

BADGER BEAT



Impact of Solar Farms on Land Prices

Cumulative acreage dedicated to large-scale solar installations in Wisconsin has risen dramatically

By Inder Majumdar, Ashley Cate, and Dr. Paul Mitchell, Professor and Chair of Agricultural and Applied Economics, University of Wisconsin-Madison

During informal conversations with Wisconsin farmers, many repeatedly raised concerns that solar farms are driving up land prices by removing prime farmland from production.

They described long-term rental offers with unrealistically high annual payments, and many wondered if these offers would put upward pressure on local land markets. Many

landowners were confused as to how the offers made sense but also did not want to miss out on a good deal.

The University of Wisconsin (UW)-Extension Farm Management

Above: The solar arrays are located within a Dean Kincaid Inc. field in Walworth County.

Team created materials to help state landowners understand and evaluate these contracts from a legal perspective: <https://farms.extension.wisc.edu/topics/pricing-and-contracts/solar/>.

However, the economic question remains unanswered: How do solar farms affect land values?

In this article, we first summarize the current data and trends in Wisconsin for solar farms and farmland values with a focus on the Central Sands, home to the state's potato and vegetable industry.

We then summarize results from a recent research paper that definitively answers the impact of solar farms on agricultural land values and provides our thoughts on how these results pertain to Wisconsin and especially the Central Sands.

This article builds on the summary of research we prepared for key stakeholders of the Wisconsin Rural Partnerships Institute: <https://aae.wisc.edu/pdmitchell/wrpi/>.

STATE SOLAR TRENDS

Epic Systems installed Wisconsin's first large-scale solar array in 2011 at its headquarters in Verona. Since that initial installation, developers have brought 75 additional large-

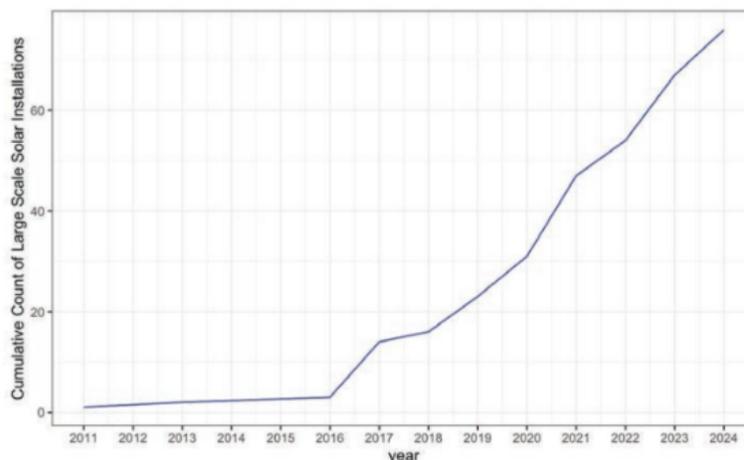


Figure 1: This is the cumulative number of Wisconsin large-scale solar installations. (Source: USGS)

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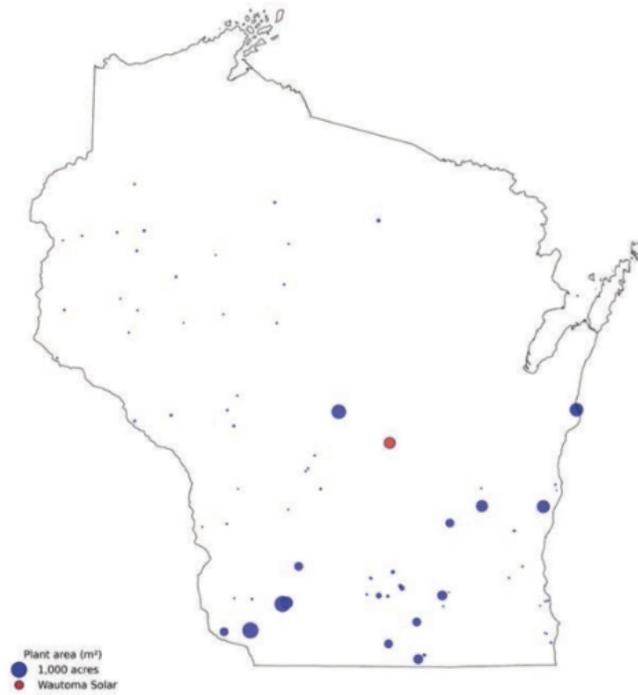
Source: https://issuu.com/bctater/docs/august_2025_badger_common_tater

scale solar projects online in Wisconsin (Figure 1).

