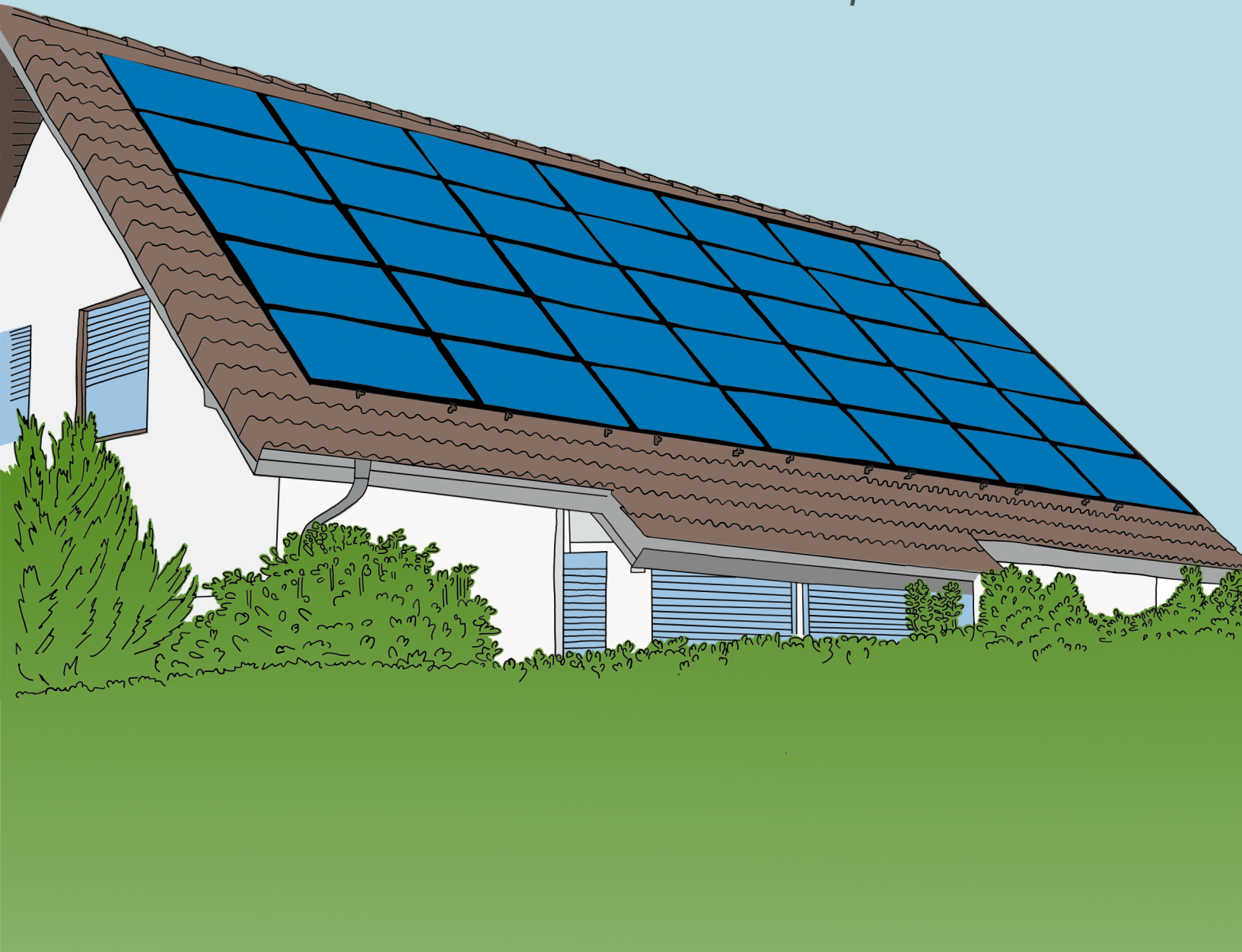


DIMMING THE BENEFITS OF RESIDENTIAL SOLAR IN TEXAS

How Harmful Market Practices Are Undermining the Potential of Residential Rooftop Solar



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Introduction

The power generated from rooftop solar has the potential to benefit the Texas grid and family budgets, particularly with hotter summers and an increasing incidence of power outages.¹ Amid positive consumer experiences, there has been a sharp uptick in solar panel-related frauds, scams, and consumer harms. The result is that many Texans are left feeling cheated and find themselves in worse financial shape because of their experience with solar panel door-to-door sales, lenders, contractors, and companies.

