

Taylor County Community Perspectives on Large-Scale Solar and Wind Development

Renewable Energy Siting & Engagement
for Tomorrow (RESET)

Engaging Wisconsin Communities in Renewable Energy

June 2026



Acknowledgements

Taylor County Advisory Team

The Taylor County Advisory Team provided local expert guidance on community, economic, and environmental issues that should be considered throughout the Taylor County Renewable Energy Siting & Engagement for Tomorrow (RESET) process. Advisory Team members included the following (listed alphabetically by first name):

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RESET Collaborative: Our Partners

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 - RENEW Wisconsin
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The views and opinions of authors expressed in this report do not necessarily state or reflect those of the United States Government or any agency thereof.



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Glossary

Agrivoltaics

The practice of combining solar photovoltaic energy production with agricultural activities, such as grazing livestock or growing crops under and around solar panels. Also referred to as dual use.

Certificate of Public Convenience and Necessity (CPCN)

A permit issued by the Public Service Commission of Wisconsin for energy projects 100 megawatts or larger, confirming the project serves the public interest.

Decommissioning

The process of removing infrastructure and restoring land to its original condition at the end of a solar project's life.

Financial assurance

A financial guarantee (such as a bond, escrow, or letter of credit) that is required from developers to ensure funds will be available for decommissioning and site restoration at the end of a project's life.

International Fire Code (IFC)

IFC is the model global standard for fire safety, including solar and battery energy storage systems (BESS).

Large-scale solar

Large-scale solar projects can also be referred to as utility-scale projects. In this report large-scale solar projects are projects at least one megawatt (MW) in size.

Megawatt (MW)

A megawatt is a unit of electrical power. One MW is equal to 1,000 kilowatts (kW), which is the unit of electricity measurement used for residential utility bills.

Battery Energy Storage System (BESS)

A system that stores electricity in batteries for later use. For example, BESS can store solar electricity generated during the day to be used at night.

Community Benefit Agreement (CBA)

A legally binding agreement between a developer and a community coalition that ensures specific benefits such as jobs, funds, and/or environmental protections as part of a project.

Dual use

Designing solar sites to support additional uses beyond energy generation, such as grazing, forage production, or pollinator habitat. Also referred to as agrivoltaics when the additional use is agricultural.

Good Neighbor Agreement

An agreement between a solar developer and adjacent landowners to mitigate impacts such as visual changes, noise, or property value concerns.

Joint Development Agreement (JDA)

A contract between a developer and local government outlining developer commitments such as road repairs, local hiring, and community investments.

Life Cycle Analysis (LCA)

An assessment of the environmental impacts of a solar panel throughout its lifespan, from raw material extraction to manufacturing, operation, and disposal.

Midcontinent Independent System Operator (MISO)

The regional transmission organization that manages electricity flow and reliability across fifteen states, including Wisconsin.

Net metering

A billing arrangement that can allow utility customers with on-site solar installations to receive some type of credit for electricity they send to the grid. This agreement depends on the utility.

Public Service Commission of Wisconsin (PSC)

The Public Service Commission of Wisconsin regulates utilities and approves large-scale energy projects.

RESET: Renewable Energy Siting & Engagement for Tomorrow

RESET is a Wisconsin program supporting community engagement for renewable energy siting. RESET is funded by an award from the U.S. Department of Energy.

Utility aid

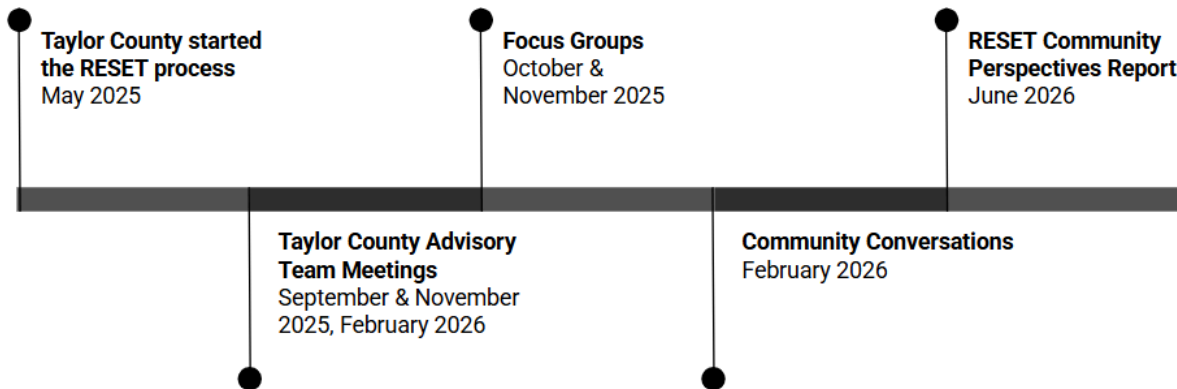
Annual payments from the Wisconsin Department of Revenue to counties and municipalities hosting tax-exempt utility property, currently \$5,000 per MW for renewable energy projects over 50 MW. Some utility aid is also available for many large-scale solar projects between 1 MW and 50 MW.

Section 1: Introduction and Executive Summary

Purpose & Process

The Renewable Energy Siting & Engagement for Tomorrow (RESET) program helps Wisconsin communities prepare and plan for large-scale renewable energy and energy storage projects. RESET aims to empower local communities, provide educational resources, and support collaboration to address the impacts of renewable energy on land, water, wildlife, people, and the local economy. In May 2025 the Taylor County board voted to participate in the RESET community engagement process. This process was guided by a multi-sector Advisory Team with folks from across Taylor County. RESET is funded by the Department of Energy, and there was no financial cost to Taylor County to participate in this process.

The Taylor County RESET Process



Community Engagement

This process intentionally focused on gathering community perspectives through an advisory team, four focus groups, and two community conversations. The Advisory Team was a multi-sector group of Taylor County leaders, and focus groups included farmers, business leaders, conservation leaders, and local government. The two community conversations convened Taylor County residents, with 25 participants. After a short educational presentation on large-scale solar from UW-Madison Extension experts, participants used a post-it method to share their perspectives on possible benefits, concerns, and questions. All community members were invited to join in the community conversations through a number of channels, including radio announcements, flyers, social media and local newsletters. Nine participants attended the first community conversation, and 16 participants attended the second community conversation. 19 completed follow-up surveys.

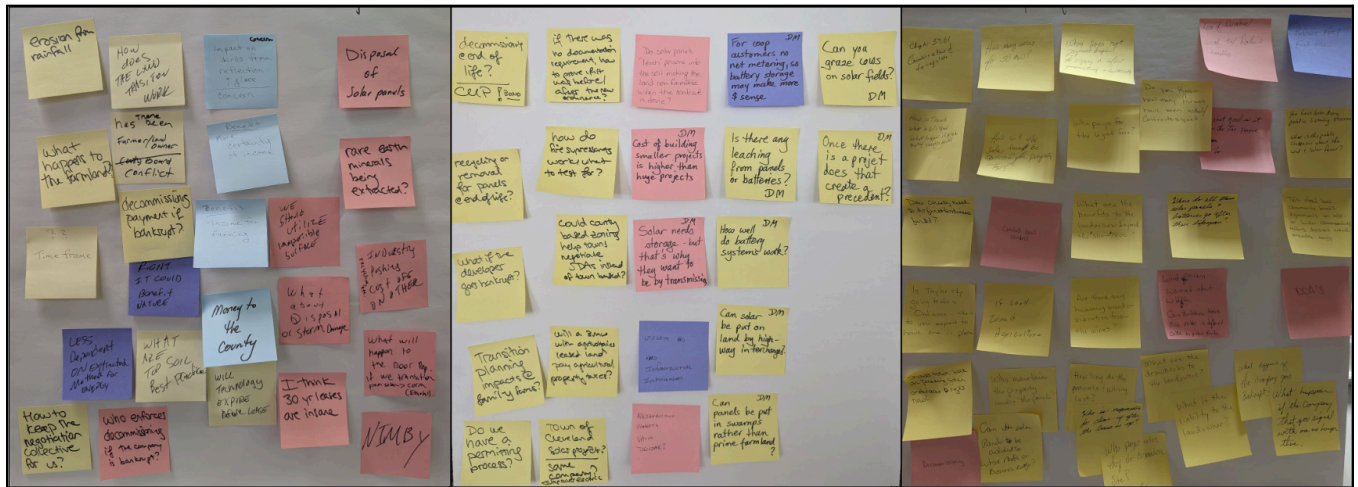
As shared in the follow-up surveys, as a result of community conversations:

- 94% shared that “I had the opportunity to voice my thoughts.”

- 74% felt more prepared to engage in renewable energy conversations or decision-making.

Additional comments included:

- “This should be front-page news – why are there not more people here?”
- “I had no prior knowledge of this topic, so every bit is helpful to me.”



Comments from engagement sessions (red=concern, blue=benefit, yellow=question)

222

Comments gathered across 7 engagement sessions

| | | |
|--|--|--|
| <p>+</p> <p>41</p> <p>Benefits</p> | <p>–</p> <p>78</p> <p>Concerns</p> | <p>?</p> <p>103</p> <p>Questions</p> |
|--|--|--|

Themes

Community member comments were sorted into the themes identified below. These themes from the community conversations inform the content of this report. In addition, the report addresses some questions raised in other counties that have statewide relevance.

For a complete list of comments, see Appendix 1: Taylor County Community Engagement Comments.

Electricity and Large-Scale Solar and Wind

- Grid, Transmission, Battery Storage
- Energy Mix, Transition to Energy Independence

Law, Policy, and Planning

- Regulations, Legal Framework, Local Control
- Siting and Planning Process
- Education and Public Participation

Economics

- Impacts on Landowners, Farmers, Businesses, and Local Government
- Utility Aid and Property Taxes

Environment

- Soil, Water, Wildlife, Air
- Life Cycle Analysis

Land Use

- Loss of Farmland, Alternative Locations
- Visual Landscape and Tourism
- Dual Use (Agrivoltaics)

Health and Safety

- Emergency Response, Fires, Toxins

Decommissioning / End of Life

- Land Restoration, Recycling and Disposal
- Costs, Financial Assurances, Regulations

Leverage Points

Wisconsin law places limits on local control of utility-scale renewable energy. The Public Service Commission of Wisconsin (PSC) has siting authority for projects that are 100 megawatts (MW) in size or larger. Local jurisdictions are responsible for permitting projects under 100 MW, but they may only regulate based on public health and safety concerns, may not apply more stringent standards than those set out in state law, and they may not impose requirements that significantly increase the cost of electricity generation. However, communities do have tools they can use to influence large scale projects. Here are some ways individuals and communities can get involved with large-scale solar project siting.

Ordinances (under 100 MW)

- Counties, cities, villages, and towns can adopt a zoning ordinance addressing large-scale solar energy that is aligned with [Wisconsin Statute § 66.0401\(1m\) Regulation relating to solar and wind energy systems](#). A zoning ordinance can include conditional use permit application requirements for large-scale solar projects such as describing screening, setback, and vegetation management plans; construction best management practices (BMPs); Emergency Management Services/fire access; and appropriate financial assurances for decommissioning. By law, conditional use permit requirements must be supported by substantial evidence.
- Communities can also require construction BMPs for soil and water protection, traffic plans, monitoring, vegetation management, and other reasonable environmental measures as part of a conditional use permit (CUP).

Plans

- Counties and Towns can update their comprehensive plans to address renewable energy development goals and concerns.
- The Public Service Commission will consider planned residential and commercial development documented in a comprehensive plan that is adopted before a project application is submitted. Developers look at comprehensive plans as they are planning renewable energy projects.

Contracts

- Landowners can negotiate for provisions in the leases they sign with solar developers. For example, leases can stipulate that specified agricultural uses will be allowed.
- Individuals who own land adjacent to the project may also be able to negotiate contracts with the developer to address concerns. These are typically called Good Neighbor Agreements.
- Local governments can negotiate contracts with developers to address a variety of concerns. These contracts are typically called Joint Development Agreements (JDAs) but sometimes go by other names. JDAs can be used to address items such as providing monetary compensation for road impacts, requiring local or union hiring, community investments, and coordination with local Emergency Management Services on emergency response training, especially for battery energy storage systems (BESS). Payment for this training can be included as part of a Joint Development Agreement.
 - Local governments can convene a working group that includes County and Town officials, along with farmers and local leaders, to draft issues to address in Joint Development Agreements with future projects.

Decommissioning

- For projects under 100 MW, communities can require decommissioning plans, recycling commitments where feasible, and financial guarantees for decommissioning costs as part of a conditional use permit.

- For projects over 100 MW, communities can negotiate decommissioning assurances as part of a JDA.

Section 2: Introduction to Electricity and Large-Scale Solar and Wind

This section includes:

- An introduction to how the electrical grid works,
- An explanation of large-scale solar’s current footprint in Wisconsin,
- Information about wind and battery storage, and
- Resources to learn more.

Community input summary: benefits, concerns, and questions about electricity and large-scale solar

Benefits

- **Energy independence:** Local power generation enhances energy independence
- **Clean energy:** Provides clean, renewable energy and reduces reliance on fossil fuels
- **Updated grid:** Improves grid resilience and reliability

Concerns

- **Transmission system:** Infrastructure costs for transmission lines and grid upgrades
- **Supply and demand:** Challenges with meeting new energy demand (such as data centers)
- **Subsidies:** Dependence on incentives for profitability
- **Complexity:** Challenges of integrating large-scale solar with existing electrical grid

Questions

- **Utility bills:** Will solar projects reduce consumer electricity costs?
- **Grid reliability:** Will grid outages or rolling brownouts be reduced by large-scale solar?
- **Who is the end user:** Will the power be used by local communities or exported?
- **Battery storage:** How do batteries work with solar projects, and the grid?

Taylor County residents had questions about how electricity, large-scale solar, and the grid work, along with questions about how local energy generation could impact utility bills, grid blackouts, and energy independence.

How does the electrical grid work in Wisconsin?

Wisconsin’s electricity system is operated by the Midcontinent Independent System Operator (MISO). MISO (pronounced “MY-so”) manages the electrical grid and high-voltage transmission for more than 40 million customers across 15 states (see Figure 2-1).

MISO’s core role in the regional electric grid is to make sure that customers have a consistent supply of electricity at an affordable cost. Electricity flow is managed on a second-by-second basis, while planning for projected electricity needs requires planning decades into the future. MISO coordinates between utilities and other stakeholders, and is managed through state and federal regulations.¹

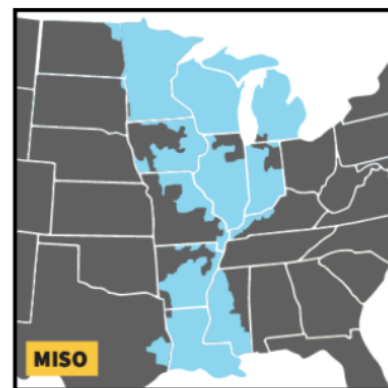


Figure 2-1: MISO territory

¹ Great Plains Institute, MISO 101 Primer: Part 1, Introduction to MISO, 2022, <https://betterenergy.org/wp-content/uploads/2023/06/MISO-101-Part-1-Intro-to-MISO.pdf>.

Where does Wisconsin's electricity come from?

