

# SOLAR LEASING

A Guide for Agricultural Landowners  
in the Pacific Northwest



AGRISOLAR CLEARINGHOUSE

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## A Guide for Agricultural Landowners in the Pacific Northwest

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## CONTENTS

Introduction	1
<b>Part I. Gathering Information</b>	<b>5</b>
Section 1. Understanding the Scale and Length of Solar Projects	6
Section 2. Realizing the Phases of the Solar Leasing Process	12
Section 3. Exploring Agrivoltaics: Solar and Farming	21
Section 4. Weighing Financial Opportunities, Losses, and Risks	29
Section 5. Recognizing Impacts to Agriculture and the Land	42
<b>Part II. Making a Decision</b>	<b>51</b>
Section 6. Respecting Relationships: Having powerful conversations with others who have connections to your land	52
Section 7. Identifying Non-Negotiable Issues	56
<b>Part III. Going Forth: Negotiating the Solar Lease</b>	<b>58</b>
Section 8. Navigating Legal Documents	59
Section 9. Negotiating With Power	72
Section 10. Conclusion: Circling back to your values and vision	76
<b>Appendix: Water Rights in Idaho, Oregon, and Washington</b>	<b>78</b>
Idaho: Water Rights (General)	79
Oregon: Water Rights and Solar	81
Washington: Water Rights and Solar	84

# INTRODUCTION

**S**OLAR ENERGY DEVELOPMENT is accelerating rapidly in the Pacific Northwest. As an agricultural landowner in the region, perhaps you've already been approached by a solar developer to enter a solar lease; maybe you anticipate receiving an offer in the near future.

Communities throughout the region are grappling with the question of whether—and where—large-scale solar projects should be built. Solar developers are attracted to farmlands and rangelands for siting solar projects. That's because these lands are large, flat, cleared of trees, easily accessible, and tend to be close to the existing power grid infrastructure.

Solar leases offer enticing opportunities for farmland and rangeland owners. Solar leases generally last for 15–25 years, with automatic renewals for an additional 5–10 years. Solar leases can help generate consistent income for 20–45 years.

On the flip side, the conversion of agricultural land to solar production stirs tension in local communities. Concerns are often raised that if solar is chosen over agriculture, farmers could lose their livelihoods, local food production might reduce, the quality of soil may be irreparably damaged due to uncertainty around impacts of the construction and removal of infrastructure, and the aesthetics of the landscape will be dramatically altered for decades to come. As this is a new and emerging technology, the question remains to be answered: will the land ever be suitable to be farmed again?

Farmland and rangeland owners are at the front lines of the tension between the push for solar and the loss of agricultural land. At some point, it is up to you, the landowner, to decide what is the long-term best interest for your business, your family, and your land. You know firsthand the qualities and intricacies of the land you own. You have an awareness of the land's history and its present use and value, which is perhaps intricately woven into your livelihood and your family life. With all this knowledge, you are in an optimal space to envision a path forward.

This puts you in a powerful position.

The responsibilities and long-term implications of your decision can also bring uncertainty, anxiety, and stress. It can feel overwhelming to parse through the vast, confusing, and conflicting information about solar leases.

Should you preserve your farmland and keep it in production (whether that means by yourself or leasing your land to another farmer or rancher)? Should you lease your land to a solar developer (which could bring in additional income for your farm operation and

This guide highlights issues specific to landowners in the Pacific Northwest. Region-specific issues include the legal and regulatory landscape, farming conditions, and shifting climate patterns in Idaho, Oregon, and Washington. That said, farmers in other regions will still find this guide informative as many issues landowners face when deciding whether to lease their land for solar are shared throughout the country.

your family, while also supporting clean energy demands)? What opportunities exist for doing both (by pursuing “agrivoltaics” or dual-use solar innovations)?

As you contemplate and answer these questions, your business partners or family members may hold conflicting opinions. This creates more tension and further complicates your decision. It can also feel intimidating to negotiate with a solar developer. What options do you have?

