



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY



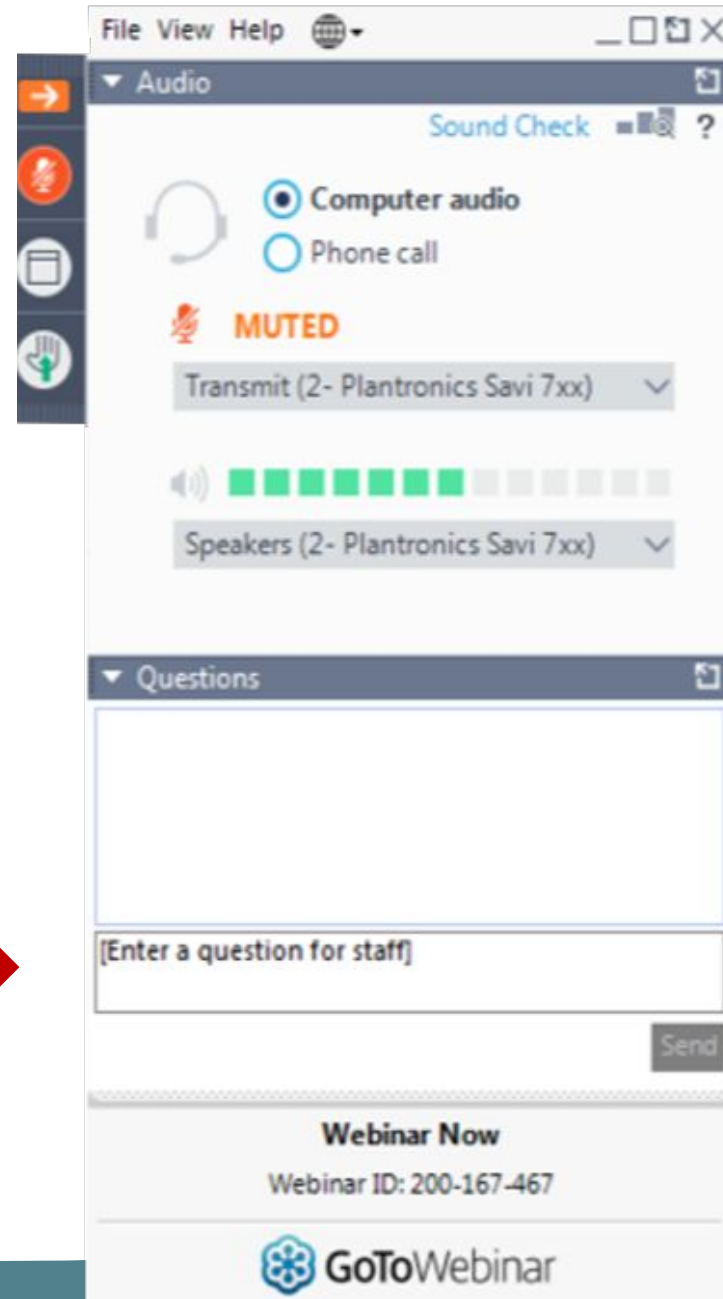
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CLEAN ENERGY & ENERGY MANAGEMENT WEBINAR SERIES

Planning & Zoning for Utility-Scale Solar

Have a question?

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



Today's Speakers

- **Sarah Mills, PhD** - Senior Project Manager at the Graham Sustainability Institute
- **Hannah Smith** - Master's Student at the University of Michigan School of Urban and Regional Planning



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PLANNING & ZONING FOR UTILITY-SCALE SOLAR