Wisconsin's electricity mix includes natural gas, coal, nuclear power, hydro, wind, and solar. As Figure 2-2 shows, the supply mix has shifted over time.² In 2024, natural gas produced 40% of Wisconsin's electricity, coal provided 32% (down from 61% in 2014), and nuclear provided 15%. Renewable resources (solar, wind, and hydro power) provided 12% of Wisconsin's electricity.³

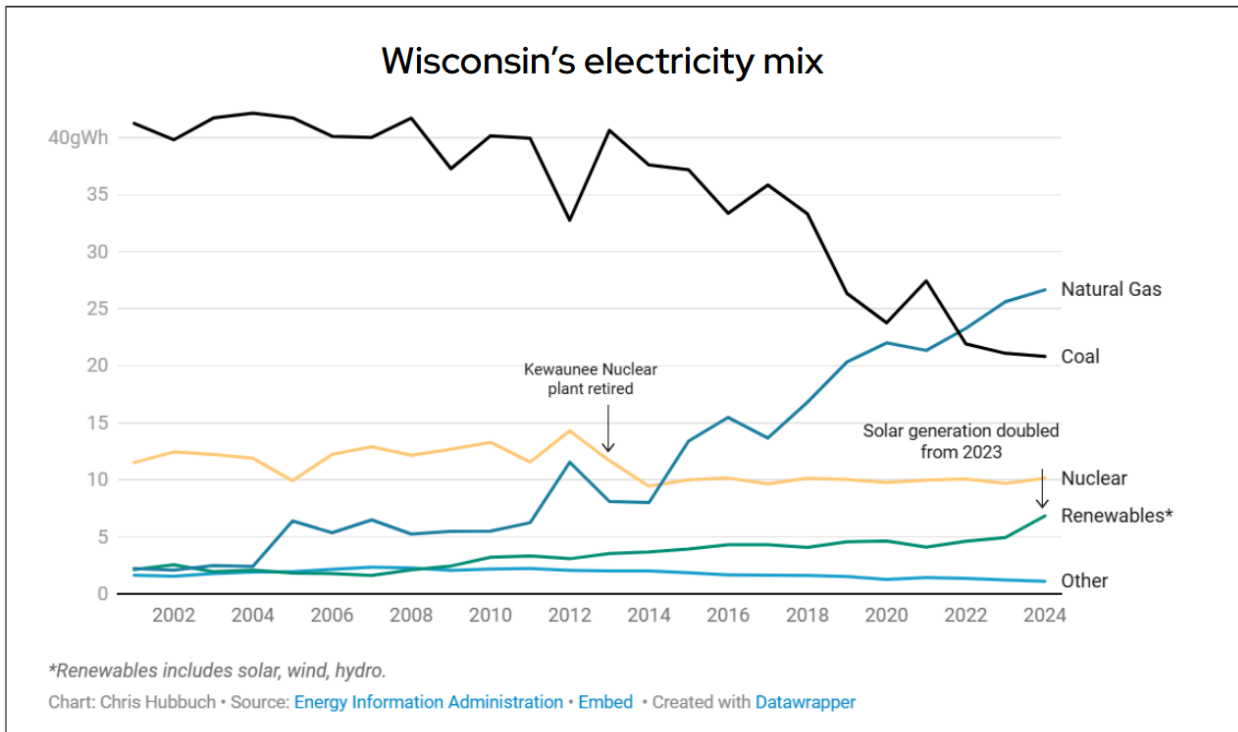


Figure 2-2: Wisconsin's changing electricity sources

What is large-scale solar?

Large-scale solar, also referred to as utility-scale solar, is any project at least one megawatt (MW) in size. One megawatt is the same as 1,000 kilowatts (kW).

One kilowatt of optimally placed solar panels will produce more than 1,000 kWh of electricity in a year in Wisconsin. The average Wisconsin home uses less than 8,000 kilowatt-hours (kWh) of electricity annually.⁴ Therefore, a megawatt of solar powers more than 100 Wisconsin homes.

² Wisconsin Energy Institute, 2024 Was the Dawn of Wisconsin's Solar Era, but There Are Clouds on the Horizon, April 1, 2025, <https://energy.wisc.edu/news/2024-was-dawn-wisconsins-solar-era-there-are-clouds-horizon>.

³ U.S. Energy Information Administration, Wisconsin State Energy Profile, December 2025, <https://www.eia.gov/state/print.php?sid=W1>.

⁴ Energy Information Agency, 2024 Average Monthly Bill- Residential, 2024, https://www.eia.gov/electricity/sales_revenue_price/pdf/table_5A.pdf.

Do large-scale solar and wind make sense in Wisconsin?

There are already dozens of large-scale solar projects operating in Wisconsin, totaling more than 3,300 megawatts.⁵ There are also a number of large-scale wind projects, and we are seeing dozens more wind and solar projects that are approved and under construction, or in the permitting process.

People often wonder whether solar makes sense in Wisconsin because of seasonality. Even though Wisconsin winters reduce solar's annual production, large-scale solar is one of the least expensive forms of electricity available today. The levelized cost of energy (LCOE) is a cost comparison of different energy generation technologies published annually by Lazard.⁶ Their 2025 report said that "renewables remain the most cost-competitive form of new-build generation on an unsubsidized basis."

The costs of wind and solar are lower than any other type of electricity generation.⁸ The LCOE does not include tax subsidies or other incentives, but does include the total lifetime costs of building, operating, and decommissioning a power plant. Key components include construction, operation and maintenance costs of managing the facility, financing costs, and the fuel costs (if applicable). Wind and solar electricity are some of the least expensive electricity sources per megawatt-hour, since the sun shines and the wind blows for free.

Could large-scale solar and wind projects increase Wisconsin's energy independence?

Wisconsin currently consumes almost six times as much energy as the state produces, and spends more than \$1.2 billion annually buying fossil fuels from out of state to power our electrical grid.⁷ Based on current consumer usage trends, modeling indicates the state will require up to 60 gigawatts (60,000 MW) of new electricity generating capacity by 2050.⁸ As existing energy generating plants are retired, Wisconsin will need new sources of electricity generation to avoid utility rate increases and rolling blackouts. Although Wisconsin does not have commercial fossil fuel reserves, it does have renewable resources like sunshine and wind. Large-scale solar can help meet in-state electricity needs and reduce reliance on imported fuels.

Where does the electricity that's generated go?

Electricity generated by any type of power plant enters the grid. It becomes part of MISO's overall supply that serves homes and businesses across 15 states. Managing base loads and peak demand means that, depending on the grid's supply and demand at a given moment, your electricity might come from the closest source or a plant hundreds of miles away.

Could large-scale solar and wind reduce grid outages in the area?

Large-scale solar alone won't result in fewer outages because solar power depends on sunlight. However, if solar or wind projects are combined with battery energy storage systems (BESS), they can improve resilience by providing immediate additional backup power during grid disturbances.

⁵ Solar Energy Industries Association (SEIA), Wisconsin Solar State Spotlight, December 2025, <https://seia.org/state-solar-policy/wisconsin-solar/>.

⁶ Lazard, Lazard's Levelized Cost of Energy+ (LCOE+), December 2025, <https://www.lazard.com/research-insights/levelized-cost-of-energyplus-lcoeplus/>.

⁷ U.S. Energy Information Administration, State Energy Price and Expenditure Estimates 1970 Through 2023, Table E14, June 2025, <https://www.eia.gov/state/seds/archive/seper2023.pdf>.

⁸ Clean Wisconsin, RENEW Wisconsin, Evolved Energy Research, Wisconsin's Roadmap to Net Zero by 2050, 2025, <https://www.cleanwisconsin.org/our-climate/wisconsins-roadmap-to-net-zero>.

Could large-scale solar projects reduce local electricity bills?

A large-scale project does not change local electricity costs. The power generated is sold into the regional electrical grid. However, from a supply and demand perspective, having more electricity supplied to the grid from low-cost sources such as solar, wind, and natural gas will keep prices lower than if additional energy is not added to the supply or if more expensive energy sources are used.

Want to learn more? Check out these resources.

- To learn more about Wisconsin energy use see U.S. Energy Information Administration [Wisconsin State Energy Profile](#).
- There were some questions about how the county might encourage local commercial and residential solar energy production. The RESET project is focused on energy produced for utilities, but the [Wisconsin Local Government Greening the Grid Playbook](#) created by the Great Plains Institute provides guidance on supporting renewable energy for local consumption.

Section 3: Laws, Policy, and Planning

This section includes:

- Summary of state regulations for siting utility-scale solar projects,
- Potential leverage points, and resources to learn more about laws, policy, and planning.

Community input summary: benefits, concerns, and questions about laws, policy, and planning

Benefits

- **State law:** Establishes clear standards and planning frameworks
- **Utility aid:** State law provides revenue for local governments

Concerns

- **Lack of transparency:** Non-disclosure agreements and complex contracts
- **Costs:** Time and money needed for legal and permitting processes
- **Changing regulations:** Financial risks due to potential policy changes
- **Lack of local control:** Governance issues over siting and operations

Questions

- **Regulations:** Who has siting authority for large-scale wind and solar projects? How are battery storage projects reviewed?

Taylor County residents had questions about Wisconsin’s regulatory landscape for siting large-scale solar, wind, and battery storage projects, including who is the siting authority, and how communities and local governments can get involved.

Wisconsin State Regulations: Laws, Policy, and Planning

Wisconsin law specifies how local jurisdictions and state agencies can and cannot regulate renewable energy. Project size determines whether local or state government handles the permitting process. Wisconsin law also provides utility aid payments to local jurisdictions for most large-scale renewable energy projects. See Section 4, Economics, for information about utility aid.

Local permitting for projects between 1 - 100 megawatts

Local governments (counties, cities, villages, or towns) are responsible for permitting large-scale renewable energy projects under 100 megawatts. Local governments can adopt zoning ordinances to protect public health and safety for wind and solar projects less than 100 MW. Conditional use permits may also require best practices to protect the environment and appropriate financial assurance for decommissioning.

However, [Wisconsin Statute § 66.0401\(1m\): Authority to restrict systems limited](#) places limits on what requirements local governments can impose for large-scale projects of any size:

“No political subdivision may place any restriction, either directly or in effect, on the installation or use of a solar energy system ... or a wind energy system, unless the restriction satisfies one of the following conditions:

- (a) Serves to preserve or protect the public health or safety.
- (b) Does not significantly increase the cost of the system or significantly decrease its efficiency.
- (c) Allows for an alternative system of comparable cost and efficiency.”

In addition, under [Wisconsin Statute § 66.0401\(4\)\(f\)1: Regulation relating to solar and wind energy systems, local procedure](#), local ordinances specifying large-scale renewable energy permit requirements cannot be more restrictive than the regulations the Public Service Commission of Wisconsin (PSC) has developed for wind energy. The PSC’s regulations are set forth in [PSC Chapter 128: Wind Energy Systems](#), and include provisions addressing permit application requirements, emergency response planning, noise, and decommissioning plans and financial assurances.

What are local governments allowed to put in a solar ordinance?

Wisconsin Land+Water has developed a number of [fact sheets](#)⁹ about Wisconsin's regulatory landscape and local government's role in siting renewable energy projects. [Solar Regulation Guidance for Wisconsin Counties, Cities, Villages, and Towns](#), the [Model Solar Zoning Ordinance](#), and Section 9, Leverage Points, of this report provide additional information on how local government can regulate large-scale renewable energy systems.

State permitting for projects 100 megawatts or larger

The Public Service Commission of Wisconsin (PSC) has siting authority for any energy-generating project that is 100 megawatts or larger. These projects must apply to the PSC for a Certificate of Public Convenience and Necessity (CPCN). In order to be issued a CPCN these projects must comply with [Wisconsin Statute § 197.491\(3d\): Certificate of Public Convenience and Necessity](#). You can read about the Application Filing Requirements (AFRs) for all Electric Power Plant Construction Projects on the [PSC’s website](#),¹⁰ including for [wind](#) and [solar](#). The AFRs describe all the information that must be included in a CPCN application to the Public Service Commission of Wisconsin for energy projects 100 MW or larger. The PSC is required to complete all project reviews within one year of receiving a completed application, and most project reviews take between 6-12 months.

Wisconsin regulates wind energy projects under [Chapter PSC 128](#) of the administrative code, which lays out statewide standards for how wind turbines can be sited and operated. These rules cover things like setbacks from homes and property lines, noise limits, shadow flicker, interference issues, and decommissioning. One of the main purposes of PSC 128 is to create consistency across the state - local governments can’t pass wind ordinances that are more restrictive than PSC 128 unless they can prove there is a clear scientific or technical reason for it. The rule sets a maximum noise limit of 50 dBA (weighted decibels) at the nearest occupied building, caps shadow flicker at 20 hours per year for non-participating homes, and requires developers to provide detailed plans for siting, operations, and eventual removal of the turbines. PSC 128 is meant to balance community concerns with the state’s renewable energy goals by giving everyone a clear, uniform framework to work within.

⁹ Wisconsin Land and Water, Renewable Energy, December 2025, <https://wisconsinlandwater.org/members-hub/conservation-resources/climate-resilience/renewable>.

¹⁰ Public Service Commission of Wisconsin, PSC Energy Filing Requirements, accessed March 18, 2026, <https://psc.wi.gov/Pages/ServiceType/Energy/FilingRequirements.aspx>.

How does battery storage impact solar or wind projects?

Battery energy storage systems (BESS) can complement renewable energy sources like wind and solar by improving when and how energy is used. With solar, excess energy generated during the day can be stored and used later during peak evening demand. With wind, storage helps reduce fluctuations by capturing energy when winds are strong and releasing it when they are not. Combining multiple renewable sources with BESS allows energy to be stored and used more reliably, similar to traditional power generation.

How does siting work for stand-alone battery energy storage system (BESS) projects?

BESS siting works similarly to wind and solar projects. Utility-scale projects under 100 MW are sited by local governments, and BESS projects that are 100 MW or greater are sited by the PSC. The PSC is currently developing regulations for energy storage systems, including battery systems.

How can members of the public be involved in the PSC siting process?

There are multiple opportunities to get involved in the siting review process. Local government, organizations, and individuals can read the notification letter and project application, attend public information meetings and any PSC scoping meetings, submit comments to the PSC, review and comment on environmental reports, and speak at PSC public hearings.

The Certificate of Public Convenience and Necessity (CPCN) application includes the project overview, a technical description of the project, project maps, construction sequence, potential impacts on natural and community resources, local government impacts, landowners affected and public outreach, waterway/wetland permitting activities, and DNR information on erosion control and stormwater management plans. Utility-proposed projects may also require an Agricultural Impact Statement from the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP).

A letter notifying the public that the PSC review process has begun is mailed to property owners near the project, government officials, libraries, media, and other interested agencies and individuals. The letter will state the level of environmental review needed and provide contact details. The letter may describe the environmental scoping period where comments are gathered to start the environmental review process.

There are multiple opportunities for public comment on any PSC reviewed energy generation project. See [Participating in Public Comments and Hearings](#) for more information.

There is a scoping comment period of at least 10 days on all new large-scale solar projects while the PSC determines whether an Environmental Assessment is sufficient or an Environmental Impact Statement is required.

If an Environmental Assessment is deemed sufficient for project review, PSC and DNR staff will develop an EA that describes the impacts of the project. Once the PSC makes that initial decision about whether an EIS is needed, there will be a 15-day public comment period and the public can submit comments about the PSC's decision and the project's environmental impacts. PSC staff will review those comments and decide on any changes to the EA or need for a full EIS.

If an EIS is required for project review, a draft EIS will be published with a public comment period of at least 45 days. These comments will be entered into the record for consideration by the PSC commissioners. Public comments can be submitted by mail, online, or in person.

If you give public testimony, be clear about who you are, how you are connected to the case, your perspective and why you feel that way, and suggest a reasonable alternative if possible. See the PSC's page on participating

in the siting process, including [requirements of a public comment](#) and suggestions for [making effective comments](#).¹¹

Figure 3-1 shows the steps the PSC follows to assess a CPCN application and where the public can submit comments.

