Industrial Solar Siting vs. Industrial Wind Turbine Placement in Michigan, 2026-2030

A Comparative Assessment of Capacity, Land Use, Regulation, and Project Timing

Academic Research Report

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This paper is a planning analysis based on public records, utility filings, state regulatory documents, project applications, and published guidance. It is not an official forecast of the Michigan Public Service Commission and does not provide legal, tax, engineering, or investment advice.

Abstract

This paper compares expected utility-scale solar development and onshore wind turbine placement in Michigan from 2026 through 2030. The analysis combines the Michigan Public Service Commission's renewable-capacity outlook, current applications filed under Public Act 233 of 2023, approved utility procurement plans, project-level schedules, land-use guidance, wildlife recommendations, and Midcontinent Independent System Operator interconnection data. The central estimate indicates about 7.5 gigawatts of net solar growth and 1.7 gigawatts of net wind growth during the five-year period. Solar therefore accounts for approximately 82% of combined net additions in the central case. As of August 1, 2026, the nonwithdrawn state-siting docket contained nine solar applications totaling 1,472 megawatts and one wind application totaling 300 megawatts. Solar is easier to deploy across more counties, but it converts large contiguous areas from crop production and raises direct disputes over farmland, drainage, screening, and cumulative acreage. Wind preserves most agricultural use within the project area, yet turbine height, setbacks, sound, shadow flicker, aviation review, wildlife concerns, and the number of affected nonparticipating parcels make project layouts difficult. The paper concludes that Michigan's 2026-2030 buildout will be solar-led, with wind additions concentrated late in the decade and most likely in the Thumb or other areas with established transmission. Results remain sensitive to interconnection delays, local and state permitting, equipment supply, federal tax rules, and project cancellations.

Keywords: *Michigan energy policy; utility-scale solar; onshore wind; PA 233; renewable energy siting; farmland; MISO interconnection; 2030 renewable standard*

Principal Findings

- Solar is expected to supply roughly four-fifths of Michigan's combined net solar-and-wind capacity growth through 2030.
- The active PA 233 docket is heavily solar-weighted: 1,472 MW of nonwithdrawn solar proposals versus 300 MW of wind.
- Solar has a larger direct land-conversion burden; wind has a larger spacing and visual-impact area but permits continued farming across most of that area.
- The strongest wind signal appears in 2028-2030, including the proposed 300-MW Riverbend project and DTE procurement targets.
- Transmission access and MISO queue timing are as important as local zoning in determining which projects enter service on schedule.

1. Introduction

Michigan is entering a five-year period in which state renewable-energy requirements, utility procurement plans, and new siting authority are expected to drive a rapid increase in large solar facilities. Wind power will remain important to the state's generation mix, but the current development queue and approved procurement record point toward a solar-led buildout. The difference is not limited to technology cost. Solar and wind create different land requirements, local conflicts, construction schedules, grid needs, and regulatory records.

The phrase “industrial solar” is commonly used in public debate but is not the controlling statutory term. This paper uses “industrial-scale” as a plain-language label for utility-scale facilities. Under Public Act 233, the state siting process applies under specified conditions to solar facilities of at least 50 megawatts and wind facilities of at least 100 megawatts. Smaller projects and projects

approved entirely through local processes can fall outside the state docket. (Michigan Legislature, 2023; MPSC, 2026a)

The distinction matters because the MPSC siting list is a leading indicator rather than a complete construction inventory. A project can have a power-purchase agreement without a state siting certificate. Another project can hold land leases and a queue position but lack a buyer. A third can be permitted locally and never appear in the PA 233 docket. The analysis therefore combines several sources rather than treating one list as the full market.

1.1 Research Questions

1. How much new solar and wind capacity is likely to enter service in Michigan in each year from 2026 through 2030?
2. How do solar and wind differ in land use, setback rules, environmental review, and compatibility with agriculture?
3. Which counties and regions are most likely to host new projects?
4. What regulatory, transmission, financial, and schedule risks could change the projected mix?