Sarah Mills, PhD
Hannah Smith

Overview

- Why plan or re-plan for solar?
- Planning for Solar
- Zoning for Solar

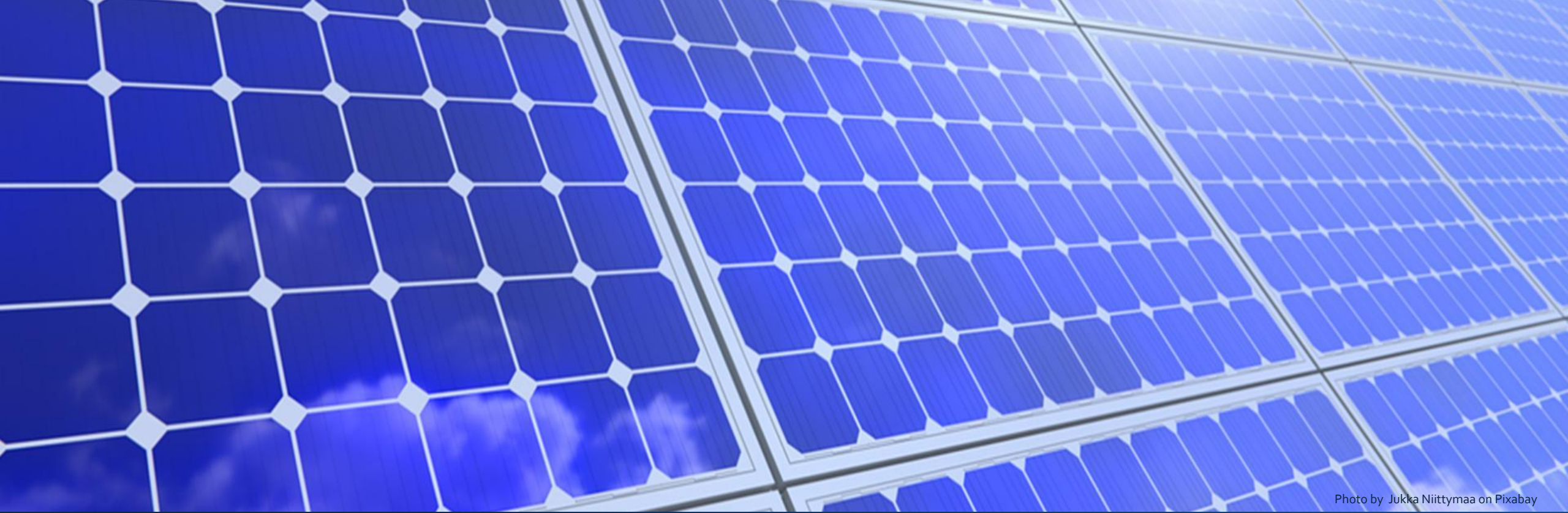
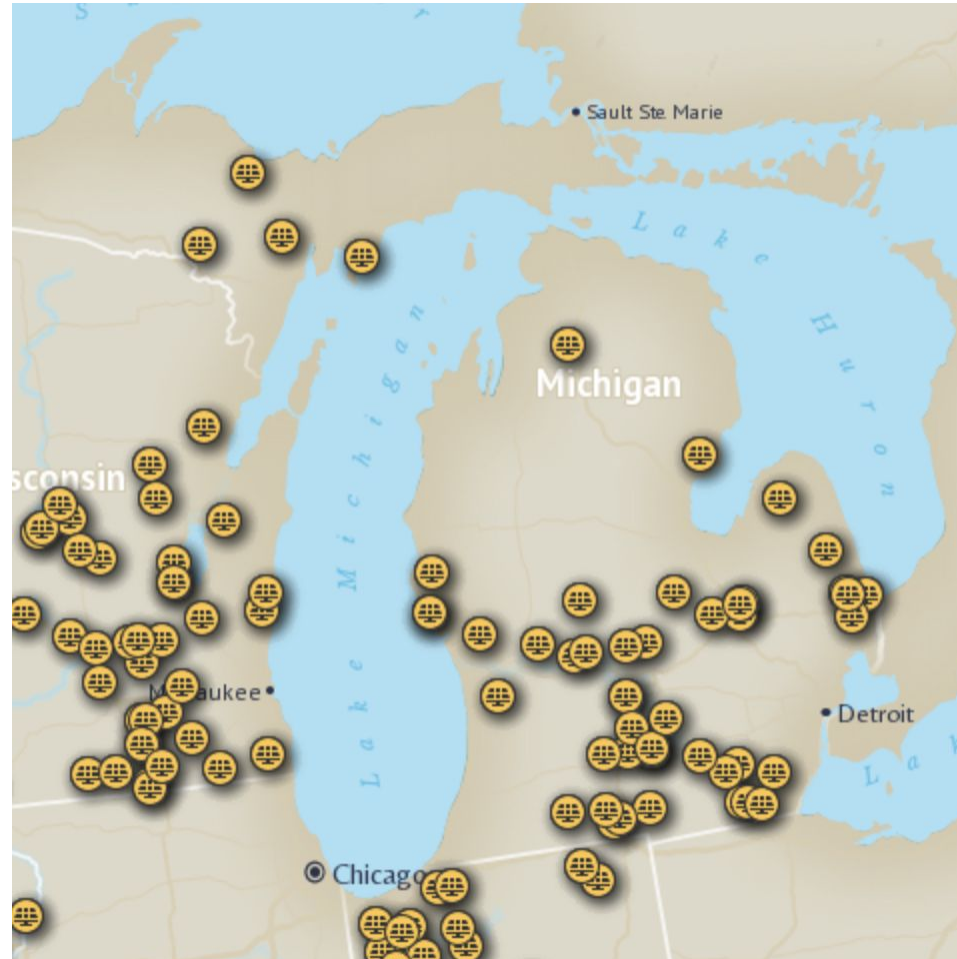


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WHY PLAN (OR-REPLAN) FOR RENEWABLE ENERGY?

