



GRAHAM
SUSTAINABILITY INSTITUTE
UNIVERSITY OF MICHIGAN

Siting Renewable Energy in Rural Communities

Sarah Mills, PhD

NCRCRD Webinar, 4/25/23

Michigan Context

- State-wide renewables requirement lapsed
- Utility plans calling for 4x increase in renewables
- Technology (wind), cost reductions (solar) making renewables possible statewide

CRAIN'S DETROIT BUSINESS

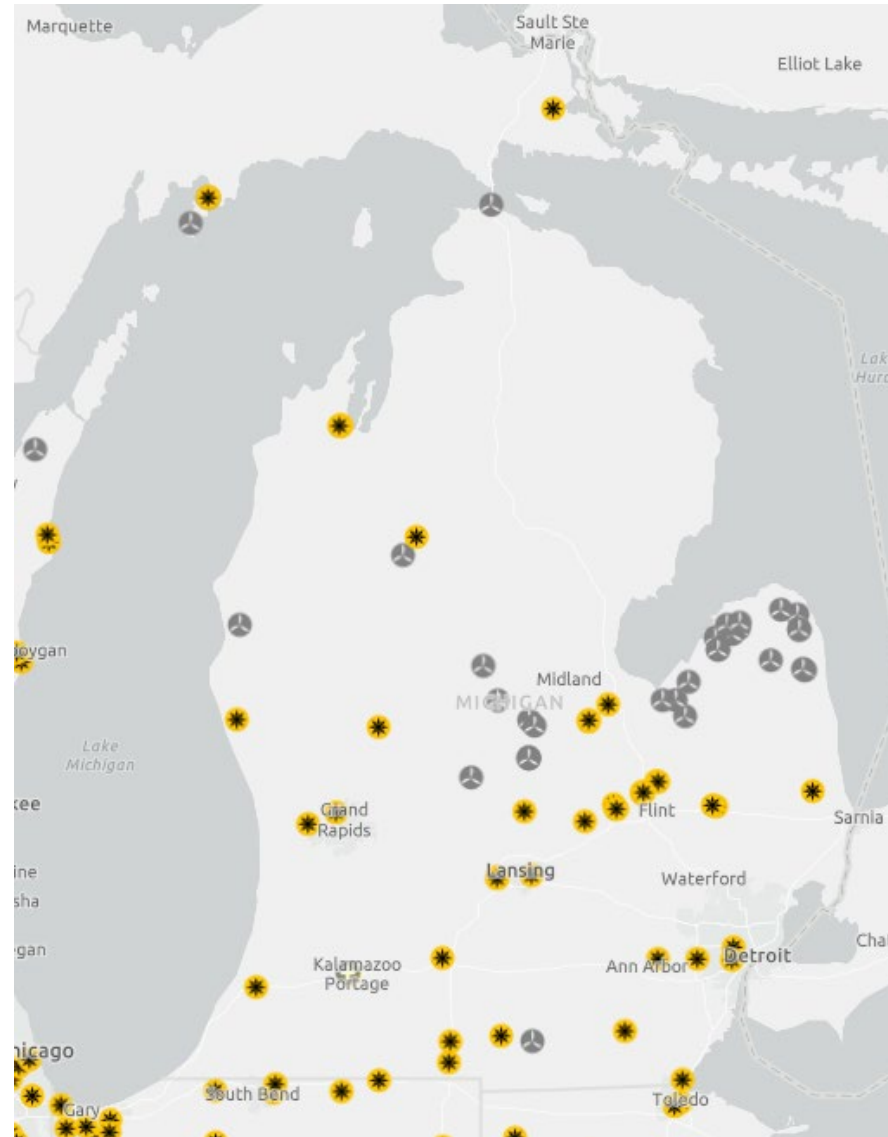