It takes **INTEGRITY** to spend time gathering information, evaluating your options, and making a conscious, informed decision. It takes **COURAGE** to respect relationships by having powerful conversations with significant people involved, including family members, business partners, and neighbors. It takes **POWER** within to engage in negotiations with a solar developer by setting clear boundaries and demands or stepping away altogether for the sake of the legacy of your land and the values and vision you hold close.

Ultimately, you have the integrity, courage, and power to make informed decisions about the future of your land.

This guide serves to help landowners navigate the complex and challenging decision process of whether to enter a solar lease by:

- Highlighting key issues to consider
- Presenting a roadmap to help you evaluate options and make an informed decision
- Offering communication skills to support you when engaging in constructive communication with others involved
- Identifying specific issues to watch out for and address in the legal documents: option to lease agreement (also referred to as the “option agreement”) and solar lease
- Providing tools and tips for negotiating with the solar company if and when you decide to enter a solar lease

The Guide is divided into three parts: 1) Gathering Information, 2) Making a Decision, 3) Going Forth: Negotiating the Solar Lease.

### **Part I. Gathering Information**

Section 1. Understanding the Scale of Solar Projects

Section 2. Realizing the Phases of the Solar Leasing Process

Section 3. Exploring Agrivoltaics: Solar and Farming

Section 4. Weighing Financial Opportunities, Losses, and Risks

Section 5. Recognizing Impacts to Agriculture and the Land

### **Part II. Making a Decision**

Section 6. Respecting Relationships: Having powerful conversations with others who have connections to your land

Section 7. Identifying Non-Negotiable Issues

### **Part III. Going Forth: Negotiating the Solar Lease**

Section 8. Navigating Legal Documents

Section 9. Negotiating with Power

Conclusion: Putting it all together

Throughout the guide you will see reflection exercises, like the one below, that will help you start to think about solar and your farmland. Let's begin by reflecting on your values for your land and intentions for entering into a solar lease.

Answer the following questions with a list of 3–5 items:

- What do you value about your land (for example: tangible qualities of the landscape, wildlife that passes through, connections that it facilitates, memories you hold)?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- Why are you considering a solar lease?



## Additional resources

Existing guides for farmers on solar leases in other regions, all of which were informative to this guide, include:

- **NEW YORK:** NY Farm Bureau, “Leasing Your Farmland for Wind & Solar Energy Development,” December 2016.
- **OHIO:** Kirk Hall, Peggy; Bachelor, Evin, Romich, Eric. “Farmland Owner’s Guide to Solar Leasing.” National Agricultural Law Center, August 2019.
- **OKLAHOMA:** Ferrell, Shannon L. “Understanding Solar Energy Agreements.” National Agricultural Law Center Production,” 2019.
- **PENNSYLVANIA:** Brocket, Daniel; Johnstonbaugh, Edward. “Landowner Leasing for Utility Scale Solar Farms.” Penn. State Univ. Extension, September 2019.

## About the authors



American Farmland Trust (AFT) is a national nonprofit organization dedicated to saving the land that sustains us by protecting farmland, promoting sound farming practices, and keeping farmers on the land.

AFT has developed Smart Solar<sup>SM</sup> principles to help shape solar development across America. These principles can be applied broadly recognizing that Smart Solar will look different across the country due to differences in landscapes, agricultural production systems and other characteristics.

### **Principle 1. Prioritize Solar Siting on Buildings and Land Not Well Suited for Farming**

Emphasize solar energy development on rooftops, carports, irrigation ditches, brownfields or other land not well suited for agriculture to help minimize the impacts of solar energy on our nation's best agricultural land and farm businesses.

### **Principle 2. Safeguard the Ability for Land to Be Used for Agriculture**

If solar energy is developed on farmland or ranchland, policies and practices should protect soil health, especially during construction and decommissioning, to ensure opportunities for farming in the future.

### **Principle 3. Grow Agrivoltaics for Agricultural Production & Solar Energy**

Agriculture and solar energy can coexist if appropriate planning is undertaken. Agrivoltaic projects sustain agricultural production underneath solar panels and/or between rows of solar panels throughout the life of the project.