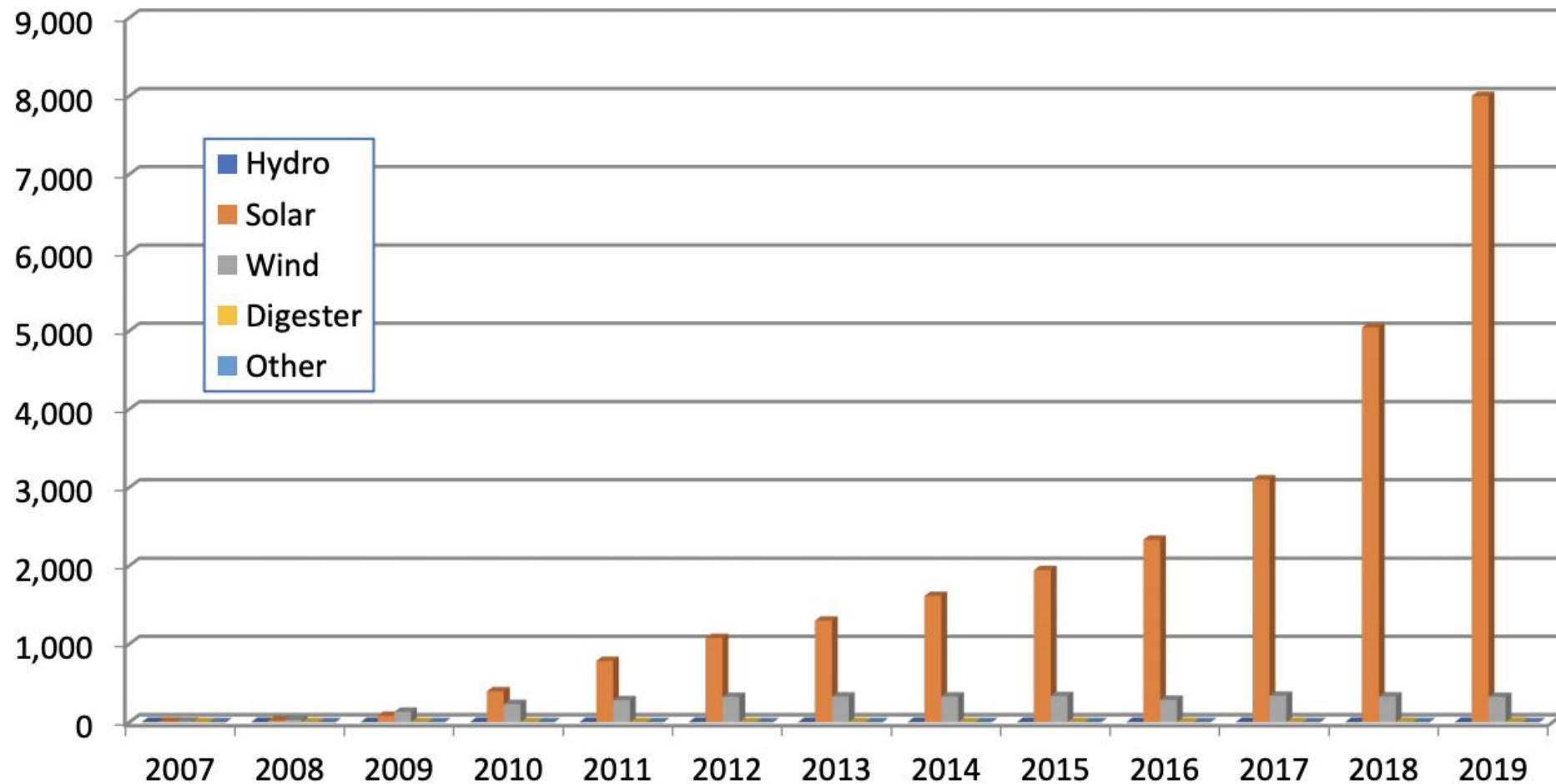
(Large) Solar being considered 48 projects, 6,659 MW



+ 3,000 MW of
small projects

- Source: MISO Queue, April 24, 2021
- <https://api.misoenergy.org/PublicGiQueueMap/index.html>

Small-scale (net metered) Solar In Michigan



Why Plan Now?



Photo:

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

All communities will have
some solar within 5 years

- **Set clear expectations for property owners and potential developers**
 - When zoning is silent, ambiguity
- **Best before proposal is on the table**
 - Time
 - Fewer conflicts of interest
 - Strategize

