

EISPC Energy Zones Study

Laboratory Teams Progress Overview

EISPC Meeting, May 30-31, 2013

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Presentation Overview

- **EISPC Energy Zones Study**
- **Public Release of EISPC EZ Mapping Tool**
- **New EZ Mapping Tool Features**
- **Stakeholder Outreach**
- **Recommendations for Further Work**
- **Questions and Comments**
- **Demonstration – New Models and Reports**

EISPC Energy Zones Study



Wind



Biomass



Clean Coal (with
carbon capture and storage)



Water

Nine Clean Energy Resource Categories



Geothermal



Storage



Solar



Nuclear



Natural Gas

Clean Energy Technologies

Biomass

- New biomass-fired plant with traditional combustion
- Biomass co-fire with existing coal plant
- Landfill gas extraction and plant inventory
- Methane extraction from wastewater treatment
- Methane extraction from animal manure processing

Clean Coal

- New clean pulverized coal technology
- New integrated gasification combined cycle
- New coal fluidized bed
- Retrofitted pulverized coal

Geothermal

- Enhanced geothermal system
- Geopressured geothermal

Natural Gas (planned for June 2013)

- Combined cycle
- Underground natural gas storage
- Above-ground natural gas storage

Nuclear

- Large light-water reactor
- Small modular reactor, integral pressurized-water reactor
- High-temperature gas cooled reactor/
Very high temperature gas-cooled reactor

Solar

- Concentrating solar power
- Utility-scale photovoltaic
- Rooftop photovoltaic solar

Storage

- Hydroelectric pumped storage
- Compressed air energy storage

Water

- Added output from existing hydropower dam
- New output from existing non-powered dam
- In-stream hydrokinetic energy
- Tidal hydrokinetic energy
- Wave energy

Wind

- Land-based wind turbine
- Offshore wind turbine

 Suitability model

 Report based on inventory or energy resource availability

EZ Mapping Tool - Capabilities

Tool Functionality:

- **View and query map layers (over 250 in catalog)**
- **Run models to identify areas of high suitability for clean power generation**
- **Run reports for user-specified analysis areas**
- **Access energy-related policy and incentive information**
- **Assist stakeholders with clean energy resource development and identification of potential clean energy zones**

EISPC EZ Mapping Tool Launched!

EZ Mapping Tool released (March 29) for public viewing and registration

- Users can browse public pages of the website, must register to use the tool
- Terms and conditions of End User Agreement must be accepted before running the tool

EISPC EZ Mapping Tool

Help Login

About the Study | Energy Resources | Data | Policies & Regs | Maps | Documents | Links | Launch Tool

EISPC EZ Mapping Tool

A map-based tool for identifying areas within the eastern United States that may be suitable for clean power generation.

Launch Tool

About the Tool

The EISPC EZ Mapping Tool is a free online mapping tool that enables users to identify potential clean energy resource areas within the Eastern Transmission Interconnection.

This web site provides information about the study, background on the energy resources, and details on the data layers used in the tool. There are also links to policies and regulations, printable maps, documents, and related links.

Features

- Eight energy resources: [Biomass](#), [Clean Coal](#), [Geothermal](#), [Nuclear](#), [Solar](#), [Storage](#), [Water](#), and [Wind](#)
- Flexible analysis of siting factors such as slope and land protections
- Analysis of potential collocation of energy technologies
- Informed analysis to reduce new transmission construction

Getting Started

The EZ Mapping Tool is an easy-to-use web-based mapping system. Click the launch button above to start. If you need help, use the Help menu at the top of the page.

We are interested in your feedback. Please email your comments to eispctools@anl.gov. Your input will be used to evaluate the quality and value of this web site.

News

May 14, 2013
[Webcast Demonstration: Thursday, May 23, 11:00 Central](#)
A one-hour webinar demonstration of the EISPC Energy Zone Mapping Tool will be presented...

April 30, 2013
[Webcast Demonstration: Wednesday, May 15, 2:00 Central](#)
A one-hour webinar

Partners and Sponsors

The study is led by the Eastern Interconnection States' Planning Council (EISPC). The research support and technical assistance to EISPC is provided by Argonne National Laboratory, National Renewable Energy Laboratory, and Oak Ridge National Laboratory. Funding is provided by the U.S. Department of Energy. [More >](#)

EISPC Argonne National Laboratory NREL OAK RIDGE National Laboratory U.S. DEPARTMENT OF ENERGY

<http://eispctools.anl.gov>

EISPC EZ Mapping Tool

Terms and Conditions:

Effective: March 06, 2013

END USER AGREEMENT

(User agrees to the terms of use outlined below.)

