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Energy Zones Mapping Tool Newsletter

April Webinar Demo: New Data and Expanded Geographical Coverage

Thursday, April 21, at 4pm ET / 3 pm CT / 2 pm MT / 1 pm PT
Use the following link to attend the webinar: https://bluejeans.com/617864576

This demonstration will cover the main capabilities of the EZMT, and highlight the many recent changes, including:

- Status of extending the mapping data content and reports to the full U.S.
- Changes to commercially-licensed data
- New water resource data and report

EZMT Will be Extended to Entire United States

The mapping layers and reports in the EZMT are being extended to cover the entire United States. The transmission line layers from Platts have recently been updated. An example of this extended data near the Mojave Solar Project in California is shown below along with the Section 368 Corridors layer.

Section 368 Corridors (polygons) and Transmission Lines (lines) Near the Mojave Solar

Project in Southern California

The following layers are now available for the U.S.

- Biodiesel Plants
- Liquified Natural Gas (LNG) Import/Export Terminals
- Natural Gas Processing Plants
- Natural Gas Underground Storage
- Petroleum Refineries
- Pipelines - Crude Oil
- Pipelines - Hydrocarbon Gas Liquid (HGL)
- Pipelines - Natural Gas
- Pipelines - Petroleum Product
- Power Plants
- Section 368 Centerline (Designated Corridor)
- Section 368 Zone (Designated Corridor)
- Sedimentary Basins with EIS Shale Plays
- Strategic Petroleum Reserves
- Tight Oil/Shale Gas Plays
- Transmission Line - Existing
- Transmission Line - Planned
- Wind Speed (m/s at 80m)
- Wind Speed (m/s at 100m)

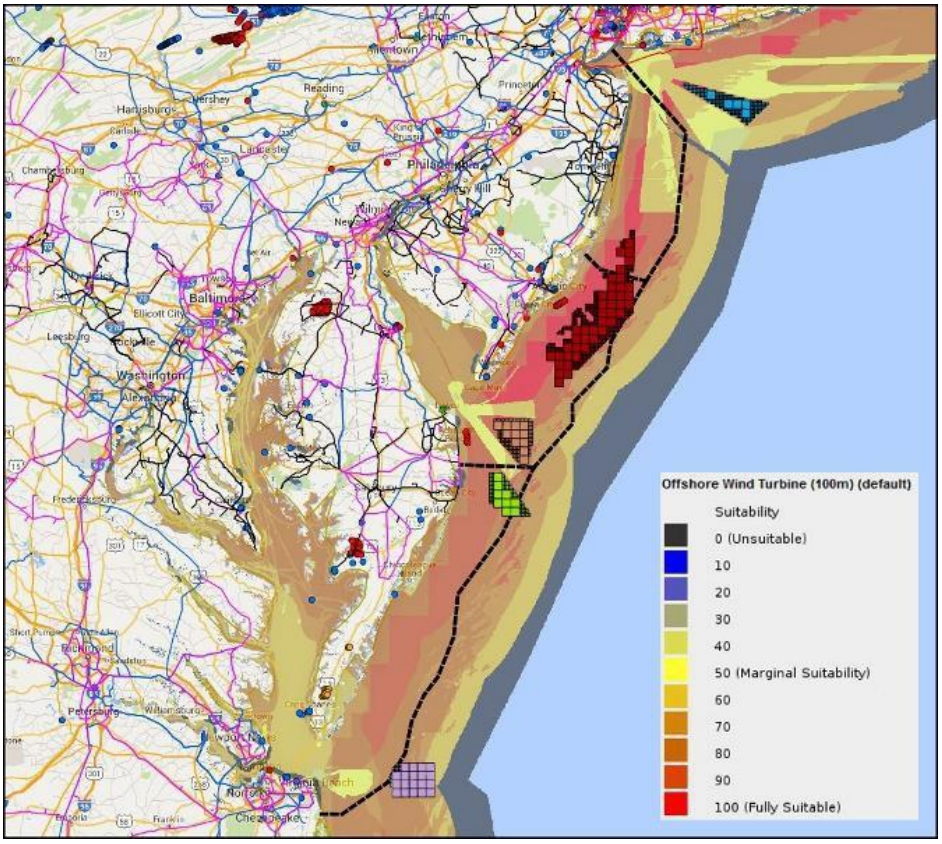
Reports will be updated to cover the full U.S. soon, and more mapping layers.