THIS WEEKNEWS & DATAAWARDSPECIAL FEATURESVOICESEVENTSCONTE

March 25, 2022 11:03 AM | UPDATED 32 MINUTES AGO

Utilities on the hunt for thousands of acres for solar development

CHAD LIVENGOOD  

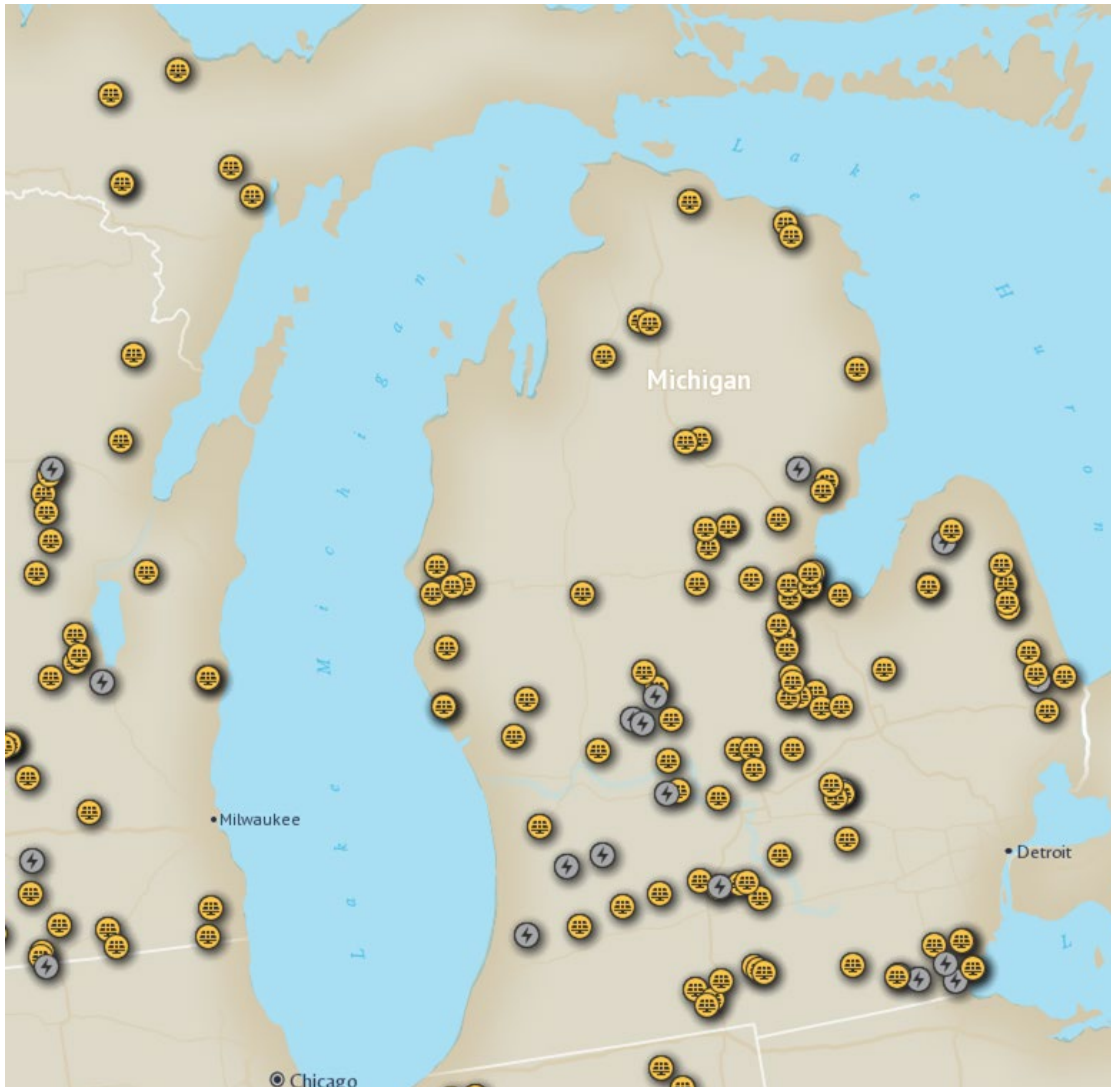
Existing utility-scale wind & solar 4,348 MW



3,579 MW Wind
769 MW Solar

Source: U.S. Energy Mapping System, April 7, 2023
<https://www.eia.gov/state/maps.php>

