

Property Values and Utility-Scale Solar Facilities

Research shows that there is no evidence that solar projects have adversely impacted neighboring properties.

Background

The utility-scale solar industry has seen significant growth over the past decade and demand for clean energy continues to grow as utility companies increase their investment in solar energy to meet customer demand, keep electricity prices affordable, and diversify their energy portfolio. The solar industry drives economic development, especially in rural communities, and can benefit all property owners through tax payments for roads, schools, and community services. In 2020, utility-scale solar projects contributed **\$750 million in state and local taxes and land-lease payments** to property owners and have invested **nearly \$116 billion total in projects nationwide**.¹ The industry also supports **120,000 jobs** across all 50 states.

Utility-scale solar is the fastest growing source of renewable energy in the United States with 12 gigawatts (GW) of capacity added to the grid in 2020 and 15.5 GW of capacity added in 2021.² According to the U.S. Energy Information Administration (EIA), solar power will account for nearly half of new U.S. electric generating capacity in 2022 with an expected growth by 21.5 GW in 2022.³ There is generally broad support across the United States to increase solar capacity. However, as utility-scale solar installations require large tracts of land, some communities have raised concerns a nearby solar facility may impact local property values. Real world experience has demonstrated this to not be true.

HOME VALUE ASSESSMENT: In 2018, graduate students at the University of Texas at Austin explored the impacts of property values near 956 utility-scale solar installations completed in 2016 or earlier across the United States. The researchers, in partnership with Lawrence Berkeley National Laboratory⁴, surveyed approximately 400 property value assessors nationwide, asking if the assessor believed there was an impact on home prices near these sites, the scale and direction of those impacts, and the source of those impacts.

The results indicate that most assessors who responded to the survey believe that **“proximity to a solar installation has either no impact or a positive impact on home values.”** The study found that the respondents believe that some features of solar facilities may be associated with positive impacts, such as a location on land that previously had an unappealing use, or the presence of trees or other visual barriers around the array.⁵ Furthermore, as the expected lifetime of a solar facility is at least thirty years, residents have assurance the nearby land will not be redeveloped for an unfavorable use.



1 American Clean Power Association. 2021. Utility-scale Solar Power Facts. Accessed at <https://cleanpower.org/facts/solar-power/>

2 U.S. Energy Information Administration (EIA). 2022. Accessed at <https://www.eia.gov/todayinenergy/detail.php?id=50818>

3 Ibid.

4 Al-Hamoodah, Leila; Koppa, Kavita; Schieve, Eugenie; Reeves, D. Cale; Hoen, Ben; Seel, Joachim; and Rai, Varun. 2018. An Exploration of Property-Value Impacts Near Utility-Scale Solar Installations. Policy Research Project (PRP), LBJ School of Public Affairs, The University of Texas at Austin, May 2018. Accessed at https://emp.lbl.gov/sites/default/files/property-value_impacts_near_utility-scale_solar_installations.pdf.

5 Al-Hamoodah et al. 2018.

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RURAL HOMES: In September 2020, the University of Rhode Island published a study⁶ that found **no negative impact to residential home values near solar arrays in rural areas.**

The study sought to quantify the effect of proximity to solar on property values by examining existing solar installations in Massachusetts and Rhode Island. The study evaluated 208 solar facilities, 71,373 housing sales occurring within one-mile of solar facilities (Test Group), and 343,921 sales between one-to-three miles of a solar facility (Control Group). The authors were able to isolate specific variables that could impact value, including isolating rural and non-rural locations, by using a regression analysis model commonly used in real estate pricing and quality adjustment for price indexes to estimate the impact that various factors have on the price or demand for property.

The study defines **“Rural”** as an area having a “population density of 850 people per square mile or fewer.”

According to the study, the results “suggest that [the impacts on home sales in the Test Area] in rural areas is **effectively zero** (a statistically insignificant 0.1%), and that the negative externalities of solar arrays are **only occurring in non-rural areas.**”⁷

Further, the study tested to determine if the size of the solar installation impacted nearby property values, and found no evidence of differential property values impacts by the solar installation’s size.