2. Legal and Policy Framework

Michigan's 2023 energy legislation established a renewable-energy standard of 50% beginning in 2030 and 60% beginning in 2035. The requirement applies to retail electric providers and is demonstrated through renewable-energy credits. The statute does not dictate that every qualifying megawatt be built in Michigan, which is important when interpreting utility contracts for projects in other states. (MPSC, 2026d)

Public Act 233 created an MPSC siting option for qualifying solar, wind, and energy-storage projects when specified conditions are met. The law did not erase local government from the process. Developers must address local ordinances, public notice, consultation, environmental information, decommissioning, and payments to affected local units. A local government operating under a compatible renewable-energy ordinance generally has 120 days to act, subject to a possible extension. The MPSC must issue a final decision within one year after an application is deemed complete. (MPSC, 2024; MPSC, 2026e)

The state standards shape project geometry. Solar fencing must generally remain at least 50 feet from a public-road right-of-way and a nonparticipating property line and 300 feet from an occupied nonparticipating structure. Wind setbacks are tied to total turbine height: 1.1 times blade-tip height from specified roads, lines, structures, and property boundaries, and 2.1 times blade-tip height from occupied nonparticipating buildings or residences. The law also limits wind shadow flicker at protected residences and community buildings to 30 hours per year. (Michigan Legislature, n.d.; MPSC, 2026a)

3. Data and Methods

The analysis uses five evidence groups. First, the MPSC 2025 renewable-energy report provides the statewide capacity outlook for rate-regulated providers. Second, the MPSC PA 233 webpage supplies current application names, capacities, locations, and status. Third, MPSC orders

and releases identify approved utility contracts and resource targets. Fourth, project applications and university or agency guidance provide land-use and siting data. Fifth, MISO records provide interconnection timing and queue conditions. Data were reviewed through August 1, 2026.

The MPSC capacity outlook is presented as a chart rather than a numerical year-by-year table. Solar and wind values were therefore read to the nearest 0.1 to 0.2 gigawatt. The annual figures in this paper are planning estimates. They are not a published MPSC schedule, and they should not be treated as precise gross construction totals. The term “net new capacity” allows for retirement, uprating, cancellation, and changes in commercial-operation dates. (MPSC, 2025a)

Project-equivalent counts were estimated using broad size ranges: approximately 100 to 220 megawatts for a large solar project and 200 to 300 megawatts for a large onshore wind project. These equivalents illustrate development scale. They do not predict an exact number of permits because capacity can also come from smaller facilities, expansions, distributed systems, municipal or cooperative projects, and out-of-state resources serving Michigan utility obligations.

Land-use measures require separate definitions. For solar, this paper distinguishes fenced or active panel area from the full participating or leased area. For wind, it distinguishes permanent displacement and temporary construction disturbance from the much larger turbine-spacing envelope. This distinction prevents an invalid comparison between the full land controlled by a wind project and only the fenced portion of a solar project.

4. Results

4.1 Statewide Capacity Trajectory

The MPSC projects renewable capacity associated with rate-regulated providers to rise from about 8.3 gigawatts at the end of 2025 to about 17.8 gigawatts at the end of 2030. The chart implies that solar increases from roughly 4.6 gigawatts to 12.1 gigawatts, while wind rises from about 3.1 gigawatts to approximately 4.7 or 4.8 gigawatts. The central estimate is therefore 7.5 gigawatts of net solar growth and about 1.7 gigawatts of net wind growth. (MPSC, 2025a)

Solar represents about 82% of the combined net solar-and-wind growth in the central case. This does not mean wind becomes unimportant. Wind can generate more strongly during winter and overnight periods, and DTE's approved amended renewable plan includes significant late-decade wind targets. It does mean that the volume of new sites, land agreements, and local proceedings will be driven mainly by solar.

Table 1. *Estimated Net New Solar and Wind Capacity by In-Service Year*

Year	Solar	Wind	Interpretation
2026	0.2 GW (0.1-0.4)	0 GW (0-0.1)	Solar transition year; limited wind additions
2027	1.6 GW (1.2-1.9)	0.2 GW (0-0.3)	Sharp solar increase; several named projects target 2027
2028	1.4 GW (1.1-1.8)	0.2 GW (0.1-0.5)	Major solar completions; Riverbend and DTE wind targets enter the period

Year	Solar	Wind	Interpretation
2029	1.8 GW (1.4-2.2)	0.4 GW (0.2-0.7)	Solar remains dominant; more wind procurement expected
2030	2.5 GW (2.0-3.0)	0.9 GW (0.5-1.2)	Largest annual build as utilities approach the 50% standard
Total	About 7.5 GW	About 1.7 GW	Solar is about 82% of combined central-case growth