Projects under consideration: 21,202 MW

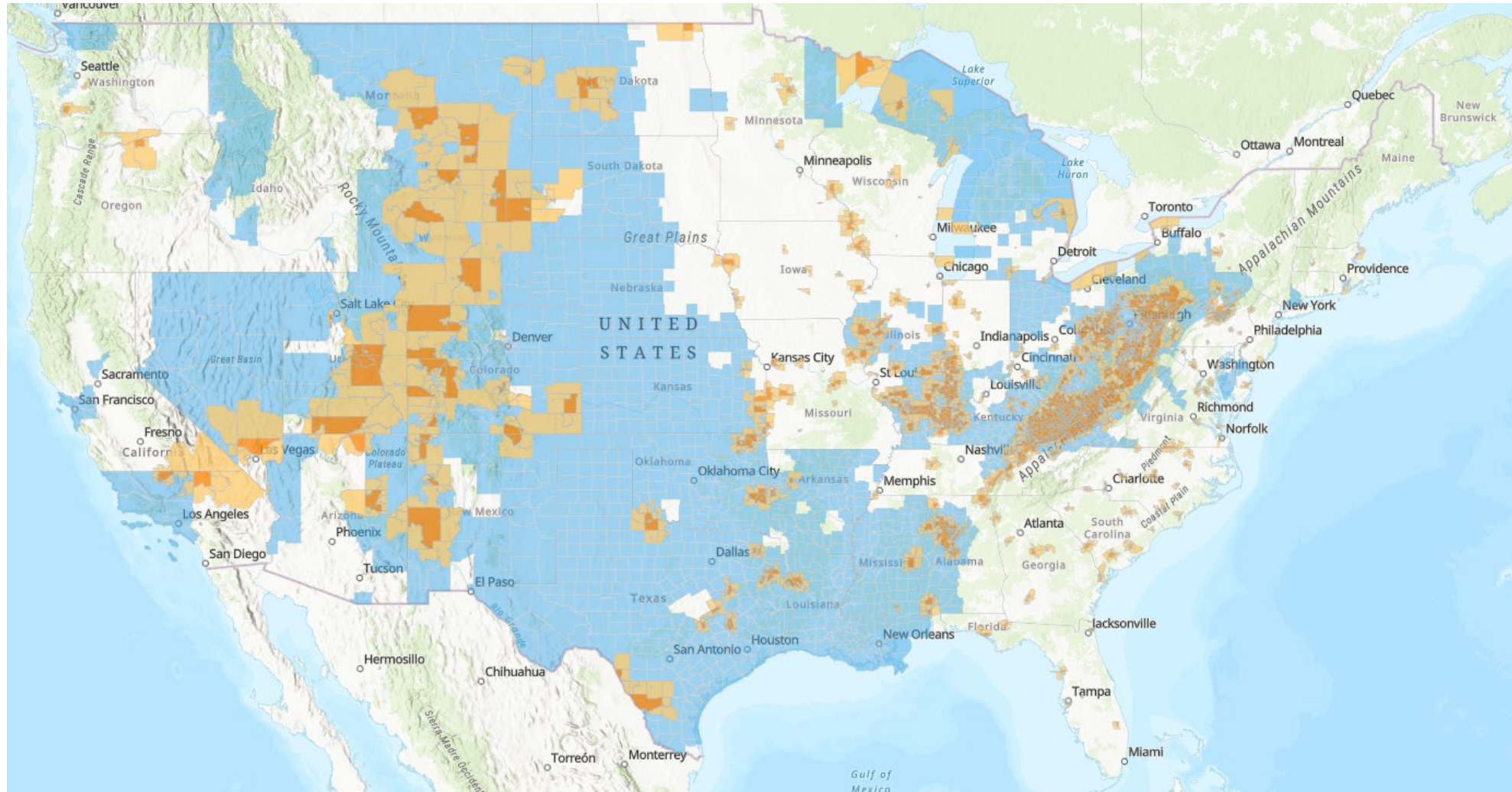


20,278 MW Solar
925 MW Wind

Source: MISO Queue, November 21, 2022
<https://api.misoenergy.org/PublicGiQueueMap/index.html>

