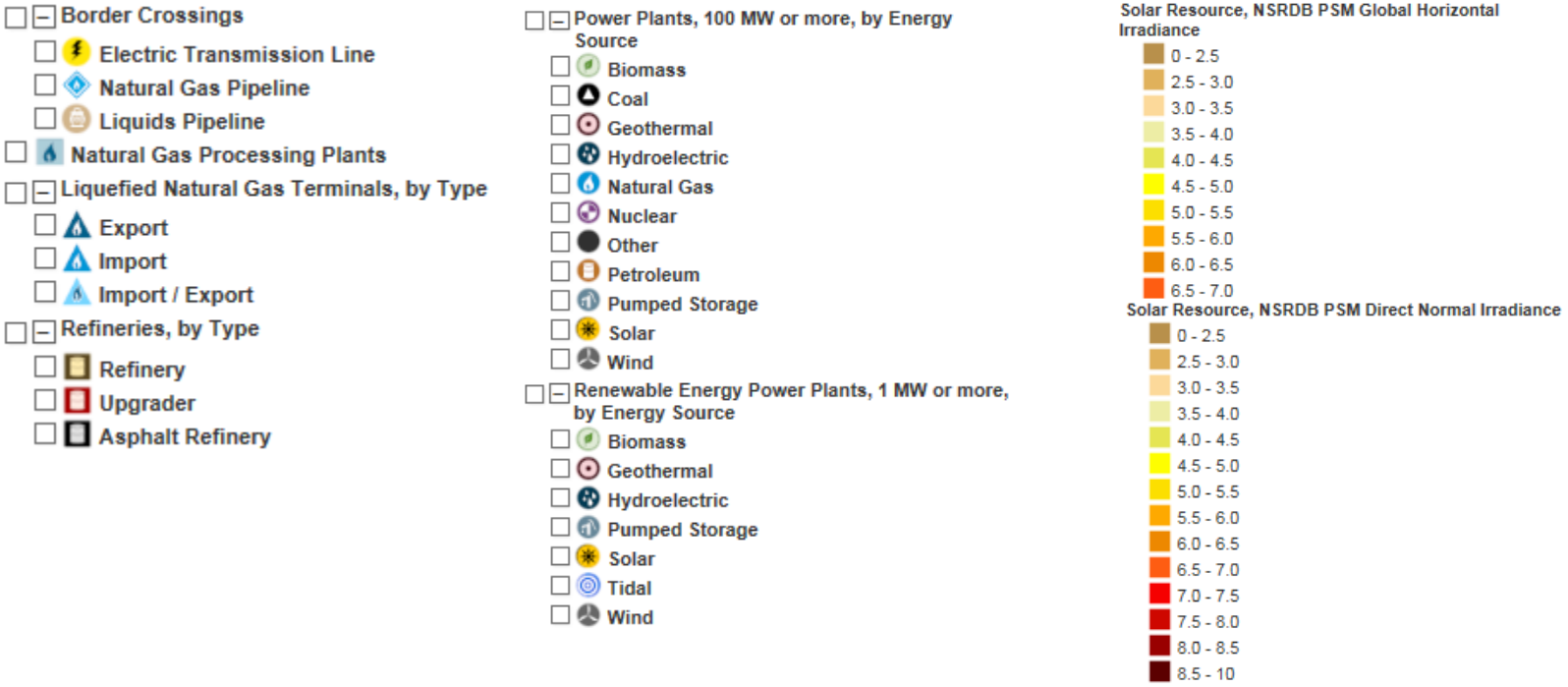
North American Cooperation on Energy Information (NACEI)

- Background:
  - A trilateral memorandum of understanding (MOU) on energy information cooperation was signed by the Energy Secretaries and Minister from Canada, Mexico and the United States in December 2014. An expanded MOU was signed in February 2016 to include climate change and energy collaboration activities.
  - Based upon the original MOU, the areas of focus were:
    - Trade Data: Comparing, validating, and improving respective energy import and export information
    - Maps: Sharing publicly available geospatial information related to energy infrastructure
    - Outlooks: Exchanging views and information on projections of cross-border energy flows
    - Definitions: Harmonizing terminology, concepts and definitions of energy products
  - Currently, there is one landing page that provides links to individual country pages. The individual country pages provide the same data but formatting and design of pages are different. In addition, the Canadian webpage is translated into both English and French and the Mexican webpage is translated into Spanish and English. We are in the process of developing a single website that will provide all the data in three languages (French, English and Spanish.)

