



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY



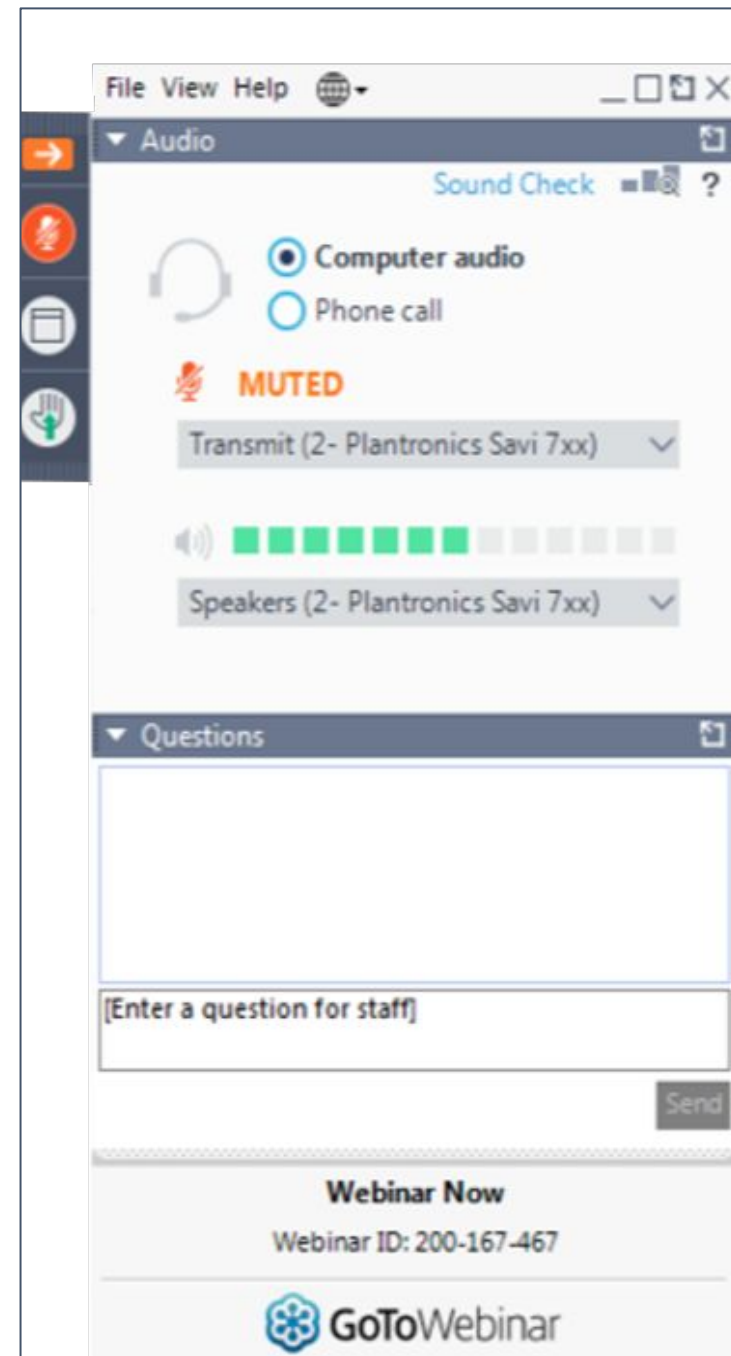
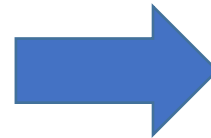
GRAHAM
SUSTAINABILITY INSTITUTE
UNIVERSITY OF MICHIGAN

CLEAN ENERGY & ENERGY MANAGEMENT WEBINAR SERIES

Using EZMT Online Mapping to Plan for Clean Energy

Have a question?

Use the “Questions” function to pose questions throughout the webinar.



Planning and Zoning Resources

- Curated repository of planning/zoning templates, guidance
 - Mostly utility-scale solar and wind
- Zoning Database
- Case Studies, FAQs

www.Michigan.gov/Energy “Communities” tab



Today's Speaker

- Jim Kuiper, Principal Geospatial Engineer at Argonne National Laboratory

USING THE ENERGY ZONES MAPPING TOOL TO PLAN FOR CLEAN ENERGY

EZMT | Energy Zones Mapping Tool

Help Login Register

About the Project | Energy Resources | Data | Documents | Links | Launch Tool

EZMT | Energy Zones Mapping Tool

A map-based tool for identifying areas within the United States that may be suitable for power generation and energy corridors.