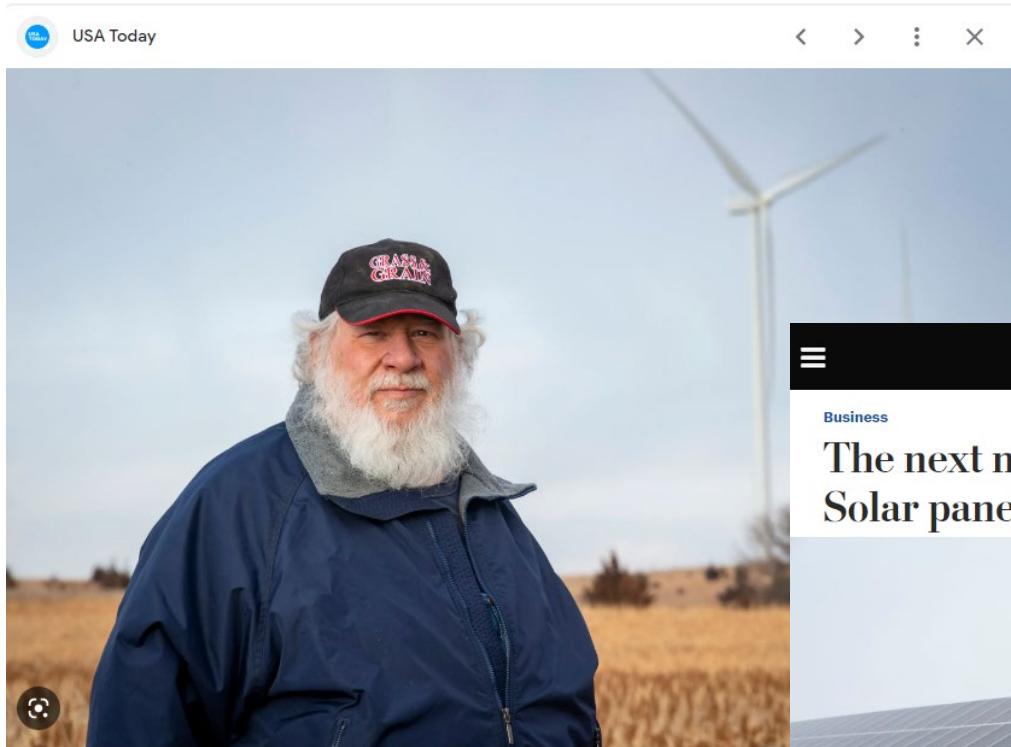
Why so much activity in particular places?

DOE: Energy Community Tax Credit Bonus



Source:
Department of Energy: Energy Community Tax Credit Tool, April 7, 2023:
<https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a2ce47d4721a477a8701bd0e08495e1d>

Huge opportunity for Rural communities



Wind energy can help American farmers earn money, avoid bankruptcy



Renewable energy projects can be a boon for rural communities

Singh

But also risks poses risks



Rural Communities Divided over Wind Power: Is There Another Way?

 Debby Warren
March 26, 2020



Encouraging Proactive Conversations in Michigan



Photo: <https://www.uppermichiganssource.com/content/news/Friends-of-the-Huron-Mountains-not-in-favor-of-wind-turbine-project-in-LANse-489183491.html>

All communities will be
approached within 10 years

- **Time to strategize**
 - How it fits with community goals
 - Which technologies, at which scales, in which part of community
- **Seek out solid information about local impacts**
 - Positive and negative
 - State-specific
- **Set clear expectations for property owners and potential developers**
 - Send message

Funding through State Energy Office

"Help communities set policies for renewable energy"

- Meet community where they are, with the tools they need
- Don't re-create the wheel
 - Curate / elevate best examples
 - Only create new to fill in the gaps
- Utilize the network



Figuring out where communities are

- 2019 first pass
 - Who is responsible?
 - Lots of silence on solar
- 2021 update
 - Solar zoning up 47%
 - Wind zoning up 8%
- Still 25% silent on renewables
- 6-state SETO-funded database
 - Released TODAY

<https://energyzoning.org/>

Department of Environment, Great Lakes, and Energy


Office of Climate and Energy

ABOUT CLIMATE ENERGY


CLIMATE AND ENERGY / ENERGY

Zoning for Renewable Energy Database


Planning and zoning for renewable energy siting is an important step toward creating stronger, more resilient communities. Of the 1,856 jurisdictions in the state, around half have already given consideration to clean energy (wind energy, solar energy, or electric vehicle infrastructure) in their zoning ordinances, and that number continues to grow.