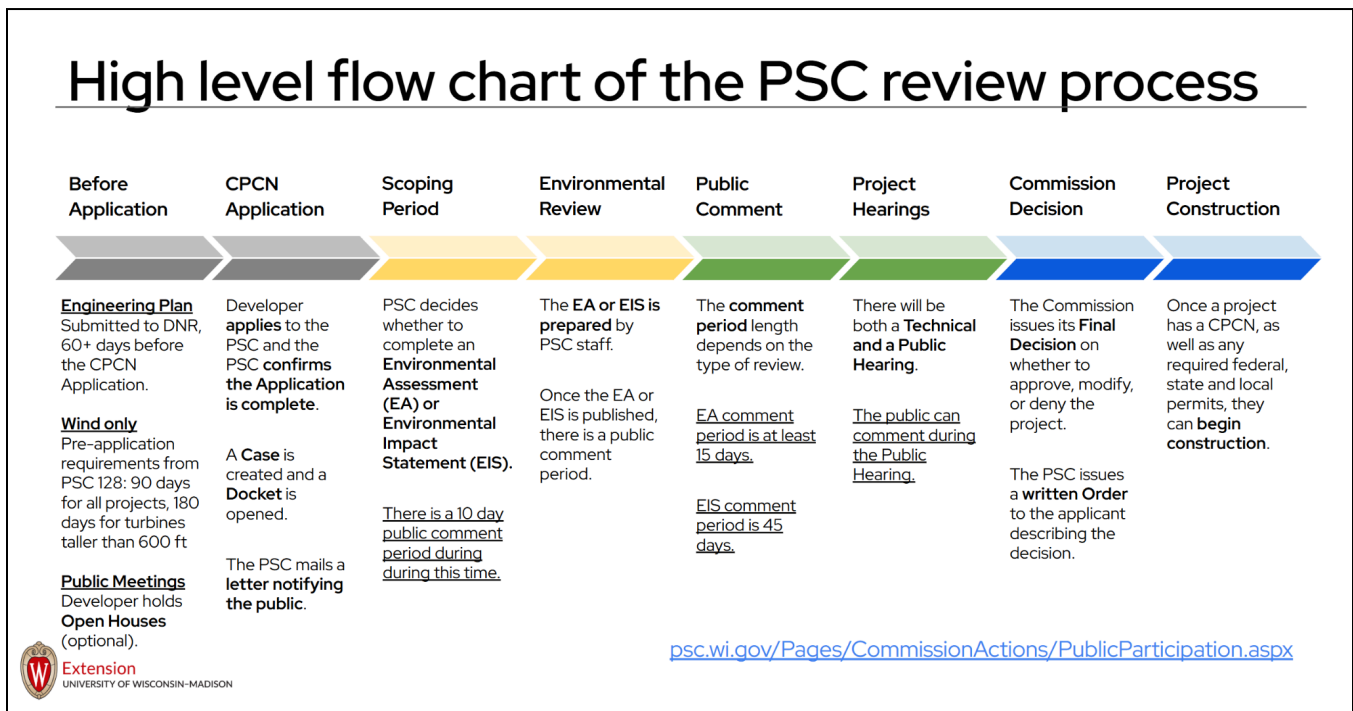


Figure 3-1: The Certificate of Public Convenience and Necessity application and public comment process

What does it mean to be an intervenor in a PSC siting review process?

An intervenor is a formal party to the proceeding, and as such gets to participate in a case by submitting evidence in the form of environmental scoping or review comments, pre-filed testimony and exhibits, or testimony at technical hearings. Being an intervenor is not necessary in order to participate in public hearing and comment periods. If a municipality wants to be part of the technical hearing as well, they can as an intervenor. To intervene in a CPCN process comes with a number of rights and responsibilities. The time and financial commitment required to be an intervenor vary widely depending on the scale of the intervention's goals. More information on the process of becoming an intervenor and the associated responsibilities can be found on the [PSC website](#).

How can comprehensive planning influence siting?

During their siting review, the PSC will consider local environmental and safety concerns and planned residential or commercial development plans that are listed in comprehensive plans. [Wisconsin Statute § 196.491\(3d\)](#):

¹¹ Public Service Commission of Wisconsin, PSC Public Participation, accessed December 5, 2025, <https://psc.wi.gov/Pages/CommissionActions/PublicParticipation.aspx>.

[Certificate of Public Convenience and Necessity](#)¹² states “the proposed facility will not unreasonably interfere with the orderly land use and development plans for the area involved.” However, local zoning designations are not considered grounds to deny a renewable energy application, and pre-existing zoning regulations can be preempted by the Commission. When assessing impacts on land use and environment the PSC has to determine what constitutes “unreasonable and undue” adverse impact. In addition, developers review comprehensive plans and where economically feasible typically design their projects to comply with the plans.

| Laws, Policy and Planning Leverage Points Tools for individuals and local government | Person/ Landowner | Local Government |
|--|----------------------|---------------------|
| Ordinance | | |
| Local jurisdictions can pass an ordinance about renewable energy siting for projects under 100 megawatts that sets out certain requirements for a conditional use permit. Review Solar Regulation Guidance for Wisconsin Counties, Cities, Villages, and Towns , Model Solar Zoning Ordinance , and Chapter PSC 128: Wind Energy Systems to avoid creating legal issues for local governments. | | ? |
| Comprehensive Plan | | |
| Local jurisdictions can update their comprehensive plan to include information about preferred renewable energy siting locations and planned development that will be considered by the PSC. | | ? |
| Participate in the PSC siting review | | |
| Participate in the PSC siting process as a member of the public. | ? | ? |
| Participate in the PSC siting process as an intervenor. See the PSC’s How Construction Projects Are Approved: Power Plant Review Process | ? | ? |

¹² Wisconsin State Legislature, Wisconsin Statute 196.491(3): Certificate of Public Convenience and Necessity, accessed November 1, 2025, <https://docs.legis.wisconsin.gov/statutes/statutes/196/491/3>.

Want to learn more? Check out these resources.

Local Government Role in Siting Projects

- For information about the County Role in Siting Renewable Energy Projects, visit Wisconsin Land+Water's [renewable energy page](#) which has multiple fact sheets about local regulation, and information about Wisconsin's statutes.
- For information about what local jurisdictions can include in ordinances see UW-Madison Extension's [Solar Regulation Guidance for Wisconsin Counties, Cities, Villages, and Towns](#), and the [Model Solar Zoning Ordinance](#).

Electric Utility Resources

- [PSC Interactive Service Area Maps](#) shows service territories for electric utilities and other utilities.
- [Wisconsin Electric Service Territories](#) lists all electric service territories in Wisconsin.

Overview of the Permitting Processes

- [Power Plant Review Process](#) is an overview of the power plant review process, including a timeline.
- [Overview of the PSC and DNR Permitting Process for Large Electric Generating Facilities](#)
- [Application Filing Requirements \(AFRs\) for all Electric Power Plant Construction Projects](#) from the PSC.

Participating in the siting process

- The PSC's page on [Public Participation](#) in the siting process.
- [Learn What to Expect at a PSC Public Hearing](#) includes who will be in attendance and tips for speaking.
- [Requirements for Public Comments](#) describes the requirements for submitting testimony
- [How to Prepare Effective Public Testimony or Public Comment](#) offers specific suggestions.

Wisconsin Department of Natural Resources (DNR) links

- [Wisconsin DNR Best Management Practices \(BMPs\) for Solar Energy Projects](#)
- [Wisconsin DNR Best Management Practices \(BMPs\) For Land-based Wind Energy Projects & Wildlife](#)
- [DNR interactive siting map for wind](#) identifies areas where placement of turbines may have significant adverse effects on bat and migratory bird populations.

Battery Energy Storage System (BESS) Resources

- [Building a Resilient Power Future with Battery Energy Storage Systems](#), Center for Rural Affairs
- [Battery Energy Storage Systems](#), American Planning Association
- [Planning & Zoning for Battery Energy Storage Systems](#), Graham Sustainability Institute, University of Michigan
- [New York State Battery Energy Storage System Guidebook](#), NYSERDA
- [Battery Energy Storage Systems FAQ](#), NYSERDA

Section 4: Economics

This section includes:

- Information about state utility aid payments to the local governments of host communities,
- Economic impacts to local landowners, farmers, governments, and businesses, and
- Resources to learn more.

Community input summary: benefits, concerns, and questions about economics

Benefits

- **Revenue streams:** Generates stable, long-term financial returns for landowners
- **Local economy:** Potential to boost local economies through utility aid revenue and job creation
- **Local investments:** Keeps energy dollars within local communities instead of purchasing coal and gas from outside Wisconsin
- **Agrivoltaics:** Possibilities for sheep grazing and other dual land use on solar sites

Concerns

- **Local costs:** Uncertainty about true costs to communities
- **Financial:** Increased agricultural land values and rental rates create barriers for farmers
- **Property values:** Potential decrease in neighboring property values
- **Long-term contracts:** 30 years is a long time - do payments change? What if the developer goes bankrupt?

Questions

- **Land value:** What are the comparative economics of solar leasing versus crop farming?
- **Fair payments:** Can mechanisms ensure fair compensation for landowners and neighbors?
- **Taxes:** How do solar projects affect local tax structures and community budgets? What is the relationship between utility aid and property taxes?

Taylor County residents had questions about the economic impacts of large-scale renewable energy projects, including how solar and wind projects could impact land values for landowners, farmers, renters, and nearby residents. They also had questions about how these projects impact local government, and the relationship between property taxes and utility aid.

Economic Impacts to Landowners

Economic impacts on landowners from solar developments depend on whether their land is included in the solar project or adjacent to it, and whether the land is residential or agricultural. Taylor County residents noted the strong benefit of a guaranteed annual income for the landowners, but they also were concerned about the potential for landowners to sign contracts that leave them exposed to risk, and about what happens to non-participating property values.

What should a landowner consider before signing a solar land lease for solar or wind?

Before a solar project can be constructed, the developer must secure the land. Large-scale solar and wind projects often lease land from rural landowners and farmers. Before signing a lease, landowners may be able to negotiate for provisions that provide them protection or address concerns. After the lease is signed it is unlikely that the project solar developer or operator will be willing or able to agree to new conditions.

Land leasing for energy projects can provide guaranteed income, but there are important items to consider when negotiating with a project developer. Questions include who is the developer and what is their track record, agreement length, what are payments during the permitting, construction, and operational phases, and many others. Make sure all agreements are documented in the lease, as verbal assurances are not enforceable. The lease should state that all responsibilities and rights will transfer to a new site operator and landowner.

UW-Madison Extension offers a guide for landowners considering leasing their land for solar projects, [Learn about Solar Land Leasing Contracts](#), along with a companion worksheet to help document important information when meeting with developers.¹³ [These documents are not substitutes for hiring legal counsel.](#)

What are average annual payments for solar land leasing?

Solar lease rental payments are typically much higher than income from agricultural use, so landowners who sign a lease usually benefit financially. Solar leases typically last 25-35 years, and sometimes include escalating lease payments for inflation. Most leases include a non-disclosure clause, so exact rates are not public. However, based on conversations Extension specialists have had with landowners, annual rents in Wisconsin range from about \$500 to over \$1,500 per acre, depending on factors such as proximity to substations and transmission lines. In contrast, the average rental rate for agricultural use in Wisconsin was \$158/acre in 2024 and \$183/acre in 2025.¹⁴ Typically developers offer lower rental rates for the period when the project is in the planning and permitting stage, and the higher payments do not start until construction begins or until the project is operational. Rental rates for farmland next to solar projects may also rise as a result of the reduced supply of land available.

What are other economic impacts to landowners?

The potential economic impacts of leasing land for energy development go beyond the annual payments, and include possible challenges to farm operations during the construction phase, impacts to transition planning for the farm, and constraints to future property improvements. Landowners should carefully consider all provisions of these long-term contracts and work with an attorney before signing to ensure their interests are protected.

What happens to agricultural and residential property values?

A 2025 scholarly study found that agricultural land values close to solar fields increased by an average of 19.4% compared to land values further away. The same study found that residential properties located next to

¹³ UW-Madison Extension, "Learn about Solar Land Leasing Contracts," 2025, <https://go.wisc.edu/solarguide>.

¹⁴ UW-Madison Extension, "Wisconsin Agricultural Land Prices 2024," Farm Management, 2025, <https://farms.extension.wisc.edu/articles/wisconsin-agricultural-land-prices/>; Economic Research Service, USDA, "Land Use, Land Value & Tenure - Farmland Value | Economic Research Service," 2025, <https://www.ers.usda.gov/topics/farm-economy/land-use-land-value-tenure/farmland-value>.

large-scale solar projects may have a temporary decline in property value. On average residential property values within a half mile of large-scale solar developments in the U.S. declined by 7.2% for up to eight years after construction of the solar facility. These declines were greatest in the northeastern US and highly variable in the Midwest, with some properties near solar sites increasing in value while others decreased.¹⁵

Non-participating property owners who are immediately adjacent to a solar field may be able to negotiate Good Neighbor Agreements that provide a landowner payment, or that obligate the solar site manager to provide visual screening, noise abatement, or other adjustments to mitigate negative effects on the adjacent property.

Economic Impacts to Farmers

How does solar development affect farmers financially?

Farmers may experience both financial benefits and costs when farmland is developed for solar energy.

- **For landowners who farm:** Rent from solar developers typically far exceeds income from farming and provides stable, predictable payments year after year. This consistent revenue can help farms weather market downturns or management transitions. At the same time, the solar project may require adjustments to the overall farming operation that add some cost, especially during project construction. In the rare cases that the project does not generate utility aid, the property may be reclassified as commercial for tax purposes. See Figure 4-1, “Does the project generate utility aid or property taxes?” for a flow chart on when this situation may occur. Landowners should work with operators to confirm the utility aid status of any projects they’re considering hosting.
 - **For adjacent landowners:** Property values may rise, though agricultural property taxes remain based on use value, not market value.
 - **For tenant farmers:** Those renting land to grow crops or spread manure may lose access and face higher rental or purchase costs for nearby farmland.
 - **Dual use opportunities:** Some farmers can graze sheep or pursue other agricultural activities within solar projects, offering affordable land access. (See “Dual Use and Agrivoltaics” in Section 6: Land Use.)
-

Economic Impacts to Businesses

Few Taylor County comments mentioned impacts on other businesses. Because economic conditions vary by region, there is not good information on how solar development may help or harm the broader business community in Taylor County.

Economic Impacts to Local Government

How are taxes impacted by large-scale energy projects?

For large-scale energy projects in Wisconsin, local governments receive utility aid instead of property taxes. The Wisconsin Department of Revenue distributes payment to each county and municipality that hosts tax-exempt utility property, based on the amount of energy generating capacity within each jurisdiction. For all renewable energy projects larger than 50 MW, as well as any projects larger than 1 MW owned by a public utility, the total payments are \$5,000 per megawatt per year, divided between local hosting governments. Since one megawatt of

¹⁵ Chenyang Hu et al, “Impact of Large-Scale Solar on Property Values in the United States: Diverse Effects and Causal Mechanisms,” Proceedings of the National Academy of Sciences of the United States of America, June 9, 2025, <https://www.pnas.org/doi/10.1073/pnas.2418414122>. Salma Elmallah et al., “Shedding Light on Large-Scale Solar Impacts: An Analysis of Property Values and Proximity to Photovoltaics across Six U.S. States,” Energy Policy 175 (April 2023): 113425, <https://doi.org/10.1016/j.enpol.2023.113425>.

solar takes up approximately seven acres of land, and many projects are 100 MW or larger, one project could be hundreds of acres and span multiple jurisdictions. Payments start the year after the project is operational, and continue for the life of the facility.¹⁶

The funds are not earmarked, and can be used in a variety of ways, including road repairs, fire services, preventing tax increases, and other local improvements. For more information see [Local Property Tax Impacts of Large-Scale Wind and Solar Projects](#).

