



# SHEDDING LIGHT ON SOLAR

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A Landowner's Guide to Solar Leasing







## OUR STANCE ON SOLAR

**The Missouri Soybean Association (MSA) is the leading voice for Missouri soybean farmers in both the state and federal capitals.**

MSA works to increase the profitability of its producers and to protect their freedom to operate through legislative advocacy, public policy initiatives and education. In accordance with this mission, MSA's role on this particular subject is not to encroach upon a farmer's choice involving the use of his or her land, but to serve as an educational resource when making complicated decisions for a landowner's property.

**Therefore, MSA neither supports nor opposes the investment of solar facilities for energy production on farmland.**

### **Legal Disclaimer**

The following is not intended to be used in place of any legal or financial advice from a licensed professional but rather a reference before beginning the process. It is important to note that a solar energy agreement is a complex and legally binding contract that may have significant, long-term environmental and economic impacts. Please contact your attorney and any financial advisors before signing any document.

The following information was assembled with the assistance of reputable sources such as the National Agricultural Law Center, the Clean Grid Alliance, and neighboring state agricultural organizations.

**CONTENTS**

**1.0 INTRODUCTION TO SOLAR LEASING..... 3**

1.1 Solar Power Generation 101..... 3

1.2 Site Selection & Land Needs ..... 3

1.3 Community Relations & Developer Expectations..... 4

1.4 Advantages of Entering into Solar Agreements..... 4

1.5 Land Use Tradeoffs & Opportunity Costs..... 5

1.6 Varied Long-term Effects on Land..... 5

**2.0 INITIAL CONSIDERATIONS..... 6**

2.1 Personal Considerations..... 6

2.2 Legal Considerations..... 6

2.3 Tax, Policy & Government Program Considerations..... 7

**3.0 LEASE CONSIDERATIONS..... 8**

3.1 Compensation..... 8

3.2 Lease Length..... 8

3.3 Operations & Maintenance..... 9

3.4 Taxes..... 9

3.5 Decommissioning – Solar at End of Project Term..... 9

**4.0 FREQUENTLY ASKED QUESTIONS..... 10**

4.1 Impacts on Current Property Use..... 10

4.2 Solar in Our Surroundings..... 11



## **CHAPTER 1** **Introduction to Solar Leasing**

As greater emphasis is placed upon finding renewable energy options, farmers may capitalize on these opportunities by entering into utility-scale solar energy lease agreements with renewable energy developers. However, it is important to realize that these agreements present both benefit and risk to Missouri farmers and landowners alike.

The purpose of this guide is to provide an unbiased resource for farmers so they may consider both the pros and cons of these agreements.

Missouri currently ranks

**34<sup>th</sup>**

in solar energy production,  
with most of the energy  
coming from residential  
installations.

### **1.1 Solar Power Generation 101**

Solar projects are typically categorized as one of two classes, photovoltaic (PV) or concentrating solar power (CSP). These classifications are based on how they leverage the sun to create electrical power. PV cells directly translate sunlight

into electricity while CSP first converts the sun into heat before generating power.