Texas is seeing benefits from the expansion of residential rooftop solar panels. A recent study found that Texas ranked number three in the country in residential solar power generation.² From 2018 to 2023, Texas power generation from residential rooftop solar systems increased from 528 Gigawatt-hours (GWh) to 3,840 GWh.³

Table 1: Small-Scale Solar Power Generation in Texas, 2018 to 2023

Year	Total Generation (GWh)
2018	528
2019	756
2020	1,290
2021	1,884
2022	2,575
2023	3,840

Source: US Energy Information Administration, *Small Scale PV (Photovoltaic) Solar Systems, 2018 to 2023*, downloaded July 28, 2024. Small-scale systems are those that are less than 1 megawatt in size, reflecting residential rooftop solar installation. Texas Appleseed analysis.

- 1 Power outages from Winter Storm Uri (2021), the 2023 winter ice storm, and most recently Hurricane Beryl are examples of impactful power outages, leaving millions of Texans without power over multiple days in challenging heat or freezing weather conditions. See, for example: FERC, [Final Report On February 2021 Freeze Underscores Winterization Recommendations](#), November 16, 2021; Samantha Aguilar, [How Freezing Rain, Tree-Lined Neighborhoods, and Above-Ground Power Lines Prolonged Austin Power Outages](#), The Texas Tribune, February 7, 2023; and Jaden Edison and Pooja Salhotra, [Texans Heading Into a Second Week Without Electricity Are Battling Heat, Frustration, and Boredom](#), The Texas Tribune, July 15, 2024.
- 2 Tony Dutzic, Abigail Ham, and Johanna Neumann, *Rooftop Solar on the Rise: Small Solar Projects Are Delivering 10 Times As Much Power As A Decade Ago*, Environment America and Frontier Group (2024), at 14.
- 3 U.S. Energy Information Administration, *Small Scale PV (Photovoltaic) Solar Systems, 2018 to 2023*, downloaded July 28, 2024, available at: <https://www.eia.gov/electricity/data/eia861m/>.

This increase in power production has paralleled a boost in federal financial incentives.⁴ Federal tax credit incentives, that date back 20 years, were recently revamped through the Residential Clean Energy Credit. The new tax credit was adopted as part of the Inflation Reduction Act, passed in August 2022.⁵ The Act established a 30% tax credit for the cost of the solar panels and related battery storage. The current tax credit is set to expire at the beginning of 2035.⁶

If done well, installing residential solar panels and related battery storage can bring many benefits, including tax incentives and rebates, lower electric bills, potential for energy independence, and providing power to the Texas grid. However, if problematic market practices and abuses are allowed to persist, they could undermine these benefits.

This study analyzes consumer complaints received by the Office of the Texas Attorney General and the Texas Department of Licensing and Regulation from 2018 to 2024. The findings provide important data to inform policy solutions that are needed to address consumer harms and incentivize positive market practices.

4 The first federal law to provide residential solar energy tax credits was the Energy Policy Act of 2005. The Act allowed a 30% tax credit for qualified residential solar energy expenditures, with a maximum credit of \$2,000. [Pub. L. 109-58, Aug. 8, 2005, 119 Stat. 594.](#)

5 The tax credit is set to decrease to 26% of the value of the solar energy project in 2032 and to 22% in 2034, before expiring in 2035. [Pub. L. 117-169, Aug. 16, 2022, 136 Stat. 1818.](#)

6 26 U.S.C. §25D.



Top Findings

- The number of consumer complaints related to solar panels that were submitted to the Office of the Texas Attorney General and to the Texas Department of Licensing and Regulation skyrocketed from 2018 to 2023, increasing by 818% and 576% respectively.
- Residents in 141 of the 254 Texas counties submitted solar panel-related complaints to the Office of the Texas Attorney General, indicating that problematic practices are wide-spread.
- The counties with the highest number of complaints were Harris County, Tarrant County, Dallas County, Bexar County, and El Paso County. Looking at the rate of complaints by population, smaller counties topped the list: McMullen County, Callahan County, Donley County, Trinity County, and Andrews County.
- Among the complaints submitted by Texans, 45% noted problems with false or misleading statements, and 37% mentioned unsatisfactory service.
- Other common complaints included problems with sales practices, defective or damaged goods, failure to provide repairs, and unsatisfactory workmanship. Eight percent of the complaints, a total of 156, were related to people billed for goods or services not received.
- Forty-two percent of the complaints included mention of a loan, and 11% included leases, the two most common financing mechanisms for residential rooftop solar panels. GoodLeap and Solar Mosaic were the lenders most commonly cited in the complaints.
- Many of the harmful practices targeted older Texans and people who are not native English speakers, and included misleading statements that there would be no electric bills after installation of the panels, false promises of government tax credits, and forgeries of signatures or other deceptive practices used to execute financing contracts.