Launch Tool

About the Tool

The Energy Zones Mapping Tool is a free online mapping tool to identify potential energy resource areas and energy corridors in the United States.

This web site provides information

Features

- Nine energy resources: [Biomass](#), [Coal](#), [Geothermal](#), [Natural Gas](#), [Nuclear](#), [Solar](#), [Storage](#), [Water](#), and [Wind](#)
- Flexible modeling of power plant and

Getting Started

Click the [Launch Tool](#) button above to start the tool, on the image below to view an introductory [video](#), or use the Help menu at the top of the page for more detailed directions.

News

February 26, 2019

[New Land-based and Offshore Wind Models Extended to the West](#)

Four new models representing land-based and offshore wind

JIM KUIPER
Principal Geospatial Engineer
Environmental Science Division

PRESENTED TO:
Michigan Department of Environment, Great Lakes,
and Energy (EGLE)
Graham Sustainability Institute

PROJECT BACKGROUND



Argonne National Laboratory is a
U.S. Department of Energy laboratory
managed by UChicago Argonne, LLC.



ENERGY ZONES MAPPING TOOL

Project Background

- Publicly available web-based mapping tool
- Funding: U.S. Department of Energy, Office of Electricity
- Originally developed for the Eastern Interconnection States' Planning Council (EISPC*) by:
 - Argonne National Laboratory
 - Oak Ridge National Laboratory
 - National Renewable Energy Laboratory
- Subsequent collaboration with Sandia National Laboratories on energy-water nexus activities
- Launched in 2012
- Many updates and enhancements since then

*EISPC is now part of the National Council on Electricity Policy

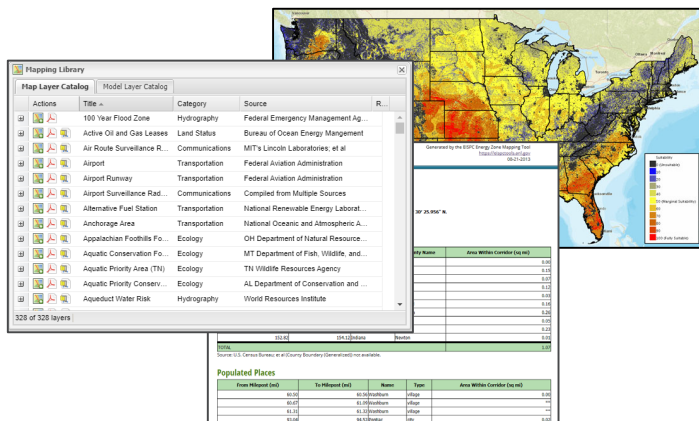


<http://ezmt.anl.gov>

ENERGY ZONES MAPPING TOOL

Project Background

The Energy Zones Mapping Tool provides **data**, **models**, and **reports**, for nine energy resource categories



Wind



Biomass



Coal



Water

Nine Energy Resource Categories

Models and reports include more than 30 grid-scale energy generation technologies