### **Principle 4. Promote Equity and Farm Viability**

Farmers and underserved communities should benefit from solar energy development. There must be inclusive stakeholder engagement to ensure projects strengthen farm viability and reflect farmer interests, including underserved producers that face barriers to accessing land and other resources.

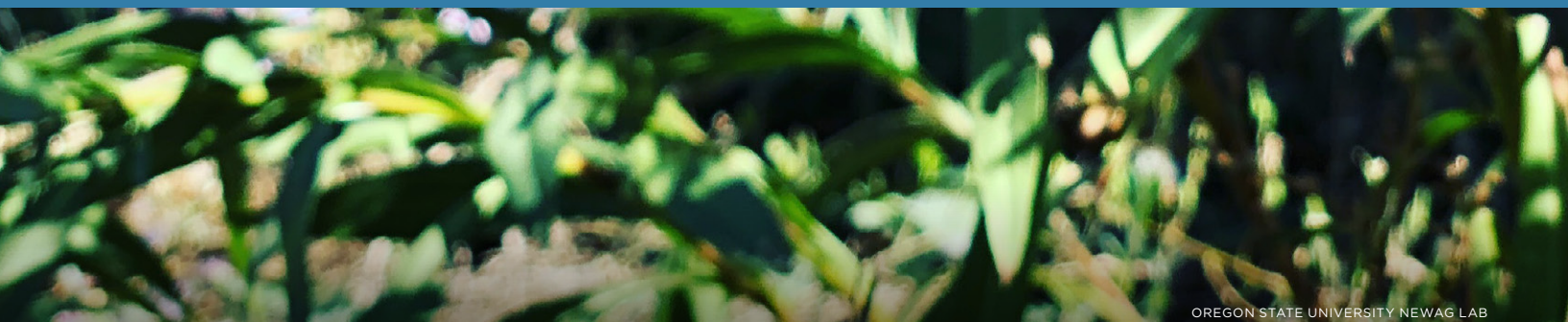


Farm Commons is a nonprofit organization dedicated to empowering farmers and ranchers to resolve their own legal vulnerabilities within an ecosystem of support. We achieve our mission through education and leadership development on issues of farm law.

**DISCLAIMER:** This guide does not provide legal advice or establish an attorney-client relationship between the reader and the author. Always consult an attorney regarding your specific situation.



## PART I. GATHERING INFORMATION



## Section 1. Understanding the Scale and Length of Solar Projects

Until recently solar energy projects in the Pacific Northwest were limited to relatively small rooftop residential and commercial solar installations. You may be picturing the iconic farm with a small solar array to generate power for its own operation.

**The scale of solar energy projects in the Pacific Northwest is rapidly expanding. The region is catching up to the national trend toward utility-scale solar.** The region's first large, utility-scale solar projects went online in Idaho and Oregon in 2016. Large-scale solar projects have been increasing in the region ever since. Already approved and proposed large-scale solar projects span numerous counties throughout Idaho, Oregon, and Washington.

**The growing number of large-scale solar projects in the Pacific Northwest is part of a greater effort to meet clean energy goals set by governments and businesses in the region and nationwide.** A decrease in the cost of solar is also spurring the growth. Solar is now cost-competitive with wind, hydro, and natural gas, which are other leading energy resources. Improved technologies have also made large-scale solar installations more efficient, productive, and durable.

Based on current trends and future projections, large-scale solar projects are expected to increase throughout the Pacific Northwest and beyond.

### Let's talk about scale: What exactly is large, utility-scale solar?

To better understand the scale of a solar project, we need to bring in a few phrases used in the solar energy sector, including megawatt, behind-the-meter, in-front-of-the-meter, and net-metering.

#### FIRST, WHAT IS A MEGAWATT?

A watt is a unit of power that measures the rate of energy transfer; a megawatt is one million watts.

The average number of homes powered by a megawatt of solar varies from state to state. It depends on average sunshine, temperature and wind, and average household electricity use.

The Solar Energy Industries Association (SEIA), a leading trade organization in the solar industry, estimates that one megawatt of solar energy powers between 100 and 150 homes in the Pacific Northwest. The number continues to increase with improved technology and increased utility-scale solar production.

Since 2012, **the utility-scale solar** sector has led the overall U.S. solar market in installed capacity.