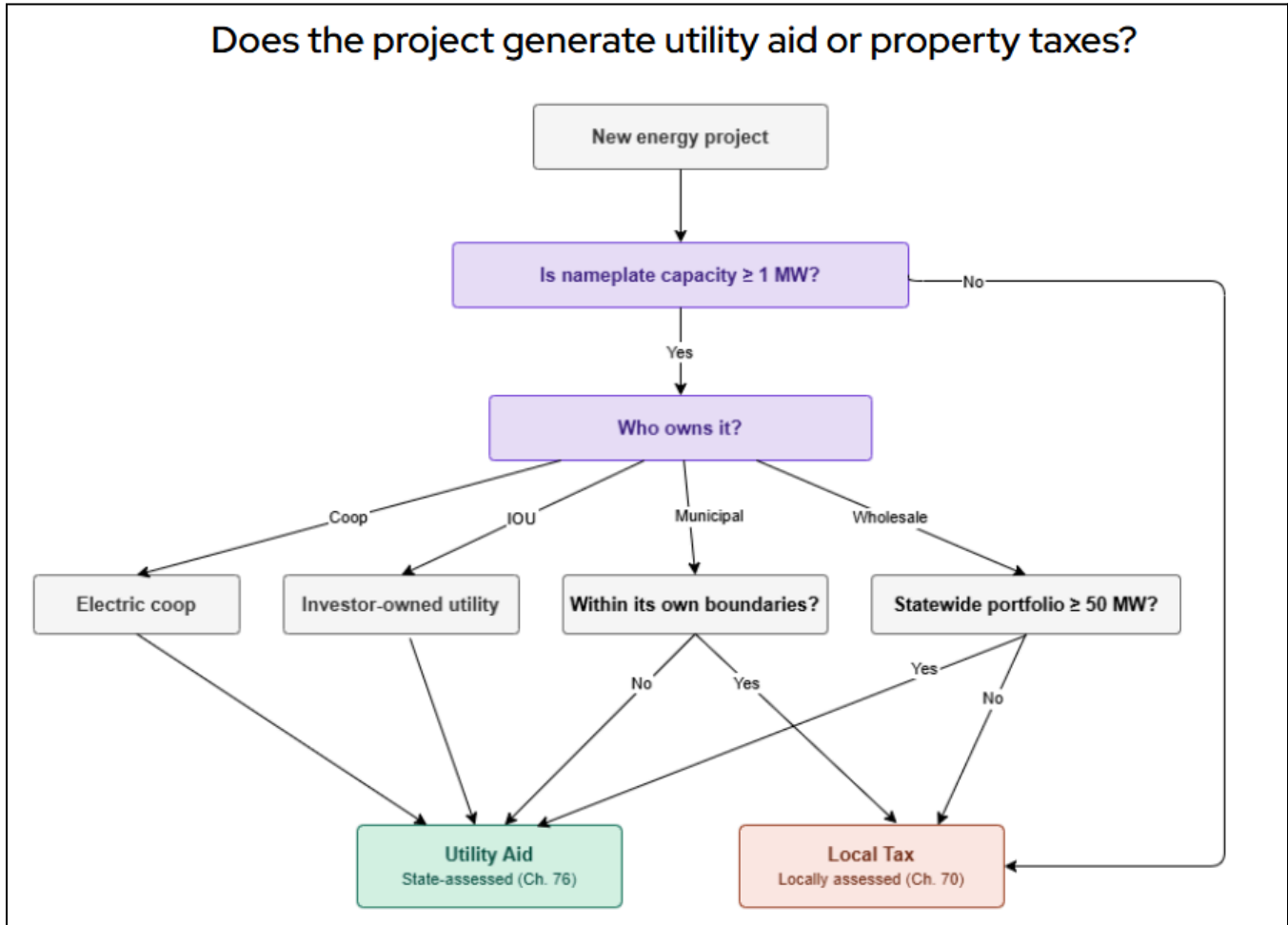


Figure 4-1: Does the project generate utility aid or property taxes?

What are possible costs to local governments?

Dealing with any large-scale development takes time and financial resources. Here is a list of some of the common items local governments might consider when planning for proposed projects:

Staff time and administrative resources

- For permitting processes (especially for projects under 100 MW that require local approval)
- Managing community engagement and addressing resident concerns throughout planning and construction

¹⁶ Graham Sustainability Institute, University of Michigan, Local Property Tax Impacts of Large-Scale Wind and Solar Projects, 2025, <https://graham.umich.edu/project/renewable-energy-tax-impacts>.

Infrastructure impacts

- Repairing or upgrading roads damaged by heavy construction traffic
- Possible wear on bridges or culverts requiring reinforcement or replacement

Legal and negotiation expenses

- Fees for attorneys and professional negotiators for developer agreements
- Drafting and reviewing contracts, easements, and compliance documents

Specialized professional services

- Engineering, environmental, and/or financial consultants to evaluate project impacts and agreements
- Additional planning or zoning expertise for complex siting issues

Fiscal impacts on schools

- Loss of school district revenue from property taxes is usually addressed by the state school aid formula
- Utility aid carveouts could be used to compensate for any remaining shortfall

Other indirect or unforeseen costs

- Emergency services readiness (such as fire or EMS) for new infrastructure
- Potential costs related to decommissioning, oversight, or long-term land use changes

| Economic Leverage Points | Person / Landowner | Local Government |
|--|--------------------|------------------|
| Tools for individuals and local government | | |
| Contract Negotiations | | |
| The county may negotiate a Joint Development Agreement with provisions such as: <ul style="list-style-type: none"> • Prioritizing local contractors for construction, vegetation management, and maintenance, • Financial assurances for decommissioning, • Funding to offset costs related to the renewable energy project, such as road repair, emergency services training, and other costs listed above, and • A commitment to maintain utility aid payments if the state law changes. | | • |
| Landowners can work with a knowledgeable attorney to negotiate a lease that optimizes financial benefits and addresses other concerns. | • | |
| Neighboring property owners may be able to negotiate Good Neighbor Agreements with the developer for visual screening, a payment, or other ways to address impacts. | • | |
| Ordinance | | |
| Jurisdictions with zoning authority can pass an ordinance that addresses common concerns, including reasonable permitting fees, and financial assurances for the construction and decommissioning phases of the project. See the Model Solar Zoning Ordinance for more information. | | • |

Want to learn more? Check out these resources.

- [Learn about Solar Land Leasing Contracts](#), UW-Madison Extension, offers a guide for landowners considering leasing their land, and a companion worksheet to help document important information when meeting with developers.
- [Finding a Wisconsin Farm Lawyer](#), UW-Extension
- [County Role in Siting Renewable Energy Projects](#), Wisconsin Land+Water, has several fact sheets about local authority in large-scale project siting.
- [Wisconsin Policy Brief Local Property Tax Impacts of Large-Scale Wind and Solar Projects](#) was created by the University of Michigan’s Graham Institute and the Center for EmPowering Communities to help communities understand how large-scale wind and solar projects impact local property taxes and budgets.
- [Utility Aid Payments for Wind and Solar Frequently Asked Questions](#), Clean Wisconsin

Section 5: Environment

This section includes:

- Information on life cycle impacts of utility-scale solar and wind projects,
- Information on soil, water, and wildlife impacts of large-scale solar and wind projects, and
- Potential leverage points, and resources to learn more about the environment.

Community input summary: benefits, concerns, and questions about the environment

Benefits

- **Energy:** Replaces fossil fuels and reduces emissions from electricity production
- **Water:** Solar reduces water pollution from fertilizers and pesticides
- **Biodiversity:** Solar supports biodiversity through pollinator-friendly practices
- **Soil:** Solar can decrease soil erosion and runoff over system lifetime
- **Resting the land:** Solar provides opportunities for ecological restoration and habitat creation

Concerns

- **Soil:** Potential soil degradation from erosion, compaction, and removal
- **Wildlife and habitat:** Wildlife disruption or mortality and habitat fragmentation or loss
- **Water:** Contamination during construction and operation, stormwater management
- **End of life:** Impacts of turbine, panel and battery disposal

Questions

- **Wildlife:** How will projects affect local animals and ecosystems?
- **Life cycle:** Is solar power a net positive environmentally, when considering the inputs?
- **Materials:** Where do the rare earth minerals and other materials in the panels come from?
- **Site management:** What regulations ensure soil and water protection during construction and operation?

Taylor County community members identified many ways solar and wind development might bring both benefits and harm to Taylor County's environment. They noted that renewable energy is beneficial because it creates fewer emissions than fossil fuels, and could increase biodiversity depending on the previous type of land use. They also had questions about how large-scale solar and wind installations affect the environment, including water, soils, and wildlife.

Wind and Solar Project Life Cycle Analysis

A life cycle analysis (LCA) evaluates the total environmental impact of an action such as solar or wind electricity generation. This analysis includes impacts from raw material mining, manufacturing, electricity generation, disposal, and recycling. Modern solar panels in the United States have significantly reduced environmental impacts because manufacturing has become more energy-efficient, material use has declined, and recycling

pathways are expanding. Wind performs even better than solar on life cycle analysis.¹⁷ See Section 7, Decommissioning, for more information.

Is solar net-positive or negative for the environment?

Based on a 2024 National Renewable Energy Laboratory report on utility-scale solar projects, the energy payback time (EPBT) of a solar project in Wisconsin would be roughly 0.6 years, and the carbon payback time (CPBT) would be roughly one year. This means that within the first year of operation, a solar panel generates an equal amount of energy as was used to mine materials, manufacture its components, transport it, and install it. After this payback period, all remaining energy generation is effectively net-positive.

When accounting for manufacturing and end of life disposal are included, solar's total greenhouse gas emissions remain lower than nearly every other energy source, including nuclear and hydropower. During their life cycle, utility-scale solar PV systems in the U.S. generate electricity with 95% fewer greenhouse gas emissions compared to coal and roughly 90% fewer emissions than natural gas. Manufacturing energy use has fallen at least 30% due to efficiency improvements, and solar panels produce 25-35 times more energy than they consume over their lifetimes.¹⁸

Soils

How will solar projects affect soil health?

The greatest negative impacts on soil health typically occur during construction. As with any construction project, heavy equipment and soil disturbance risk compacting soils and increasing erosion.¹⁹ There may also be negative effects on soil health at the end of the project life, as decommissioning is expected to require use of heavy equipment and soil disturbance to remove racking systems and other structures. Solar developers should work with construction contractors to keep grading and topsoil movement to a minimum. See the Wisconsin DNR's [Best Management Practices for Solar Energy Projects](#) for additional ways to minimize soil damage during construction.

Vegetation management is critical to restoring and maintaining soil health both during construction and site operation. Once construction is done, perennial vegetation offers multiple soil health benefits compared to annual crops because the plants protect the soil surface all year long and their living roots support soil biology and structure year-round.

Habitat and Wildlife

What happens to existing habitat when a solar project is built?

The impact depends on the state of the land before construction. In previously cultivated areas, like crop fields, habitat can improve if native vegetation is added after construction of the solar facility. Careful siting and site management can help protect local wildlife, and designated areas of critical value for wildlife should be avoided

¹⁷ Science Feedback, Wind Turbines and Solar Panels Are Lower-Emissions than Fossil Fuels Overall, November 28, 2024. <https://science.feedback.org/wind-turbines-solar-panels-lower-emissions-than-fossil-fuels-overall/>.

¹⁸ National Renewable Energy Lab (NREL), An Updated Life Cycle Assessment of Utility-Scale Solar Photovoltaic Systems Installed in the United States. (2024), <https://docs.nrel.gov/docs/fy24osti/87372.pdf>.

¹⁹ Great Plains Institute, Best Practices: Photovoltaic Stormwater Management Research and Testing (PV-SMaRT) (2023), <https://www.nrel.gov/solar/market-research-analysis/pv-smart>.

when possible. The Nature Conservancy’s interactive [Site Renewables Right](#) map shows known critical wildlife areas to help support decisions around site planning.²⁰

Do solar farms disrupt wildlife movement or block animals like deer from passing through?

Large projects should be designed to minimize disruption to wildlife movement by using measures such as permeable fencing and wildlife corridors. Permeable fencing allows small animals to pass under the fence, and corridors are unfenced spaces between areas of panels that allow larger animals to pass through.

How do solar projects impact pollinators and biodiversity?

Wisconsin’s native pollinator populations have been declining, and large-scale solar projects offer an opportunity to restore habitat and promote growth by planting native vegetation.²¹ Establishing perennial native plants under and between solar panels can improve habitat quality for pollinators in the Midwest by up to 300% compared to traditional row cropland. In addition, when pollinator-friendly vegetation is used, crops such as soybeans and cranberries can see higher yields and improved quality up to one mile beyond the solar site due to increased pollinator activity. When native and pollinator-friendly seed mixes are planted below and between solar panels, they also create stable habitats that support other insects, birds and other small wildlife, especially if mowing or grazing is timed to avoid disturbing nesting birds.²²

How can we measure whether a solar site is supporting biodiversity?

Researchers and agencies can use tools such as [pollinator scorecards](#)²³ and pollinator counts to track the quality of the habitat over time. This tracking can help communities quantify the responses of native plants and animals when solar panels are introduced to the land, allowing for necessary adjustments.

How do wind projects affect wildlife?

Wind turbines can affect birds and bats through collision risk, habitat displacement, and disruption of movement corridors. Birds, especially migrating species, raptors, and waterfowl, can collide with turbine blades, as well as with other infrastructure such as towers or transmission lines. The DNR [best management practices for Land-based Wind Energy Projects](#) recommend ways to reduce the above impacts, such as adjusting turbine location and height, rotor-swept area, and lighting; minimizing overhead wiring; and using bird flight diverters when necessary. The DNR identifies important bird areas, migratory concentration sites, and flyway corridors where turbines should be avoided to protect species navigating between roosting, feeding, and nesting habitats.

Bats are one of the most vulnerable species to wind development, both from direct mortality and from habitat disruption. Bats are frequently struck by turbine blades, and rapid air pressure changes associated with rotating blades can also cause fatal internal injuries. The DNR [best management practices for Land-based Wind Energy Projects](#) links to a map of areas to avoid when siting wind projects, and recommends avoiding bat priority areas such as hibernacula and maternity roosts. In addition, the Broad Incidental Take Permit/ Authorization for Wisconsin cave bats calls for “curtailing” turbine blades at low wind speeds during critical times, especially in

²⁰ The Nature Conservancy, “Site Renewables Right: A Clean and Green Energy Future, July 9, 2024, <https://www.nature.org/en-us/what-we-do/our-priorities/tackle-climate-change/climate-change-stories/site-wind-right/>.

²¹ Wisconsin Department of Natural Resources, Saving Wisconsin’s Native Pollinators, accessed January 12, 2026, <https://dnr.wisconsin.gov/topic/endangeredresources/pollinators>

²² Clean Wisconsin, Local Environmental Benefits of Solar Farming in Wisconsin, April 3, 2025, <https://www.cleanwisconsin.org/local-environmental-benefits-of-solar-farming-in-wisconsin/>.

²³ UW-Madison, Wisconsin Solar Pollinator Program, accessed January 5, 2026, <https://pollinators.wisc.edu/solar/about/>.

proximity to hibernacula and priority roosts. Curtailing means rotating the blades so they move more slowly. This practice of curtailing blades at low wind speeds from April to September can reduce bat fatalities by more than a third, but it can also occasionally reduce electricity production.²⁴

Water

Community members had questions about impacts to groundwater quantity and quality. Depending on where they are sited and how they are managed, solar projects have the potential to improve or decrease water quality.

How will solar projects affect water runoff and groundwater recharge?