Although developers completed fewer than 10 installations between 2011 and 2016, subsequent growth in large-scale solar installations has accelerated significantly, maintaining a steady upward trajectory without signs of slowing.

The Wautoma Solar Project in Waushara County is the only large-scale solar facility located in Wisconsin's Central Sands. The U.S. Geological Survey's photovoltaic database ranked the Wautoma Solar Project as the seventh-largest solar facility in Wisconsin (Figure 2, highlighted in red).

The cumulative acreage dedicated to large-scale solar installations in Wisconsin has risen dramatically, especially between 2018 and 2021 (Figure 3). Indeed, the pace of land allocation to solar projects



continued on pg. 54 Figure 2: The map charts large-scale solar installations in Wisconsin from 2011-2025.

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roughly doubled during this period, underscoring a marked intensification in solar development activities statewide.

LAND VALUE TRENDS

Land values are tracked by many in the agricultural sector as a key indicator of the state of the farm economy. Hence, the U.S. Department of Agriculture (USDA) National Agricultural Statistics Service annually publishes average land values for each state, with the most recent data summarized in **Figure 4**.

At the state and national level, the figure shows stable land values for several years and then an increase after 2020. Based on these data, the average 2024 cropland value in Wisconsin was \$6,800/acre, up 36% from 2020.

However, this increase has slowed, and the average state cropland value was only up 1.3% from 2023-2024. The recent spike in corn and soybeans has ended, so increases in cropland values have slowed.

Cropland values in Wisconsin’s Central Sands are of more interest to potato and vegetable growers, but the USDA data are not broken down to this level. To look at land

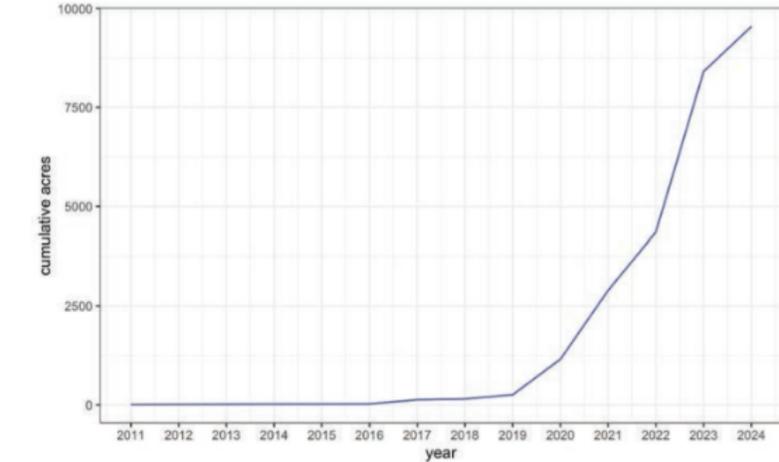


Figure 3: The graph shows cumulative acreage of Wisconsin large-scale solar installations.

value trends in the Central Sands, we use data from Land Sales Bulletin, a company based in Monroe that collects land transaction data from county and state-level courthouses.

Figure 5 shows the average dollar-per-acre land transaction value for selected townships across Adams, Portage, and Waushara counties that encompass the main potato growing region in the Central Sands.

TRANSACTION VALUE

The black line represents the yearly average dollar-per-acre transaction value for all recorded sales, so the sharp jumps, notably in 2019 and 2022, reflect a handful of high-priced,

likely non-farm parcels that placed upward pressure on average per-acre values.

The blue line smooths out the fluctuations to reveal the underlying trend, and the gray band around it represents a 95% confidence interval: the wider the band, the less certain we are about the true average for that year.