According to the US Department of Energy Solar Futures study, by 2050, 90 percent of solar energy will come from **utility-scale projects** in rural communities.



It can take anywhere between 3.5 and 16.5 acres of solar arrays per MW of solar generating capacity. A 5 MW project could require 17.5 to 82 acres of land.

In early 2022, the largest solar facility in the Pacific Northwest, and one of the largest in the country, was approved. The Obsidian Solar Center is projected to generate **400 MW** of energy at a time. It will be located on about six square miles of land in Oregon, near the Lake County community of Christmas Valley.

**ENERGY USAGE\***

AMOUNT OF MW GENERATED	HOMES POWERED (POTENTIAL)	AMOUNT OF LAND NEEDED
1 MW	100-150	3.5-16.5 acres (mean = 10)
100 MW	10,000-15,000	70-330 acres (mean = 200)
1,000 MW	100,000-150,000	7,000-33,000 acres (mean = 20,000)
<i>Oregon example: Christmas Valley—400 MW</i>	<i>40,000-60,000</i>	<i>3,840 acres (6 square miles)</i>

\* Numbers based on data from “What’s in a Megawatt”, SEIA. [seia.org/initiatives/whats-megawatt](http://seia.org/initiatives/whats-megawatt).

NOTE: These numbers are estimates and vary by state. In Idaho, 1 MW provides energy for close to 150 homes, while in Washington the number of homes powered by 1 MW is estimated to be closer to 100. Factors affecting the number of homes include average sunshine (also called insolation), average household electricity consumption, temperature, and wind.

**These numbers simply provide a glimpse of the land needed for a large-scale solar project.**

As we grapple with these numbers, we must keep one thing in mind: **solar energy is a rapidly emerging industry. Things are ever evolving.** As new technologies develop, numbers will likely change. Based on the trends it seems that costs will continue to decrease and less land will be needed per MW of solar energy generated; this could shift tensions between risks and opportunities for all. Only time will tell.

Regulatory agencies at the national, state, and local levels are wrestling with strategies to regulate the markets, provide incentives, or let things be. Regulatory decisions also influence the price of solar and whether, where, and how solar projects are built. What’s more, various policies and legal decisions are caught in litigation. The legal battles provide further ambiguities down the road.

For more on regulation and legal battles, see “Who Regulates Solar Energy?” at the end of Section 2.

**WHAT IS THE DIFFERENCE BETWEEN BEHIND-THE-METER AND IN-FRONT-OF-THE-METER?**

**In the most general terms, solar energy production can be divided into two types: Behind-the-Meter and In-Front-of-the-Meter.**

**Behind-the-Meter (BTM)**

The solar energy generated by a BTM solar energy system is primarily used by the home, building, or facility where it is located. The components are situated “behind” the utility meter, hence its name. In states with **NET METERING** policies, any surplus electricity can be sent through the meter and into the power grid in exchange for utility bill credits.

BTM systems are typically small in scale, including rooftop or small-scale arrays on residential or commercial properties, or panels on farms that generate the farm’s energy needs.

STATE	NET-METERING POLICY	SYSTEM CAPACITY LIMIT
Idaho	Idaho does not have a statewide net-metering law. Each of the state’s three investor-owned utilities (Avista Utilities, Idaho Power and Rocky Mountain Power) has developed a net-metering rate that the Idaho Public Utilities Commission (IPUC) has approved. As of June 2022, IPUC is reviewing a proposal by Idaho Power to change its net-metering rate.	Set by utility company
Oregon	Oregon’s net metering program requires all utilities, including investor-owned, public utility districts, municipalities, and cooperatives, to offer net-metering programs to customers with solar and other renewable energy systems tied to the grid. ORS 757.300.	Up to 25 KW for residential installations, and 2 MW for commercial.
Washington	Washington’s net-metering law requires all utility companies, including investor-owned, public utility districts, municipalities, and cooperatives, to offer net-metering to customers with solar and other renewable energy systems tied to the grid. RCW 80.60.	No more than 100 KW



### In-Front-of-the-Meter (IFTM)

Solar energy generated from an IFTM system feeds directly into the power grid and is distributed to a utility’s ratepayers. This type of solar energy system is also referred to as distributed generation. The IFTM system is situated “in front of” the ratepayers’ utility meters. Electricity flows through each ratepayer’s meter and the utility bills the ratepayer for their use. IFTM systems are significantly larger in scale than BTM systems and include:

- **COMMUNITY SOLAR.**
- **UTILITY-SCALE.**
- some **COMMERCIAL** projects.