Geothermal



Storage



Solar



Nuclear

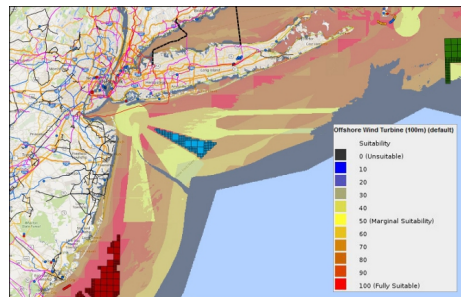


Natural Gas

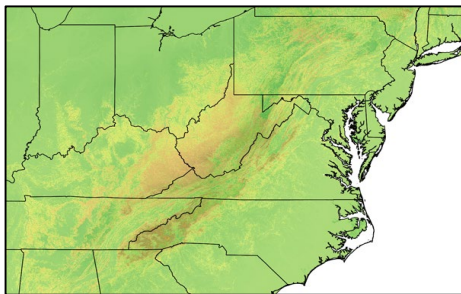
ENERGY ZONES MAPPING TOOL

Scope and Capabilities

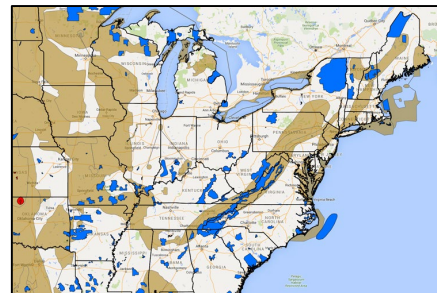
- Large geospatial data library (>330 layers)
 - Energy infrastructure
 - Energy resource
 - Siting factors relevant to energy analysis
 - Reference/background
- Suitability modeling and analysis for:
 - Power generation (37 power plant models)
 - Energy corridor paths (3 corridor models)
- Tools to create, import, and download analysis areas and corridors
- Reports, which are dynamically-generated for user-specified extents (16 report topics)



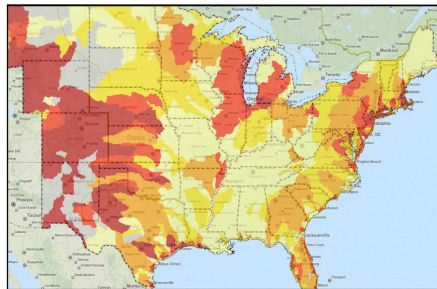
Offshore Wind Energy Lease Areas with Offshore Wind Turbine Model Results



Elevation and Slope



American Bird Conservancy Data

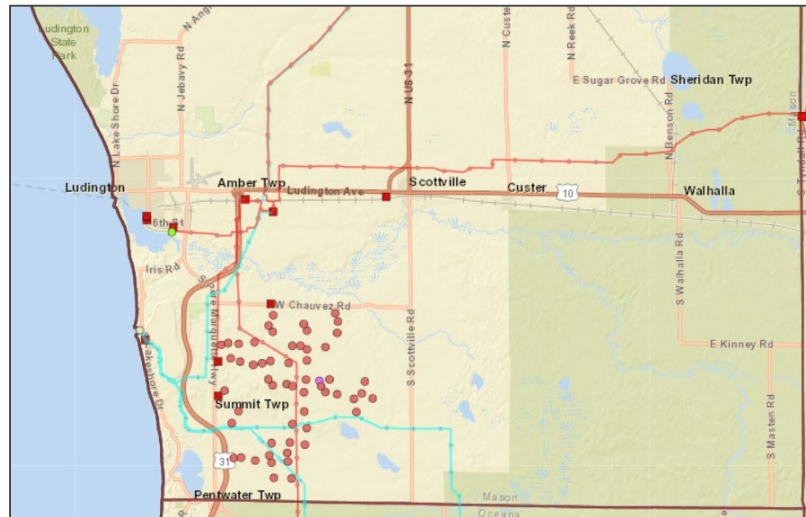


Baseline Water Stress
(Withdrawals/Available Flow)

ENERGY ZONES MAPPING TOOL

Current Activities

- Hosting
 - Maintain/update data
 - Respond to inquiries
- User interface redesign and build
- Training and publicization
 - Outreach such as this webinar
 - Training sessions. videos, docs.
 - Journal article in progress
- Electric vehicle charging station modeling and analysis (separately funded)



Recently updated power plants, transmission lines, substations, and wind turbines (Ludington County, MI)

LIVE DEMONSTRATION



Argonne National Laboratory is a
U.S. Department of Energy laboratory
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EZMT is available at:
<https://ezmt.anl.gov>

Contact:
jkuiper@anl.gov, or
ezmt@anl.gov



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CLEAN ENERGY & ENERGY MANAGEMENT WEBINAR SERIES

Upcoming Webinars & Trainings

Feb 12 Conducting Energy Audits on Municipal Facilities

March 2 Facilitating Community-wide Clean Energy
Improvements Using PACE Financing

March 30 Intro to Planning and Zoning for Clean Energy

Stay Up-to-Date, Find Recordings

www.Michigan.gov/Energy “Communities” tab