PV systems are the most commonly found in utility-scale

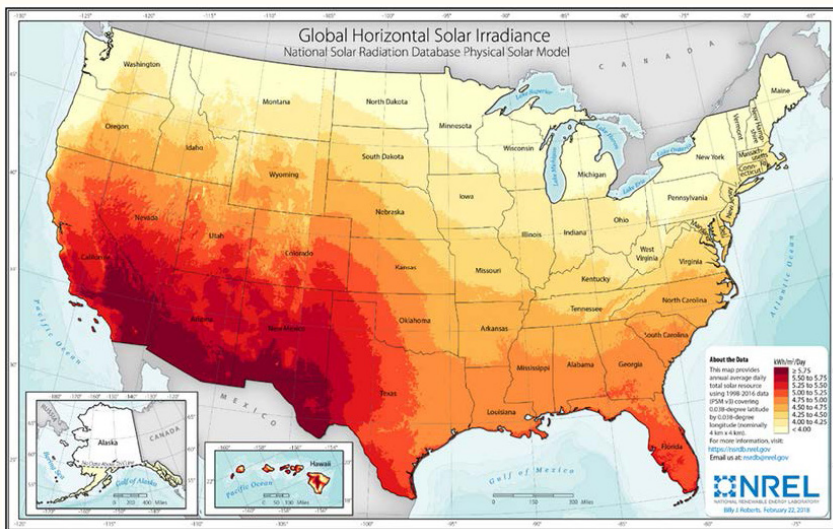
agreements and are designed to generate more than five megawatts of electricity. The systems then connect to a substation so that the voltage may be raised before sending the energy directly to the transmission grid. The development of utility-scale PV solar consumes approximately five acres per megawatt generated and averages at least 25 acres per project.

### **1.2 Site Selection & Land Needs**

While Missouri is not known for its long sunny days like other states, such as California and Florida, the variety in its geography offers many opportunities for solar expansion. There are many considerations that developers must look at when finding a new site for solar energy development. The three most important factors being solar potential, proximity to transmission lines and the physical terrain.



- **Solar potential** – Areas that have continuous access to bright and abundant sunlight are the most attractive to solar developers. Solar potential is measured by the PV solar industry using Global Horizontal Irradiance (GHI). By referring to the GHI map below, you can see that Missouri has an annual average daily solar value of 4.00-4.50 kWh/m<sup>2</sup>/Day.



- **Proximity to Transmission Lines** – Current and future infrastructural investments are also a limiting factor. Therefore, developers seek land that is near already existing, higher voltage transmission lines and substations. If transmission lines are not close by, more land and monetary investment will be needed for further development.

- **Terrain** – For ease of construction, flat areas with less than three percent slope and minimal obstructions (trees, hills, etc.) are preferred.

## 1.3 Community Relations and Developer Expectations

A developer typically involves landowners, who are willing, during the permitting process to ensure the local permitting authority understands the support for the project. In Missouri, this might include landowner invitations to meetings with the permitting authority, such as a County Board of Commissioners. It is important to encourage landowners to assert their private property rights and the ability to make business decisions that fits their needs, instead of one size fits all government mandates. To that end, as business partners, developers typically offer opportunities to answer questions from landowners and community members, and seek open lines of communication throughout not only the development process, but also the construction and operations stages of a project.

## 1.4 Advantages of Entering into Solar Agreements

### Financial Benefits

Solar is a cash crop that helps farmers and landowners diversify their income portfolio and ensure the reliability of their livelihood. Unlike many agricultural crops in the Midwest, renewables can be harvested all year long. Plus, wind and solar are drought-proof, high-yield land outputs that can produce for decades at a time without expenses on fertilizers, pesticides and irrigation.

### Community Economic Benefits

Solar farms stimulate the economy. According to the American Clean Power Association, Missourians receive about \$360,000 from solar in state and local tax payments each year. As the industry grows, this source of revenue will increase, supporting

## Spotlight on Land Use

An average of between 7 and 10 acres of land is required to produce one megawatt (MW) of electricity from solar energy. Missouri has 90 MW of solar, occupying approximately 1,000 acres of land. This accounts for just 0.004% of the state's 27.8 million acres of farmland.

local programs and infrastructure for decades to come.

Renewables also create good-paying jobs for community members, helping local economies thrive. Solar photovoltaic installers are among the top five fastest growing occupations in the United States, according to the U.S. Bureau of Labor Statistics. These jobs can also bring families together, drawing younger generations back to rural communities or family farms as opportunities and local amenities increase.