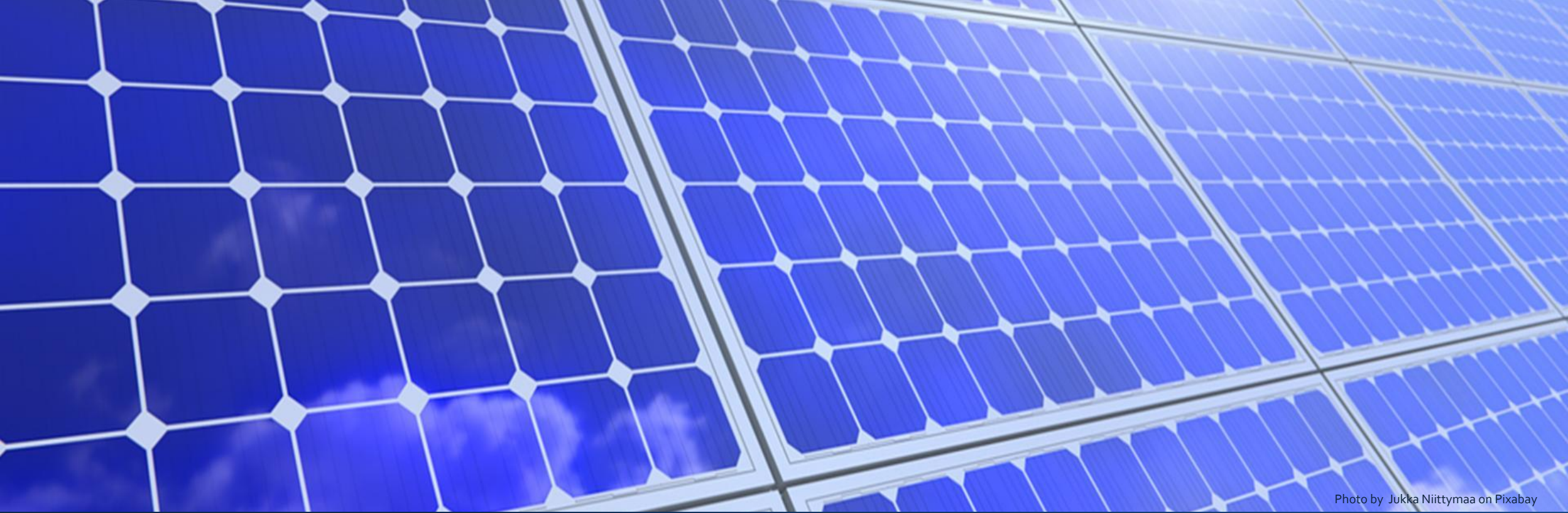


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PLANNING FOR SOLAR ENERGY

Planning for Solar Energy

- How does renewable energy fit with your long-term plan?
- Which technologies, at which scales, and specifically where?

Solar comes in all sizes



<https://news.energysage.com/how-many-solar-panels-do-i-need/>

<https://www.lansingstatejournal.com/story/news/local/2015/12/07/bwl-solar-array/76726074/>

Planning for Solar – In Master Plan

- **Solar-Specific Goal Language:**

Goal 1: Encourage local production of solar energy on new residential and commercial construction.

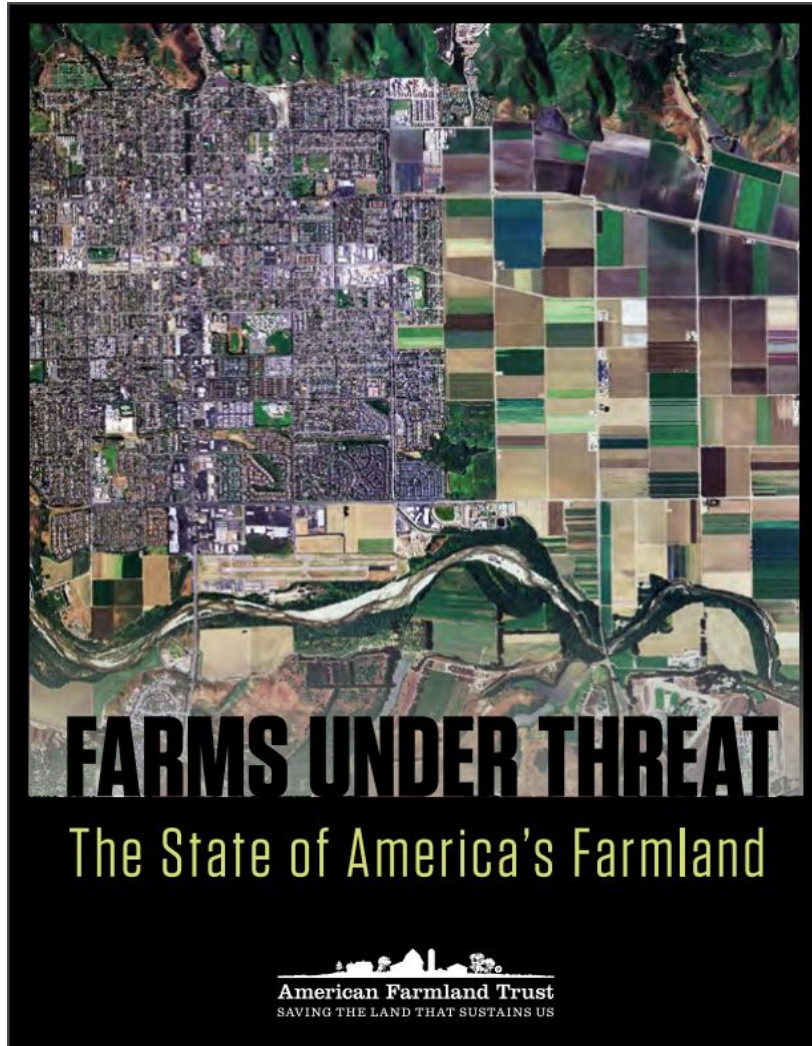
Goal 2: Maximize the production of solar photovoltaic energy to the extent feasible, while minimizing potential biological, agricultural, visual, and other environmental impacts.

GrowSolar Local Government Solar Toolkit

As strategy for existing Goals & Objectives

- **Sustainability:** strategy to reach sustainability goals
- **Natural Resource Protection:** solar harnessed without depletion, helps protect species/habitat
- **Economic Development:** opportunity to expand tax base, additional income to landowners
- **Tree Preservation:** should address as competing use
- **Historic Preservation:** should address as competing use
- **Farmland Preservation:** opportunity to help farmers diversify and sustain ag (but may be seen as competing)

Fit with agriculture



<https://farmland.org/project/farms-under-threat/>

“Renewable energy creates opportunities for farmers and landowners to earn new income

but also poses threats to farmland and local food systems.”