D.P., Fayette County, Texas

This complaint is on behalf of my mother...Mr. Perez came by her house and convinced her she would save money on her electric bills and the government would pay for solar panels if she qualified. No mention of a cost to her throughout the entire process. She is 90 years old and is very confused about the whole ordeal...she had no computer, no email account and is legally blind due to complications with Macular Degeneration, yet somehow she has ended up with a debt of \$56,930.43. Mr. Perez created an email account on her phone without her knowledge and was using it to DocuSign documents.⁷

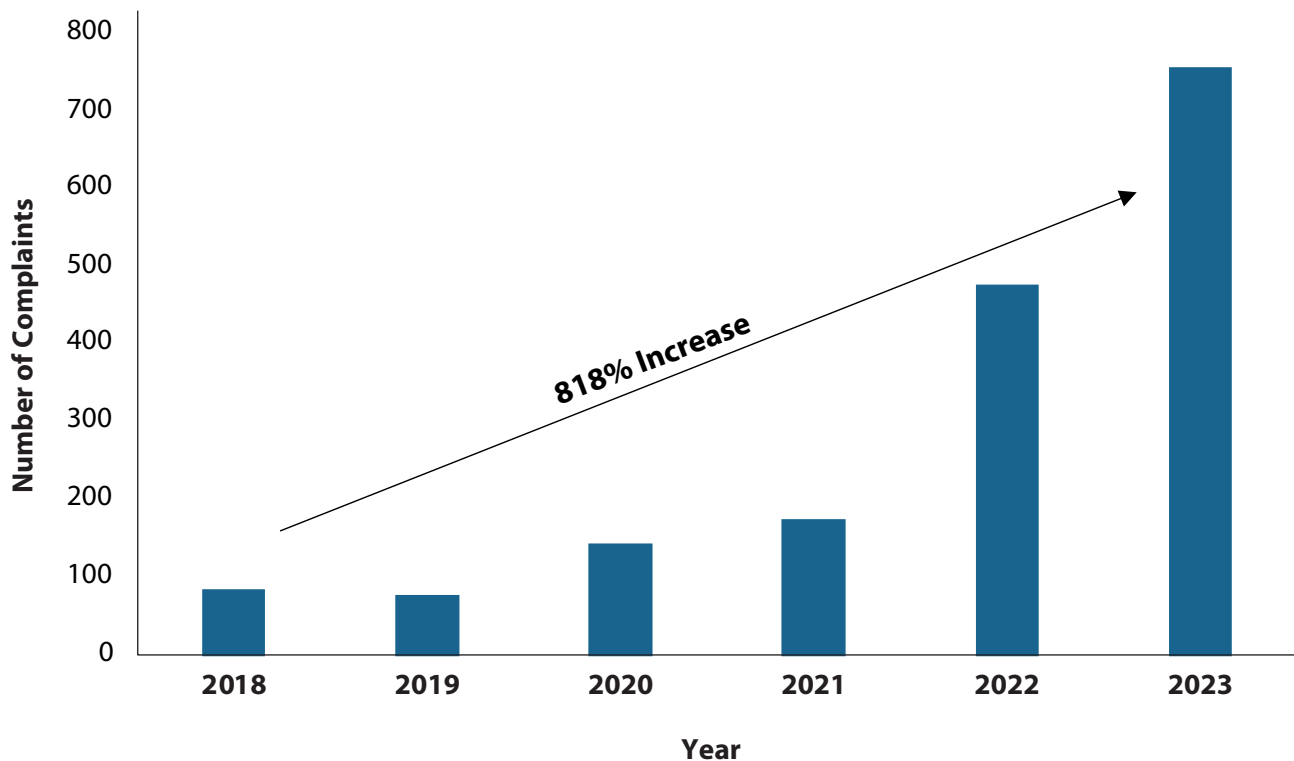
⁷ Consumer complaint CGS-351598 submitted to the Texas Office of the Attorney General on January 29, 2023. The text is the full complaint as submitted.



Solar Panel Consumer Complaints in Texas Are on the Rise

The Office of the Texas Attorney General received 2,448 complaints related to solar panel issues from January 1, 2018 to June 30, 2024.⁸ Among those complaints, 2,040 came from people living in Texas. In total, the number is high, but even more notable than the total number is the sharp rise in complaints over the period examined. In 2018, there were 82 complaints submitted. In 2023, there were nearly 800, an 818% increase.⁹

Chart 1: Solar Panel-Related Complaints Submitted by Texans to the Texas Attorney General
January 1, 2018 to December 31, 2023



Source: Texas Appleseed analysis of solar panel-related complaints accessed through open records requests submitted to the Texas Office of the Attorney General. The complaints cover a period from January 1, 2018 to December 31, 2023.

The Texas Department of Licensing and Regulation (TDLR) has seen a similar trend. TDLR licenses electricians, and since electricians are generally required as part of the installation of the panels, the agency also receives solar panel-related complaints. From January 1, 2018 to May 1, 2024, TDLR received 410 solar panel-related complaints.¹⁰ TDLR also saw a substantial increase in complaints over the period

8 Texas Appleseed analysis of solar panel-related complaints accessed through open records requests submitted to the Texas Office of the Attorney General. The complaints cover a period from January 1, 2018 to June 30, 2024.