#### **What is net metering?**

Net metering policies come into play when you have a solar energy system that generates more power than you use. You can deliver the excess solar energy directly to the power grid to be dispersed. In exchange, the utility gives you a credit on your utility bill. This is called “net metering.”

**COMMUNITY SOLAR** is a way to share solar energy with homes and businesses in your community. Members buy or lease part of a larger solar energy system located in their community. Arrangements vary: some community solar projects are subscription models owned by a third party or a utility company, others are community-owned where members pool investments to purchase and maintain the project usually through an LLC or cooperative. The community solar project leases the land for a fee. Solar energy from the project goes to the power grid. Participants typically pay a subscription fee and receive credits on their utility bill for the energy generated by the local solar panels through net metering.

STATE	COMMUNITY SOLAR PROGRAM	SYSTEM CAPACITY LIMIT
Idaho	Idaho currently does not have a Community Solar program. Its recently proposed Clean Energy Your Way program will allow customers to subscribe to an off-site solar panel for a portion of their power. However, the program will not permit community members to own the solar panels and the panels are unlikely to be located inside communities.	N/A
Oregon	The Oregon Community Solar Program gives customers of Portland General Electric, Pacific Power, and Idaho Power the option to subscribe to a community solar project for a fee and receive credits back on their utility bill for the energy generated by the local solar panels.	3 MW or less in peak capacity
Washington	Washington has a community solar incentives program where community solar participants receive incentives payments if the project meets certain requirements. For example, the incentives are prioritized for projects located away from protected habitat and farmland; however, dual use agrivoltaics is permitted. Community solar projects may also be structured outside of the state's solar incentive program.  A Community Solar Project may be organized by a Washington electric utility or by a private entity.	Under 1000 KW



**UTILITY-SCALE** solar generally refers to a project that generates electricity for the purpose of distributing it through the power grid. Power generated from these projects is typically greater than 5 MW. Utility-scale solar facilities are connected to transmission facilities at levels greater than 100,000 volts. Sometimes a utility company will own and develop a utility-scale solar project; other times projects are owned and developed by a private solar developer who bundles and wholesales it to a utility provider. Basically, a private solar developer secures acreage for the project through a lease or purchase and install the solar array. Once the solar installation generates electricity, the developer sells the electricity to the power grid by entering into a power purchase agreement with a utility provider. Utility-scale solar is an emerging industry as the demand for solar and renewable energy increases. Many private solar developers are start-up entrepreneurial businesses seeking to make a profit.

**COMMERCIAL PROJECTS** are large-scale solar installations that are built off-site to generate power for a single commercial client. Examples of large-scale commercial solar projects in the Pacific Northwest include large solar installations built specifically to power the data centers of tech companies like Google, Meta, Microsoft, and Amazon.

## How does large-scale solar work?

Most large-scale, in-front-of-the-meter solar projects use either photovoltaic (PV) or concentrating solar power (CSP) technologies. These technologies vary in how they convert the sun’s energy to electrical power.

PV technology directly converts sunlight into electrical power. The solar cells are embedded in panels stationed on an array that is angled towards the sun. PV solar panels generate direct current (DC) which is then converted to alternating current (AC) and is fed to the power grid. This process requires inverters and other infrastructure. **No water is needed for the PV process; however, water may be needed to clean the panels.**

CSP technology first converts the power of the sun into heat and then uses that heat to generate electrical power. CSP concentrates reflected sunlight off mirrors or reflectors onto receivers that convert that light into heat. The heat warms either air or liquid, which generates energy that is used to make electricity. **Oftentimes CSP projects require water for cooling or for the heat exchange process.**





## When does solar leasing come into play?

Utility-scale solar projects—as well as some community solar and commercial projects—cover large swaths of land. Recall the numbers—it can require anywhere between 3.5 and 16.5 acres per MW of generating capacity. Solar developers often regard agricultural land as a prime location for these projects. Private solar developers often try to bundle multiple parcels together to fulfill their acreage needs.