What are you trying to preserve?

- Urban boundary
- Rural vista
- Land for growing food
 - Short vs. long term?
 - Are you moving, compacting soil?
- Farm livelihoods
 - Farmer with lease
 - Tax revenues

PA 116 MI Farmland Preservation Policy as of June 2019

- Can put agreement on “pause” if...
 - Maintain existing drainage / field tile
 - Plant cover crop including pollinator habitat
 - End-of-life remediation
 - + Surety bond/letter of credit

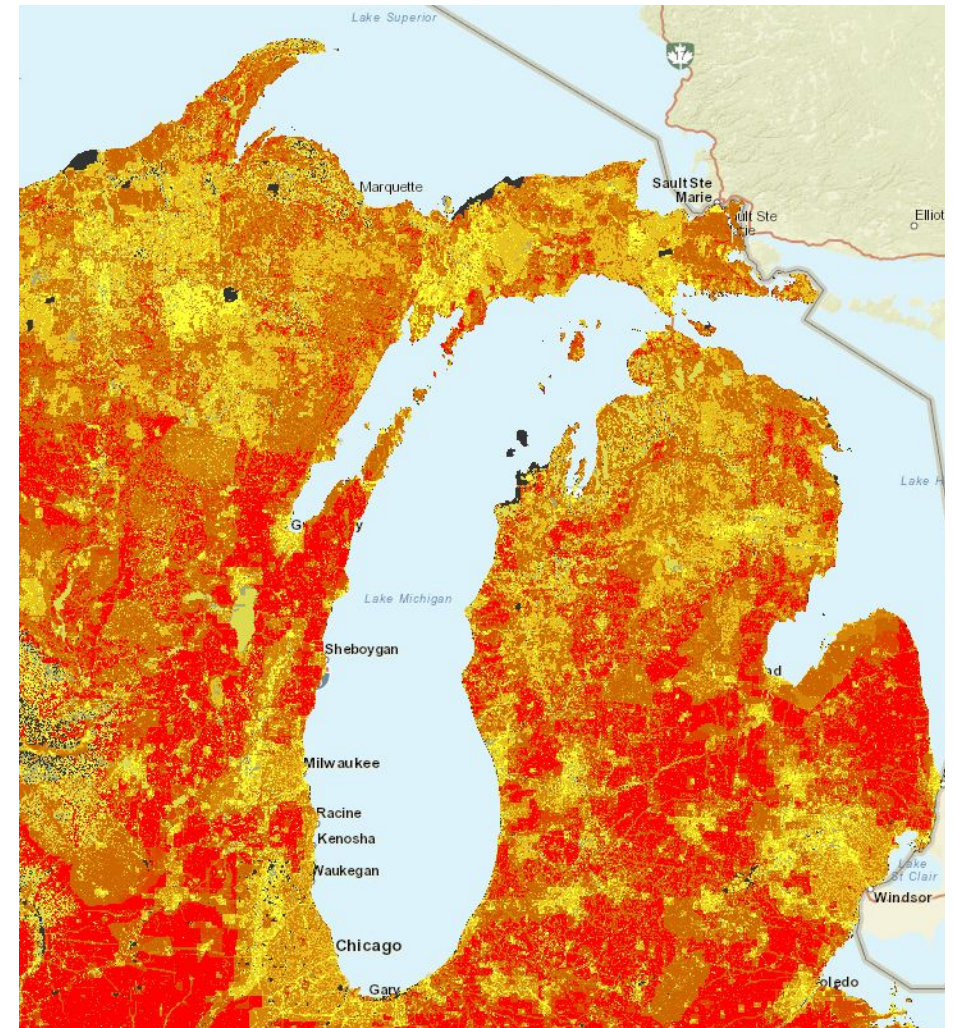
Aim to protect long-term farmability of land; provide farmers/farm communities with new income stream

My advice to communities on solar and ag

- What does your community mean by farmland preservation?
- **Be consistent**
 - What else do you allow in ag district?
 - Golf course? Residential development?

Adding Existing Conditions and Trends

- Existing solar installations
- Identify areas with greatest solar potential using solar mapping resources
 - Transmission lines
 - Substations
 - Resource potential
- Energy Zones Mapping Tool ([EZMT](#))
 - [EGLE/UM](#) webinar & demo