9 *Id.*

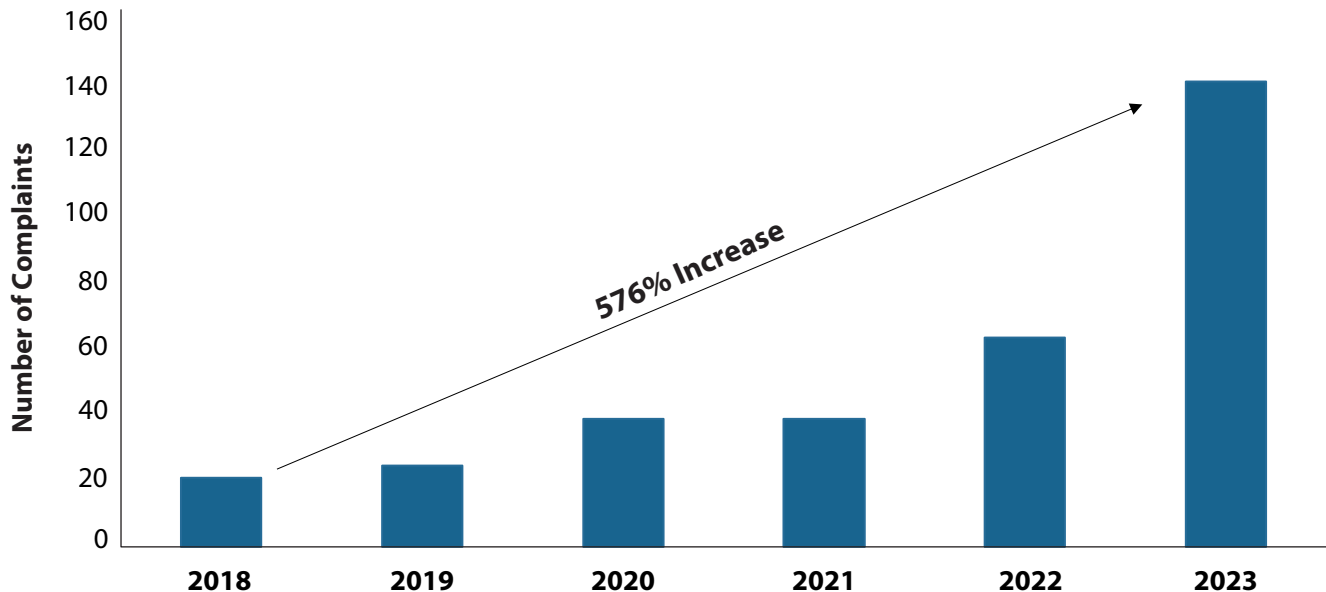
10 Texas Appleseed analysis of open records requests for solar panel-related complaints, submitted to the Texas Department of Licensing and Regulation. The complaints cover a period from January 1, 2018 to May 1, 2024.

examined, from 21 in 2018 to 142 in 2023, a 576% increase.¹¹ This increase caught the notice of the agency. In its 2025 to 2029 strategic plan, released on June 5, 2024, the agency noted both the increase in complaints received—200 over the past 18 months—and its lack of authority to address them:

“What we hear most often from consumers is that the salesmen make outlandish claims about performance, cost, and benefit that go unfulfilled, resulting in the consumer’s unhappiness. When they wish to file a complaint, they believe TDLR can help, when in almost all cases, we can’t. We have no authority to pursue complaints about the sales transaction or the financing of these systems, unless the company is also offering to install the panels themselves. By hiring a third-party installer, the solar company protects itself from liability.”¹²

Chart 2: Solar Panel-Related Complaint Submitted to the Texas Department of Licensing and Regulation

January 1, 2018 to December 31, 2023



Source: Texas Appleseed analysis of open records request submitted to the Texas Department of Licensing and Regulation. The complaints in the chart cover the period from January 1, 2018 to December 31, 2023.

This increase in consumer complaints is not unique to Texas. The Federal Trade Commission has also seen a spike in consumer complaints related to solar panels. In 2018, there were 630 complaints.¹³ By 2023, the number had jumped to 5,331.¹⁴ State attorneys general have been filing lawsuits to address abuses related to solar panel sales, installation, maintenance, and financing. There have been at least 13 state legal actions from 2022 to 2024, alleging violations of a variety of consumer protection laws,

¹¹ *Id.*

¹² Texas Department of Licensing and Regulation, *2025-2029 Strategic Plan: Leading Texas to a Brighter, Stronger Future* (2024) at 35.

¹³ Alana Semuels, *Rooftop Solar Power Has a Dark Side*, TIME, September 26, 2023.