Note. *Central values are rounded from the MPSC technology chart. Ranges reflect chart-reading uncertainty, schedule movement, retirements, projects outside the rate-regulated forecast, and possible cancellations. Source: MPSC (2025a).*

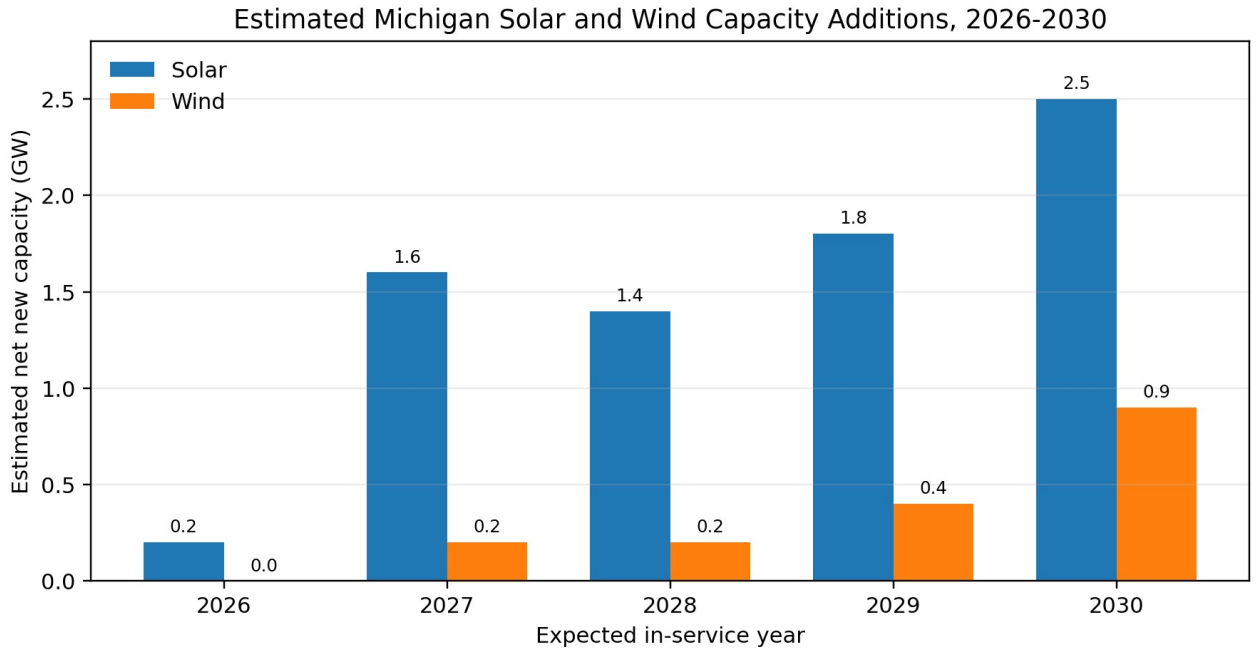

Figure 1. *Estimated annual net new solar and wind capacity.*

Values are planning estimates derived from the MPSC 2025 technology chart, not an official annual data table.

4.2 Current State-Siting Pipeline

As of August 1, 2026, the MPSC listed nine nonwithdrawn solar applications totaling 1,472 megawatts and one wind application totaling 300 megawatts. Two of the solar cases were paused, and the 150-megawatt Walker Road solar application had been withdrawn. The nonwithdrawn solar-to-wind ratio was nearly five to one by nameplate capacity and nine to one by project count. (MPSC, 2026a)

The docket is a strong near-term signal because it reflects developers willing to enter a contested state process. It is not proof that every proposal will be financed, interconnected, contracted, or built. The paused and withdrawn cases show that state jurisdiction does not remove commercial, procedural, or community risk.