In the News

The Bureau of Ocean Energy Management (BOEM) announced a major step in wind energy development in federal waters offshore New York. BOEM delineated a 127 square mile Wind Energy Area (WEA) that begins approximately 11 nautical miles south of Long Beach, New York. The "Atlantic OCS Wind Energy Area" layer from the EZMT shows the new WEA below.

BOEM also announced its approval of the first wind energy Research Activities Plan for a facility to be located off the coast of Virginia. Last year, BOEM awarded a research lease to the Virginia Department of Mines, Minerals and Energy, and the new action clears the way for the installation and operation of two 6-megawatt turbines and associated cabling to shore, pending final engineering review of the project. The electricity generated by these turbines could power 3,000 homes. The "Renewable Energy Leasing Area" layer from the EZMT shows the new Virginia Research Lease Area below.

EZMT has many other useful capabilities that can assist with evaluating these locations for wind energy, including map layers for shipping lanes, existing turbine locations, water depth, protected areas, and many more. Also, the EZMT models and reports are useful for studying the suitability of offshore wind turbines in specific zones.



Wind Energy Area offshore New York (Blue) and Research Lease Area offshore Virginia (Purple) with Wind Turbines (Points), Planned Transmission Lines, and Offshore Wind Turbine Suitability

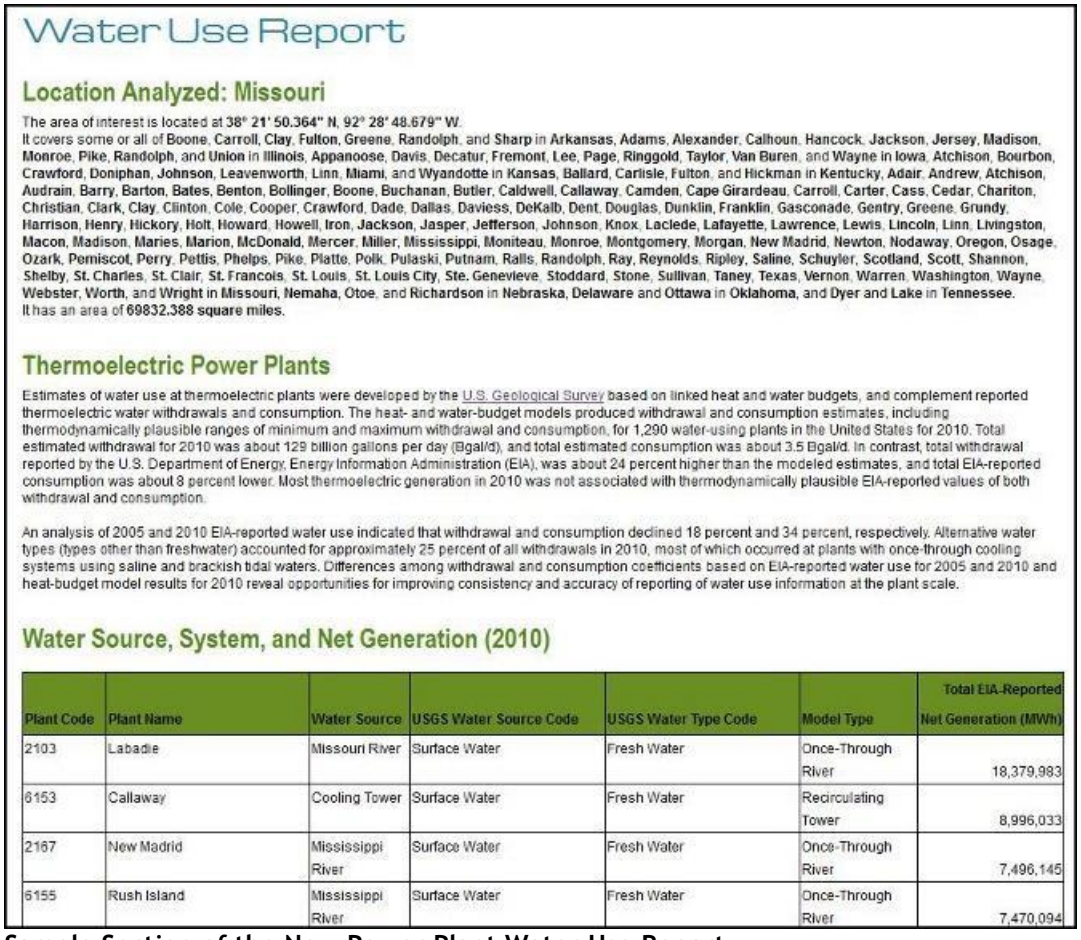
Help Videos and Demonstrations Now on YouTube