## **1.5 Land Use Tradeoffs & Opportunity Costs**

### **Restriction of Land Use**

Unlike wind energy projects, which often allow for crop, livestock and even hunting operations to occur around the turbines, only certain personnel can enter and exit a utility-scale solar facility – because they are critical grid infrastructure. Therefore, they must be kept secure and fenced off, with only authorized people coming onsite. While there is a rise in agrivoltaic uses such as growing crops underneath solar panels in smaller scale projects, this likely won't be implemented at utility-scale projects.

Thus, a utility-scale solar project may represent a replacement of the agricultural or recreational revenues from the land it occupies, since those uses may no longer be possible.

### **Liability Risk**

Liability insurance requirements for landowners and lessees vary based on contract language and situation. These are some common liability concerns for landowners considering solar energy leases:

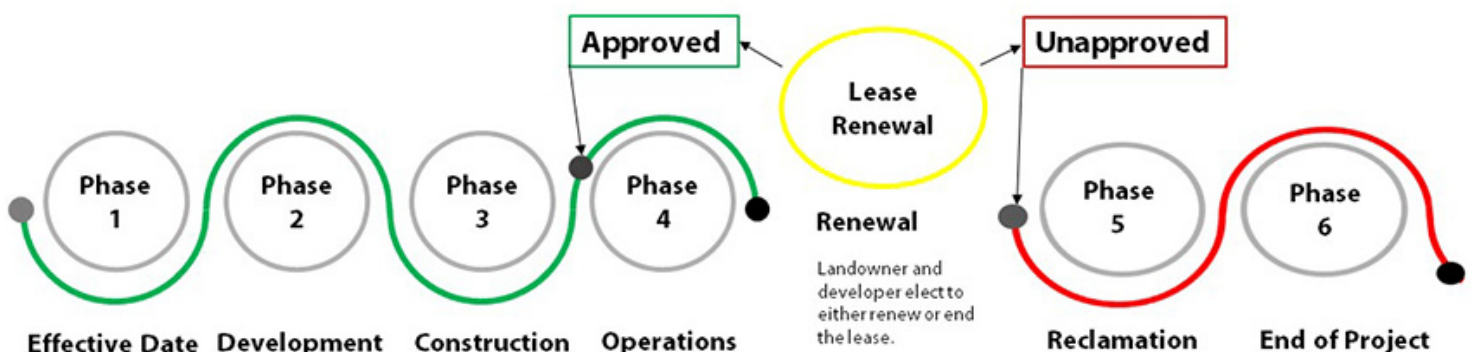
- Who is responsible for damages or injuries during solar array construction?
- Is the landowner liable for injuries to solar energy company employees maintaining the equipment?
- Who is liable if damage to the solar equipment occurs from other property users (hunters, custom equipment operators, loggers, agency personnel, farm employees, etc.)?
- How could indemnification clauses in the lease expose the landowner to future liability?

Landowners may consult with attorneys, insurance professionals and other experts to measure potential liability risks from a solar energy lease.

## **1.6 Varied Long-term Effects on Land**

Due to the long-term nature of the agreements, entering into a utility-scale lease agreement may have either a net benefit or cost to your soil and water quality depending on the pre-existing practices on your operation.

### **What are the phases of solar leasing?**





## CHAPTER 2 Initial Considerations

Farmers earn their living from their land. Consequentially, they are very good stewards. Renewable energy provides a variety of benefits to the landowner, the community and the environment as well. These considerations are all important when deciding to lease land for solar.



### 2.1 Personal Considerations

It's no secret that the way land is used has an impact on all aspects of life for those that own it. That's why it is vital to recognize that farmers and landowners that lease their land for solar developments are making a personal choice. Regardless of whether the decision is based on the desire to diversify their personal income stream, fulfill the renewable energy demands of utilities, corporate purchasers and their customers, or even help meet the carbon reduction goals of a local community, a landowner has the right to make decisions about how their land is used.

### 2.2 Legal Considerations

Before entering into a utility-scale solar-energy-lease agreement, a landowner should look at the entire scope of their operation and make sure the proper documentation is in order.

