



American Farmland Trust

On-Farm Solar for Texas Farmers & Ranchers

American Farmland Trust's (AFT) mission is to protect farmland, promote sound farming practices, and keep farmers on the land. With more strategic and intentional planning, the placement of solar projects can safeguard land for farming and ranching by protecting soil health, expanding agrivoltaics for agricultural production and solar energy, and strengthening farm viability. Smart SolarSM is the solution.

SMART SOLAR PRINCIPLES

1. Prioritize solar siting on the built environment and land not well suited for farming. Concentrate solar development on rooftops, irrigation ditches, brownfields, and marginal lands.
2. Safeguard the ability for land to be used for agriculture. Policies and practices should protect soil health and productivity, especially during construction and decommissioning.
3. Grow agrivoltaics for agricultural production and solar energy. Agrivoltaics projects allow for farming underneath and/or between rows of solar panels throughout the life of the project.
4. Promote equity and farm viability. Require inclusive stakeholder engagement, including farmers and underserved communities, to ensure widespread benefits from solar energy development.

GOVERNMENT INCENTIVES

- Rural Energy for America Program (REAP)
- Federal Tax Credits (ITC/PTC)
- Modified Accelerated Cost Recovery (MACRS)
- Local government and utility incentives



CONSIDERATIONS

- Farm energy costs
- Electrical power needs & future load projection
- Battery energy storage



BENEFITS

- Cost Savings
- Energy independence
- Government incentives

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On-farm solar typically involves two parties: the owner and solar company. Usually, the owner shares 12 months of electrical usage and after an initial consultation to determine goals, the solar company will offer a proposed solution. Differing electric needs, available placements, utility rules, and overall goals make each situation unique. It is advisable to get at least three quotes from experienced and reputable companies since some might be limited to the products and services they offer, or technical expertise for on-farm systems. With a signed proposal in hand, the company will begin the interconnection process with the utility and submit for permits. On-farm systems are generally less than 250kw in size. Those on the high end (irrigation, refrigeration needs) will possibly require infrastructure upgrades which will be determined during the utility approval phase. After utility approval, your system can be installed but won't be turned on until the solar company submits for and your system is granted permission to operate.

Here are some other key points to consider as you make your decisions.

Individual Considerations:

What are your goals with solar? Have you considered any energy efficiency improvements to go along with your solar system? The cheapest form of power is the one not used. Having an energy audit done beforehand will help determine how energy efficiency upgrades could maximize your benefits by reducing the size of the system needed. These upgrades can be included in REAP funding (see below).

How much of your annual usage do you want to offset? What would that look like based on your utility's export crediting rules? In Texas, there is a lot of variability in electric rates and solar export crediting rules that are important to understand when sizing your system. Two of the most common are net-metering and net billing. **Net metering** allows users to receive kWh credits (often one to one exchange) for excess solar production sent back to the grid. This stored or banked electricity (credits) can be used to offset future consumption when solar production is low. At the end of the month, you are billed only for this net difference. With net metering, your payback is generally shorter than other billing methods and you can typically offset a higher percentage of your electrical usage.

Similarly, **net billing** allows you to export electricity back to the grid, but instead of receiving credits you are paid for each kWh you export back, at a predetermined rate typically less than what you receive from net metering. Offsetting the majority of your electric bill requires oversizing your system due to the lower buy back.

Battery energy storage systems can be used in these situations, when the imported and exported cost of electricity fluctuates throughout the day (time of use), and to serve as backup power in an outage (grid-tied solar systems will otherwise not work). If you have the option to choose retail electric providers, switch to one that offers the best solar policies and buy back rate as these change periodically.

With all this variability, speak not only to your utility about their rules but your installer who has a more detailed understanding of and how it will look regarding your proposed design.

Can you install on the built environment or land not well suited for agriculture? The amount of sun exposure, size of your system, and distance to your main service panel factor into siting your solar system. Unshaded, south facing roofs, such as on homes or barns, are ideal install locations as long as the roof can support the weight. If not available, are there other areas of your property not well suited for agriculture? Is this location near your electrical panel to minimize trenching and additional costs? If you must site on farmland using a ground mount, protect soil health during construction, limiting compaction and site grading. **If you're considering utilizing farmland for utility-scale ground mount solar, have you considered agrivoltaics?** Agrivoltaics is the production of solar energy and agriculture on the same land at the same time, such as livestock grazing, crop production, etc.

If done well, on-farm solar solutions offer a triple impact, providing farmers with energy independence by reducing their need for external power sources, ensuring substantial cost savings through lower electricity bills, and capitalizing on government incentives to offset their initial investment costs.

Incentives for Farmers & Ranchers:

The **Rural Energy for America Program (REAP)**, administered by the USDA's Office of Rural Development, provides financial support (loans and grants) to agricultural producers and rural small businesses who install renewable energy systems or make energy efficiency improvements. Grants cover up to 50 percent of total eligible project costs (max \$1 million), and loan guarantees up to 75 percent. The competitive application process includes a scorecard and quarterly submission deadlines. Organizations such as [Solar United Neighbors](#) and [Texas A&M Kingsville](#) have online resources available for producers in certain areas. Some solar developers will even assist in the application process. For further eligibility and FAQ see the USDA's Rural Development [website](#).

There are two **federal tax credits**. The investment tax credit (ITC) offers a one-time credit of 30 percent of the installed system cost, with additional 'add-on' credits for projects using domestic content or located in low-income and energy communities. This 30% ITC can be combined with the 50% REAP grant, covering 80% of the project costs. The production tax credit (PTC) is based on production over time, and often more valuable on large utility-scale projects. Choosing between them depends on multiple factors, and consulting with an installer and tax advisor is recommended. There is a direct pay provision for state, local and territorial governments, tribal and native entities, rural energy cooperatives, and other tax-exempt entities.

Modified Accelerated Cost Recovery System (MACRS) or accelerated and **bonus depreciation**, allow businesses to deduct a large percentage of the asset cost over a five-year period through annual depreciation deductions on their tax returns. Again, we recommend speaking with your tax advisor while considering these incentives.

Some local governments and utilities may offer **rebates** or additional incentives when installing solar. Texas property tax code allows an exemption of 100% of the appraised property value increase associated with new solar installations.