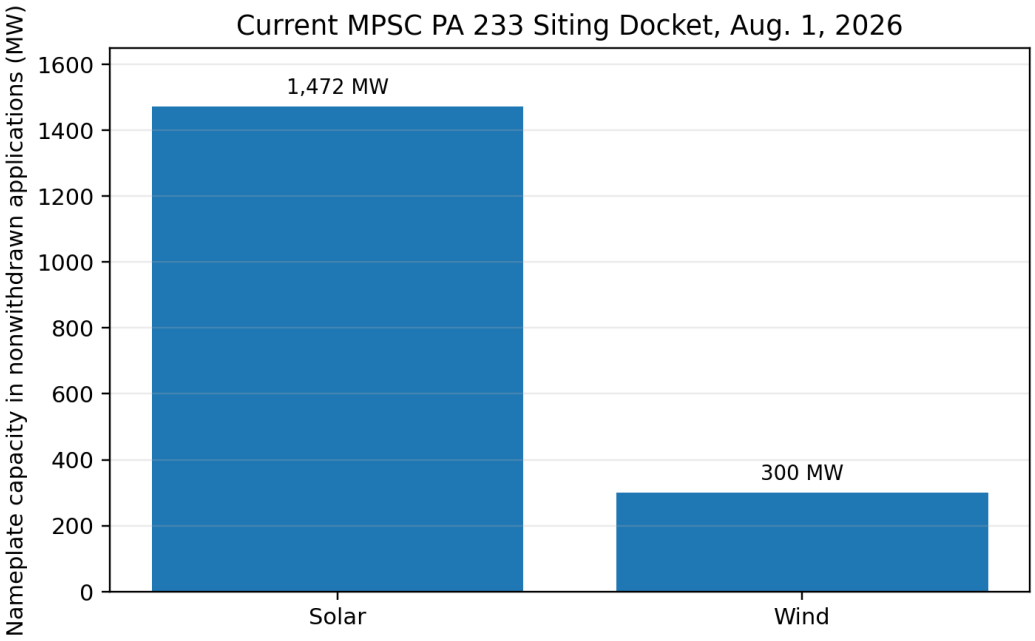

Figure 2. *Nonwithdrawn nameplate capacity in the MPSC PA 233 docket.*

Solar total includes two paused cases. The withdrawn Walker Road application is excluded. Source: MPSC (2026a).

4.3 Approved Procurement and Named Projects

The June 11, 2026, Consumers Energy approvals totaled 1,269 megawatts of contracted solar capacity. Of that amount, 669 megawatts were tied to Michigan projects: Sunfish Solar in Calhoun County, Acceleration Solar in Ingham County, and Portside Solar in St. Clair County. The remaining 600 megawatts were located in Illinois and Iowa. The distinction is important: the contracts support Michigan customers and compliance needs, but not every acre of the procurement package is in Michigan. (MPSC, 2026b)

Other official records show a broader project stream. Watertown Solar in Sanilac County is expected to provide 150 megawatts by mid-2027. DTE's 200-megawatt Silver Creek Solar Park in Huron County is expected to begin operation in September 2028. The Riverbend wind proposal in Sanilac County targets late-2028 operation. These projects make the Thumb one of the few regions where large solar and large wind development can be compared within the same period. (MPSC, 2026c; MPSC, 2025c; Riverbend Wind Project, 2026)

DTE's amended renewable plan supplies the clearest late-decade wind demand signal: 200 megawatts in 2028, 400 megawatts in 2029, and 600 megawatts in 2030, along with 150 megawatts of solar through 2030 under that specific plan. The targets do not identify all host counties and may be met through several ownership or contracting structures. DTE's earlier integrated resource plan also set broader annual renewable additions of 600 megawatts in 2026-2028 and 1,000 megawatts in 2029-2030. (MPSC, 2025b; MPSC, 2023)

Table 2. *Selected Michigan Projects and Official Schedule Signals*

Project	Type	Size	County	Target	Status/Source
Watertown Solar	Solar	150 MW	Sanilac	Mid-2027	Approved Consumers PPA
45th Parallel	Solar	200 MW	Otsego	Dec. 31, 2027	Company-owned target
Acceleration Solar	Solar	90 MW	Ingham	By June 2028	PPA approved; siting under review
Portside Solar	Solar	80 MW	St. Clair	By June 2028	PPA approved
Silver Creek Solar	Solar	200 MW	Huron	September 2028	DTE project approved
Otisville Solar	Solar	125 MW	Genesee	2028	State siting under review
Riverbend Wind	Wind	300 MW	Sanilac	Late 2028	State siting under review
Birch Valley Solar	Solar	162 MW	Tuscola	2029	State siting under review
Lakeside Solar + BESS	Solar/storage	150 MW + storage	Muskegon	2029	State siting under review

Note. *Schedules are applicant or utility targets and can change. The table is selective and should not be summed with Table 1 because some projects are already represented in utility forecasts and procurement records.*