Despite the noise shown by recorded land value transactions, the trend moves steadily higher, largely mirroring the statewide rise in cropland values in **Figure 4**. However, it is important to keep in mind that the data from the Land Sales Bulletin mixes agricultural and non-agricultural land transactions.

Commercial and residential lots can sell for several times what an agricultural producer would pay, and that mix likely plays a role in explaining year-to-year swings. Between 2018 and 2019, for instance, statewide cropland prices barely budged, yet prices for commercial parcels in **Figure 5** jumped almost 11%.

The red dotted line in **Figure 5** marks 2023, when the Wautoma Solar Project in Waushara County came online. Recent research suggests that the price effect from a large solar array typically surfaces after a three-

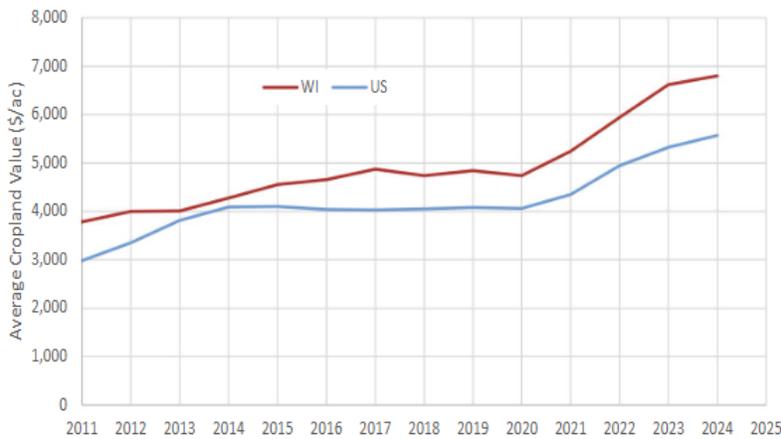


Figure 4: Charted are average cropland values for Wisconsin and the United States.

(Source: USDA NASS)

year lag, so it is no surprise that we don't observe any acute departures from the blue trend line.

In short, land in the Central Sands keeps getting pricier, and the role of the large solar array in contributing to this trend will become more evident within the next few years.

RECENT RESEARCH

In June, Hu et al. (2025) published new research in the Proceedings of the National Academy of Sciences that settles the academic debate for the time being on how large-scale solar projects impact land values.

The new analysis used a comprehensive database that covers 40 states from 1986 to 2021 to identify a consistent pattern: average land prices temporarily increase near solar farms.

The average farmland price increase is 19.4% for parcels within 2 miles of large-scale solar installations, but this effect disappears beyond 2 miles, and this price effect peaks three years after installation and dissipates within six years.

They interpret this price pattern as an option value—a premium that arises because the nearby land could be added to an existing project at a relatively low cost. However, as one moves further away and as the project matures, the likelihood of expansion declines, and so does the option value.

Because smaller parcels are more easily added to existing projects, they have a greater option value and can expect larger price increases. Indeed, Hu et al. (2025) found that only the small parcels near existing large-scale solar projects experience a statistically significant land value increase.

RESIDENTIAL PROPERTIES

For residential properties, Hu et al. (2025) found that being near a large-scale solar farm was a disamenity—residential land sales values within