- **Title and Ownership** – A clean land title is required before negotiating a lease agreement. Since joint ownership is common in many operations, each legal owner of the land must consent to the lease before beginning the project.

- **Letter of intent** – A letter of intent is often required at the beginning of the project. Reserving the land for a particular developer's use, the document typically limits the landowner's right to negotiate with other developers. Therefore, it is important to thoroughly research the company before signing.

- **Option to lease** – Once the landowner agrees to grant the developer exclusive rights to lease the land, an option to lease will be signed. \*Note: this is not the official lease and all necessary terms may not be spelled out at this step in the process\*



- **Lease or Purchase Agreement** –The lease is a long-term agreement that should explicitly address the terms and conditions of the agreement to their fullest extent. The terms should include payment terms, liability and tax responsibilities, renewal terms, removal bonds, etc.

Landowners should feel empowered to negotiate at each step of the process while recognizing that negotiating parties are each looking out for their own interests. Farmers should work closely with their lawyers to understand their rights throughout.

## **2.3 Tax, Policy & Government Program Considerations**

According to Missouri Revised Statutes §137.100, solar energy systems not held for resale are exempt from taxation for state,

county or local purposes. Outcomes of pending court cases may change the plain language interpretation of this statute. The Missouri legislature could also change laws that impact property tax assessment of utility-scale solar energy installations.

Changing land uses may impact tax rates. Changes in tax rates are related to state and local land use laws and zoning. Attorneys and accountants familiar with state and local land use and tax laws can help landowners understand possible impacts of solar energy leases upon property tax rates and allowable land use.

Solar energy development could potentially impact land conservation program contracts. Discussions with local or regional United States Department of Agriculture (USDA) personnel can provide landowners with additional information and insights about these potential impacts.

***MSA works to protect their freedom to operate through legislative advocacy, public policy initiatives and education.***







## **CHAPTER 3** **Lease Considerations**

### **!! ATTENTION !!**

The following information highlights the BEST practices used by “good players” in the solar industry. A landowner should ensure that the below concepts are addressed in the lease or contract presented to them by the developer and consult their lawyer and financial advisors before signing anything.



### **3.1 Compensation**

On agricultural land, there are three types of compensation that begin when the landowner cannot reasonably perform agricultural activities – the development term, the construction term, and the operating term. The payments step-up throughout the process until the full payment of the operating term.

The exact terms of the monetary compensation stay in force regardless of who owns the solar facility or who owns the land (e.g. if the facility owner sells the facility or the landowner sells their land).

### **Crop Compensation**

Some developers agree to pay compensation for crops on any portion of the property that are either taken out of commercial production for a season because of the construction of the solar facilities, or that are removed or damaged as a direct result of construction of the solar facilities. The compensation should be equal to the fair market value of the specific crop.

### **3.2 Lease Length**

A lease period must be of sufficient length to recapture the project's costs and return an acceptable profit to project investors. A developer will likely insist on a lease term that is equal to the contract they have with the utility (sometimes called a “power purchase agreement” or “PPA”) to ensure access to the site for the length of the PPA.

Leases typically last between 20 and 50 years, often consisting of an “initial” or “primary” term (about 20-30 years) followed by options to renew the lease for additional years at the developer’s discretion. While it may be difficult to get initial terms in smaller increments, there may be opportunity for negotiating the terms of lease renewals. Landowners should analyze the duration of the agreement carefully, accounting for not only the primary term but also for any renewal periods as well. Assume for the sake of discussion that the developer will execute any and all renewals to which they may be entitled.

Due to lease length, entering into a solar energy agreement may impact estate plans. Landowners may need to involve successors in discussions about the agreement as part of their succession planning efforts.

### **3.3 Operations & Maintenance**

In almost all instances, the solar developer will be responsible for the operations and maintenance of onsite infrastructure during the project term. As mentioned earlier, only certain personnel can enter and exit a utility-scale solar facility – because they are critical grid infrastructure. Therefore, landowners need not worry about maintaining the facilities themselves. However, always confirm that is specified within your agreement.