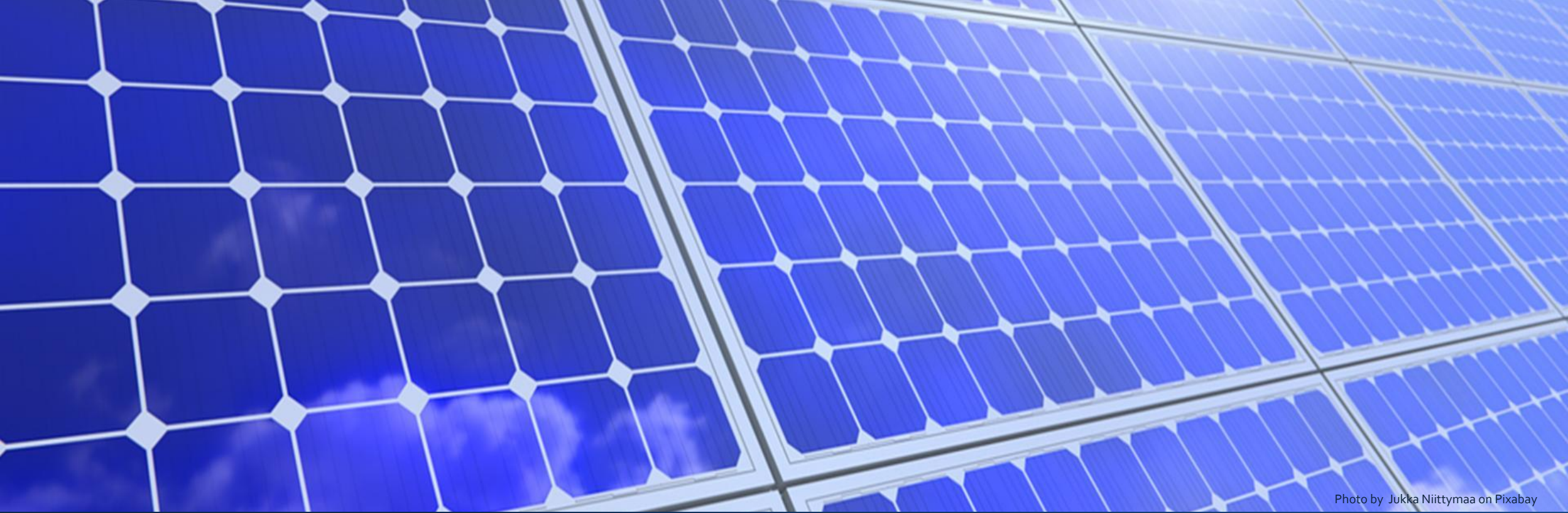


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ZONING FOR SOLAR ENERGY

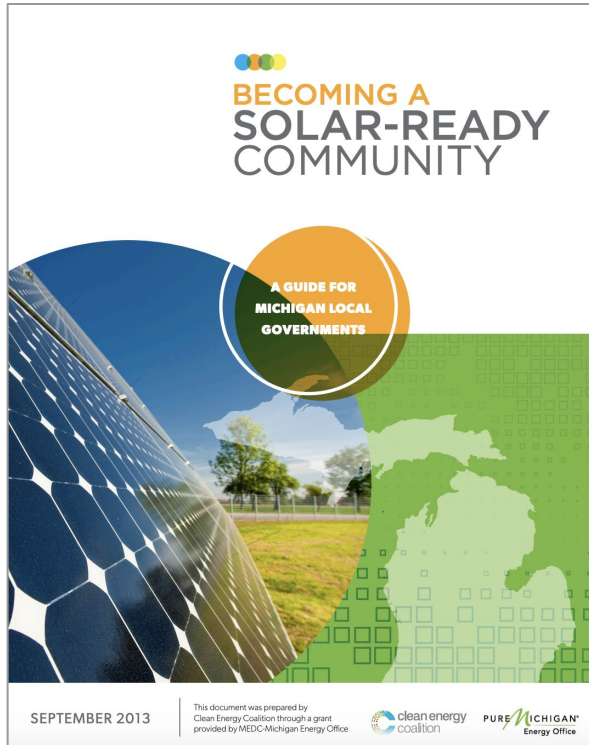
Zoning for Solar Energy

- **Zoning needs to be consistent with determined role of solar energy in long-term plan**
 - Specifics matter for ability to realize plan
 - Unlikely to satisfy everyone
 - Doesn't have to be all or nothing
 - Beware of zoning out
 - But making really hard is ok
- **Opportunity to send your message**
 - Codify (or modify) current practice

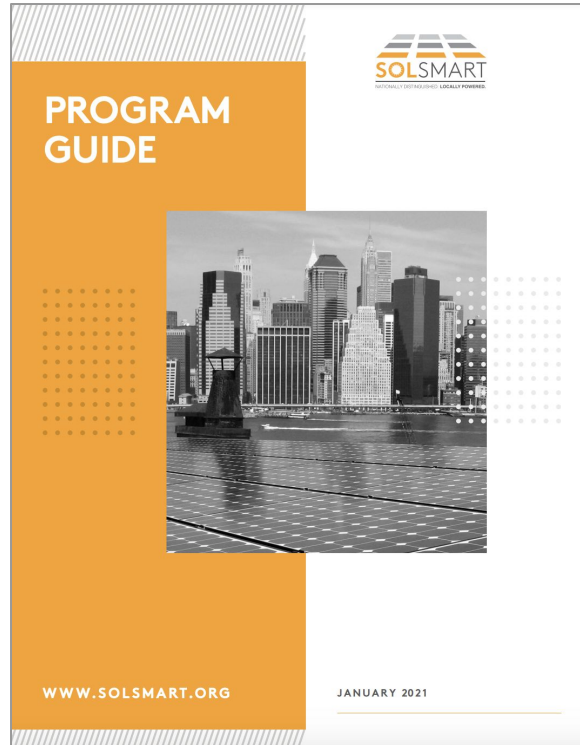
Zoning for Solar - Scale

- **Must consider the various forms of solar energy:**
 - Rooftop
 - Ground-mounted accessory use
 - Solar Carports
 - Small principal-use
 - Greenfield/brownfield
 - Larger principal-use