4.4 Land Use, Setbacks, and Agricultural Compatibility

Solar's principal siting burden is contiguous acreage. The 2025 Michigan planning guide cites about 4.2 acres per megawatt as a broad average and a range of roughly 5 to 10 acres per megawatt for larger systems. Current Michigan applications show why definitions matter. Acceleration Solar proposes about 618 fenced acres on 873 participating acres for 90 megawatts. Rouget Road proposes about 1,400 active acres within roughly 2,150 acres for 175 megawatts. Glacier Meadows has described about 1,200 active acres within approximately 2,200 leased acres for 200 megawatts. (MSU Extension & U-M Graham Sustainability Institute, 2025; Acceleration Solar, 2025; RWE, 2025; Ørsted, 2025)

These cases support a practical Michigan planning range of about 6 to 8 fenced acres and 9 to 12 participating acres per megawatt for large projects. Applied to 100 megawatts, that is roughly 600 to 800 fenced acres and 900 to 1,200 acres under lease or participation. The higher figure includes setbacks, wetlands, drains, irregular parcels, internal roads, substations, and unused buffers.

Wind presents the opposite pattern. Federal research estimates about 0.74 acre per megawatt of permanent displacement and 1.74 acres per megawatt of temporary disturbance, although the full turbine-spacing area can range from 19 to 145 acres per megawatt. Most land between turbines can remain in crop production. The direct farm conversion is therefore small relative to solar, but the affected visual and setback area is far larger. (Denholm et al., 2009; Brown et al., 2012)

A 650-foot turbine provides a useful illustration of the parcel-assembly problem. Applying the PA 233 multipliers produces a setback of about 715 feet from specified roads or nonparticipating property lines and about 1,365 feet from a nonparticipating occupied building. A developer can often remove a solar panel block or shift a fence with limited system-wide effect. Moving or

deleting a wind turbine can alter wake spacing, collection lines, aviation review, and project economics.

Table 3. *Side-by-Side Siting Comparison*

Attribute	Utility-Scale Solar	Onshore Wind
PA 233 threshold	At least 50 MW under specified conditions	At least 100 MW under specified conditions
Current nonwithdrawn MPSC cases	Nine projects; 1,472 MW	One project; 300 MW
Road/property setback	Generally 50 feet from road right-of-way and nonparticipating property line	1.1 times blade-tip height from specified roads, lines, structures, and property lines
Occupied nonparticipating building	Generally 300 feet	2.1 times blade-tip height
Height rule	Panels no more than 25 feet at full tilt	Limited by FAA no-hazard determination and approved design
Direct land effect	About 6-8 fenced acres/MW in current large Michigan cases	About 0.74 permanently displaced acre/MW in federal research
Agricultural use	Crop production usually stops inside panel blocks; grazing or pollinator uses may continue	Most crop production can continue between turbines and roads
Primary local concerns	Farmland conversion, drainage, screening, roads, decommissioning, cumulative acreage	Height, views, sound, shadow flicker, setbacks, aviation, wildlife
Layout flexibility	Panel blocks and fences can often be adjusted	Each turbine relocation can affect the full array and interconnection design

Note. *Standards are summarized from PA 233 and MPSC guidance. Project-specific conditions can add requirements. Land figures use different definitions and should not be compared without the explanatory text.*

4.5 Environmental and Visual Review

Solar environmental review centers on tree clearing, wetland crossings, habitat fragmentation, stormwater, soil compaction, topsoil handling, and drainage tile. The Michigan Department of Natural Resources identifies tree removal and fragmentation as major bat-related concerns for solar sites. Vegetative screening can reduce views from nearby roads and homes, but it requires years to mature and continued maintenance. (Michigan DNR, n.d.-a)

Wind review adds collision risk for birds and bats, migration routes, eagle nests, forested ridges, FAA lighting, sound, and shadow flicker. DNR voluntary practices recommend locating wind facilities at least three miles from Great Lakes shorelines, avoiding turbines within one-half mile of bald eagle nests, and using buffers around bird conservation areas, wetlands, and woodlots. These are not automatic statutory prohibitions, but they can affect agency comments, project design, financing, and public acceptance. (Michigan DNR, n.d.-b)

The Thumb illustrates the tradeoff. Flat agricultural land and established transmission support both technologies. At the same time, the region includes intensive drainage systems, prime farmland, migratory bird routes, Great Lakes shoreline concerns, and a long history of public debate over turbines. Solar avoids the regional visual reach of 600- to 700-foot turbines but can convert thousands of acres within a single township or county.