Farmers and ranchers across the Pacific Northwest region are being approached by solar developers with exploratory offers to lease their land for large-scale solar projects. Solar developers may contact many landowners in a general area to see if sufficient interest and enough land area exist to develop a solar project. Some developers are advertising in farm magazines to further spread their reach.

Solar leases can provide extra income to landowners. However, solar leases range from 25 to 40 years with automatic extension periods of five to ten years. The decision affects the property for generations. All ideas should be thought through and discussed before embarking on a large-scale solar project—you, the farmer, know your land and how you want it used and preserved.

### SCALE

TYPE		RECIPIENT OF SOLAR ENERGY
Personal Use/Net-Metering		Farm operation
Community Solar*		Local Community
Large Commercial*		Single business or entity
Utility-Scale Solar*		Utilities (wholesale sales)

\*Solar lease

If a representative from each type of large-scale solar project approached you about a solar lease, what questions would you have for them? For example, you might want to know about their desired project scale and land needs, as well as the business's ethics, history, and land stewardship track-record.

- Community Solar Representative (scale =1000 kw to less than 3 MW):
  
- Utility Solar Representative (scale = greater than 5 MW):
  
- Commercial Solar Representative (scale = enough to power one specific facility):



## References

- Hall, Peggy; Bachelor, Evin; Romich, Eric. "Farmland Owner's Guide to Solar Leasing." National Agricultural Law Center, August 2019.
- Solar@Scale. "A Local Government Guidebook for Improving Large-Scale Solar Development Outcomes." International City/County Management Association, September 2021.
- "What's in a Megawatt," Solar Energy Industries Association.

## Additional resources

- Idaho Conservation League, Speak up for Community Owned Solar: [idahoconservation.org/blog/solar-for-all-speak-up-for-community-owned-solar](https://idahoconservation.org/blog/solar-for-all-speak-up-for-community-owned-solar).
- Oregon Community Solar Program: [oregoncsp.org](https://oregoncsp.org).
- Washington Community Solar: [utc.wa.gov/regulated-industries/utilities/energy/community-solar](https://utc.wa.gov/regulated-industries/utilities/energy/community-solar).

## Section 2. Realizing the Phases of the Solar Leasing Process

### Which large-scale projects will be developed?

The process of developing a utility-scale solar project reflects a chicken-and-egg dilemma. Typically, the solar developer is a private entrepreneurial business. Their ultimate objective is to sell the solar energy generated from the project to a utility provider for a profit. They do this by negotiating and entering a power purchase agreement (PPA) with the utility provider.

Before the solar developer submits a project to the utility, they first must determine if there's enough land available. Often this means bundling multiple properties together. The solar developer must solicit interest from multiple landowners to lease their land for the large-scale solar project.

Sometimes solar developers begin their contact with landowners with a **LETTER OF INTENT (LOI)**. The LOI generally expresses the solar developer's interest in leasing the land for the solar project and requests the landowner's cooperation in exploring the arrangement further.

Other times solar developers skip the LOI phase and go directly to the **OPTION TO LEASE AGREEMENT**, also referred to as the option agreement. The option agreement invites landowners to commit to a **SOLAR LEASE** agreement *if* the solar developer finds the property is suitable for the project AND the project meets all financial, regulatory, and other contingencies. **At this point, the landowner cannot back out of the agreement.**

Solar developers spend a lot of time investigating, evaluating, and planning a large-scale solar project before approaching a landowner to enter a solar lease. Even when landowners are on board and sign leasing-related documents—i.e., LOI and Option to Lease—many projects fall through because of financing or regulatory approval hurdles.

For large-scale solar projects a utility company owns and develops, the utility company will be in less of a bind. They will not face the extra challenge of securing a power purchase agreement once they've secured commitments for land leases. But they will still need to surpass inherent uncertainties with financing contingencies and regulatory approvals. This is also the case for community solar and large commercial projects where the end-users are already identified.