Zoning database



Zoning jurisdiction map



Wind energy zoning map



Solar energy zoning map

Michigan Zoning Database

The Michigan Zoning Database is a free resource for elected officials, government employees, planners, developers, and Michigan residents. Please explore and share.

From the data collected here, you will learn:

- Which communities have considered renewable energy in their zoning ordinances
- In which communities utility-scale wind and solar projects are located
- Which level of government has zoning authority and a link to each zoning ordinance
- Demographic and geographic information about each community

The database includes numerous tabs. Please refer to the "Overview" tab first for instructions on how to interpret the data and use the tool. You may also find the "Definitions" tab especially useful.

The database is frequently updated as more data is collected. If you find any errors in the data, have new zoning ordinances, or have any questions about the data, please contact:

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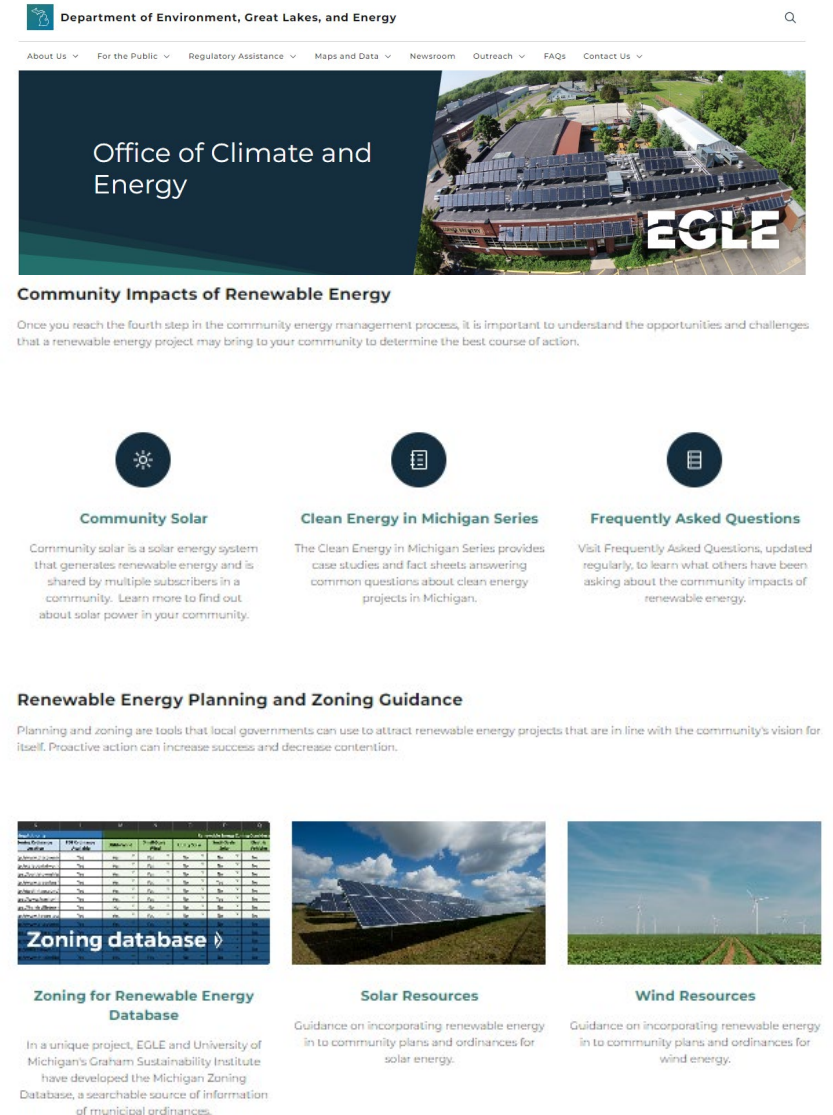
Michigan.gov

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Planning and zoning resources

- Curated repository of templates, guidance
 - <https://www.michigan.gov/egle/about/organization/materials-management/energy/communities>
- Creation of case studies / FAQs
 - 18+, written by experts, students across the state



Department of Environment, Great Lakes, and Energy

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Community Impacts of Renewable Energy

Once you reach the fourth step in the community energy management process, it is important to understand the opportunities and challenges that a renewable energy project may bring to your community to determine the best course of action.