4.6 Geographic Distribution

Solar proposals are spread across more counties because they do not require a narrow high-wind resource zone. Current applications and approved contracts point to four clusters. The first is the southern Lower Peninsula, including Calhoun, Lenawee, Livingston, Washtenaw, Genesee, Ingham, and St. Clair counties. The second is the Thumb and Saginaw Bay area, including Tuscola, Sanilac, Huron, and Arenac counties. The third is western Michigan, led by Ottawa and Muskegon counties. The fourth consists of selected northern and Upper Peninsula sites in Otsego, Cheboygan, and Delta counties.

The southern Lower Peninsula combines large tracts, utility load, and transmission access, but it also has fast-growing rural residential areas and active farmland-preservation policies. Western Michigan has a sizable pipeline but denser rural settlement and strong opposition in some communities. Northern projects can gain access to larger parcels, yet snow, forest clearing, lower winter solar output, and weaker transmission can raise costs.

Wind remains concentrated in the Thumb. Riverbend is the only current PA 233 wind case and proposes 300 megawatts across Sanilac County. Huron and Tuscola counties remain technically plausible because of existing turbines and transmission, but no additional large wind applications from those counties were listed in the state docket as of the study date. The gap between technical potential and an actual application is a central finding: a region can be suitable for wind while lacking a financeable and publicly advanced project.

Table 4. *County and Regional Development Signals*

County/Area	Technology Signal	Relative Activity	Reason
Calhoun	Solar	High	499-MW Sunfish contract; large agricultural tracts
Lenawee	Solar	High	Rouget Road and Glacier Meadows; farmland and drainage concerns
Sanilac	Solar and wind	High	Watertown Solar and 300-MW Riverbend Wind
Huron	Solar; existing wind	High	200-MW Silver Creek Solar expected in 2028
Livingston	Solar	High	220-MW Headland proposal amid rural-residential growth
Ottawa	Solar	Medium-high	200-MW Silver Maple case paused
Tuscola	Solar; existing wind	Medium-high	162-MW Birch Valley proposal
Muskegon	Solar/storage	Medium	150-MW Lakeside project paired with BESS
Otsego	Solar	Medium	200-MW 45th Parallel target for 2027
Delta/Cheboygan	Solar	Selective	Named northern projects; transmission and forest constraints

Note. *The activity rating is an analytical screen based on named capacity and application status. It is not an official state ranking.*

4.7 Interconnection and Approval Timing

Solar and wind use the same MISO generator-interconnection process. The formal tariff schedule cited in MISO's 2025 update totaled 373 days from study through agreement execution. Older cycles had taken an actual average of 1,511 days, or more than four years. MISO has adopted reforms intended to reduce the backlog, but a signed interconnection agreement does not eliminate equipment, transmission-upgrade, permitting, and construction delays. (MISO, 2025)

The queue does not automatically favor one technology. Solar faces a much larger volume of competing requests at popular substations. Wind projects can face costly network upgrades when they are remote, large, or connected through long collector systems. A reasonable planning assumption is two to five years from a mature queue position through agreement and energization, with some projects taking longer.

Local and state siting can overlap with interconnection work, but neither process guarantees construction. Speaker Township received the Riverbend local application in August 2025 and conditionally approved it in December 2025, close to the 120-day statutory period. The approval contained dozens of conditions and did not make the project immediately construction-ready. Solar permits can be less specialized, yet they often involve more parcels, drains, wetlands, road crossings, and acres of soil disturbance. (Speaker Township Planning Commission, 2025)

Table 5. *MISO Interconnection Schedule and Reported Older-Cycle Performance*

Stage	Tariff Schedule	Reported Actual	Planning Meaning
Phase 1	100 days	676 days	Initial network screening and overloaded study cycles
Phase 2	105 days	331 days	Upgrade scope, costs, and restudies after withdrawals
Phase 3	60 days	387 days	Late-stage network modeling and system impacts
Agreement execution	108 days	117 days	Closer to tariff period after studies conclude
Total	373 days	1,511 days	Historic average exceeded four years before construction

Note. *Source: MISO (2025). The reported actual figures describe older cycles and should not be read as a fixed duration for every new Michigan project.*

5. Discussion

5.1 Why Solar Leads the 2026-2030 Buildout

Solar leads because it can be placed across more of Michigan, scaled in modular blocks, paired with battery storage, and procured through a large pool of developers. Utility plans already contain extensive solar authorizations, and the current MPSC docket shows a broad county distribution. Developers can adapt a solar layout around wetlands, homes, drains, and parcel boundaries by changing panel blocks or leaving buffers. That flexibility does not remove land conflict, but it increases the number of technically feasible sites.