AGRICULTURAL LAND: Similar results were found in a 2020 study on the effect of solar farms on agricultural land values in North Carolina, while also finding evidence that a solar farm may increase those agricultural land values. Published by Dr. Nino Abashidze at the School of Economics, Georgia Institute of Technology, and titled “Utility Scale Solar Farms and Agricultural Land Values,” the study examined 451 solar farms in North Carolina.

The study found **“no direct negative or positive spillover effect of a solar farm construction on nearby agricultural land values.** Although there are no direct effects of solar farms on nearby agricultural land values, we do find evidence that suggests construction of a solar farm may create a small, positive, option-value for landowners that is capitalized into land prices. Specifically, after construction of a nearby solar farm, we find that agricultural land that is also located near transmission infrastructure may increase modestly in value.”

Other property value studies that find no evidence of decreased property values after construction of a solar farm:

- **MINNESOTA:** In 2017, the Chisago County (Minnesota) Assessor’s Office conducted their own study on property prices adjacent to and in the close vicinity of a 1,000 acre North Star solar farm in Minnesota. John Keefe, the Chisago County Assessor, concluded that the North Star solar farm had **“no adverse impact” on property values.** Almost all of the [Test Area] properties sold were at a price above the assessed value. He further stated that, “It seems conclusive that valuation has not suffered.”⁸
- **NORTH CAROLINA:** In 2018, Kirkland Appraisals, LLC studied the value of properties adjacent to solar farms in North Carolina.⁹ Kirkland’s analyses strongly support the compatibility of solar farms with adjoining agriculture and residential uses and conclude that there was **no negative or positive impact in home values due to proximity of a solar farm.**
- **VIRGINIA:** Christian P. Kaila & Associates studied the value of properties adjacent to solar farms in Virginia.¹⁰ The analysis concluded that adjacent property value (for both residential and agricultural property), was **not adversely affected by construction and operation of solar facilities.**
- Donald Fisher, ARA who has served six years as Chair of the American Society of Farm Managers and Rural Appraisers, and has prepared several market studies examining the impact of solar on residential values was quoted in a press release dated February 15, 2021 stating, “Most of the locations were in either suburban or rural areas, and all of these studies found either a neutral impact or, ironically, a positive impact, where values on properties after the installation of solar farms went up higher than time trends.”
- CohnReznick, LLP has studied sale prices of single-family homes and agricultural land properties adjacent to solar farms in over 15 states, using appropriate Paired Sales methodology¹¹, as well as Before/After resale (appreciation rate) analysis, and concluded that the **solar farms did not adversely affect property values in either the short or long term.**
 - Their research also includes reviewing published studies prepared by academia, as well as other appraisers, and conducting interviews with county assessors and local real estate professionals, who have experience with properties transacting near existing solar facilities in their respective communities. The consensus is that solar farms in their areas had not impacted property values.

The utility-scale solar industry recognizes the importance of engaging with the host community to balance economic, environmental, safety, and social concerns when developing and operating their projects. In their siting and application process, successful solar developers have prioritized being a good neighbor and a long-term partner with host communities.

6 Gaur, V. and C. Lang. (2020). Property Value Impacts of Commercial-Scale Solar Energy in Massachusetts and Rhode Island. Submitted to University of Rhode Island Cooperative. Extension on September 29, 2020. Accessed at <https://web.uri.edu/coopext/valuing-sitingoptions-for-commercial-scale-solar-energy-in-rhode-island/>.

7 The University of Rhode Island study’s conclusion that there may be an impact to non-rural communities is surmised is that “land is abundant in rural areas, so the development of some land into solar does little to impact scarcity, whereas in non-rural areas it makes a noticeable impact.

8 Chisago County Press: County Board Real Estate Update Shows No “Solar Effects” (11/03/2017).

9 Kirkland, Richard C. 2018. Culpeper Solar Impact Study. Kirkland Appraisals, March 7, 2018.

10 Christian P. Kaila & Associates. 2020. Property Impact Analysis of Round Hill Solar, Proposed Solar Power Plant Augusta County, Virginia. June 2020.

11 Bell, Randall, PhD, MAI. Real Estate Damages. Third ed. Chicago, IL: Appraisal Institute, 2016. (Page 33).

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