"Solar Ready"



https://www.michigan.gov/documents/cimateandenergy/Solar_Guidebook_For_Local_688706_7.pdf



<https://solsmart.org/solar-energy-a-tool-kit-for-local-governments/>

- Expedited, no-fee permitting
- Group-buy programs
- Evaluating municipal buildings / properties

Zoning for Solar - Rooftop

- Typically by-right in all districts
- Visibility from road/public space
 - In historic districts?
- Allow solar to exceed height limit on flat roof?
- Incentivize rooftop solar?
 - FAR premiums / density bonus
 - Dimensional standard relief

Zoning for Solar – Ground-mounted Accessory Use

- **Start with regulations for other accessory structures**
 - Is visibility from road problematic?
 - Placement in front yard?
 - Lot coverage, height limit?
- **Require screening on “back” side?**
- **Count toward imperviousness (depending on what’s underneath)?**

Zoning for Solar Carports – Ground-mounted Accessory Use



- Allow covering of any parking?
- Allow reduced space dimensions for retrofits?
- Incentivize through reduced parking requirements?
- Opportunities with EV charging

Zoning for Solar – “Small” Principal Use

- **Set upper threshold**
 - What size that would seem non-controversial?
 - Perhaps different on brownfield than greenfield, or based on district?
- **By-right (e.g., industrial, ag districts) or special use (e.g., in residential districts)**
- **Set-backs, screening typically follow district**

Zoning for Large Principal Use Solar - Height

- **Most district height limits fine**
 - Currently, 16' more than enough for ground-mounted systems with wildflowers underneath
- **Wildflowers or grazing underneath typically requires raising panels slightly** (so don't want limit height too much)

Zoning for Large Principal Use Solar - Setbacks

- Typically follow setbacks of district
- Perhaps more if adjacent to residential use or residential district
- If worry about ag land, minimize setback so less land “inactive”

Zoning for Large Principal Use Solar - Screening

- Typically follow requirements in district
- May require additional screening if adjacent to sensitive uses (e.g., residential)
- If solar is seen as temporary land use, minimize/reduce screening requirements; definitely no berming

Zoning for Large Principal Use Solar - Lot Coverage

- What's the intent? Imperviousness or “development”
- Exempt from lot coverage based on suitability of groundcover
- Low lot coverage % suggest accessory use, or “wasted area”
 - Appropriate if only see this supplemental farm use, not primary use
 - More likely to make large project unviable (but could be justified if that is in ordinance)
- How to measure

Zoning for Large Principal Use Solar - Groundcover & Stormwater Management

- Do you care, or covered in noxious weed ordinance or other landscaping requirements?
- Be careful don't specify something that won't grow in shade
 - PA 116 requires cover crop including pollinator habitat
 - Brownfields may have different requirements
- May also want to allow for agrivoltaics
- Exempt from stormwater if ground under the array is pervious

Zoning for Large Principal Use Solar - Decommissioning

- Define what is “end of life”
 - allow ~12 months
- Decommissioning plan to be approved at time of site plan approval
 - Outline of life of project, decommissioning costs, process details
 - Common to require financial guarantee or surety bond for decommissioning
 - Periodic review

Zoning for Large Principal Use Solar - Other Considerations

- Permitting (EGLE, FAA) and construction/electrical/building codes
- Safety signage
- Sound
- Fencing
 - NESC (utilities); NEC (non-utilities)
 - Currently NEC says 7' fence or 6' + 3-string barbed wire. Do you care?
 - Is this allowed in setback?
- Ag & short-term: Limit internal drives to limit compaction

Helpful Solar Zoning Resources

- Curated repository of templates, guidance
 - <http://graham.umich.edu/climate-energy/energy-futures>
- Case studies on brownfield solar, comparison of wind + solar in Shiawassee
- March-April 2020 issue of Planning & Zoning News
- Zoning guidance on solar from MSU Extensions (in the works)

Solar Resources

Solar energy development is rapidly growing in Michigan as technology and price continue to become more accessible. For both small-scale and utility-scale projects, the resources below can help identify the right policies for your community.