New EZ Mapping Tool Features

Energy Policy and Regulations Database

EISPC EZ Mapping Tool

Home | About the Study | Energy Resources | Data | Policies & Regs | Maps | Documents | Links  Launch Tool

Help My Account

Search for Policies & Regulations

Provide policy updates or edits to eispc tools@anl.gov.

Country/State/Province	Policy Type	Implementation Sector	Affected Technologies
District of Columbia Florida Georgia Illinois Indiana Iowa Kansas Kentucky Louisiana	Bond Program Climate Policies Corporate Tax Incentive Enterprise Zone Environmental Regulations Equipment Certification Equity Investment Fees Generating Facility Rate-Making	Federal Local Non-Profit State/Province Utility	Biomass/Biogas Coal with CCS Concentrating Solar Power Energy Storage Fuel Cells Geothermal Electric Hydroelectric Natural Gas Nuclear

Search

Found 13 results

Administrative Code Title 83, Public Utilities (Illinois)

↓ [Show the Summary](#)

Policy Type	Environmental Regulations, Generating Facility Rate-Making, Renewables Portfolio Standards and Goals, Safety and Operational Guidelines, Training/Technical Assistance
Affected Technologies	Biomass/Biogas, Coal with CCS, Concentrating solar power, Energy Storage, Fuel Cells, Geothermal Electric, Hydroelectric energy, Small Hydroelectric, Natural Gas, Nuclear, Photovoltaics, Wave Energy, Wind energy
Implementation Sector	State/Province

New EZ Mapping Tool Features

Updated user interface

The screenshot displays the EISPC EZ Mapping Tool web interface. The browser address bar shows the URL <https://eispctools.anl.gov/mapping/viewer>. The page title is "EISPC EZ Mapping Tool". The main menu includes "Library", "Areas", "Analyze", and "Results". The "Map Contents" section shows a checked item "My Wind: Onshore (Draft) run". A legend for "Suitability" is provided, ranging from 0 (Unsuitable) to 100 (Fully Suitable) with corresponding color swatches. The map itself shows a suitability map of the Chicago area, with labels for "Port Washington", "Milwaukee", "Kenosha", and "Chicago". The map is color-coded according to the suitability legend, with red indicating high suitability and black indicating unsuitability. The map also shows major roads and water bodies.