Construction increases risk of runoff due to soil disturbance and heavy equipment compacting surface soils. Consult the Wisconsin DNR's [Best Management Practices for Solar Energy Projects](#)²⁵ or the Great Plains Institute's [Photovoltaic Stormwater Management Research and Testing \(PV-SMaRT\)](#) project²⁶ for best practices during construction.

Even after construction is completed, the hard surfaces of the solar panels mean that instead of rain falling evenly across the site there are areas of concentrated water hitting the soil surface below the panel edges. This changed precipitation pattern increases the risk of rainfall running off the site. However, if the site has good perennial vegetative cover such as native pollinator species or perennial forages for sheep, then the vegetated areas between the panels are expected to absorb any runoff.²⁷ UW-Madison is currently conducting research on the hydrological impacts of a solar array.

If the land was in row crops that did not use cover crops before the solar development, then replacing those crops with perennial groundcover, especially native deep-rooted species, can reduce the likelihood of runoff and erosion, particularly between October and May.

Solar developers should check the site for the presence of tile and other drainage infrastructure, avoid damage to those structures, and repair them when necessary as outlined in [Chapter PSC 128: Wind Energy Systems: Decommissioning \(PSC 128.19\)](#) and the PSC's [Solar Energy Projects Application Filing Requirements](#).

How will solar projects affect water quality?

The greatest risks to water quality from solar development occur during construction and decommissioning. During those phases there is a risk of erosion due to soil disturbance that can negatively affect surface water resources.

If solar development occurs on land that was previously in row crops, and if the site is planted with diverse perennial vegetation, then solar projects will likely improve water quality once construction is done. These water quality improvements are due to two factors. First, in contrast to when it was producing row crops, the land is no longer at risk for erosion in winter and early spring because it is covered in year-round vegetation. Second,

²⁴ Michael D. Whitby et al., A Decade of Curtailment Studies Demonstrates a Consistent and Effective Strategy to Reduce Bat Fatalities at Wind Turbines in North America, January 2024, <https://docs.nrel.gov/docs/fy24osti/88381.pdf>.

²⁵ Wisconsin Department of Natural Resources, Wisconsin DNR Best Management Practices (BMPs) for Solar Energy Projects, 2025, https://dnr.wisconsin.gov/sites/default/files/topic/Sectors/Solar_BMPs_FINAL_November_2025.pdf

²⁶ Great Plains Institute, Best Practices: Photovoltaic Stormwater Management Research and Testing (PV-SMaRT) (2023), <https://www.nrel.gov/solar/market-research-analysis/pv-smart>.

²⁷ Chesapeake Bay Scientific and Technical Advisory Committee (STAC), Best Management Practices to Minimize Impacts of Solar Farms on Landscape Hydrology and Water Quality, January 2024, https://www.chesapeake.org/stac/wp-content/uploads/2024/01/FINAL_Report_Solar-Development_24_001-2.pdf.

some of the fertilizers and pesticides typically applied to row crops get into the surface and groundwater.²⁸ Once they are established, pollinator plantings and diverse pasture mixes generally do not require additional fertilizer or pesticide applications.

Intact solar panels do not leach chemicals, and they are designed to withstand most severe weather, including moderate hail.²⁹ Even when panels are damaged or cracked, the exposure point concentrations are still “several orders of magnitude below USEPA health screening values for soil, air, and groundwater.”³⁰ Most modern panels also pass federal “leachate” Toxic Characteristic Leaching Procedure (TCLP) tests, meaning they are not classified as hazardous waste at the end of their lifespan.³¹

Air and emissions

Taylor County participants appreciated that solar development could reduce greenhouse gas emissions and other air pollution associated with electricity production from fossil fuels. See the section on Life Cycle Analysis at the beginning of this section for more information.

How will solar development affect climate change and local microclimates?

As discussed in the Life Cycle Analysis section, large-scale solar projects generate 90% lower greenhouse gas emissions than natural gas. Solar panels convert the energy from sunlight into electricity and do not generate waste heat as part of that process, so solar facilities do not have the same heat island effect as urban development. If the sites are vegetated, evapotranspiration (EV) from the vegetation, combined with shading by the panels, may have a slight cooling effect on site during the day. This evaporative cooling will likely be slightly smaller than that associated with corn in July and August. Research at a solar site in Dane County will provide better information on the microclimate impacts of solar facilities in coming years.

Environmental Leverage Points

Tools for individuals and local government

| | Person/ Landowner | Local Government |
|---|----------------------|---------------------|
| Comprehensive Plans | | |
| Recommend that renewable energy development protect biodiversity by: <ul style="list-style-type: none"> • Prioritizing previously cultivated lands rather than natural areas for solar projects, | | • |

²⁸ Joel Stokdyk et al., “Sources and Risk Factors for Nitrate, Pathogens, and Fecal Contamination of Private Wells in Rural Southwestern Wisconsin, USA,” *Water Research* 275 (May 2025): 123202, <https://doi.org/10.1016/j.watres.2025.123202>. R. Shepard, “Nitrogen and Phosphorus Management on Wisconsin Farms: Lessons Learned for Agricultural Water Quality Programs,” *Journal of Soil and Water Conservation* 55, no. 1 (2000): 63–68, <https://doi.org/10.1080/00224561.2000.12457310>.

²⁹ North Carolina State Extension Publications, *Health and Safety Impacts of Solar Photovoltaics* (2026), <https://cms.carolinas-dash.org/wp-content/uploads/2026/02/Health-Safety-Impacts-of-Solar-PV-Carolinas-DASH-March-2026.pdf>.

³⁰ International Energy Agency, *Human Health Risk Assessment Methods for PV Part 2 – Breakage Risks* (IEA PVPS, 2019), <https://iea-pvps.org/key-topics/iea-pvps-t12-15-human-health-risk-assessment-methods-for-pv-part-2/>.

³¹ North Carolina State Extension Publications, *Health and Safety Impacts of Solar Photovoltaics* (2026), <https://cms.carolinas-dash.org/wp-content/uploads/2026/02/Health-Safety-Impacts-of-Solar-PV-Carolinas-DASH-March-2026.pdf>.

| | | |
|---|--|---|
| <ul style="list-style-type: none"> Identifying critical wildlife areas and migration routes and recommending permeable fencing and wildlife corridors to allow wildlife movement at solar projects, and not siting wind turbines in critical areas for bird and bat movement, Planting native perennial vegetation to increase biodiversity and protect soil and water in solar projects, and Following the DNR's Best Management Practices for Solar Energy Projects and Best Management Practices for Land-based Wind Energy Projects & Wildlife. | | |
| <p>Conditional use permits for projects under 100 MW</p> | | |
| <ul style="list-style-type: none"> Require construction best management practices such as avoiding soil disturbance and use of heavy equipment when soils are wet, minimizing grading and other movement of topsoil, and monitoring compaction,³² Require or recommend perennial vegetation ground cover, including deep-rooted native perennial plants which offer the greatest biodiversity and soil health benefits between panel arrays and, if needed, shade-tolerant vegetation under panels where native prairie species are unlikely to thrive, Require fencing that allows wildlife movement, in accordance with the DNR's Best Management Practices for Solar Energy Projects, and Require siting and management of wind turbines in accordance with DNR BMPs. | | <ul style="list-style-type: none"> • |

Want to learn more? Check out these resources.

Best Management Practices

- [Best Management Practices \(BMPs\) for Solar Energy Projects](#), Wisconsin Department of Natural Resources
- [Best Management Practices for Land-based Wind Energy Projects & Wildlife](#), Wisconsin Department of Natural Resources
- [Principles of Low Impact Solar Siting and Design](#) by The Nature Conservancy

Wildlife

- [The Nature Conservancy Site Renewables Right Interactive Mapping Tool](#) provides spatial information on key wildlife and conservation values that can inform siting discussions
- [Energy Siting: Resources for Preliminary Siting Assessment](#), Renewable Energy Wildlife Institute (REWI), discusses wildlife considerations around large-scale siting

Soil

- [Soil Health in Solar Development](#), Center for Rural Affairs
- [Solar Soil Health Guide](#), American Farmland Trust

³² Great Plains Institute, Best Practices: Photovoltaic Stormwater Management Research and Testing (PV-SMaRT) (2023), <https://www.nrel.gov/solar/market-research-analysis/pv-smart>.

Water

- [Photovoltaic Stormwater Management Research and Testing \(PV-SMaRT\)](#), Great Plains Institute

Life Cycle Assessment

- [An Updated Life Cycle Assessment of Utility-Scale Solar Photovoltaic Systems Installed in the United States](#), Natural Renewable Energy Laboratory

Section 6: Land Use

This section includes:

- Land use and visual implications of large-scale solar development,
- Information about the potential for dual use of large-scale solar projects,
- Potential leverage points, and resources to learn more about land use.

Community input summary: benefits, concerns, and questions about land use

Benefits

- **Siting:** Allows productive use of marginal or unused land
- **Agrivoltaics:** Enables dual-use options like sheep grazing and pollinator habitats
- **End of project:** Solar projects can be decommissioned, letting land return to agriculture

Concerns

- **Farmland:** Loss of prime agricultural land and growing capacity
- **Alternative sites:** Why not prioritize rooftops, parking lots, brownfields, or wetlands instead of prime farmland?
- **Visual impacts:** Changes the rural character of the area

Questions

- **Farming impacts:** How can solar be integrated without harming agricultural productivity?
- **Siting:** Can land be returned to production after the end of the contract?
- **Agrivoltaics:** Can solar installations coexist with grazing and crop production?

Taylor County contains significant agricultural acreage and relatively low-density development. As seen statewide, most utility-scale solar projects occur in counties with characteristics that include flat land, access to transmission, and utility infrastructure. Participants had many comments about the potential land use impacts of large-scale solar. The top concern was that solar development would take good farmland out of production. There were also several questions about alternative locations for utility-scale solar, and about the potential for grazing or other agricultural uses on solar projects.

Farmland Loss

Why are large-scale solar projects usually built on agricultural land?

Large-scale solar projects are most efficient and profitable on large parcels of flat land with deep soils and no trees or buildings, which means they often are sited on farmland. Applications for projects larger than 100 megawatts are required to submit plans to minimize the impact on the long-term agricultural potential of the site, including practices to minimize damage to soils and tile drainage, and plans to restore the site.³³

Will solar development affect our food supply?

³³ Public Service Commission of Wisconsin and the Wisconsin Department of Natural Resources, Solar Energy Projects Application Filing Requirements, 2022, <https://psc.wi.gov/SiteAssets/2022SolarPowerAFR.pdf>.

The Center for Land Use Education – UW Stevens Point estimated that for Wisconsin to meet its goal of net zero carbon emissions for electricity production will take between 240,000 and 340,000 acres of land for solar generation, which is roughly 3% of the land currently in field crops.³⁴ In comparison, Wisconsin currently grows more than 1 million acres of corn for ethanol.³⁵

Why not put solar on buildings, parking lots, or brownfields?

Utility-scale renewable energy projects are mostly built on farmland because it offers large parcels that are easy to connect, affordable, and ready to build.

Solar projects on buildings, parking lots, and brownfields are all viable and important for energy independence and grid resilience. However they are not able to replace utility-scale energy generation facilities because of the acreage required to generate the energy needed. Some limitations to the alternative sites are outlined below.

Buildings

Rooftop solar is an important component of sustainable electricity production, and can provide cost savings as well as environmental benefits. However, in most cases rooftop solar produces just enough electricity to meet the building's own needs, not large amounts for the wider grid. Commercial rooftop solar is usually tied to a customer's utility meter and managed through net-metering programs. Net metering policies vary by utility, and you can learn more about net metering in Wisconsin on the Public Service Commission of Wisconsin's website.³⁶

Parking lots

Solar panels in parking lots are called solar car parks, and they create dual use opportunities for parking lots. There are benefits to the shade from sun or shielding from snow provided by the panels, as well as an opportunity to locate generation closer to demand and EV charging infrastructure. However, they are significantly more expensive than both rooftop and ground-mounted systems because they require extensive steel structures to elevate and support panels, concrete foundations, additional safety features for vehicle traffic, and considerations for snow loads, plowing, and maintenance. These added costs make carports one of the most expensive forms of solar per kilowatt installed.

Brownfields and degraded lands

Solar on degraded lands such as closed landfills, mines, or brownfields can provide an opportunity to generate power and economic benefit from a site that is not suited for other types of land use. New York and other states have successfully developed 1-5 MW projects on degraded land, but very few exceed this size, in part because most brownfields do not occupy much acreage. In addition, these sites often require special engineering, such as ballasted racking or protective soil caps, which increases costs. Developers may also face additional permitting and environmental regulations, and these projects often need incentives or financial support to be economically viable.³⁷

While these sites are valuable for community-scale solar projects, they cannot replace the land area required for utility-scale generation.

³⁴ Center for Land Use Education, UW-Stevens Point, Utility-Scale Solar Suitability Modeling, 2022, <https://storymaps.arcgis.com/stories/532f59d04047449d920c068f99bb9d2b>.

³⁵ Clean Wisconsin, Corn Ethanol vs. Solar Land Use Comparison, March 2023, <https://www.cleanwisconsin.org/corn-ethanol-vs-solar-land-use-comparison/>.

³⁶ Public Service Commission of Wisconsin, PSC Customer-Owned Electrical Generation: Net Metering, accessed January 6, 2026, <https://psc.wi.gov/Pages/ForConsumers/MoreResources/CustomerOwnedGeneration.aspx>.

³⁷ Center for the New Energy Economy, Brownfields to Brightfields: State Policy Models to Facilitate the Reuse of Degraded Lands for Renewable Energy, October 2024, <https://hdl.handle.net/10217/240102>.

Wetlands

So much wetland has already been converted to agricultural and other uses that wetland is generally considered a protected habitat type,³⁸ and additional DNR permits are required for building in wetlands or waterways.³⁹ Wetlands are generally not preferred for solar projects because the soil disturbance from installing the project in a wetland setting is likely to be particularly damaging to soil and water quality. In addition, construction and vegetation management are likely to be more expensive in a wetland setting.

Visual Landscape

Across the state Wisconsin residents value their agricultural landscape and do not want large-scale solar development to harm the area's scenic beauty or associated tourism revenue.

How can visual impacts be minimized?

There are ways to reduce changes to the viewshed. Developers can plant trees and shrubs around solar projects to reduce visibility of the project from neighboring properties. Evergreen trees can block views of the panels even in winter, and a mix of native evergreen and flowering trees and shrubs can provide habitat for wildlife as well as screening the solar facility. Other practices that can improve the aesthetics of solar facilities include planting the site with native flowering plants, sheep grazing, placing unattractive equipment such as inverters in the center of the site, and minimizing areas of bare soil such as roads and staging areas.

Dual Use Solar: Agrivoltaics and Pollinator Plantings

Taylor County community members were interested in using solar project land for agricultural or environmental production opportunities, and there were several questions about the options.

Large-scale solar projects have the possibility of supporting additional beneficial uses during the life of the solar installation. These other uses are usually either certain agricultural uses or establishment of diverse native species that support beneficial insects such as native bees and butterflies, as well as other small animals. In general, this strategy is called dual use, and when the second land use is agricultural it is also called "agrivoltaics" - a combination of agriculture and solar photovoltaics.

What types of agrivoltaics work in Wisconsin?