Once the solar developer gets enough interest to meet the acreage required for their envisioned solar project, they propose the project to the utility company. If the utility company says no, there's no power purchase agreement and no project. If regulators say no, there's no permit and no project. The option agreements that the landowners entered all end. The solar leases that were negotiated with landowners become null and void. The solar leases do not go into effect.

In this section, we introduce the fundamentals of each of these legal documents, flagging key issues to address at this initial phase. In Section 8. Navigating Legal Documents, we'll dive deeper into the specifics of the solar lease agreement.

The entire process can be long and drawn out, taking as many as ten or more years from the planning stage to breaking ground for construction, especially if legal battles ensue.

Here we'll walk through the solar lease process from beginning to ending. It can be helpful to realize these phases and timelines at the outset and the realities of uncertainty when mapping out your timeline for deciding whether to enter a solar lease.

## Phases of a solar lease

	PHASE	EVENTS
	Siting phase	Identifying properties Contacting landowners Letter of Intent
	Development or option phase	Option agreement + Solar lease Due diligence Regulatory permitting Power purchase agreement (PPA)
	Construction phase	Solar lease begins
	Operational phase	Maintenance
	Decommissioning phase	Solar lease ends (25+yrs later)

## SITING PHASE

### Identifying properties

A solar developer typically begins the process by conducting studies to determine optimal grid interconnection locations strategically. In addition, solar developers will usually investigate the legal requirements and regulatory process for constructing and operating a solar facility in the area. The burden is on the developer to navigate the array of local, state, and federal regulations.

For more information on regulations, see “Who Regulates Solar Energy?” at the end of this section.

Solar developers then identify nearby properties that appear to meet their standards for sunlight and physical qualities and begin seeking interest from landowners.

Solar developers consider many factors when selecting a property for a large-scale solar project. Four fundamental factors include: sufficient sunlight; proximity to the power grid infrastructure; adequate physical qualities of the property; and minimal legal hurdles.

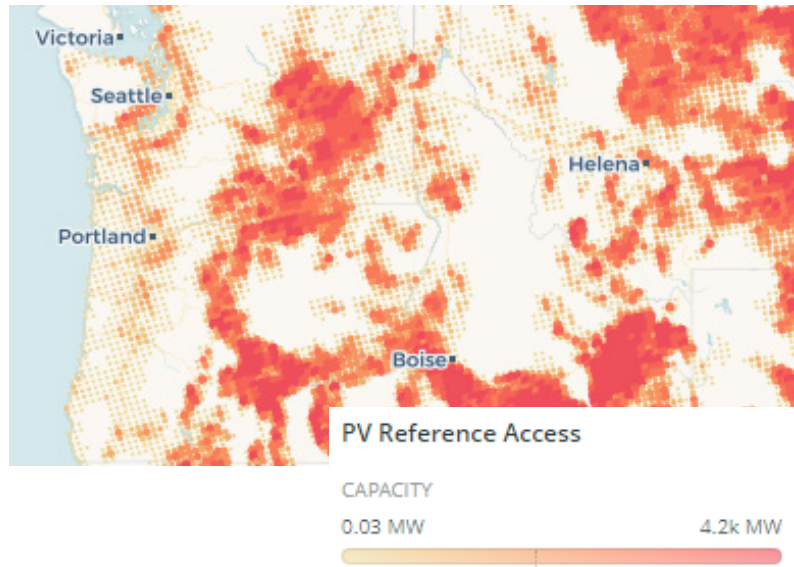
### Sufficient sunlight

The solar industry uses the Global Horizontal Irradiance (GHI) metric to measure solar potential. GHI describes the amount of energy the sun *could produce* in a specific spot if all that energy were converted to electricity. While solar potential is not limited to the

For more information on regulations, see “Who Regulates Solar Energy?” at the end of this section.

eastern side of the Cascade Mountain Range in the Pacific Northwest, the solar potential is much higher in Central and Eastern Washington and Oregon, as well as in Southern Idaho, as illustrated in the map at right from the National Renewable Energy Laboratory division of the Department of Energy.