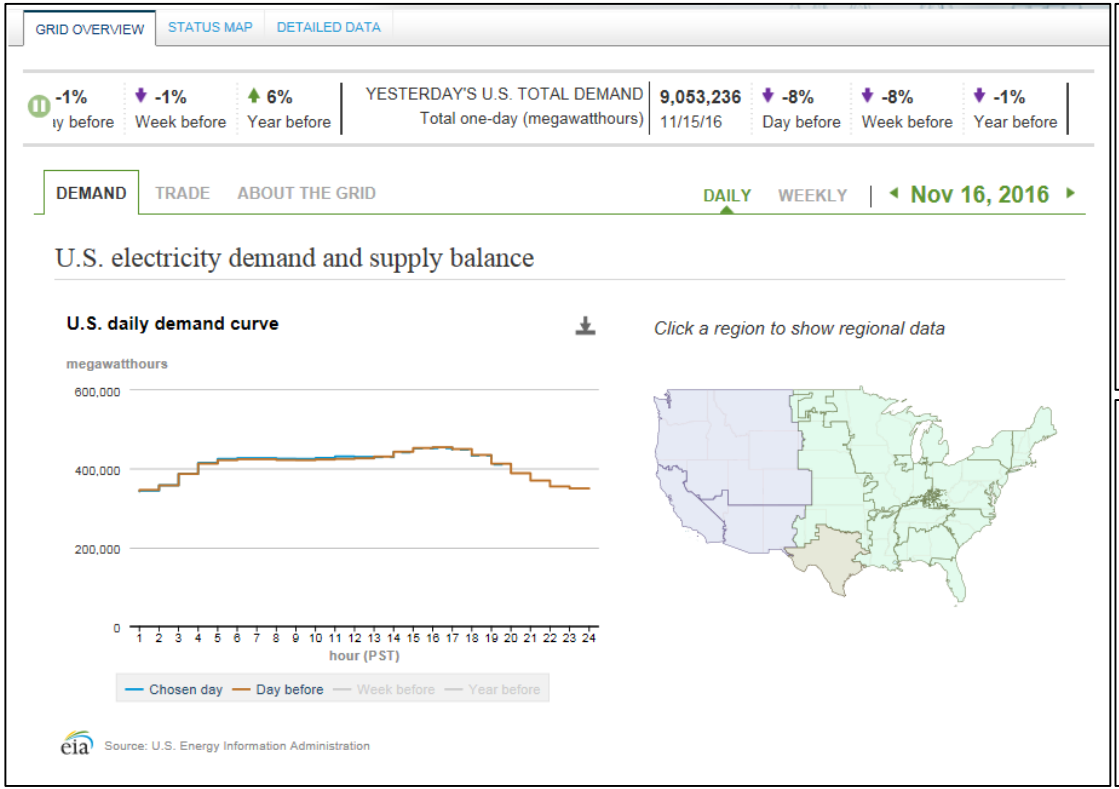
North American Cooperation on Energy Information (NACEI)

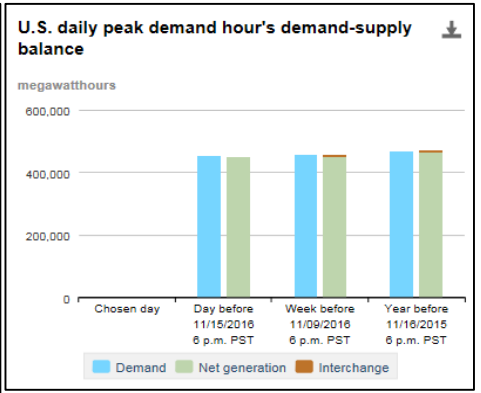
- GIS desktop software, web map service, EIA's ESRI ArcGIS web application.
  - *NACEI data are fed to EIA web application via Canadian provided .WMS, while U.S. Energy Mapping system data are via ESRI managed cloud service.*
- Use GIS desktop software to create and edit data in GIS file formats.
- Able to handle a large number of layers and large sizes of files.
- Multiple countries collaborating on type of data collected and table formats.
- Bi-annual updates of data.
- Translated into three different languages (French, English, and Spanish).
- Provide maps in PDFs and data in Excel and shapefile formats.
- Metadata and glossary of map definitions.

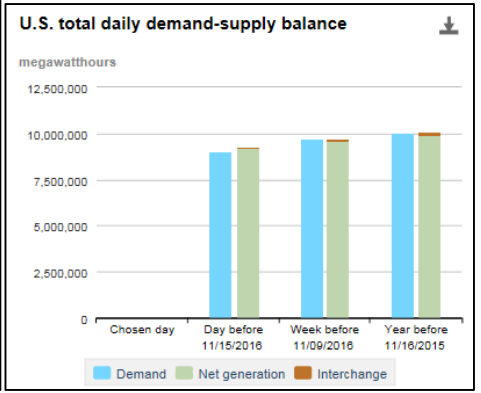
North American Cooperation on Energy Information (NACEI)