There are agrivoltaics projects that integrate solar power generation with a wide range of crops, from vegetables to grains to livestock.⁴⁰ For utility-scale projects it is not currently financially feasible to raise the panels high enough so cattle cannot reach them, or to space them far enough apart to safely allow large farm machinery access. The type of agrivoltaics that has seen the most success to date is sheep grazing.⁴¹

Sheep grazing, also known as solar grazing, has the following advantages:

- Sheep are small enough that they do not damage the panels, and can easily graze under them,

³⁸ Minnesota Board of Water and Soil Resources, Guidance on Reviewing Solar Panel Projects for Wetland Conservation Act (WCA) Compliance, 2021, <https://www.wsbeng.com/wp-content/uploads/2021/07/Solar-Project-guidance-doc-5-14-21.pdf>

³⁹ Office of Energy Projects | Wisconsin DNR, accessed April 16, 2026, <https://dnr.wisconsin.gov/topic/Sectors/Energy.html>.

⁴⁰ National Renewable Energy Lab (NREL), The 5 Cs of Agrivoltaic Success Factors in the United States: Lessons From the InSPIRE Research Study, August 2022,

www.agrisolarclearinghouse.org/the-5-cs-of-agrivoltaic-success-factors-in-the-united-states-lessons-from-the-inspire-research-study.

⁴¹ Institute for Energy Economics and Financial Analysis, Agrivoltaics: An Economic Option for Farmers and Rural Development, November 2025, <https://ieefa.org/resources/agrivoltaics-economic-option-farmers-and-rural-development>.

- The vegetation they graze protects the soil year-round, unlike annual crops such as vegetables or grains,
- The grazing keeps the vegetation low so it does not shade the panels or interfere with airflow,
- As a result, the farmer can get paid by the solar operator for managing the vegetation,
- The panels can provide shade for the sheep in hot weather, and
- Solar sites have good perimeter fences that will keep the sheep in and may help keep out predators.⁴²

In 2024 the US imported 73% of the lamb consumed, so there is potential for increased domestic production.⁴³

What about agrivoltaics with cattle?

At present, allowing cattle to graze in utility-scale solar systems is not economically feasible because of the concern that the animals will damage the panels. Raising the panels high enough that cattle cannot reach them is currently too expensive. However, research on cattlevoltaics is ongoing.

Production of alfalfa and other forages on agrivoltaic sites is likely to be both economically and technically feasible, and would integrate well with the existing dairy sector in Wisconsin. Like sheep grazing, this practice will require planning and accommodation on the part of both solar site operators and farmers, such as the use of small equipment.⁴⁴

Pollinator plantings?

Many solar project operators plant a diverse mix of native grasses and flowering plants to hold the soil in place and provide environmental benefits. While the seed is more expensive and is likely to require more management than turf grass for the first year, the additional costs are not prohibitive, and the ecological benefits are significant.⁴⁵

While these plantings are not an agricultural crop, the pollinators and other beneficial insects supported by diverse native vegetation can benefit nearby agricultural crops.⁴⁶

Land Use Leverage Points

Tools for individuals and local government

| | Person / Landowner | Local Government |
|--|-----------------------|---------------------|
| Alternative Locations | | |
| Identify areas in the comprehensive plan, such as closed landfills and mines, that the community would like to prioritize for renewable energy generation. | | . |

⁴² UW-Madison Extension, Solar Grazing Checklist, 2026, <https://go.wisc.edu/solargrazing>.

⁴³ American Sheep Industry Association, Overview of Lamb and Mutton Imports, March 2025, <https://www.sheepusa.org/wp-content/uploads/2025/03/ASI-Trade-One-Page-on-Lamb-and-Mutton-Imports-final.pdf>.

⁴⁴ Ohio State University Extension, Farm Energy Management | Energize Ohio, accessed December 1, 2025, <https://energizeohio.osu.edu/farm-energy-management>.

⁴⁵ Wisconsin Department of Natural Resources, Wisconsin DNR Best Management Practices (BMPs) for Solar Energy Projects, Office of Energy Projects, 2025, <https://dnr.wisconsin.gov/topic/Sectors/Energy.html>.

⁴⁶ Environmental Science & Technology, Examining the Potential for Agricultural Benefits from Pollinator Habitat at Solar Facilities in the United States, 2018, <https://pubs.acs.org/doi/10.1021/acs.est.8b00020>.

| Agrivoltaics (dual use) | | |
|--|---|---|
| Include provisions in the lease allowing agrivoltaics and/or requiring maintenance of key agricultural infrastructure such as wells. | • | |
| Include language in your comprehensive plan encouraging dual use of solar sites or following DNR best management practices for vegetation on solar sites. | | • |
| Include a provision allowing dual use in Joint Development Agreements (JDAs). | | • |
| Require following DNR best management practices for vegetation in an ordinance or as part of conditional use permits for projects under 100MW. See the Wisconsin Department of Natural Resources Best Management Practices (BMPs) for Solar Energy Projects , pages 6-7. | | • |
| Require consideration of agrivoltaics in an ordinance as part of conditional use permits for projects under 100MW. See the Model Solar Zoning Ordinance for possible language. | | • |
| Visual Impacts | | |
| Negotiate practices with developers to minimize visual impacts as part of contracts, including JDAs, Good Neighbor Agreements, and individual landowner leases. | • | • |
| The comprehensive plan can recommend screening and siting practices to reduce visual impacts from energy facilities. | | • |

Want to learn more? Check out these resources.

Agrivoltaics (dual use)

- [Solar Grazing Checklist for Farmers and Solar Site Managers](#), UW-Madison Extension
- [Solar Grazing Best Management Practices](#), American Solar Grazing Association
- [Agrivoltaics](#), Center for Rural Affairs
- [Agrivoltaics: An economic option for farmers and rural development](#), Institute for Energy Economics and Financial Analysis
- [Pollinator Habitat Aligned with Solar Energy \(PHASE\) Toolkits and implementation manuals](#)
- [Honey Bee Health Coalition Guidelines for Developing Pollinator-Friendly Utility-Scale Solar Projects](#)

Alternative sites

- [Community Planning for Solar: Conducting a Solar Resource and Infrastructure Assessment](#), pages 38-42, UMass Amherst Clean Energy Extension
- [Developing Solutions for Brownfield Renewable Energy in Michigan](#), University of Michigan

- [Brownfields to Brightfields: State Policy Models to Facilitate the Reuse of Degraded Lands for Renewable Energy](#), Colorado State University Center for the New Energy Economy

Section 7: Decommissioning

This section includes:

- Information about the physical and financial aspects of solar and wind project decommissioning, and
- Decommissioning leverage points, and resources to learn more about best practices.

Community input summary: benefits, concerns, and questions about decommissioning

Benefits

- **Farmable:** Land can be returned to agricultural use after project life

Concerns

- **Soil impacts:** Potential contamination, loss, or compaction during equipment removal
- **Equipment disposal:** Limited recycling infrastructure for panels and system components
- **Regulations:** Insufficient planning for end of life processes
- **Costs:** Financial risks if companies dissolve or go bankrupt

Questions

- **Recycling:** Can all materials be effectively recycled?
- **Land restoration:** What practices ensure the land can be farmed again?
- **Costs:** Who pays for equipment removal and site cleanup?

TaylorCounty residents had many questions about what happens to large-scale solar projects at the end of the project's life. They wanted to know who is responsible for removing equipment, what happens to the solar panels, wind turbines, and system components, who will pay for it, and what happens if the operator goes bankrupt. Here are some answers to the physical and financial questions around energy project decommissioning.

What happens at the end of a large-scale solar project's life?

Most land-leasing agreements for large-scale solar projects run 25–35 years, often with an optional 10-year extension. When the contract ends, two outcomes are possible, repowering or decommissioning. Repowering means replacing solar panels while reusing existing infrastructure such as racking and cabling. Decommissioning involves removing equipment and restoring the site for agriculture or other uses. Estimated decommissioning costs range from \$21,700 to \$56,300 per megawatt, though costs may change over time depending on labor, recycling availability, and inflation.⁴⁷

Can solar panels and equipment be recycled?

Because most solar facilities are still within their operating life, large-scale decommissioning is only beginning to occur in the United States. Waste generated from solar panels is expected to account for 3% of total solid waste

⁴⁷ Center For Rural Affairs, Decommissioning Solar Energy Systems Resource Guide, June 2022, <https://www.cfra.org/decommissioning-solar-energy-systems>.

in the U.S. by 2050.⁴⁸ However, many components can be reused or recycled. While recycling has historically been more expensive than landfilling, costs are declining. Parts like aluminum frames, wiring, and clean glass can be easily recycled. Specialized recycling facilities are required for silver, copper, or silicon wafers. Potentially hazardous components include lead, cadmium, or other metals.⁴⁹ Most modern panels pass federal tests and are not classified as hazardous waste at the end of their lifespan.⁵⁰

The Department of Natural Resources has a guidance document [Managing Used Solar Panels and Components](#).⁵¹ The US Environmental Protection Agency has information about [Solar Panel Recycling](#),⁵² and the Solar Energy Industries Association has an informational hub [SolarRecycle.org](#)⁵³ with information on topics like expanding recycling, material recovery, and manufacturer take-back options.

Who is responsible for decommissioning?

Although Wisconsin law does not explicitly name responsible parties for solar projects, responsibility generally falls to the developer or site operator. Wind energy rules in [PSC 128.19: Decommissioning](#)⁵⁴ require wind developers to remove infrastructure and restore land for farming. While written for wind systems, these standards are often used as a reference for solar projects as well. No comparable statewide regulations for solar have been developed by the PSC.

Are there financial protections if the project owner goes bankrupt?

For wind energy systems, [PSC 128.19\(3\)\(b\)](#) allows local governments to require bonds, escrow accounts, or letters of credit to ensure decommissioning funds are available. Communities often apply the same approach to solar projects. From PSC 128.19(3)(b), “A political subdivision may require an owner of a wind energy system with a nameplate capacity of one megawatt or larger to provide financial assurance of the owner’s ability to pay for the actual and necessary cost to decommission the wind energy system before commencing major civil construction activities such as blasting or foundation construction at the wind energy system site. An owner may comply with this paragraph by choosing to provide a bond, deposit, escrow account, irrevocable letter of credit, or some combination of these financial assurances, that will ensure the availability of funds necessary for decommissioning throughout the expected life of the wind energy system and through to completion of the decommissioning activities.”

For projects under 100 MW, local governments can require a plan for decommissioning and financial assurance for utility-scale renewable projects through ordinances or permitting as part of a conditional use permit (CUP).

⁴⁸ NC State Extension Publications, Health and Safety Impacts of Solar Photovoltaics (2026), <https://cms.carolinas-dash.org/wp-content/uploads/2026/02/Health-Safety-Impacts-of-Solar-PV-Carolinas-DASH-March-2026.pdf>.

⁴⁹ Center For Rural Affairs, Decommissioning Solar Energy Systems Resource Guide, June 2022, <https://www.cfra.org/decommissioning-solar-energy-systems>.

⁵⁰ North Carolina State Extension Publications, Health and Safety Impacts of Solar Photovoltaics (2026), <https://cms.carolinas-dash.org/wp-content/uploads/2026/02/Health-Safety-Impacts-of-Solar-PV-Carolinas-DASH-March-2026.pdf>.

⁵¹ Wisconsin Department of Natural Resources, Managing Used Solar Panels and Components: Guidance for Solar Panel Collection, Storage, Transportation, Recycling and Disposal (WA-2038), 2024, <https://dnr.wisconsin.gov/topic/Waste/HWRResources.html>.

⁵² US EPA, Solar Panel Recycling, Guidance (OMB), August 23, 2021, <https://www.epa.gov/hw/solar-panel-recycling>.

⁵³ Solar Energy Industries Association (SEIA), Circular Economy, SEIA, accessed January 6, 2026, <https://seia.org/initiatives/circular-economy/>.

⁵⁴ Wisconsin State Legislature, Wisconsin Statute 196.378(4g)(b): Wind Energy Systems, accessed November 1, 2025, [https://docs.legis.wisconsin.gov/document/statutes/196.378\(4g\)\(b\)](https://docs.legis.wisconsin.gov/document/statutes/196.378(4g)(b)).

A complete decommissioning plan typically includes:

- How equipment will be dismantled and removed,
- How materials will be reused, recycled, or disposed,
- How land will be restored,
- Estimated decommissioning costs,
- If financial assurance is provided, and how, and
- Transfer of decommissioning obligations to any new project owner.

Types of financial assurance:

- Letter of credit,
- Performance bond,
- Escrow account, or
- Other approved mechanisms.

It is important to specify that the decommissioning plan and responsibility must be transferred to any new owner of the project. The only exception is that public utilities regulated by the PSC are not required to provide separate financial assurance.

For solar projects 100 MW or larger, developers must meet the PSC’s [Solar Energy Projects Application Filing Requirements](#),⁵⁵ which include:

- Demonstrating how land will be restored to agricultural use,
- Describing equipment removal and material disposal, and
- Providing decommissioning cost estimates.

Local jurisdictions may also negotiate Joint Developer Agreements, which can include financial assurance provisions.

Landowners

Landowners who lease their land for solar projects of any size may include decommissioning and land restoration requirements directly in their lease agreements. This can include specified restoration standards, required financial protections, and transferrable obligations if the project is sold.

| Decommissioning Leverage Points | Person / Landowner | Local Government |
|---|-----------------------|---------------------|
| Tools for individuals and local government | | |
| Under 100 MW | | |
| Require a plan for decommissioning and appropriate financial assurance from developers to cover project decommissioning costs as part of conditional use permits. Note: Financial assurance can be in the form of bonds, letters of credit, or escrow accounts (Chapter PSC 128.19(3)(b): Wind Energy Systems) | | • |

⁵⁵ Public Service Commission of Wisconsin and the Wisconsin Department of Natural Resources, Solar Energy Projects Application Filing Requirements, 2022, <https://psc.wi.gov/SiteAssets/2022SolarPowerAFR.pdf>.

| | | |
|--|--|---|
| Communities may require developers to follow Wisconsin DNR guidance on recycling and disposal standards for solar equipment as part of conditional use permits for large-scale renewable energy projects under 100 MW. | | • |
| 100 MW and Larger | | |
| Local jurisdictions may negotiate Joint Developer Agreements with developers that include financial assurance provisions for decommissioning. | | • |
| Any Project | | |
| <p>Negotiate land lease provisions to:</p> <ul style="list-style-type: none"> • Require restoration of soils and drainage tile • Guarantee decommissioning • Set timelines by which decommissioning funds must be secured • Specify financial protections if the project is sold or the developer goes bankrupt <p>Note: Learn about Solar Land Leasing Contracts for additional guidance.</p> | | • |

Want to learn more? Check out these resources.

- [Managing Used Solar Panels and Components: Guidance on testing, hazardous waste rules, collection, transport, storage, and disposal](#), Wisconsin Department of Natural Resources
- [Chapter PSC 128: Wind Energy Systems: Decommissioning \(PSC 128.19\)](#), Wisconsin State Legislature
- [Decommissioning Solar Energy Systems Resource Guide](#) from the Center for Rural Affairs
- [Decommissioning Wind Energy Systems Resource Guide](#) from the Center for Rural Affairs
- [Recycling Wind Energy Systems in the United States Part 1: Providing a Baseline for America’s Wind Energy Recycling Infrastructure for Wind Turbines and Systems](#), U.S. Department of Energy
- [Wind Energy End-of-Service Guide](#), U.S. Department of Energy
- [Fact Sheet: Decommissioning Wind and Solar Energy Systems](#) from the Center for Rural Affairs
- [Town of Lyndon Decommissioning Plan](#) includes decommissioning steps and financial assurances
- [Solar Energy Technologies Office Photovoltaics End-of-Life Action Plan](#). U.S. Department of Energy, Office of Energy Efficiency & Renewable Technology, March 2022.
- The US Environmental Protection Agency has information about [Solar Panel Recycling](#)
- National Renewable Energy Laboratory Research Papers
 - [Best Practices at the End of the Photovoltaic System Performance Period](#)
 - [Solar Photovoltaic Module Recycling: A survey of U.S. Policies and Initiatives](#)
 - [A Circular Economy for Solar Photovoltaic System Materials](#)

Section 8: Health & Safety

This section includes:

- Health and safety information about large-scale solar projects and battery energy storage systems (BESS),
- Federal regulations around fires and toxins, and
- Potential leverage points, and resources to learn more about health and safety.