Short instructional videos, and recorded webinars are now avalable on our new YouTube Channel, including:

- Help video playlist
- Planning a Potential Energy Zone
- Corridor Analysis
- New Corridor Route Generation Tool
- Policy Database
- Generating and Using Reports
- Energy Planning and Climate Change
- Wind Energy Data, Models, and Reports
- Highlight on Natural Gas
- Corridor Routing

New Power Plant Water Use Report

As part of a broader task to increase the energy-water capabilities of the EZMT, a new Power Plant Water Use Report was added. Estimates of water use at thermoelectric plants were developed by the U.S. Geological Survey and reported in the Withdrawal and Consumption of Water by Thermoelectric Power Plants in the Unites States, 2010. The new EZMT report samples the data in a user-specified area and provides a concise summary of the following topics: water source, system, net generation, water withdrawal, and water consumption. The report also includes excerpts from the 2010 USGS document with a link to the document itself.



Water Use Report

Location Analyzed: Missouri

The area of interest is located at 38° 21' 50.364" N, 92° 28' 48.679" W.
It covers some or all of **Boone**, **Carroll**, **Clay**, **Fulton**, **Greene**, **Randolph**, and **Sharp** in **Arkansas**, **Adams**, **Alexander**, **Calhoun**, **Hancock**, **Jackson**, **Jersey**, **Madison**, **Monroe**, **Pike**, **Randolph**, and **Union** in **Illinois**, **Appanoose**, **Davis**, **Decatur**, **Fremont**, **Lee**, **Page**, **Ringgold**, **Taylor**, **Van Buren**, and **Wayne** in **Iowa**, **Atchison**, **Bourbon**, **Crawford**, **Doniphan**, **Johnson**, **Leavenworth**, **Linn**, **Miami**, and **Wyandotte** in **Kansas**, **Ballard**, **Carlisle**, **Fulton**, and **Hickman** in **Kentucky**, **Adair**, **Andrew**, **Atchison**, **Audrain**, **Barry**, **Barton**, **Bates**, **Benton**, **Bollinger**, **Boone**, **Buchanan**, **Butler**, **Caldwell**, **Callaway**, **Camden**, **Cape Girardeau**, **Carroll**, **Carter**, **Cass**, **Cedar**, **Chariton**, **Christian**, **Clark**, **Clay**, **Clinton**, **Cole**, **Cooper**, **Crawford**, **Dade**, **Dallas**, **Daviess**, **DeKalb**, **Dent**, **Douglas**, **Dunklin**, **Franklin**, **Gasconade**, **Gentry**, **Greene**, **Grundy**, **Harrison**, **Henry**, **Hickory**, **Holt**, **Howard**, **Howell**, **Iron**, **Jackson**, **Jasper**, **Jefferson**, **Johnson**, **Knox**, **Laclede**, **Lafayette**, **Lawrence**, **Lewis**, **Lincoln**, **Linn**, **Livingston**, **Macon**, **Madison**, **Maries**, **Marion**, **McDonald**, **Mercer**, **Miller**, **Mississippi**, **Moniteau**, **Monroe**, **Montgomery**, **Morgan**, **New