U.S. Electric System Operating Data







U.S. Electric System Operating Data

- EIA's U.S. Electric System Operating Data tool provides hourly electricity operating data, including actual and forecast demand, net generation, and the power flowing between electric systems.
- The information is collected directly from each interconnected electric system on the EIA-930 survey to provide nearly real-time demand data.
- The U.S. Electric System Operating Data tool allows for analysis and visualizations of hourly, daily, and weekly electricity supply and demand on a national and regional level for all of the 66 electric system balancing authorities that make up the U.S. electric grid.
- User can visualize and analyze: hourly flow of electricity between electric systems, variety in electric systems' daily demand shapes and seasonality daily demand patterns, potential stress on electric systems and hourly flows of electricity with Canada and Mexico
- Launched July 2016. First hourly data collection conducted by a federal statistical agency!

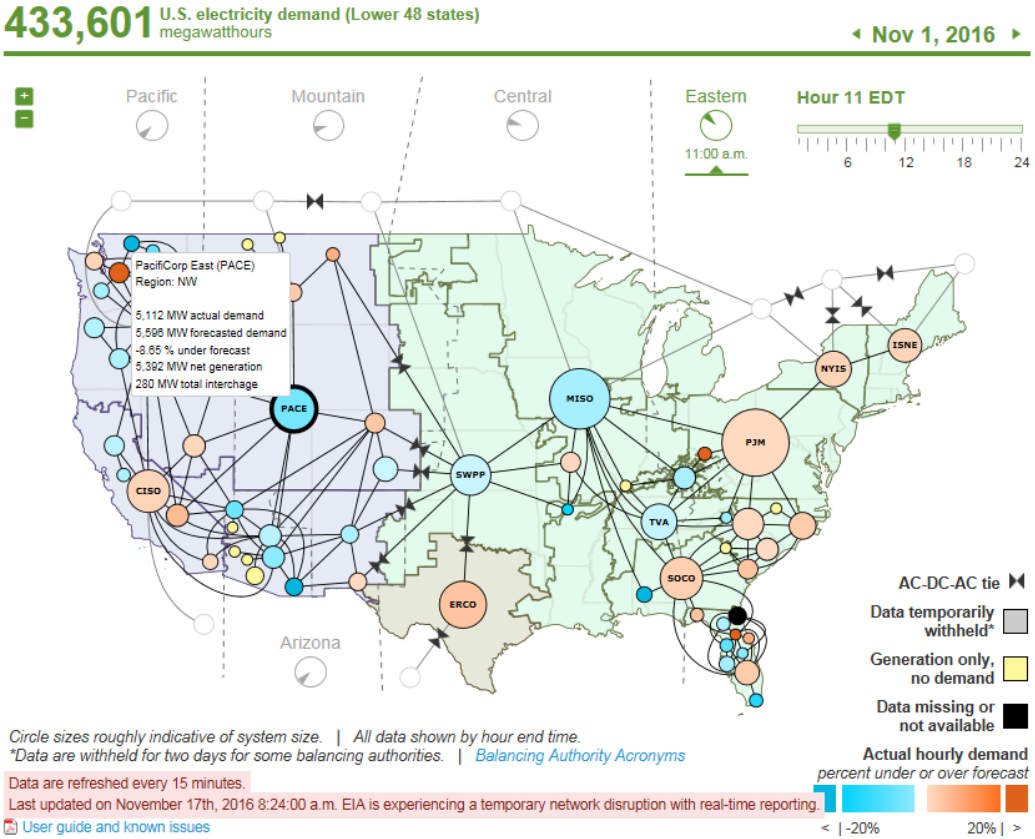
U.S. Electric System Operating Data

- Open source, JavaScript based software.
- Web application that uses suite of visualization tools (Highcharts, Highstocks, JVectormap).
- Simple mapping visualization tool
  - Thematic
  - Single layer
  - Temporal\timeline visualization
- Interconnected visualization tools and data tables.
- Dynamically updated when database updated.
- Flexibility\Customizable.

U.S. Electric System Operating Data

- Drill down information to the U.S., regional and balancing authority levels.
- Information provided in interactive charts, tables and maps.
- Ability to select data for specific time of day, dates or time frame for comparison using calendar and slider controls.
- Status Map
  - Thematic map displaying differences in hourly electric demand vs. forecast demand.
  - Basic GIS functions: Zoom and Info pop-ups.
  - Dynamically linked to information in charts and on other pages.