Community input summary: benefits, concerns, and questions about health and safety

Benefits

- **Air:** Reduced emissions from fossil fuel generation
- **Safer than alternatives:** When compared with coal or nuclear plants

Concerns

- **Fire:** Risks from battery storage systems
- **Stray voltage:** Possible electrical hazards from large-scale systems
- **Toxins:** Equipment damage and contamination concerns from panels or batteries
- **Local capacity:** Emergency response challenges for local emergency service departments

Questions

- **Safety measures:** What mitigates fire and electrical risks?
- **Responses:** How will emergency services be equipped to handle solar-related incidents?
- **Responsibility:** Who covers costs for weather-related damage or other accidents?
- **Human health:** Do solar projects pose any noise or health concerns for nearby residents?

Taylor County residents were concerned about possible fires, toxic contamination, weather damage, and other health and safety issues related to large-scale solar projects. This section summarizes the fire and toxin risks associated with renewable energy systems and the standards used to mitigate them in Wisconsin.

Fires

Fire safety is a main concern for many communities when it comes to solar panels and battery energy storage systems. This section outlines the major risks, the standards that guide system design, and how local responders prepare for potential incidents.

What are the fire risks and regulations with photovoltaic (PV) solar panels?

Solar panel fires are rare. Most fire concerns stem from electrical components like wiring, connectors, and inverters, rather than the panels themselves. Codes and regulations can help manage these risks through design and installation standards.

Wisconsin follows NFPA 70, also known as the [National Electrical Code \(NEC\)](#).⁵⁶ The NEC protects people and property from electrical hazards through proper inspection and installation. Sections 690 and 691 outline the requirements for the safe design and installation of PV systems.

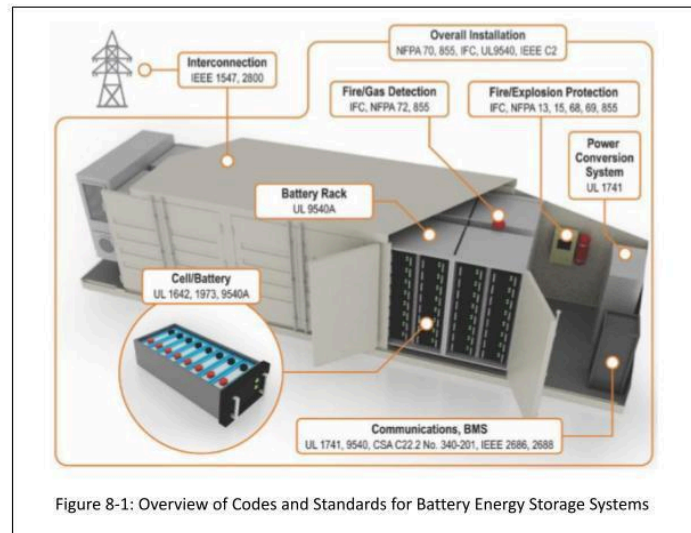
How can local emergency responders prepare for solar (PV) related fires?

Firefighters can prepare by completing solar-specific trainings like [Solar PV Safety](#) from the International Association of Fire Fighters,⁵⁷ which uses online simulations to teach crews how to handle PV-related incidents. Local governments can also negotiate with developers during the permitting process for additional emergency services training and equipment.

What are the fire risks and regulations with battery energy storage systems (BESS) ?

While the PSC regulations refers to Energy Storage Systems (ESS) more broadly, this section focuses specifically on Battery Storage Systems (BESS). While the risk is low, battery energy storage systems (BESS) pose a higher risk than solar panels. This is why BESS are subject to stricter standards for design and maintenance. The primary concern is thermal runaway, which occurs when a battery cell generates uncontrollable heat. Modern codes require specific gaps between battery units to prevent a fire in one cell from spreading to others.

The [Energy Storage in Local Zoning Ordinances report](#) includes an overview of codes and standards that apply to BESS projects, as well as a survey of local zoning ordinances (Figure 8-1).⁵⁸



The current Wisconsin legislation follows the [2021 International Fire Code \(IFC\)](#), which includes references to [NFPA 855](#),⁵⁹ the standard for installation and fire suppression in energy storage. As part of the permitting and approval process, developers are usually responsible for showing how their projects will adhere to these standards. Because battery energy storage is a relatively new practice, local jurisdictions may choose to adopt the 2026 update of NFPA 855, which is more comprehensive than earlier versions. The PSC is [finalizing application filing requirements](#) for energy storage systems, including battery storage systems over specified cost thresholds.

How can local emergency responders prepare for BESS-related fires?

Wisconsin does not currently mandate BESS-specific training statewide. However, NFPA 855 recommends that local departments:

⁵⁶ National Fire Protection Association, NFPA 70, National Electrical Code (NEC) (2026), 2026, <https://www.nfpa.org/product/nfpa-70-national-electrical-code-nec/p0070code>.

⁵⁷ Solar PV Safety Training, April 6, 2020, <https://www.iaff.org/solar-pv-safety/>.

⁵⁸ Pacific Northwest National Laboratory, Energy Storage in Local Zoning Ordinances, Pacific Northwest National Laboratory, November 2023, <https://www.pnnl.gov/publications/energy-storage-local-zoning-ordinances>.

⁵⁹ National Fire Protection Association, NFPA 855: Standard for the Installation of Stationary Energy Storage Systems, 2026, <https://www.nfpa.org/codes-and-standards/nfpa-855-standard-development/855>.

- Coordinate emergency operation plans with developers,
- Conduct pre-incident planning to understand shutdown procedures, and
- Develop strategies to mitigate harm to personnel and prevent total system loss.
- Fire strategies should be focused on containment rather than suppression

Toxins

This section addresses common community concerns regarding potential toxins in solar panels, and the contamination risks for soil, water, and human health.

What toxic materials are in solar panels, and are they a health risk?

Solar panels do not pose meaningful toxicity risks to human health. The lead in crystalline silicon modules (the majority of solar panels in production) is less than 0.1%, and the cadmium and tellurium in Cadmium telluride modules is also less than 0.1%.⁶⁰

In addition to being small amounts, solar panels have an annual breakage rate of ~0.04%. When panels are damaged or cracked, the exposure point concentrations are still “several orders of magnitude below USEPA health screening values for soil, air, and groundwater.”⁶¹ Most modern panels also pass federal “leachate” Toxic Characteristic Leaching Procedure (TCLP) tests, meaning they are not classified as hazardous waste at the end of their lifespan.⁶² Studies have also shown that typical solar panels also do not pose a PFAS risk.⁶³

What toxins are in batteries, and are they a health risk?

Lithium-ion batteries can release a wide range of hazardous materials into the air if a fire occurs, similar to other residential or commercial fires. Strict adherence to fire safety codes like UL 9540 (the testing standard for BESS) is the best way to prevent these chemical releases. For more information about BESS fires, see NYSERDA’s [Battery Energy Storage Systems FAQ](#).⁶⁴

Stray Voltage

Is stray voltage a concern, and how is it prevented?

Stray voltage is a low-level electrical discharge from grounded metal objects. The Public Service Commission of Wisconsin (PSC) has a [stray voltage testing protocol](#), and they require developers of projects 100 MW or larger to “discuss any plans to conduct stray voltage testing pre- and post-construction” in their [Solar Energy Projects Application Filing Requirements](#). While stray voltage can affect livestock, solar projects do not create stray voltage when correctly constructed. NEC 690 is the wiring and grounding standard that is designed to eliminate this risk.

⁶⁰ National Renewable Energy Laboratory (NREL), Unfounded Concerns about Photovoltaic Module Toxicity and Waste Are Slowing Decarbonization, *Nature Physics* 19, no. 10 (2023): 1376–78, <https://doi.org/10.1038/s41567-023-02230-0>.

⁶¹ International Energy Agency, Human Health Risk Assessment Methods for PV Part 2 – Breakage Risks (IEA PVPS, 2019), <https://iea-pvps.org/key-topics/iea-pvps-t12-15-human-health-risk-assessment-methods-for-pv-part-2/>.

⁶² North Carolina State Extension Publications, Health and Safety Impacts of Solar Photovoltaics (2026), <https://cms.carolinas-dash.org/wp-content/uploads/2026/02/Health-Safety-Impacts-of-Solar-PV-Carolinas-DASH-March-2026.pdf>.

⁶³ Preeti Nain and Annick Ancil, “Do Solar Panels Contain PFAS?,” *MRS Energy & Sustainability*, April 2026, <https://link.springer.com/article/10.1557/s43581-026-00156-7>.

⁶⁴ NYSERDA, Battery Energy Storage System-FAQ, 2025, <https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Programs/Clean-Energy-Siting/Battery-Energy-Storage-System-FAQ.pdf>.

Extreme Weather Events

Taylor County community members had questions about what type of weather damage can happen to solar projects, and who covers the costs.

Does extreme weather damage solar panels, and who pays for repairs?

Solar panels are built and tested to withstand major weather events including storms, hail, and snow. Hail damage is the largest extreme weather risk and cost to plant operators, and a combination of thinner panel designs and more extreme weather events are increasing the annual damage rates.⁶⁵

The equipment owner is usually financially responsible for repairs and carries insurance for these risks.

Landowners should ensure their lease agreements clearly state that they are not liable for weather damage to the system, and include any site cleanup requirements.

| Health and Safety Leverage Points Tools for individuals and local government | Person / Landowner | Local Government |
|---|-----------------------|---------------------|
| Toxins | | |
| Require battery systems to be NFPA 855 compliant to prevent fires and chemical leaks as part of a conditional use permit. Consider adopting the 2026 version. | | • |
| Emergency response training | | |
| Coordinate with local Emergency Management Services on emergency response training, especially for battery energy storage systems (BESS). Payment for this training can be included as part of a Joint Development Agreement. | | • |

Want to learn more? Check out these resources.

Fires

- The [Alliant Energy Battery Energy Storage System Wood County Solar Project](#) provides breakdown information of what Alliant Energy did to ensure safety for their BESS in Wood County.
- [NC Clean Energy Technology Center Health and Safety Impacts of Solar Photovoltaics 2026](#) is a general source on the health and safety impacts of solar projects.
- [Assessment of Potential Impacts of Fires at BESS Facilities](#), Clean Power

Toxins

⁶⁵ kWh Analytics, Solar Risk Assessment (2024), <https://kwhanalytics.com/wp-content/uploads/2025/02/Solar-Risk-Assessment-2024-1.pdf>.

- [NREL Unfounded concerns about photovoltaic module toxicity and waste](#) compares waste generated by PV to other energy sources.

Stray Voltage

- The PSC's website has information about [stray voltage](#), including Wisconsin's policies, procedures, and testing protocol.

Extreme Weather Events

- [Severe Weather Resilience Solar PV System Design](#)

The USDOE provides a guide on how to best prepare for severe weather, and includes an interactive [National Risk Index](#) map to determine the highest weather risks associated with the construction site. From there, the website recommends technical specifications to include in contracts and solicitations.

- [NREL Preparing Solar Photovoltaic Systems Against Storms Factsheet](#)

A storm-preparation checklist that aims to increase the chances that solar PVs will be able to survive major storms.

Section 9: Leverage Points

This section includes:

- A summary of types of action local governments, individuals, and groups can take to engage with large scale renewable energy siting.
-

As covered in previous sections of the report, Taylor County residents have identified many potential benefits and costs associated with large scale solar energy. This section will discuss possible leverage points, or ways communities and individuals may be able to influence the siting and design of large-scale renewable energy projects so they better align with community values and needs, maximize benefits, and minimize negative impacts.

Before seeking to pass regulations or negotiate with a developer, it is important for a community to have a good understanding of local questions, concerns, and goals for renewable energy. This report summarizes the input received from Taylor County residents and leaders during the community engagement process conducted in 2026, and the full list of comments received is included in Appendix 1: Taylor County Community Engagement Comments.

This input provides a good starting point for action that local government or individuals might take regarding siting of large-scale solar projects.

These actions fall into four categories:

- providing comments during the Public Service Commission of Wisconsin (PSC) review process for projects 100 MW or greater;
- passing an ordinance outlining requirements for a conditional use permit for utility-scale solar projects up to 100 MW;
- updating the comprehensive plan to identify areas slated for residential or commercial development, areas of critical habitat, and areas suitable for solar or wind development; and
- negotiating contracts with solar or wind developers, including land leases and Joint Development Agreements or other memoranda of understanding.

Section 3, Laws, Policy, and Planning, outlines the process and considerations for providing comments to the PSC. Ordinances, comprehensive plans, and contracts are discussed below.

Ordinances

Under [Wisconsin Statute § 66.0401: Regulation relating to solar and wind energy systems](#), local governments (counties, towns, cities and villages) may not place any restriction on the installation or use of solar or wind energy systems unless the restriction:

- serves to preserve or protect public health or safety,
- does not significantly increase system cost or efficiency, or
- allows for an alternative system of comparable cost and efficiency.

Thus, local governments may not prohibit solar projects.⁶⁶ See [Solar Regulation Guidance for Wisconsin Counties, Cities, Villages, and Towns](#)⁶⁷ for more information on what can and cannot be legally included in a local ordinance.

However, counties, cities, villages, and towns can adopt a zoning ordinance addressing large-scale solar energy that is aligned with [Wisconsin Statute Section § 66.0401\(1m\)](#). A zoning ordinance can include conditional use permit application requirements for large-scale solar projects such as describing construction best management practices (BMPs), traffic plans, monitoring, screening, setback, and vegetation management plans; Emergency Management Services and fire department access; and appropriate financial assurances for decommissioning. By law, conditional use permit requirements must be supported by substantial evidence.

Taylor County does not currently have county zoning. If the county chooses to adopt zoning under [Wis. Stat. § 59.69](#), it can regulate certain renewable-energy projects under 100 MW through a zoning or permitting ordinance, including conditional use permits, but only within the limits of Wis. Stat. §§ 66.0401 and 66.0403. Projects 100 MW or larger are sited exclusively by the Public Service Commission, and county zoning cannot approve, deny, or condition them.

If Taylor County does not adopt zoning, towns may independently adopt zoning after town electors authorize village powers, but towns are still subject to the same state law limits. Cities and villages possess independent zoning authority by statute and are not subject to county zoning ordinances. However, they too must comply with the limits noted above. UW-Extension's [Model Solar Zoning Ordinance](#) offers example language local governments may draw from for guidance. The model ordinance is written to comply with state statutes and relevant court decisions and does not expand local regulatory authority beyond those limits.

Comprehensive Plans

The Public Service Commission of Wisconsin will consider local environmental, safety, and planning concerns that are set forth in comprehensive plans or ordinances, including areas identified for residential or commercial development. The comprehensive plan can also help solar and wind developers understand and address community priorities and concerns as they consider where and how to site projects.

Planning documents that are published before the project application is submitted are more likely to influence the developer's plans and the PSC. See [Wisconsin Statute § 196.491\(3\): Certificate of public convenience and necessity](#)⁶⁸ for more guidance.

Contracts

While the ability of a community to regulate utility scale renewable energy is limited by Wisconsin state law, local government, community organizations, and landowners can negotiate with renewable energy developers before their projects are permitted for special provisions that address local concerns. Developers may be willing to accommodate reasonable requests to build good will in the community or simply in order to gain access to land.

What kind of contracts exist around large-scale solar projects?