The annual forecast also reflects projects already in development. Several named solar facilities target 2027 or 2028 operation, and Consumers Energy has approved contracts with major in-state projects. The 2030 renewable standard increases the value of resources that can be developed in repeatable increments. Solar fits that procurement structure more easily than a limited number of very large wind arrays.

The cost is acreage. Applying the practical project range to 7.5 gigawatts produces a gross scenario of roughly 45,000 to 60,000 fenced acres and 67,500 to 90,000 participating acres. This is not a prediction of Michigan land conversion because some capacity may be outside the state, on brownfields, below the PA 233 threshold, or already under construction. It is a scale test showing why farmland and drainage disputes will intensify if the central capacity path is met largely through greenfield Michigan projects.

5.2 Why Wind Retains a Strategic Role

Wind has two advantages that are not captured by project count. First, it can produce during periods when solar output is low, including winter and overnight hours. Second, it permits farming across most of the project spacing area. A county may host hundreds of megawatts of wind while permanently converting a relatively small fraction of the land to foundations, roads, substations, and crane pads.

Those benefits are offset by siting difficulty. Modern turbines are taller, making setback areas larger and increasing the number of nonparticipating parcels that can affect a layout. Regional visibility and aviation lighting generate opposition beyond immediate neighbors. Wildlife review is also more specialized. These factors help explain why Michigan can have strong wind resources and established turbine counties while showing only one active large wind application under PA 233.

Wind growth is most likely to accelerate in 2028-2030 if DTE's targets produce contracts and if Riverbend or similar projects clear state review and interconnection requirements. The central forecast allows for a late-decade increase but remains below solar. A canceled 300-megawatt wind project would materially change the annual wind totals because the project base is small.

5.3 Local Government and Community Effects

PA 233 changes the leverage of local zoning but does not reduce the workload placed on townships and counties. Local officials still review roads, drains, emergency response, host agreements, construction traffic, soil erosion, decommissioning, and compliance. A contested state case can also require attorneys, engineers, planners, and expert witnesses. The statute provides applicant payments to affected local units, but complex cases can continue for months and create records that must be administered for decades.

Solar and wind distribute effects differently. Solar concentrates construction traffic, fencing, and land conversion in a smaller visible area. Wind spreads roads, turbines, collector lines, and setback effects across a larger region. Solar disputes often center on whether farmland should be used for generation. Wind disputes often center on whether participating landowners can impose noise, views, and shadow effects on nonparticipating neighbors. Both technologies raise questions

about tax treatment, decommissioning security, and the distribution of lease and community benefits.

For the Thumb, local review should treat solar and wind as separate land-use categories rather than applying one generic renewable-energy policy. Drainage tile, farm access, road restoration, prime soils, migratory routes, turbine lighting, and cumulative concentration require different evidence. The presence of older wind facilities does not automatically justify a new turbine design, and the presence of open farmland does not automatically establish that a large solar array is the best use of a specific tract.

5.4 Market and Federal Uncertainty

Federal tax rules create a schedule divide between projects that established qualifying construction before the applicable deadline and projects that did not. IRS Notice 2025-42 states that the clean-electricity production and investment credits terminate for applicable wind and solar facilities placed in service after December 31, 2027, when construction begins after July 4, 2026. The notice emphasizes significant physical work rather than sole reliance on the former 5% safe harbor. Project-specific eligibility requires tax advice, but the rule increases financing pressure on 2028-2030 projects that lack protected status. (IRS, 2025)

The practical response may be a rush to secure equipment and establish construction, followed by higher contract prices or cancellations for projects that cannot retain tax value. Solar is particularly exposed to module, cell, and inverter trade rules. Wind is exposed to steel, bearings, castings, blades, and specialized transport. Both depend on transformers and switchgear with long lead times.

Utility load growth adds another uncertainty. Data centers, electrification, manufacturing, and coal retirements can increase demand for new generation and transmission. At the same time, higher load can place additional pressure on interconnection studies and make firm capacity, storage, and dispatchable generation more valuable. The result could be more solar paired with storage, a stronger late-decade wind market, or both.