### **3.4 Taxes**

The developer should be responsible for property taxes assessed

on the project infrastructure, as well as any rollback taxes or increases in taxes due to change in land type. These taxes provide economic stability for communities that host solar projects, creating opportunities to improve local infrastructure or invest in other county projects.

### **3.5 Decommissioning - Solar at End of Project Term**

A solar agreement typically details a decommissioning plan for the solar project. Many county ordinances also include decommissioning requirements to ensure the costs for project removal do not fall on the landowner or the county. Decommissioning plans often include financial assurance in the form of a bond or escrow account. Landowners should ensure that decommissioning plans include what happens if the developer experiences financial hardship such as bankruptcy, or if the project were to end prematurely for any reason.

#### **Land Restoration**

Upon termination of the lease agreement, the developer (facility owner) is responsible for restoring the land to a condition reasonably similar to the original condition. If the facility owner fails to remove the panels and restore the land, the landowner has the right to remove the panels, restore the land, and receive compensation for the cost incurred by that process.







## **CHAPTER 4** **Frequently Asked Questions**

Farmers earn their living from their land. Consequently, they are very good stewards of it. Renewable energy provides a variety of benefits to the landowner, the community and the environment as well. These considerations are all important when deciding to lease land for solar.

### **4.1 Impacts on Current Property Use**

#### **How much land will a solar installation occupy?**

To maximize efficiency, a developer will likely seek to install as many solar panels in an area as possible so long as they do not cast shadows on each other and thus reduce their efficiencies. While solar energy projects may have a smaller overall “footprint” than a wind energy project, they occupy a greater percentage of that footprint than a wind energy project.

Landowners should work closely with the project developer in the design of the project to minimize the amount of land occupied by the solar equipment in order to maximize the amount of land still available for agricultural use.

Landowners should explicitly reserve the right to use the property for agricultural, recreational and other uses to the maximum extent possible. From the landowner’s perspective, such a reservation should be broad while still allowing the developer the

rights necessary to construct, operate, and maintain the project. Similarly, landowners should be careful not to grant away access to other resources on the property without fair compensation. Some solar agreements may attempt to give developers free access to water, rock, and other materials without any additional payment to the landowner.

#### **What if my land is contracted under a governmental program?**

The landowner’s participation in governmental programs can have an impact on the use of the property for solar energy development. Several USDA programs such as the Conservation Reserve Program (“CRP”), Environmental Quality Incentives Program (“EQIP”), the Grassland Reserve Program (“GRP”) and other common programs for landowners require participants to have multi-year contracts and plans for the use and maintenance of the land under contract. Constructing solar power equipment on such lands in violation of those contracts or plans could cause landowners to forfeit future payments, return of past payments,

or even pay penalties.

If project lands are any under USDA program contracts, the appropriate agencies should be contacted to discuss integration of the project under the contract plans or an amendment of the government program agreement before execution of the solar energy agreement. Landowners should consider negotiating agreement language providing that the developer should compensate any loss of revenues from such programs caused by the solar power project.

## **3.2 Solar in Our Surroundings**

### **Does solar reflect light onto neighboring properties?**

Even though they look somewhat shiny, PV solar modules must absorb light rather than reflect it. Any reflected light cannot be

converted into electricity, so solar panels are designed to ensure minimal reflection.

### **Does solar make noise?**

Though tracking motors and inverters may make a soft humming sound, this noise is inaudible from 50-150 feet outside the solar enclosure. Noise associated with solar panels is limited to their construction and removal.

### **Does solar impact property values?**

Large solar projects often have no negative impact on property values. In some cases, they may even have tangible positive effects. Proximity to solar farms does not negatively impact the sales of agricultural or residential land or deter its purchase.