Main Menu

- Library
- Areas
- Analyze
- Results

Map Contents

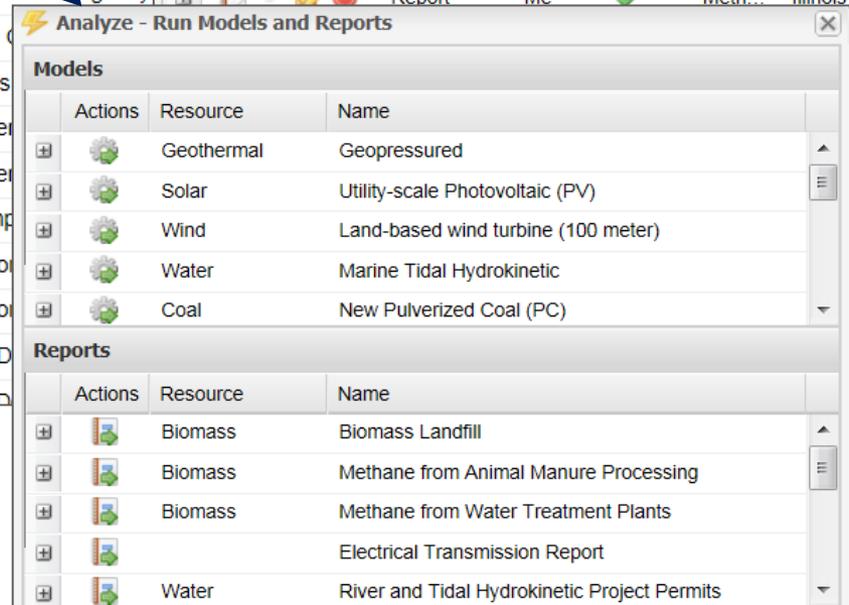
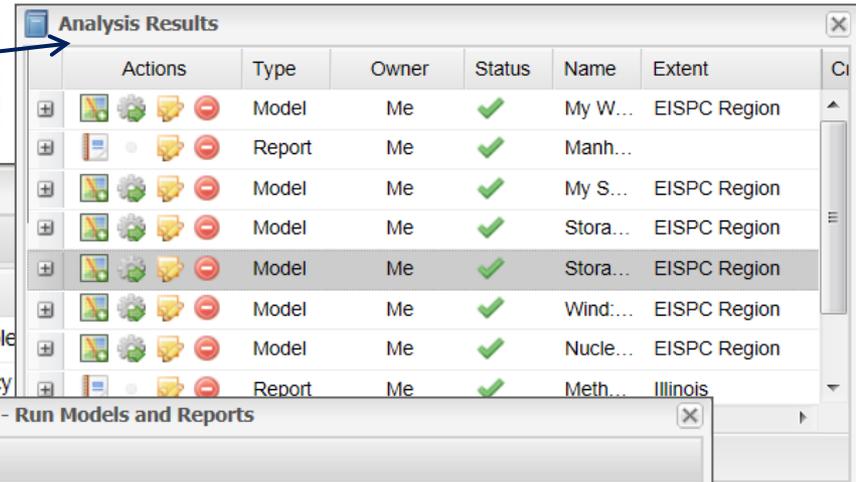
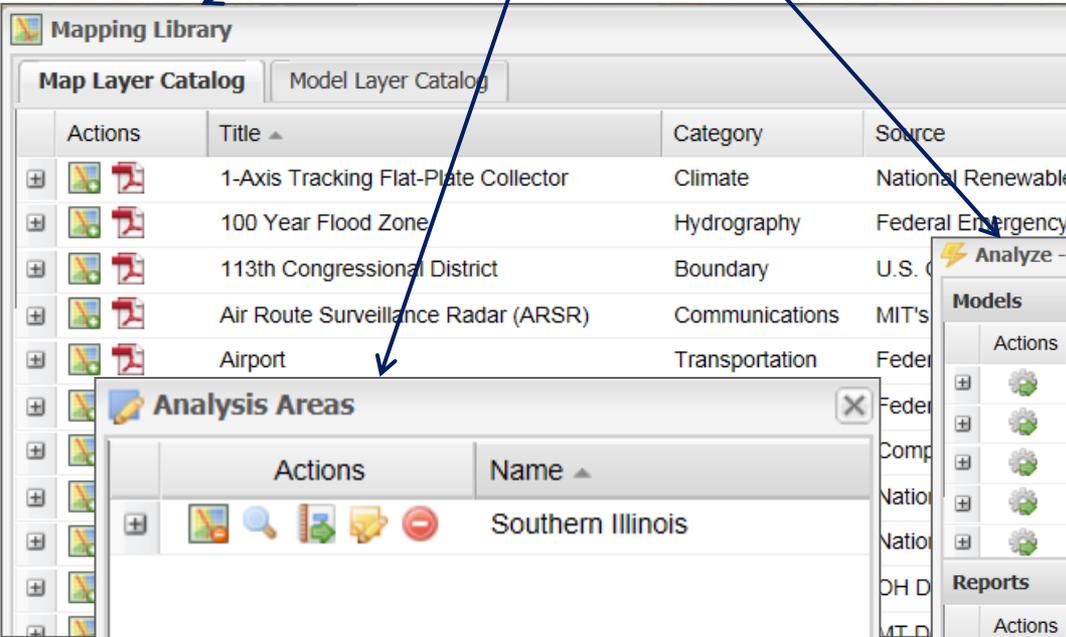
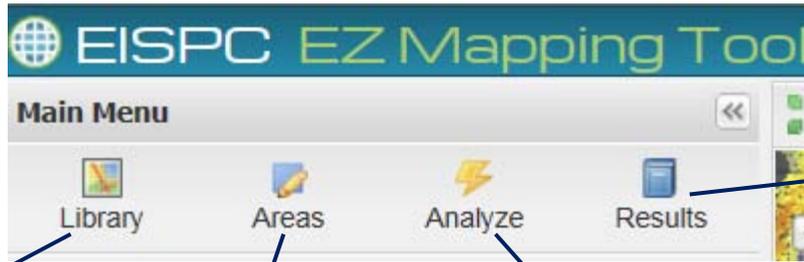
- My Wind: Onshore (Draft) run