⁶⁶ Wisconsin State Legislature, Wisconsin Statute 66.0401: Regulation Relating to Solar and Wind Energy Systems, accessed November 1, 2025, <https://docs.legis.wisconsin.gov/statutes/statutes/66/iv/0401>.

⁶⁷ UW-Madison Extension. 2026. Solar Regulation Guidance for Wisconsin Counties, Cities, Villages, and Towns. <https://economicdevelopment.extension.wisc.edu/reset/local-government-actions/>.

⁶⁸ Wisconsin State Legislature. Wisconsin Statute 196.491(3): Certificate of Public Convenience and Necessity. Accessed November 1, 2025. <https://docs.legis.wisconsin.gov/statutes/statutes/196/491/3>.

Landowners, including farmers, can negotiate special provisions in land leases with developers.

Local governments can negotiate directly with a solar developer for a contract in which the developer agrees to meet specific standards, providing greater certainty for the local governments and developers about how the project will unfold if built. These contracts go by several names, including joint development agreement, local operating agreement, memorandum of understanding, or roads and revenue agreement.

Nonprofit and other community organizations may be able to negotiate Community Benefit Agreements (CBAs) with renewable energy developers.

What should a landowner consider before signing a land lease for solar or wind?

Before a solar or wind project can be constructed, the developer must secure the land. Large-scale solar and wind projects often lease land from rural landowners and farmers. Before signing a lease, landowners may be able to negotiate for provisions that provide them protection or address concerns. After the lease is signed it is unlikely that the project developer or operator will be willing or able to agree to new conditions.

Land leasing for energy projects can provide guaranteed income, but there are important items to consider when negotiating with a project developer. Questions include who is the developer and what is their track record, agreement length, what are payments during the permitting, construction, and operational phases, and many others. Make sure all agreements are documented in the lease.

UW-Madison Extension offers a guide for landowners considering leasing their land for solar projects, [Learn about Solar Land Leasing Contracts](#), along with a companion worksheet to help document important information when meeting with developers.⁶⁹ [These documents are not substitutes for hiring legal counsel.](#)

What is a Good Neighbor Agreement, and why is it important?

Good Neighbor Agreements can be requested by landowners participating in leasing to compensate non-participating neighbors. These could include vegetative screenings so the neighbor's view shed is not impacted, set-backs from the property line of panels or electrical equipment, or monetary benefits. This can help neighbors avoid conflict if one is benefitting financially and the other feels inconvenienced by the land use change.

What are Joint Development Agreements?

Joint Development Agreements (JDAs) are contracts that local governments negotiate with solar developers. These contracts may allow the community and solar developer to address community concerns that cannot be regulated through ordinances, either because the project is 100 MW in size or greater, or because the concerns go beyond the health, safety, and environmental provisions allowed by Wisconsin statute. These agreements can have different names, including Local Operating Agreement (LOAs) or Memorandum of Understanding (MOUs), but there is no legal distinction between these terms. If a project spans multiple jurisdictions it may be helpful for counties, towns, and villages to coordinate on contract negotiations, both to increase negotiating power and to save on costs for professional services.

Contracts may cover a wide range of topics including road use and repair, setbacks, noise restrictions, and decommissioning procedures, as well as financial assurances from the project owner. Often contracts also secure conservation and environmental commitments related to land, water and wildlife.

⁶⁹ UW-Madison Extension, "Learn about Solar Land Leasing Contracts," 2025, <https://go.wisc.edu/solarguide>.

People who oppose a solar proposal may not like the idea of signing an “agreement” with a project developer. It can be called a “contract” instead and accomplish the same things. Signing a contract or agreement does not make the solar or wind project happen or not happen. It does set standards that need to be met by the developer and local governments if the project goes forward.⁷⁰

See Land + Water’s research on [solar contracts with developers](#),⁷¹ developed by University of Wisconsin - Stevens Point's Center for Land Use Education (CLUE), for an in-depth look at existing agreements and best practices in Wisconsin.

Want to learn more? Check out these resources.

- [Supporting Community-Centered Solar Development: A Guide to Hosting Community Conversations About Large-Scale Solar Development](#), University of Michigan’s Graham Sustainability Institute, has a template for how communities can host their own conversations and identify priorities.
- [Site Renewables Right](#), The Nature Conservancy, is a mapping tool that can help communities identify areas suitable for renewable energy, as well as areas to avoid for environmental or other reasons.
- [Learn about Solar Land Leasing Contracts](#), UW-Madison Extension, offers a guide for landowners considering leasing their land, and a companion worksheet to help document important information when meeting with developers.
- [Empowering Rural Development through Community Benefit Agreements](#), Center for Rural Affairs

⁷⁰ Lynn Markham at the Center for Land Use Education (CLUE) at UW-Stevens Point provided information for this section.

⁷¹ Wisconsin Land and Water, Solar Contracts, accessed April 24, 2026,

<https://wisconsinlandwater.org/members-hub/conservation-resources/climate-resilience/renewable/development-agreements>.

Section 10: Conclusion

Taylor County's participation in the RESET process lays the foundation for proactive, community-driven planning for large-scale renewable energy development. Through interviews, focus groups, and community conversations, residents identified both benefits and concerns about renewable energy and its long-term impacts on land use, economics, and community character. These discussions revealed clear priorities: protecting farmland, ensuring transparency in contracts, addressing decommissioning responsibilities, and clarifying zoning authority guidance.

The engagement process underscored that successful renewable energy siting requires more than technical feasibility. It requires clear communication and alignment with local values. By incorporating community feedback into ordinances, comprehensive plans, and developer agreements, Taylor County can set expectations for best practices in construction, operation, and end-of-life management. Leveraging tools such as Joint Development Agreements, vegetation standards, and financial assurance for decommissioning, will help balance economic opportunity with environmental stewardship.

As Wisconsin continues to experience an energy transition, continued collaboration among local governments, landowners, developers, and residents will be essential. This report provides a roadmap for informed decision-making and community engagement, which are critical steps toward a sustainable energy landscape.

Appendix 1: Taylor County Community Engagement Comments

Community members identified benefits, concerns, and questions regarding large-scale solar projects.



This is a full listing of the benefits, concerns, and questions shared. They have been organized into themes, with the recognition that benefits, concerns, and questions are relevant across multiple themes.

Note: The themes and comments are not listed in any specific order. Notes are identified as a benefit, concern, or question based on the color of the post-it note it was written on by the community member.

Electricity and Large-Scale Solar

Benefits

- “Keep electricity rates from climbing”
- “Lower energy costs”
- “Lower cost of utility bill”
- “Hopefully more power”
- “Are we moving fast enough?”
- “Renewable source of energy”
- “Country being prepared”
- “Offset fossil fuel use for electricity”
- “Does the municipality benefit from it?”

Questions

- “What percent of electricity is solar?”
- “How reliable is present solar?”
- “How does it affect cost to consumers?”
- “Time frame?”
- “Does solar save local people money?”
- “Will the grid support it local?”
- “How does net metering work in WI? Total map.”
- “Does the power generated get used by the neighbors or even the farm itself? Or is it added to the grid for use further away?”
- “Reimburse energy cooperation”
- “What is the life of a solar panel?”
- “How well do battery systems work?”

Laws, Policy, and Planning

Benefits

- “Unified front with county, village, towns”
- “What happen if other party changes hands”

Concerns

- “Public input”
- “Have in place zoning”
- “Get the public informed on the projects”
- “People not getting the right information at the right time”
- “Concern of the unknown”
- “Third party energy provider follow same rules as utility companies”
- “Lobby/laws and best location”
- “Need clarification on property tax assessments”
- “Requiring an agricultural impact statement”
- “Traffic”
- “Solar needs storage -- but that's why they want to be by transmission.”
- “Limited Local Control”
- “NDAs”

Questions

- “If land is zoned as agriculture?”
- “Does the town need an ordinance to go or not go?”
- “What can towns do?”
- “What kind of ordinance can a town have?”
- “What to put in the comp plan? -zoning codes?”
- “Zoning - airport?”
- “How to make citizens aware of what's going on?”
- “What is the plan for the town to benefit?”
- “Does the permitting currently go to the towns or county?”
- “Plan to benefit the community?”
- “Should an ordinance include wind?”
- “Does DNR do an endangered resources review on every large scale solar project?”
- “What size of project triggers public hearings- how soon can neighbors expect to maybe hear about a project in their neighborhood?”
- “Will the towns/counties work together?”
- “Without federal or state support would developers build?”
- “Can the municipality stop it if they don't agree?”
- “Non disclosure, no talk?”
- “Do we have a permitting process?”
- “Could county backed zoning help towns negotiate SDAs instead of town based?”
- “Once there is a project, does that create a precedent?”
- “Town of Cleveland solar project? Same company?”
- “If there was no documentation requirement how to prove if it was before/after the new ordinances?”
- “Do you know how many farmers asked/contracts signed?”
- “Who pays for the legal fees?”
- “Chapter 59.61 Counties allowed to regulate?”

- “What is the liability to the landowner?”
- “Talk about how community benefit agreements can help or hinder communities making decisions around renewable energy?”
- “You have been doing public listening sessions: what is the consensus about the wind and solar farms?”
- “What happens if the company that you sign with is no longer there?”
- “Is Taylor county going to do an Ordinance- when to expect to have one in place?”
- “Who maintains the property under the panels?”

Economics

■ Benefits

- “Money coming into community”
- “Tax collection to town will it be beneficial?”
- “Infrastructure improvements”
- “helps local government for maintaining roads”
- “Revenue, landowner or local government”
- “Money, landowner, lower rates, roads”
- “Help budget of town”
- “Financial gain to government entities”
- “Education to land owners”
- “Savings”
- “More certainty of income”
- “Income for family”
- “Local money to towns/county”
- “Income to townships and to farms”
- “For co-op customers no net metering, so battery storage may make more financial sense. ”
- “Utility aid and infrastructure improvements”
- “Benefits of cheap power?”
- “Money to the county. If done right it could benefit nature.”

■ Concerns

- “Who pays property taxes in these lease agreements?”
- “Proper education of land owner”
- “Town's concerns and payouts”
- “Taxes”
- “Tax implications - land - income ”
- “Long term leases”
- “Tax category”
- “I think 30 year leases are insane”
- “Landowners have to take extra insurance to protect utility from power issue generated by their project”
- “How do property taxes work? Increase commercial go to nothing?”
- “\$ to municipality for smaller project”
- “Loss of tax base for town and county”
- “Neighboring property value decline”
- “Cost of building smaller projects is higher than huge projects”
- “Loss of Tax dollars locally”

Questions

- “How much potential income to landowners?”
- “Actual cost of kilowatt?”
- “How is it taxed?”
- “Is rent going up or down with the economy?”
- “Is the cost worth the effort?”
- “Are there any benefits for the township?”
- “Make sure everything benefits Taylor County?”
- “How to keep the negotiation collective for us?”
- “How does the land transition work?”
- “Has there been a farmer/land owner conflict?”
- “Farm land preservation tax”
- “\$50K/ 1/2 mile for a gravel road”
- “Make sure the local municipality don’t lose \$ with infrastructure”
- “Property tax”
- “What if the developer goes bankrupt?”
- “Will a 3 megawatt project with agrivoltaics pay agricultural property taxes?”
- “What good is it for the taxpayer?”
- “How will the sold farm be assessed for property tax?”
- “When does rent payment begin? At signing or after generating electricity?”
- “What are the benefits to the landowner beyond the 500-1800\$”
- “What happens if the company goes bankrupt?”
- “What are the drawbacks to landowners?”
- “AG vs other taxes?”
- “Transition planning impacts at family farms?”

Environment

Benefits

- “Reducing emissions”
- “Carbon emissions are down”
- “Less dependent on extracted method for energy”
- “People caring enough”
- “Better air quality”
- “Reduce Fossil Fuel Use”
- “Less strain on ground”

Concerns

- “Noise”
- “Disturbing more than just the solar farm”
- “Environment”
- “Impact on birds from reflection”
- “We should utilize impermeable surfaces”
- “Environmental impact”
- “Heat generated global warming?”
- “Is there any negative impact to the environment?”

- “WIND concern: worries about wildlife”
- “Industry pushing cost off on other things (recycling)”

■ Questions

- “What are the top soil best practices?”
- “Does the solar kill the insects or birds that fly around it?”
- “Long term consequences of solar farms?”
- “Erosion from rainfall?”
- “What will happen to the deer population if we transition from solar- corn (ethanol)?”
- “Rare earth minerals being extracted?”
- “Is hardware (panels) recyclable?”
- “Wind concern: Can wind turbines have one rotor a different color to protect birds?”
- “Are there any humming sounds or vibrations from the wires?”

Land Use

■ Concerns

- “Irritate neighbors”
- “Removing farmland from production”
- “Take farm land out of production”
- “Loss of farmland and other land for infrastructure”
- “Neighbor disputes”
- “Best land use”
- “Neighbor concerns”
- “Use of farmland?”
- “Loss of farmland to produce”
- “Loss of ag land”
- “Neighbor to get solar field next door”
- “Stay away from farm tillable land”
- “Why would farmers be restricted on farmland use. "fair" to single out growing crop for energy vs. using arrays for energy”
- “Disturbance of land- can it be returned to production after contract?”
- “Farmland loss”
- “Loss of most protective crop land”
- “After use”
- “Loss of farmland”
- “Grazing land”

■ Questions

- “Why aren't more of these solar projects just put on roof tops rather than crop fields?”
- “Sol Smart parking lots, walmarts?”
- “Plain community?”
- “Can solar be put on land by high-way interchanges?”
- “Can panels be put in swamps rather than prime farmland?”

- “Loss of farmland/ loss”
 - “How many acres for 50 MW?”
 - “Can the solar panels be added to roofs or business roofs?”
 - “Can you graze cows on solar fields?”
 - “It has been talked about, but has any of the finished projects allowed grazing of animals?”
-

Decommissioning

Concerns

- “Clean up after solar”
- “What happens to equipment at its end of life”
- “What happens to solar panels after 30 years? Are they recycled? or end up in land fills?”
- “Who would be responsible for cleanup if the company fails? Who's liable for tax on land?”
- “Who enforces decommissioning if the company goes bankrupt?”
- “Disposal of solar panels”
- “What happens in 30 years when the contract is over? Who is responsible?”
- “Decommission cost/ correct recycle”
- “Who owns the solar panels? After 30 years who deals with the old panels?”
- “Whos responsible for clean up after 30 years?”
- “Cost of end of 30 year clean up”
- “Property clean up after 30 years”
- “Lifespan of solar panels”
- “What is the life expectancy of a solar panel?”
- “Decommissioning”

Questions

- “What is lifespan?”
 - “Clean up when contract is done?”
 - “Is the ground any good for anything after it is taken down?”
 - “After 30 years, who cleans up the mess?”
 - “Decommissioning payment if bankrupt?”
 - “What happens to farmland?”
 - “Who is responsible to clean up after they quit working?”
 - “What happens to hardware after a 30 year lease?”
 - “How long do the panels last?”
 - “Recycling or removal for panels at end of life?”
 - “Decommission at end of life?”
 - “Who pays when they decommission a site?”
 - “Who is responsible for clean-up after the lease is up?”
 - “How long do the panels wiring last?”
 - “Where do all of these solar panels and batteries go after their lifespans?”
 - “Will technology expire before lease?”
-

Health & Safety

Concerns

- “What are the health risks?”
- “Disposal of storm damage?”
- “Stray voltage testing. Test before and 1 year later?”
- “Is there human impact or animal impact?”
- “Effects of violent weather. Tornados/hail?”
- “Do solar panels "leach" poisons into the soil making the land non-farmable when the contract is done?”

■ Questions

- “If the weather takes it out?”
- “How do fire suppressants work, and what to test for?”
- “Is there any leaching from panels or batteries?”

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