¹⁴ *Id.*

including state laws governing home solicitation sales, laws governing deceptive trade practices, and the Federal Trade Commission Act.¹⁵

An increased reliance on door-to-door sales coupled with easy financing and leasing standards focused more on closing the deal than delivering the promised benefit, has coincided with the uptick in consumer complaints. A recent market exposé on *Planet Money* highlights the evolution of the residential solar panel industry.¹⁶

Sales volume was initially limited to the early adopters who paid for the panels. To grow the business, a segment of the market transitioned to a hard sell enterprise, focused on volume driven by a combination of power purchase agreements, leases, and financing structures, with less attention paid to a beneficial result for the customer.¹⁷

This business model has also led to inflated costs for consumers. Sales people are incentivized to upcharge, boosting the cost of solar panel installations through their commissions to the tune of tens of thousands of dollars.¹⁸ Recent legal action by the Minnesota Attorney General alleges that major players in the solar panel financing business also added undisclosed finance charges to loans, amounting to, on average, between 15% and 30% of the cost of the solar panel systems.¹⁹

15 In our research, Texas Appleseed documented legal actions between 2022 and 2024 in [Arizona](#), [Arkansas](#), [Connecticut](#), [Florida](#), [Kansas](#), [Kentucky](#), [Minnesota](#), [Missouri](#), [Nebraska](#), [New Mexico](#), [North Dakota](#), [Ohio](#), and [Tennessee](#).

16 Alana Semuels, Keith Romer, Jenny Lawton, and Emma Peaslee, [Rooftop Solar's Dark Side](#), Planet Money, National Public Radio, July 12, 2024.

17 *Id.* Power purchase agreements are agreements between the solar panel company and the homeowner, where the company maintains ownership of the panels and the homeowner commits to purchasing the power produced at a designated rate. The leasing model is similar, but instead of paying for the power, the homeowner pays monthly to lease the panels for a designated time-period, often 20 years. In the case of power purchase agreements and leases, the solar panel company, and not the consumer, is able to benefit from the federal tax incentives. To free up capital, solar panel companies have securitized the various financing mechanisms in recent years, shifting their primary business from selling and installing solar panels to companies in the business of financing transactions that happen to install solar panels.

18 Alana Samuels, [A Big Solar Company May Be Collapsing](#), TIME, July 22, 2024.

19 Office of Minnesota Attorney General, [Attorney General Ellison Sues Solar Lenders Over \\$35 Million in Deceptive Hidden Fees](#), March 8, 2024.

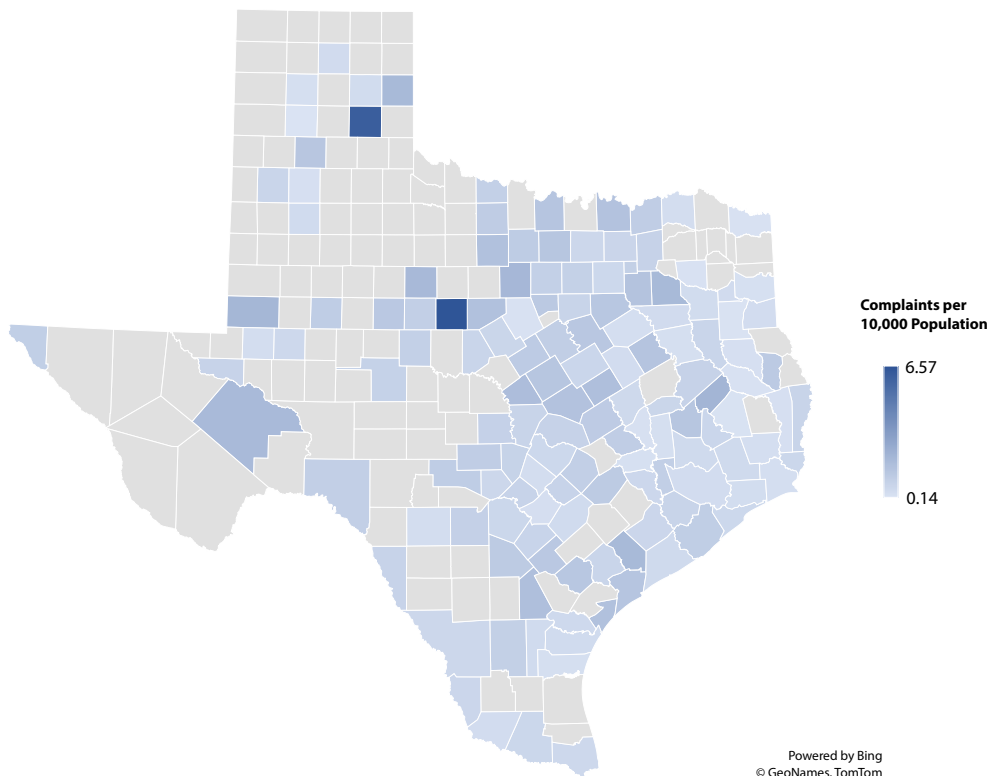


The Geography of Solar Panel Complaints in Texas

Analyzing solar panel-related consumer complaints in Texas by county, the most striking trend is the diversity of geography where the complaints originate. Complaints were filed from residents in 141 of the 254 Texas counties. Over 28 million Texans live in those 141 counties. While the highest number of complaints come from the big population centers, the rate of complaints is similar across a broad swath of the state, covering urban and rural counties alike.