6. Limitations

The paper has four main limitations. First, the MPSC capacity outlook does not include every municipal, cooperative, merchant, or behind-the-meter resource. Second, annual technology values were read from a chart and are rounded. Third, a current application does not establish a contract, final interconnection agreement, financing, or construction notice. Fourth, project acreage uses inconsistent definitions across filings.

The county activity screen is also incomplete because prospective projects can remain confidential before land control, queue entry, or a utility award. DTE's future wind targets are not assigned to named counties in the cited plan. Some utility renewable obligations can be met by projects outside Michigan. Project schedules should therefore be viewed as current public targets, not guaranteed commercial-operation dates.

Finally, the analysis compares nameplate capacity rather than annual energy production or accredited capacity. A megawatt of wind and a megawatt of solar do not produce the same hourly

profile. A full reliability study would require capacity factors, seasonal accreditation, storage duration, curtailment, transmission limits, and hourly load modeling. Those issues are outside the scope of this siting paper.

7. Conclusion

Michigan's 2026-2030 renewable buildout is expected to be led by utility-scale solar. The central estimate is about 7.5 gigawatts of net solar growth compared with about 1.7 gigawatts of wind. The active state-siting docket reinforces that direction, with nearly five megawatts of proposed solar capacity for every megawatt of wind.

Solar's lead does not make it easier for host communities. It shifts the central siting question toward land conversion: how much farmland is placed inside fences, how drainage and soil are protected, how projects are screened, and whether benefits are proportional to the acreage and duration. Wind presents a different problem. It preserves most farm use but reaches farther through height, setbacks, views, sound, shadow, wildlife review, and aviation lighting.

The strongest wind opportunity is late in the decade and likely remains concentrated in the Thumb or other areas with established transmission. Solar will spread across more counties, with the southern Lower Peninsula, the Thumb and Saginaw Bay area, western Michigan, and selected northern sites carrying the largest public workload. The projects that reach service by 2030 will be those that align land control, community process, MPSC review, utility procurement, transmission upgrades, equipment, and federal financing rules. A permit or contract alone is not enough.

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Appendix A. MPSC PA 233 Application Inventory as of August 1, 2026

The inventory below reproduces the project-level status used to calculate the current docket comparison. Status can change after the study date.

Case	Project	Capacity/Type	County	Status
U-21932	Acceleration Solar	90 MW solar	Ingham	Under review; complete
U-21956	Otisville Solar	125 MW solar	Genesee	Under review; complete
U-21962	Washtenaw Solar Energy	150 MW solar	Washtenaw	Under review; complete
U-22003	Rouget Road Solar	175 MW solar	Lenawee	Schedule suspended; paused
U-22004	Headland Solar	220 MW solar	Livingston	Under review; complete
U-22036	Riverbend Wind	300 MW wind	Sanilac	Under review; complete
U-22044	Glacier Meadows Solar	200 MW solar	Lenawee	Under review; complete
U-22071	Silver Maple Solar	200 MW solar	Ottawa	Schedule suspended; paused
U-22072	Birch Valley Solar	162 MW solar	Tuscola	Under review; complete
U-22130	Walker Road Solar	150 MW solar	Clinton	Application withdrawn
U-22143	Lakeside Solar + BESS	150 MW solar + 150 MW/600 MWh BESS	Muskegon	Under review

Note. *Source: MPSC (2026a). The nonwithdrawn solar total of 1,472 MW excludes Walker Road and includes the paused Rouget Road and Silver Maple cases.*

Appendix B. Calculation Notes

Solar share of combined growth: 7.5 GW / (7.5 GW + 1.7 GW) = 81.5%, rounded to 82%.

Current docket ratio: 1,472 MW solar / 300 MW wind = 4.91, or nearly five to one.

Illustrative 650-foot turbine setbacks: 650 × 1.1 = 715 feet; 650 × 2.1 = 1,365 feet.

Solar acreage scenario: 7,500 MW × 6-8 fenced acres/MW = 45,000-60,000 fenced acres. 7,500 MW × 9-12 participating acres/MW = 67,500-90,000 participating acres.

Project-equivalent concept: Solar equivalents use approximately 100-220 MW per large project; wind equivalents use approximately 200-300 MW per large project. These are scale indicators, not permit counts.