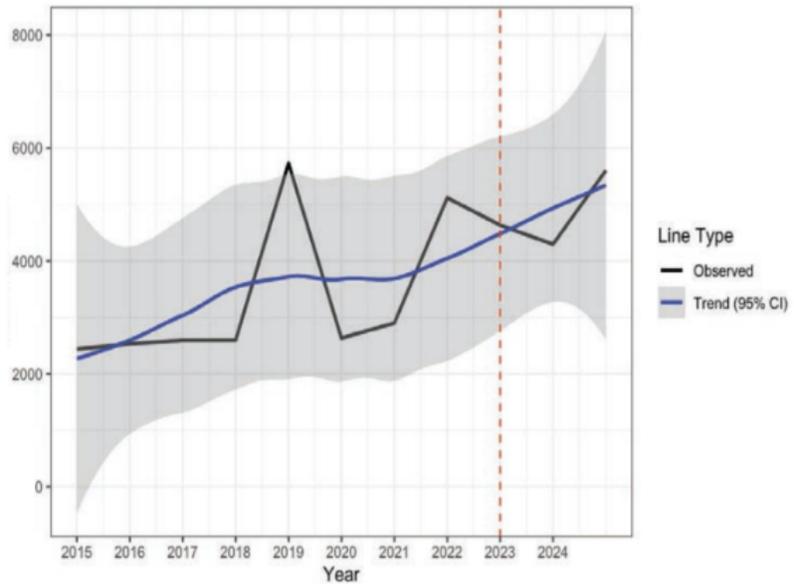


Figure 5: The graph shows average dollar-per-acre land transaction values for the Wisconsin Central Sands.

3 miles of a large-scale solar farm experienced price declines of 4.8% on average. Again, this effect is temporary, fading within nine years of installation.

The Hu et al. (2025) study included data from Wisconsin but did not report Wisconsin-specific results. If we were to repeat the study just

for Wisconsin, we expect price effects to show a similar pattern, but to vary in magnitude and by location.

Wisconsin has many areas devoted to specialized agricultural uses. Intensive dairy regions need land for manure, and crops like potatoes, vegetables, cranberries, and ginseng

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require special types of land.

Loss of land to solar installations in these areas would likely have a larger and longer impact on surrounding farmland values because alternative land to replace these losses is limited.

However, the effect would likely be smaller in areas with more typical crop land use (e.g., corn, soybeans, forage) for which substitute land is available nearby.

IMPACT OF PUBLIC PERCEPTION

Public perception also plays an important role. Whether real or perceived, farmers and homeowners near solar farms are concerned about actual or potential effects on the value of their land and the perceptions of potential buyers.

Further, some rural opposition to solar projects can be explained by the perception that these projects use rural resources for the benefit of urban areas, a phenomenon known as the “rural burden” (Nilson & Stedman, 2023).

However, not all solar projects are the same. Farms or other rural businesses may install solar to meet their

own energy needs, while smaller, community-scale solar projects are built to serve a rural community.

Most academic research focuses on the impacts of large-scale solar installations, and it is unclear how perceptions and resulting changes to land values differ for business- or community-scale solar projects.

In the context of the “rural burden,” this type of solar installation could plausibly be viewed as favorable in rural and agricultural areas, as a source of pride for energy independence. Hu et al. (2025) finds some evidence supporting this effect, but the topic remains largely unexplored.

CONCLUSION

Solar installations can temporarily increase the value of nearby cropland by creating an “option value” because the parcel can be added to the existing solar facility, but this price premium extends only a few miles from the facility and fades over time.

Residential properties have the reverse trend, which is a smaller decrease in property value due to the disamenity of being by the solar

facility, but this effect also fades over time and space. Based on these recent research findings, what can those owning farmland in the Central Sands expect?

The Wautoma Solar Project was installed in 2023, so landowners within a couple miles with smaller parcels can expect a jump in land prices of around 20% that will peak roughly next year and then begin to decline and disappear by 2029.

However, because the Wautoma project is already relatively large for Wisconsin, it may be less likely to expand.

Also, the federal renewable energy policies supporting the expansion of solar are subject to change, and so expansion of the Wautoma project or installation of new projects in the Central Sands seem less likely until this policy uncertainty is clarified.

Overall, these factors suggest that most cropland in the agriculturally unique Central Sands region will not see sustained price increases due to the current project or new solar projects unless the situation changes greatly.

References

Hu, C, Z. Chen, P. Liu, W. Zhang, X. He, and D. Bosch. 2025. *Impact of Large-scale Solar on Property Values in the US: Diverse Effects and Causal Mechanisms. Proceedings of the National Academy of Sciences* 122 (24) e2418414122 <https://www.pnas.org/doi/10.1073/pnas.2418414122>.

Nilson, R., and Stedman, R. 2023. *Reacting to the Rural Burden: Understanding Opposition to Utility-Scale Solar Development in Upstate New York. Rural Sociology*, 88:578-605 <https://doi.org/10.1111/ruso.12486> **BCT**