Suitability Legend

Suitability	Description
0	Unsuitable
10	
20	
30	
40	
50	Marginal Suitability
60	
70	
80	
90	
100	Fully Suitable

New EZ Mapping Tool Features

Updated user interface: Main Menu



New EZ Mapping Tool Features

New suitability models and reports:

- **New models:**
 - ✓ **Compressed-Air Energy Storage (CAES)**
 - ✓ **Marine Tidal Hydrokinetic**
 - ✓ **Imperiled Species modeling layer added to each suitability model**
- **New reports:**
 - ✓ **River and Tidal Hydrokinetic**

 Analyze - Run Models and Reports

Models			
	Actions	Resource	Name
		Geothermal	Geopressured
		Solar	Utility-scale Photovoltaic (...)
		Wind	Land-based wind turbine (...)
		Water	Marine Tidal Hydrokinetic
		Coal	New Pulverized Coal (PC)
		Nuclear	High-Temperature Gas-co...
		Geothermal	Enhanced Geothermal Sy...
		Nuclear	Large Light-Water Reacto...
		Wind	Land-based wind turbine (...)

Reports			
	Actions	Resource	Name
		Biomass	Biomass Landfill
		Biomass	Methane from Animal Man...
		Biomass	Methane from Water Trea...
			Electrical Transmission R...
		Water	River and Tidal Hydrokine...
			Imperiled Species Report
			Power Plants
		Coal	Pulverized Coal
		Water	Existing Hydropower Dams

Upcoming EZ Mapping Tool Features (June 2013)

Suitability Models for Natural Gas Resources:

- **Developed methodology for the modeling of NG resources (combined cycle units and storage facilities)**
- **Currently implementing NG suitability models**

Corridor Screening:

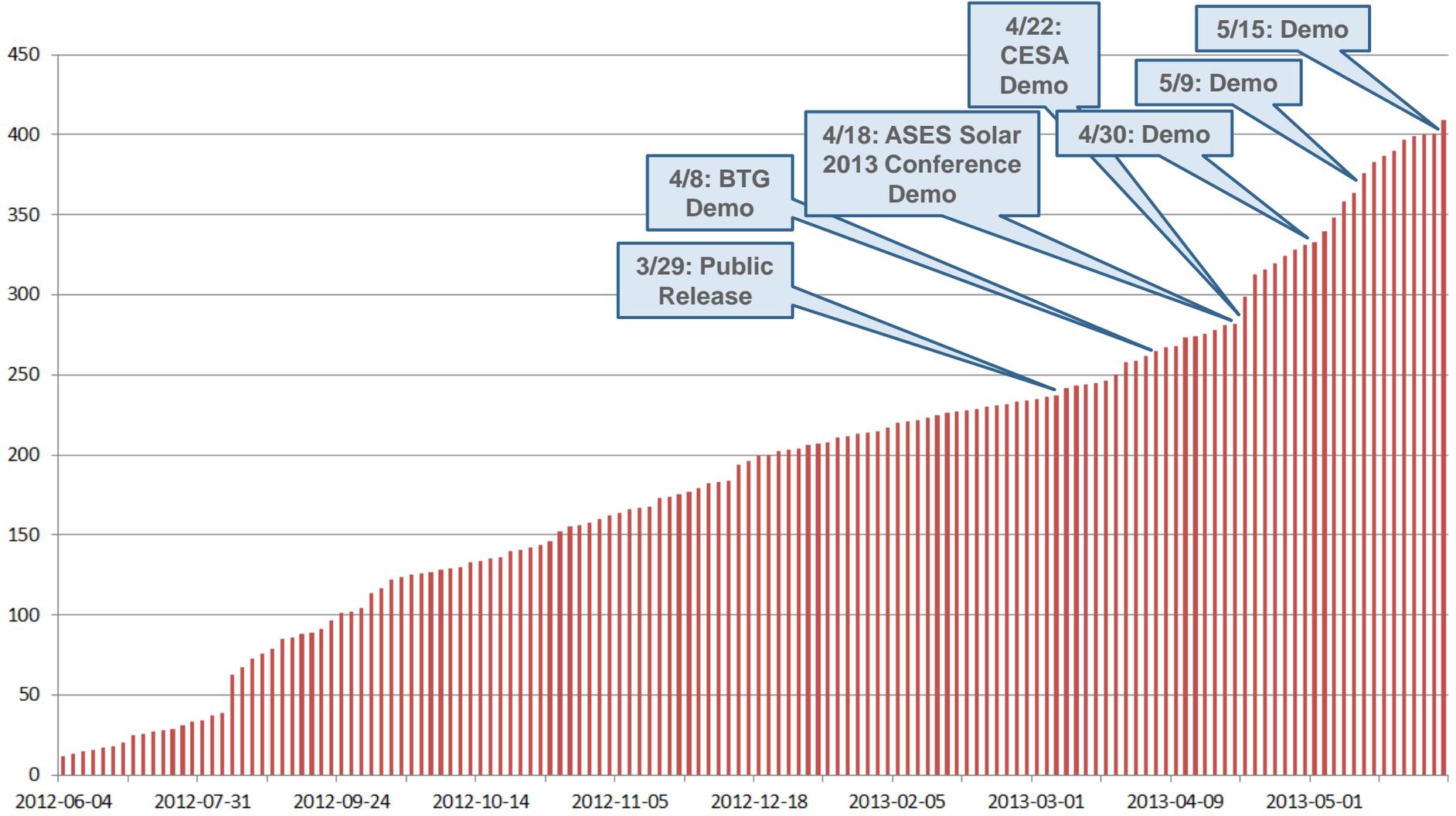
- **Developed methodology for high-level screening of potential energy corridors (not a detailed siting analysis)**

