

Team X • Solar farms and nearby home values in upstate New York

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1. Research question

Does a new solar farm lower the sale prices of homes within one kilometer of it in upstate New York? This is an evaluation. A town planning board reviewing a solar farm would act on the answer. New York leaves farms under 25 megawatts to local approval, so towns approve most of the state's solar farms (New York State Department of Public Service, n.d.). We expect prices within one kilometer to fall by 1 to 3 percent after the farm begins operating, relative to homes 2 to 5 kilometers from the same farm. We are wrong if prices near and far move together after the farm opens.

2. Why it matters

The planning board decides how far the panels must sit from homes and whether the developer must screen them with trees. If nearby homes lose value, the board can set the setback at the distance where the loss fades, and require screening inside it. If they lose nothing, a longer setback takes land from the project and costs the town the farm's tax payments for no gain.

Two studies come closest to ours. Elmallah et al. (2023) studied more than 1,500 projects in six states. Homes within half a mile sold for about 1.5 percent less than homes two to four miles away, and the effect was not measurable beyond one mile. Gaur and Lang (2023) found that homes within 0.6 miles in Massachusetts and Rhode Island lost 1.5 to 3.6 percent of their value after a farm was built, mostly where the farm replaced farmland or forest in rural areas. We add evidence from upstate New York, where towns approve the farms. In 20 towns we also test whether prices moved when the farm was approved, before it was built.

3. Approach

Each observation is one sale of a single-family home. The outcome is the logarithm of the sale price, from the ATTOM sales records in Dewey. The sample covers sales from 2012 to 2025 within 5 kilometers of the 431 farms of 1 to 25 megawatts that began operating in upstate New York between 2016 and 2023. Upstate here means outside New York City, Long Island, Westchester and Rockland. These are the farms that town planning boards decide on.

The treatment is a solar farm beginning operation within 1 kilometer of the home before it sells. Prices may already move when the board approves a farm, so we leave out sales in the two years before each farm opens. The comparison group is the sales of homes 2 to 5 kilometers from the same farm in the same years. Their prices stand in for the counterfactual, what prices within 1 kilometer would have done without the farm. We leave out homes between 1 and 2 kilometers, which may be partly affected. The design is difference-in-differences. It compares the change in prices near each farm, from before it opened to after, with the change farther away. Farms open in different years, so we date each sale by the years before or after its own farm opened and estimate the effect year by year, which is an event study. The identifying assumption is that, without the farm, prices within 1 kilometer would have followed the same trend as prices 2 to 5 kilometers away.

In the 20 towns with the most farms, we also collect the date the planning board approved each farm from the board's minutes. We use those dates to test whether prices moved at approval.

4. Data and access

Dataset	Holder	Unit and period	Variables we need	Access time	Status
Real Estate Transaction Data (ATTOM)	Dewey, through Cornell's subscription	Sale, 2012–2025	Price, date, location, size, year built, property type	Days	File opened Oct 16
U.S. Large-Scale Solar Photovoltaic Database, version 4.0	U.S. Geological Survey and Berkeley Lab, public	Farm, operating through 2025	Outline, capacity, first year of operation	Now	File opened Oct 12
Planning board minutes	Town clerks, public	Board meeting	Date each farm was approved	Weeks	Holder contacted Oct 15, for 3 of 20 towns

We expect to hold all three by November 30. If the approval dates have not arrived by then, we drop the approval test, and the question narrows to the effect of a farm once it operates.

Property records can identify owners, so we cannot rule out IRB review ourselves. We asked the IRB office to decide on September 18. On October 7 it asked which fields we keep, and we answered that we drop owner names when we load the file. We expect its determination by mid-November. If it asks for an application, that is our slowest approval, and it has to start by November 18. We need no data-use agreement, because we have no sponsor and every source is public or covered by Cornell's Dewey subscription.

5. Anticipated challenges

The main threat is selection into treatment, through where each farm sits. Developers choose cheap, flat land near power lines, often farmland at the edge of a village. Prices within 1 kilometer of that land may already have been growing more slowly than prices 2 to 5 kilometers away, closer to the village. The near ring would then lag the far ring for reasons unrelated to the farm, which pushes our estimate toward a larger loss. We cannot measure the developer's choice of parcel, but the event study shows whether near and far prices drifted apart before the farm opened. If they did, we will report by February 15, the date we set for first estimates, that the design cannot separate the farm from the place.

The approval dates are the row of our resource map most likely to stop us. Three of the 20 town clerks have answered, and older minutes may exist only on paper. Eva writes to the other 17 by October 30. If fewer than 15 towns have sent dates by November 30, we drop the approval test, as in our plan B, and record the change in our decision log.

6. Team plan

Member	Role	Delivers	By	Backup
Ana Torres	Coordinator	Runs the check-in. Uploads each deliverable	Every Wednesday	Dev
Ben Mwangi	Data	ATTOM sales near the 431 farms, cleaned and described	Nov 6	Carla
Carla Novak	Mapping	Distance from every home to the nearest farm	Nov 13	Ben

Member	Role	Delivers	By	Backup
Dev Raman	Design	The design section of the outline, with the check that near and far prices moved together before each farm opened	Nov 4	Ana
Eva Lindqvist	Records	Approval dates from the 20 towns. The IRB determination	Nov 30	Ana

Missed work. A miss is a task not done by its date without warning. A member who warns us before the date has not missed it, and we set a new date at the next check-in.

1. **First miss.** We raise it at the next check-in and write down a new date.
2. **Second miss.** Ana talks to the member within three days. The backup takes the task or we split it, and the check-in records it.
3. **No change, or a week without a reply.** We bring it to the instructor, with the check-ins as the record.

References

Elmallah, S., B. Hoen, K. S. Fujita, D. Robson and E. Brunner (2023). Shedding light on large-scale solar impacts: An analysis of property values and proximity to photovoltaics across six U.S. states. *Energy Policy* 175: 113425. <https://doi.org/10.1016/j.enpol.2023.113425>

Gaur, V. and C. Lang (2023). House of the rising sun: The effect of utility-scale solar arrays on housing prices. *Energy Economics* 122: 106699. <https://doi.org/10.1016/j.eneco.2023.106699>

New York State Department of Public Service (n.d.). ORES frequently asked questions. <https://dps.ny.gov/node/29636>

AI disclosure

Tools. Claude (claude.ai).

Used for. Suggesting search terms for studies of solar farms and home prices. Checking our data table for missing columns.

Checked. We opened both studies and confirmed every number we quote. We counted the farms in the solar database ourselves. We put no Dewey data into the tool.