The top five counties based on the total number of complaints submitted to the Texas Attorney General were Harris County, Tarrant County, Dallas County, Bexar County, and El Paso County. Looking at the complaint rates per 10,000 population shows a different picture, with the top five counties being small and rural: McMullen County, Callahan County, Donley County, Trinity County, and Andrews County. Texans from counties with populations under 100,000 submitted 15.5% of the total complaints, while making up 12.4% of the total state population.

**Map 1: Solar Panel-Related Complaints Submitted to the Texas Attorney General
Rate Per 10,000 County Population**
*January 1, 2018 to June 30, 2024**



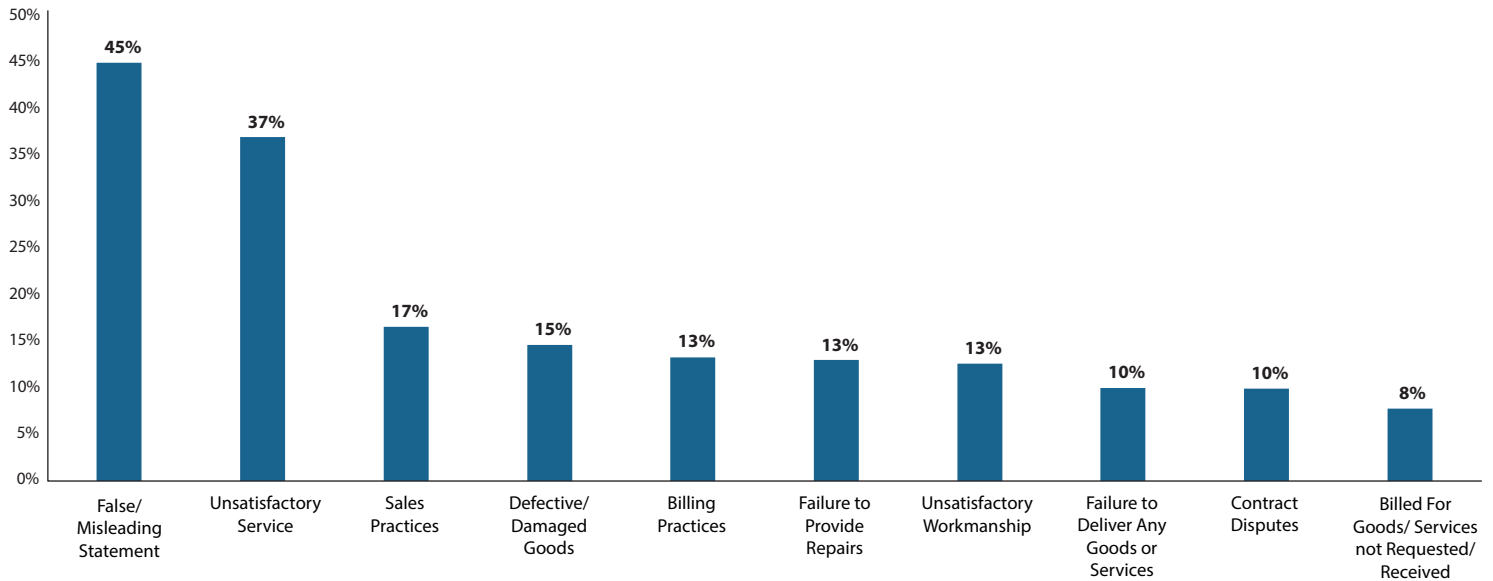
*McMullen County is excluded from the map as an outlier. It has a rate of 33 complaints per 10,000 people. McMullen County has a population of 600, and there were two complaints submitted. County population data is from the 2022 1-Year American Community Survey. Complaints data is from a Texas Applesseed analysis of solar panel-related complaints accessed through open records requests submitted to the Texas Office of the Attorney General. The complaints cover a period from January 1, 2018 to June 30, 2024.