Madrid**, **Newton**, **Nodaway**, **Oregon**, **Osage**, **Ozark**, **Pemiscot**, **Perry**, **Pettis**, **Phelps**, **Pike**, **Platte**, **Polk**, **Pulaski**, **Putnam**, **Ralls**, **Randolph**, **Ray**, **Reynolds**, **Ripley**, **Saline**, **Schuyler**, **Scotland**, **Scott**, **Shannon**, **Shelby**, **St. Charles**, **St. Clair**, **St. Francois**, **St. Louis**, **St. Louis City**, **Ste. Genevieve**, **Stoddard**, **Stone**, **Sullivan**, **Taney**, **Texas**, **Vernon**, **Warren**, **Washington**, **Wayne**, **Webster**, **Worth**, and **Wright** in **Missouri**, **Nemaha**, **Otoe**, and **Richardson** in **Nebraska**, **Delaware** and **Ottawa** in **Oklahoma**, and **Dyer** and **Lake** in **Tennessee**.
It has an area of **69832.388 square miles**.

Thermoelectric Power Plants

Estimates of water use at thermoelectric plants were developed by the U.S. Geological Survey based on linked heat and water budgets, and complement reported thermoelectric water withdrawals and consumption. The heat- and water-budget models produced withdrawal and consumption estimates, including thermodynamically plausible ranges of minimum and maximum withdrawal and consumption, for 1,290 water-using plants in the United States for 2010. Total estimated withdrawal for 2010 was about 129 billion gallons per day (Bgal/d), and total estimated consumption was about 3.5 Bgal/d. In contrast, total withdrawal reported by the U.S. Department of Energy, Energy Information Administration (EIA), was about 24 percent higher than the modeled estimates, and total EIA-reported consumption was about 8 percent lower. Most thermoelectric generation in 2010 was not associated with thermodynamically plausible EIA-reported values of both withdrawal and consumption.

An analysis of 2005 and 2010 EIA-reported water use indicated that withdrawal and consumption declined 18 percent and 34 percent, respectively. Alternative water types (types other than freshwater) accounted for approximately 25 percent of all withdrawals in 2010, most of which occurred at plants with once-through cooling systems using saline and brackish tidal waters. Differences among withdrawal and consumption coefficients based on EIA-reported water use for 2005 and 2010 and heat-budget model results for 2010 reveal opportunities for improving consistency and accuracy of reporting of water use information at the plant scale.