Stakeholder Outreach

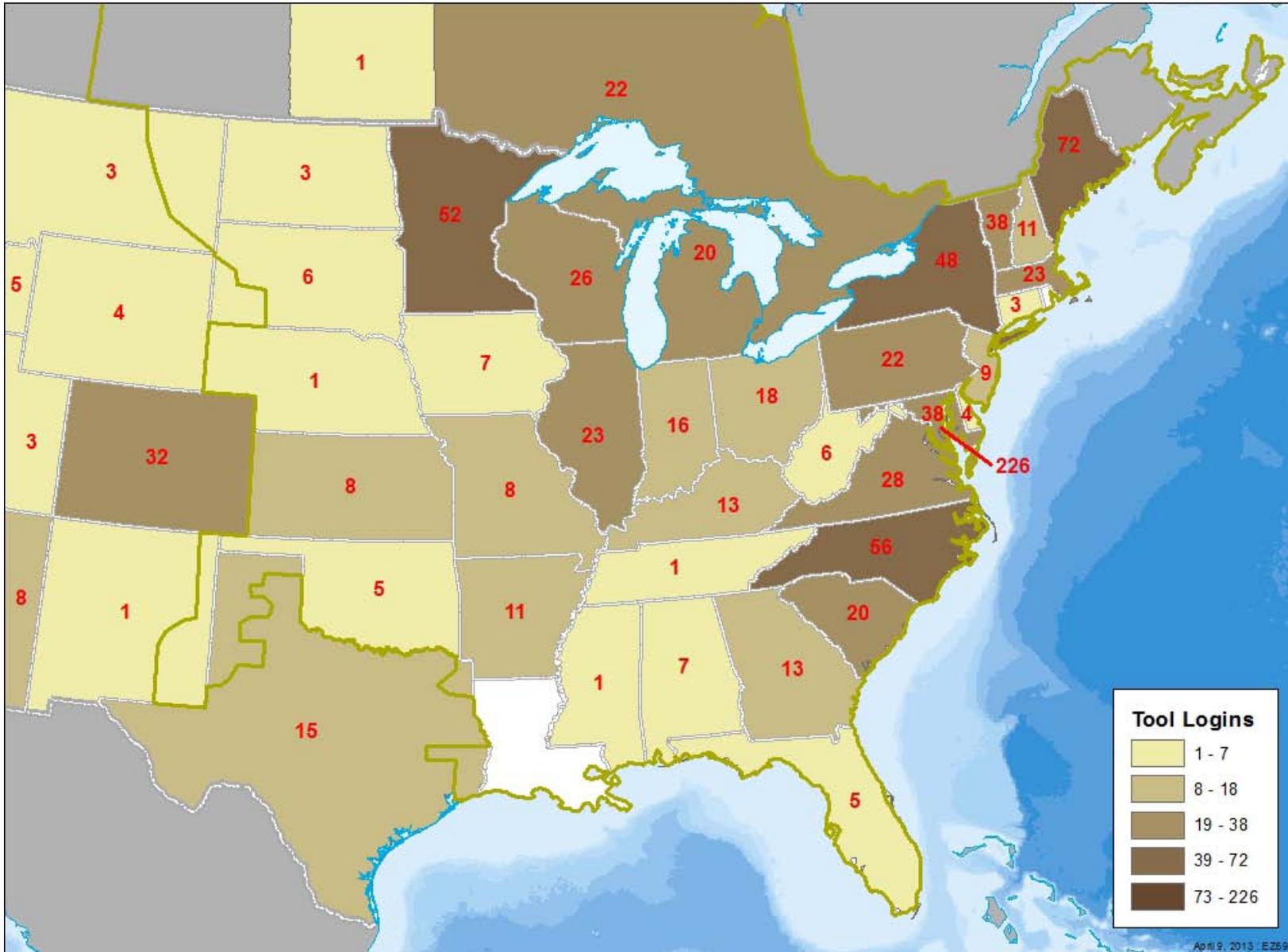
Conducted Webinars/Demos:

- **Western Interstate Energy Board (WIEB) – Jan 30**
- **NARUC Committee Meetings – Feb 4**
- **WIEB and State-Provincial Steering Committee (SPSC) – March 27**
- **Beta Testing Group – April 8**
- **Solar Energy Conference – April 16-19**
- **CESA and RPS Collaborative – April 22**
- **Webinar for registered users – April 30**
- **Great Lakes Wind Collaborative – May 9**
- **Webinars for new users – May 15 and 23**

Tool Registrations (Excluding Development Team)



Total Logins (Excluding Development Team)



Stakeholder Outreach

EZ Mapping Tool Release:

- **Announcements/press releases issued by EISPC, NARUC, and Argonne**

Planned Training:

- **NARUC Summer Committee Meetings – July 21 (half day)**
- **EISPC Meetings – August 26/27 at Argonne (three identical half-day sessions)**
- **Webinar training sessions (dates TBD)**

Stakeholder Outreach

Planned Model Demos:

- **NECPUC – June 10**
- **DOE – June 17**
- **Virtual Coast GeoTools – June 20**
- **NASEO – July 2**

Recommendations for Further Work

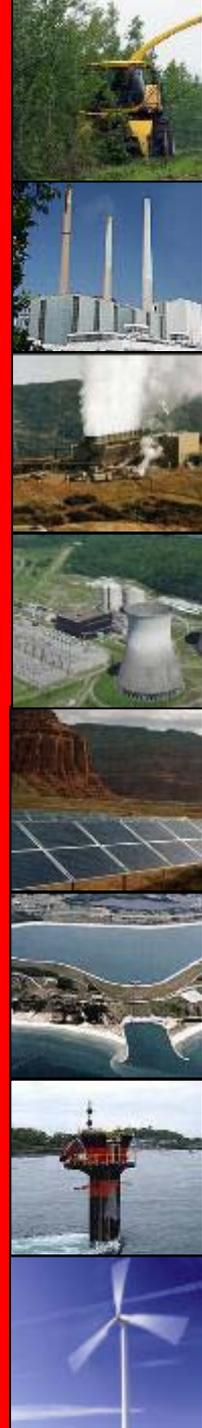
Model Enhancements and Upgrades:

- **Regular updates/addition of relevant data layers**
- **Inclusion of overlays showing results from three EIPC scenarios**
- **More detailed corridor screening analysis**
- **Suitability model for smaller NGCC units (250-500MW) in urban areas (industrial/brownfield locations)**
- **Models to analyze optimal mix of resources and number of plants within an analysis area**
- **Enhancements to facilitate sharing models and analysis areas among different users**

Recommendations for Further Work

Potential Studies and Applications:

- **Mapping location of flexible resources relative to variable renewable resources**
- **Mapping and characterizing offshore wind resources in Great Lakes region**
- **Identifying areas in Great Plains with highest wind energy potential and least environmental impact**
- **Identifying biomass areas in SE and New England**
- **Measuring and mapping reduction in wind potential when assuming stringent rather than moderate habitat avoidance criteria**



Questions and Comments

- Register for the tool here:
<http://eispctools.anl.gov>
- Questions/comments at any time to:
eispctools@anl.gov