Common Solar Panel-Related Complaints

In the consumer complaints data, the Texas Office of the Attorney General assigned categories for the complaints. The data for solar panel-related complaints included 27 separate categories. Each complaint can be associated with multiple categories. Based on the data provided, the top complaint category was a false or misleading statement associated with the solar panel sale or marketing, cited in 45% of the complaints from Texans.²⁰ Unsatisfactory service was the other top complaint category, cited in 37% of the complaints.²¹ Other categories of note included problematic sales practices, cited in 17% of the complaints, defective or damaged goods cited by 15%, failure to deliver any goods or services cited by 10% of the people submitting complaints, and 8% were billed for goods or services not received.²²

Chart 3: Common Solar Panel-Related Complaints
Percent of Complaints Submitted by Texans to the Texas Attorney General
January 1, 2018 to June 30, 2024



Source: Texas Appleseed analysis of solar panel-related complaints accessed through open records requests submitted to the Texas Office of the Attorney General. The complaints cover a period from January 1, 2018 to June 30, 2024.

In addition to the categories provided as part of the data, three additional categories were created as part of the analysis, looking at the solar panel funding mechanism. Among the complaints, 42% included mention of a loan or the name of a specific lender.²³ One hundred and ninety-five, or around 10% of all of the complaints from Texans, mentioned GoodLeap, a solar panel lender that has been the subject of multiple state attorney general legal actions.²⁴ Another large solar panel lender, Solar Mosaic, has also

20 Texas Appleseed analysis of solar panel-related complaints from Texans. The complaints cover a period from January 1, 2018 to June 30, 2024. The data was accessed through open records requests submitted to the Texas Office of the Attorney General between December 2023 and July 2024.

21 *Id.*

22 *Id.*

23 *Id.*

24 *Id.*

been cited in legal actions and was mentioned in 82 complaints, making up 4% of the total.²⁵ Lenders often place liens on the property, making it difficult to sell the property or refinance a mortgage on the property without fully paying off the loans.²⁶ Leases were mentioned in 11% of the complaints and power purchase agreements were mentioned in 4 complaints.²⁷

Recent Texas News Stories Highlighting Residential Rooftop Solar Frauds and Scams

Houston, Texas: October 5, 2023

Gloria Combs is 77 years old. A door-to-door salesperson said that the solar panels were free through a government program and would also save her money on her electric bill. None of those benefits panned out. After the panels were installed, she learned that she owed \$50,000 on a 25-year loan. She felt tricked. Combs, a double amputee, is struggling with the cost.

Source: [Fox 26, Houston](#)

Joshua, Texas: February 7, 2024

William Hampton was terminally ill and in hospice care. His adult daughter tried to stop workers installing solar panels and was told they had a contract. After his death, his daughter discovered a 25-year loan contract for \$60,000. The company says they do not allow dealers to sell to a consumer who is unable to fully understand terms of contract (language barriers, health, or other evident conditions), but his family wondered how he could sign the contract in his state of illness. After Hampton passed away, and the family stopped paying the loan, so the company filed a lien on the property. As a result, the family was struggling to sell the property.

Source: [CBS News Texas](#)

Garland, Texas: May 10, 2024

Kim Kromdyk was considering solar panels and met with a salesperson. During the pitch, she was asked to sign a blank tablet screen authorizing a credit check. She eventually decided against getting solar panels. Around two years later, she discovered that a solar lending company had put a lien on her home and claimed she owed \$97,000. The installation company said they canceled her contract, but the lender kept attempting to collect. The lender provided Kromdyk's attorney with the contract she purportedly signed. The lender ultimately canceled the loan and removed the lien. Kromdyk credits the CBS Investigations Team for the positive resolution.

Source: [CBS News Texas](#)

25 *Id.*

26 Solar lenders often place a UCC-1 lien, also called a UCC financing statement, on the property where the solar panels are installed. This lien asserts a security interest in personal property associated with the home, in this case, the solar panels. Because it is difficult and expensive to remove the solar panels and repair the damage from the process, these liens can often hinder the sale or refinancing of the property. Of even greater concern is instances where the solar panels could be funded as part of a refinance of the home mortgage or through a home equity loan. With interest rates high, market conditions are not conducive to those arrangements, but without addressing the current market problems, when interest rates fall, there could be an even larger problem for Texans.

27 *Supra*, note 20.

Older adults, including those with dementia, and people whose primary language is not English, have been commonly targeted with harmful sales practices. The complaints data does not identify language or the age of the person, but multiple specific written complaint accounts and Texas media stories include impacts on older Texans and Spanish speakers.²⁸

Examples of specific complaints highlight many of the problematic practices in this market. A Dallas County resident shared:

“Took advantage of our elderly grandmother who is low income, who can’t even read or write. They conned her into buying solar panels on a house that is so old, it’s falling apart. The salesman didn’t tell her his real name, got all her personal information and even tried to get all her personal checking account information. She was tricked into a 25 year loan with Good Leap for the amount of \$43K, that’s not including the interest; and she’s 79 years old. Now she has a lien against her house, and her health problems have worsened since this scam. Shame on this business.”²⁹

A complaint from Hunt County provided a similar set of facts:

“The salesman Joshua Moore came to Mrs. Frosch’s home and represented that his company can install solar panels at “no cost” to Mrs. Frosch and that she will have “money in her pocket” every month from the excess production of the solar panels. Mrs. Frosch is elderly and gets confused. She does not remember signing anything but her name is on a loan through Sun Trust Bank. At some point there is a recording of Mrs. Frosch with Solar Mosaic which asks her to confirm her personal information and reads quickly through some loan terms. She does not remember talking to Solar Mosaic; the salesman did not disclose there was a separate financing company. She understood the deal was at no cost to her, however, this is not the case. She has a 20 year loan. The solar panels are not producing as they were advertised and as a result she now has two bills - one for her electricity and one for the loan.”³⁰

28 See, for example: Andrea Lucia, Lexi Salazar, and Scott Fralicks, [Texas Solar Company Accused of Preying on Elderly Signs Deal with Federal Government](#), CBS News Texas, February 8, 2024.

29 Consumer complaint CGS-394036 submitted to the Texas Office of the Attorney General on January 1, 2024. The text is the full complaint as submitted.

30 Consumer complaint CGS-287318 submitted to the Texas Office of the Attorney General on May 27, 2021. The text is the full complaint as submitted.

A Hidalgo County resident shared another concerning story. She never received any solar panels and yet ended up in legal action, owing thousands of dollars:

“Door to door agent went to our home and to offer sola[r] panels, we did the application then they told us we did not qualify due to our roof not passing inspection, then we get letters from the court we called the sales agent to ask and he told me not to worry about it they were handling the situation. I then come to the court because we did not feel comfortable and they told us that we had to pay thousands of dollars for panels we don't even have. When we review all documents left behind we notice they had forged my signature and when I did asked them why they said that was not the contract that was were we requested inspection for the roof. I don't speak English or write.”³¹

A Texan from Kerr County highlighted some of the same issues, such as forged contracts and systems not producing as promised. Another common issue in the following complaint is false promises of tax incentives that would defray the system costs. People only get the tax incentives when they owe taxes. Low-income households and those with fixed incomes rarely receive the credits promised by the solar panel sales people:

“When the sales rep initially came to my door, he stated, and I quote, ‘you will no longer have an electric bill, besides a \$5 or \$10 connection fee from Kerrville public utility board. I was also told this was a government program and at income tax time, I would receive maybe \$20,000 that the sales rep suggested I use toward paying off the debt from the solar panels. [After installation was finished] I was still getting an electric bill, it was smaller, but not small enough to make me comfortable with paying for the solar panels. I called KPUB and they told me they had many upset solar panel Customers, and that the panels only covered some of the energy used on homes, so people are still receiving over half of their old utility bills...I emailed their support email asking for a copy of my contract on September 24, 2023. [I] found out there are suits filed by the attorney generals office in Kentucky and other states referring to this company...I went to the website of the Business Bureau, and filed a complaint on September 25, 2023. The third party contacted Titan who replied stating they had attached the contract, which states that they did not promise electric bill savings. After looking over the contract, it did indeed state that, however, my signature had been forged and a false email I have never seen was listed as my account email. We financed through goodleap finance company, who I have been contacting in hopes to speak with their Titan Solar Panels team. I have had no luck speaking to anyone about the \$45,000 loan they have supplied us to purchase the solar panels....”³²

These complaints, from different parts of the state, identify problems that appear to be systemic and are consistent with those identified in other areas of the country.

31 Consumer complaint CGS-363386 submitted to the Texas Office of the Attorney General on April 17, 2023. The text is the full complaint as submitted.

32 Consumer complaint CGS-382733 submitted to the Texas Office of the Attorney General on September 28, 2023. The text omits parts of the full complaint as submitted for spacing purposes. Omitted phrases are identified with ellipsis marks.



Conclusion

The complaint data analyzed in this study highlights a number of consumer protection lapses in the current market. Currently, many Texans end up with solar panel systems that:

- Are unaffordable;
- Do not offset their electricity bill as promised; and
- Do not deliver the promised tax credits or other financial credits.

There are also problems with:

- Door-to-door sales targeting older Texans, non-native English speakers, and those with diminished mental capacity;
- Contract forgeries; and
- Debt for solar panel systems that were never installed.

Other notable consumer harms include:

- Companies installing systems that never pass inspection or never successfully connect to the local electric utility;
- Unfulfilled warranty and repair obligations;
- Unrepaired roof damage from installation or removal of the panels; and
- Solar panel companies going out of business and leaving people without the promised maintenance and service.

Solar panels play an important role in the energy ecosystem in Texas. To reach their positive potential, it is essential to address patterns of harmful and fraudulent practices in the residential solar panel market. These practices must be addressed both through new legal protections and through enforcement actions, holding bad actors accountable.