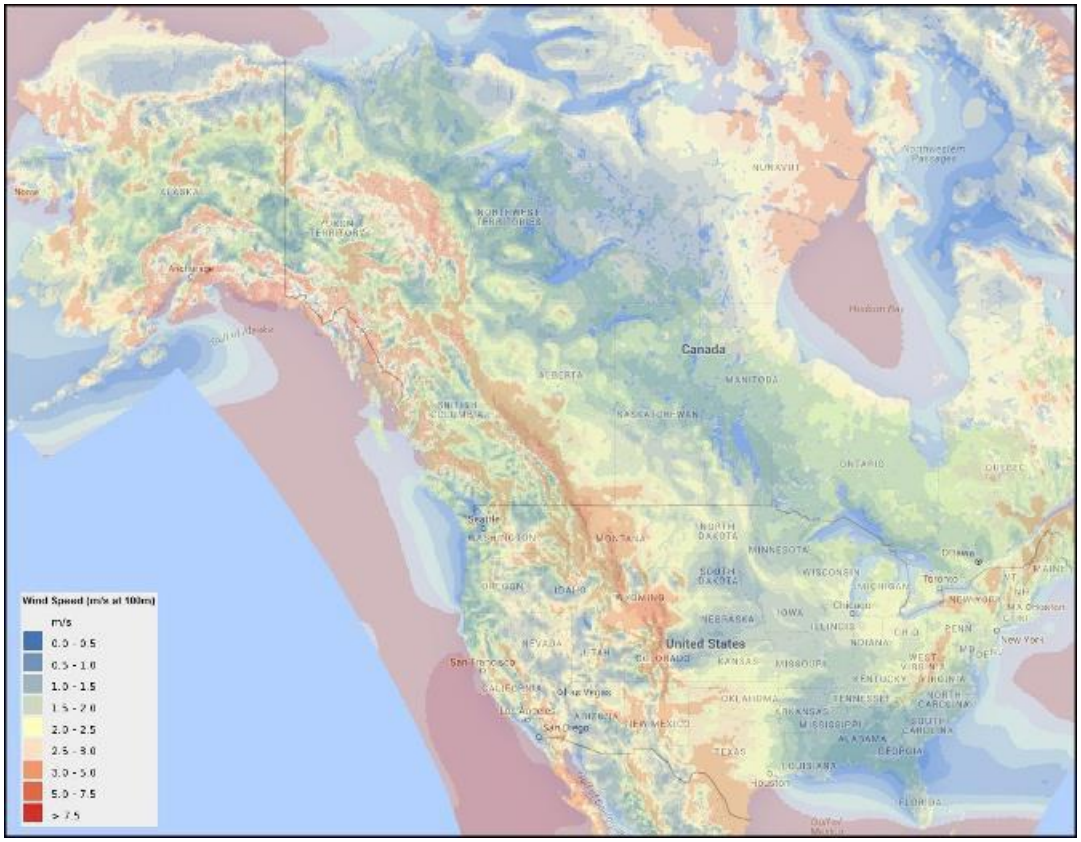
Water Source, System, and Net Generation (2010)

Plant Code	Plant Name	Water Source	USGS Water Source Code	USGS Water Type Code	Model Type	Total EIA-Reported Net Generation (MWh)
2103	Labadie	Missouri River	Surface Water	Fresh Water	Once-Through River	18,379,983
6153	Callaway	Cooling Tower	Surface Water	Fresh Water	Recirculating Tower	8,996,033
2167	New Madrid	Mississippi River	Surface Water	Fresh Water	Once-Through River	7,496,145
6155	Rush Island	Mississippi River	Surface Water	Fresh Water	Once-Through River	7,470,094

Sample Section of the New Power Plant Water Use Report

New Wind Speed Data

New layers for annual average wind speed have been added for 80m and 100m heights. The layers cover North America and are derived from results computed at Argonne using the Advanced Research WRF (ARW) Version 3.7 modeling system. Models have been updated to use this latest wind data.



Annual Average Wind Speed at 100m Height

Recent Energy Zones Mapping Tool Updates

- The Platts transmission line layers have been relicensed for another year, updated, and extended to North America.
- The following Platts mapping layers were removed due to expiration of the commercial license: Power Plants, Substations, Pipelines (including Natural Gas, Crude Oil, and Refined Products).
- The AWS TruePower wind resource layers were removed due to expiration of the commercial license.
- New wind speed layers were added for modeling and map display.
- Wind turbine suitability models were updated to use the new wind speed data.
- Six reports (Corridor, Electrical Transmission, Existing Dams, Pipelines, Power Plants, and Pulverized Coal) are temporarily not available as they are being updated.
- Many other mapping layers have been added and extended to the U.S. (see above sections for details.)