SOLAR IN YOUR COMMUNITY

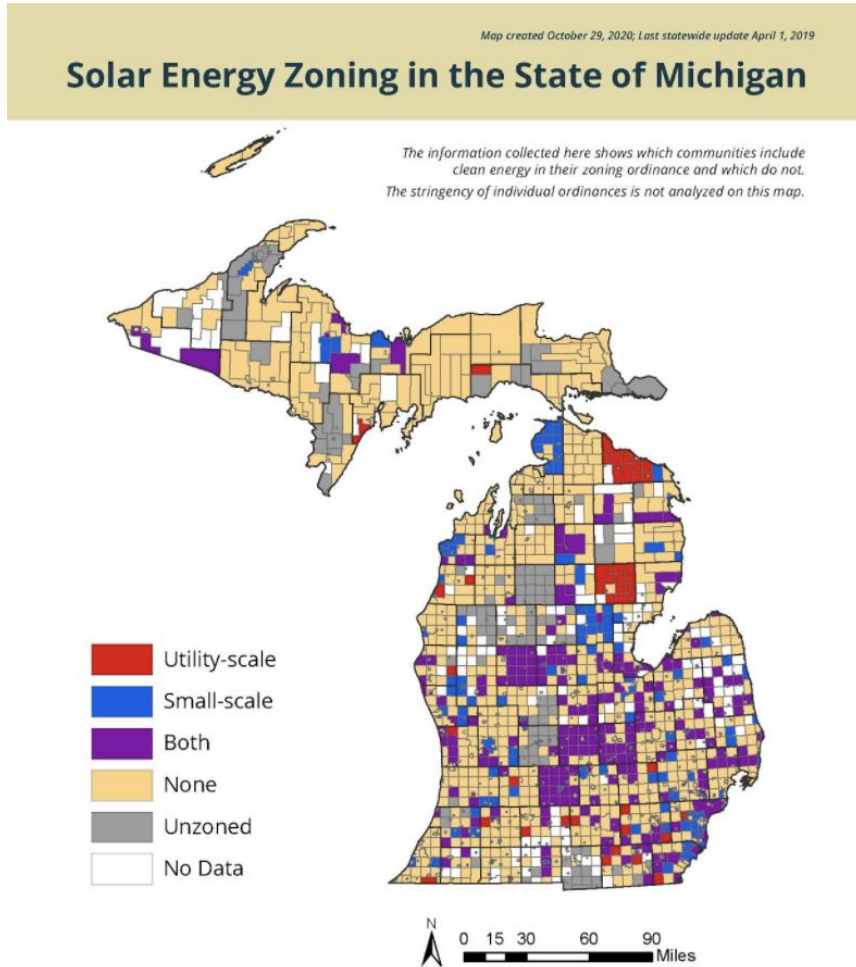
Communities around the state are exploring solar power to offset the costs and emissions of other energy sources. Solar panels provide a flexible alternative to coal and gas powerplants that can allow communities to produce clean energy for local residents and the rest of the state. These resources will help you prepare, plan, and zone for solar energy production in your community.



Guidebook for Local Governments <i>Becoming Solar-Ready: A Guide for Michigan Governments</i> , produced under a grant to the Clean Energy Coalition from the MEDC—Michigan Energy Office. Includes sample permitting checklists, board and council resolutions, and planning/zoning language.	Comparison: Minnesota Guidelines <i>Grow Solar Minnesota: Local Government Solar Toolkit</i> , produced by the Great Plains Institute, addresses the role of solar development in comprehensive plans and zoning ordinances and provides sample ordinance language.	Sample Ordinance Language <i>Model Zoning for the Regulation of Solar Energy Systems</i> , produced by the Massachusetts Executive Office of Energy and Environmental Affairs, includes sample ordinance language for solar energy development of all sizes, along with recommendations.
Integrating Solar Energy into Local Plans <i>Integrating Solar Energy into Local Plans</i> , one of the American Planning Association's Solar Briefing Papers, is a short guide on incorporating goals, objectives, policies, and actions that support solar energy use into local plans.	Sample Master Plan Language <i>Planning for Solar Energy</i> , produced by the American Planning Association, is an in-depth report on how planners can promote solar energy use through local policy and action.	More Resources A table of additional documents and websites on preparing, planning, and zoning for solar energy production.

https://www.michigan.gov/climateandenergy/0,4580,7-364-85453_98214---,00.html

Michigan Zoning Database (Thanks to EGLE)



- Database of most zoning ordinances in the state; which have wind/solar content
- Available at <https://www.michigan.gov/energy/>

Please let us know if there are updates in your community!

EGLE grants

- **Community Energy Management Incentive Program**
- **Grants for updating plans & ordinances for renewable energy**
 - Up to \$15,000
- **Apply at**
www.Michigan.gov/energy

OFFICIAL WEBSITE OF MICHIGAN.GOV

Department of Environment, Great Lakes, and Energy

Office of Climate and Energy

CLIMATE AND ENERGY / ENERGY / BUSINESSES

Community Energy Management Incentive Program

Energy Services will offer financial incentives to communities, public education K-12 schools and postsecondary institutions, and other entities for energy related implementation projects, recommended from energy audits and assessments that can be completed between February 1, 2021 and July 31, 2021. The maximum rebate award is \$15,000 per applicant.

Awards will be given on a first come first serve basis at the discretion of Energy Services to work with local governments, public education K-12 schools and postsecondary institutions, and other entities on energy management, energy efficiency and renewable energy projects such as, but not limited to: benchmarking, ASHRAE Level I or II audits, energy efficiency upgrades, renewable energy projects, training, workshops, updating plans/ordinances to include energy, etc.

https://www.michigan.gov/climateandenergy/0,4580,7-364-85453_85455_85523-475266--,00.html



More questions?

- **Reach out to us**
 - Answer questions
 - Give presentation
 - Connect you to MSU-Extension, other communities

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