U.S. Electric System Operating Data

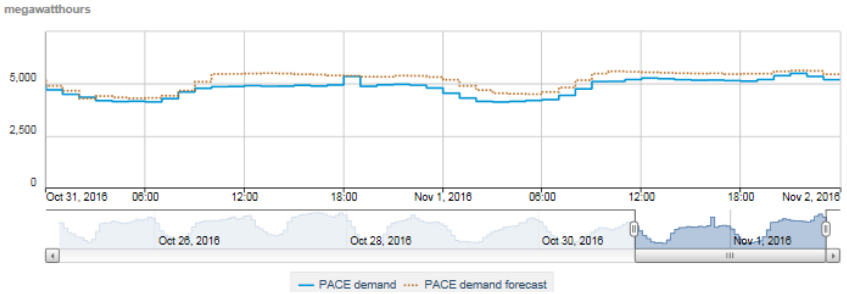


- Thematic map displaying differences in hourly electric demand vs. forecast demand.
- Basic GIS functions: Zoom and Info pop-ups

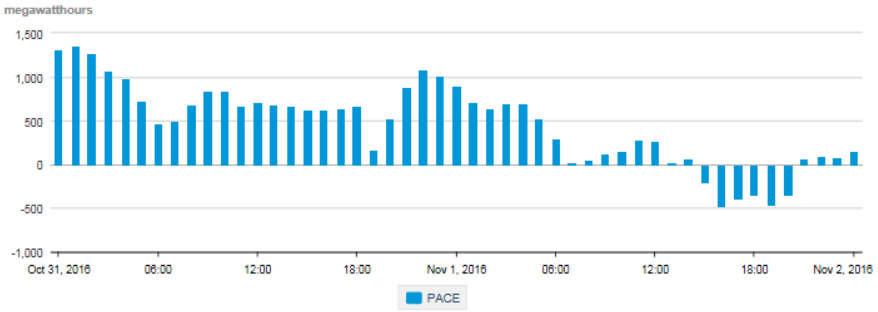
U.S. Electric System Operating Data

Balancing authority electricity demand

Balancing authority hourly actual and forecast demand 10/25/2016 – 11/01/2016, EDT DOWNLOAD

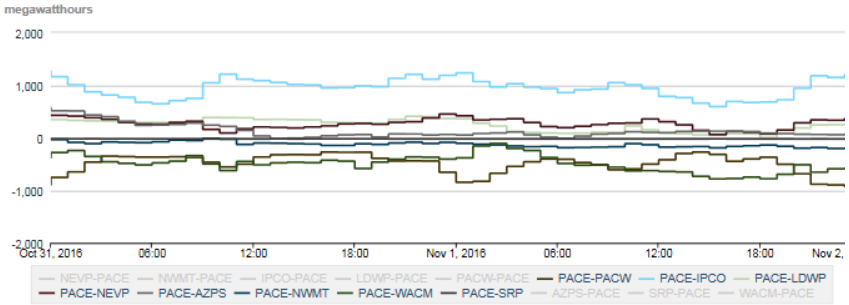


Balancing authority in-flow (-) and out-flow (+) 10/25/2016 – 11/01/2016, EDT DOWNLOAD



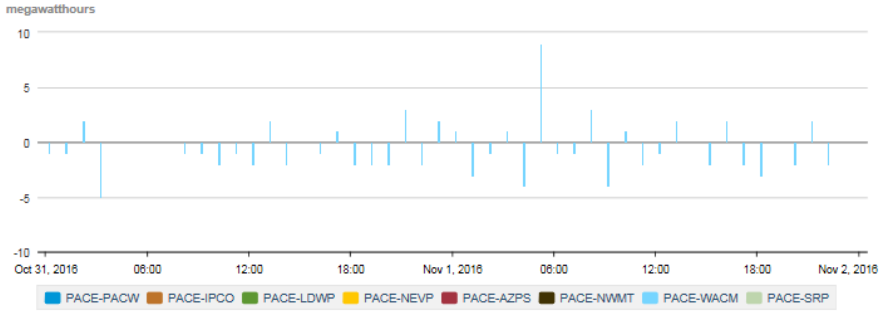
Balancing authority Interchange *(BA-to-BA interchange data available up to two days prior to current day.)*

Balancing authority electricity flow 10/25/2016 – 11/01/2016, EDT DOWNLOA



interchange error options | SEPARATE COLUMNS | STACKED COLUMNS

Balancing authority interchange error 10/25/2016 – 11/01/2016, EDT DOWNLOAD



EIA Data Tools and Browsers

- **GIS related applications and resources**
  - U.S. Energy Mapping System
  - North American Cooperation on Energy Information (NACEI)
  - U.S. Electric System Operating Data
  - U.S. Crude Import Tracking Tool
  - International Energy Portal
  - Coal data browser
  - Electricity data browser
  - Today In Energy articles
  - Overview & General maps webpage
  - Maps in monthly and annual publications

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

State Energy Profiles | www.eia.gov/state

Drilling Productivity Report | www.eia.gov/petroleum/drilling/

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