- Community Solar**
Community solar is a solar energy system that generates renewable energy and is shared by multiple subscribers in a community. Learn more to find out about solar power in your community.
- Clean Energy in Michigan Series**
The Clean Energy in Michigan Series provides case studies and fact sheets answering common questions about clean energy projects in Michigan.
- Frequently Asked Questions**
Visit Frequently Asked Questions, updated regularly, to learn what others have been asking about the community impacts of renewable energy.

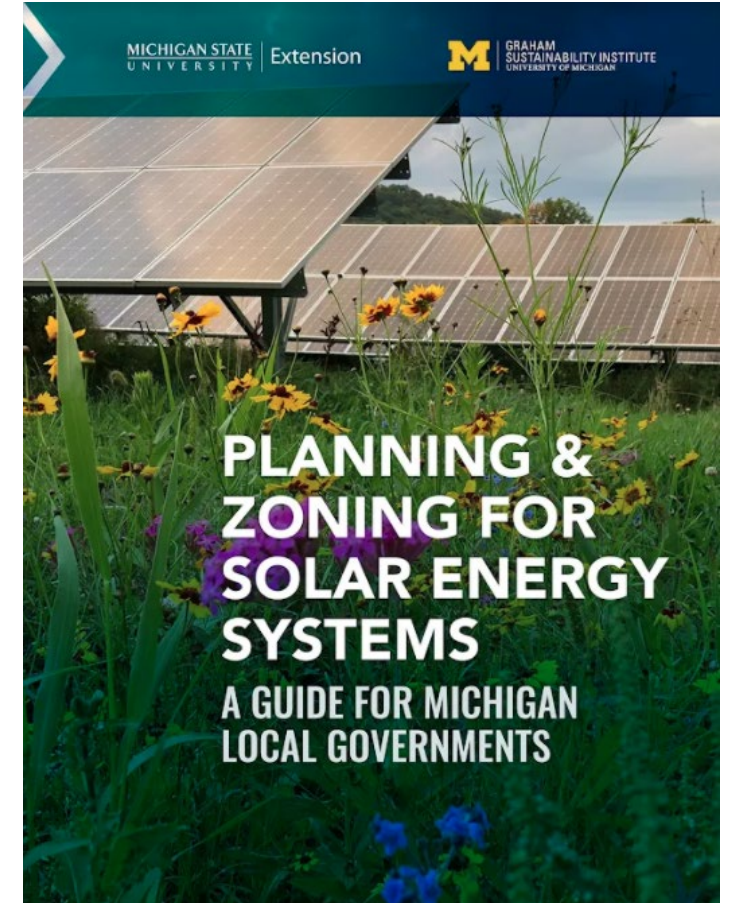
Renewable Energy Planning and Zoning Guidance

Planning and zoning are tools that local governments can use to attract renewable energy projects that are in line with the community's vision for itself. Proactive action can increase success and decrease contention.

- Zoning database**
In a unique project, EGLE and University of Michigan's Graham Sustainability Institute have developed the Michigan Zoning Database, a searchable source of information of municipal ordinances.
- Solar Resources**
Guidance on incorporating renewable energy in to community plans and ordinances for solar energy.
- Wind Resources**
Guidance on incorporating renewable energy in to community plans and ordinances for wind energy.

Sample solar ordinance – with MSU-Extension

- Oct 2021: **Release guidebook**
 - NACDEP National award
- **Mailed to all 1,856 jurisdictions**
- May 2022: **MSUE Guidebook Training**
- Sept/Oct 2022: **MAP, MTA presentations**
- **Overlay template, energy storage guide in-the-works**



Renewable Energy Academy

- **Introductory webinar / event**
 - MAP, MTA, MSUE, NEMCOG
- **Bus tour**
- **Deep-dive, “bring your ordinance” workshops**
- **Ordinance review**
 - “What message are you sending?”



<https://graham.umich.edu/rea>

Works in Progress

- **MI REDI:** community engagement program
- **Community-Centered Solar Development:** DOE grant to understand perceptions of process, distribution of benefits, project design on local attitudes; develop a proactive community engagement process
 - Contact me if interested!
- **Economic Impacts of Solar on Farmland:** DOE grant with MSU, Iowa State
- **Building a Network of Practitioners:**
 - <https://graham.umich.edu/project/2022-extension-and-renewables-convening>

Questions?

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