To see what kind of solar energy potential exists near you, visit the [National Renewable Energy Lab](#).



#### Proximity to the power grid infrastructure

Solar developers are most interested in properties with easy access to high-voltage power lines close to electrical substations. The power lines and substations are considered the grid interconnection point. They provide the physical pathway to deliver the energy generated from the solar panels to whomever is purchasing the power.

Interconnection can be costly for the developers. A project becomes too expensive if a site is far from the grid infrastructure or challenging to access. Developers will also consider the condition of the nearby connection point as upgrades to the grid infrastructure can be costly.

#### Good physical qualities

Solar developers often prefer farmland because it is flat, lacks rocks and roots, and has access to sunlight. The ideal site will have a slope of no more than three percent. Drainage must be adequate, and shade obstructions must be minimal.

#### Minimal legal hurdles

Solar developers tend to avoid locations that will involve challenging zoning or permitting issues. In addition, solar developers will shy away from properties that have existing easements that might interfere with access for construction or maintenance of the solar installations, including easements for utilities, drainage, wetlands conservation, and farmland preservation, because easements often prohibit any conflicting land uses. If this were the case, it would give the easement holder a right to object to the solar lease or seek payment for violations or interferences with the easement. This is often too risky for the developer.

## CONTACTING LANDOWNERS

### Letter of intent

Often, the solar developer reaches out to a landowner with a letter of intent (LOI) to begin the solar leasing process. This letter might include details of the overall solar project, including specifics about the potential lease arrangement they are offering the



landowner. The letter does not obligate the solar developer to do anything. However, the LOI often legally requires the landowner to comply with specific provisions:

- **EXCLUSIVITY.** You cannot engage with another solar competitor.
- **NON-INTERFERENCE.** You must agree to give the solar developer access to your property for due diligence.
- **CONFIDENTIALITY.** You cannot discuss the details with anyone except for your attorney.

The LOI is a legal document that requires a signature. Once you sign, you are obligated to comply with whatever it needs.

We strongly recommend asking an attorney to review the LOI before signing it. While this is early in the stage, an attorney can help you navigate what's to come and protect your interests. As a general legal risk management strategy, it's a good idea to seek the advice of an attorney if/when a solar company (or anyone for that matter): (1) presents you with a written document, (2) requests your signature, and (3) offers you money.



The LOI, if offered, begins the negotiation process.

One critical tip throughout this process is to get **EVERYTHING** in writing. This includes conversations with the broker if one is involved. Words spoken in person or over the phone can be misinterpreted or even inaccurate. A best practice is to clarify any spoken conversations in writing through an email conversation or even a written agreement. These writings can then be shared with your attorney or even with business partners and family members as you engage with them in the process.



## DEVELOPMENT OR OPTION PHASE (OPTION AGREEMENT + SOLAR LEASE)

### What is the option agreement?

Like an LOI, the option to lease agreement provides the solar developer time to engage in due diligence on the property, obtain a lease or purchase commitments from other landowners, and secure financing and regulatory permits for the solar project. During this time, the landowner will generally be held to exclusivity, non-interference, and confidentiality provisions, as we highlighted for the LOI.

**The option agreement goes a huge step further than an LOI. Generally, once a landowner signs the option to lease agreement, they cannot back out of a project. In other words, the option agreement provides the solar developer the option to enter the lease, not the landowner.**

If the due diligence is positive, financing is secured, and regulatory permits are approved, the landowner is legally obligated to enter the solar lease. Under any circumstance, the solar developer can back out. The landowner, however, can very rarely back out.

### What is the solar lease agreement?

The solar lease is the primary document that sets the detailed parameters of the arrangement. It includes the payment terms, duration of the lease, rights, and obligations of the landowner and the developer, tax and liability issues, rights of access, and more.

Solar leases are considered a “commercial lease” in the eyes of the courts. The courts presume a level of sophistication and awareness by all parties. It is critical that landowners understand what they are getting into and fully negotiate the provisions.

**We will further explore details of the solar lease in Part 3: Navigating the Legal Documents.**

A critical point to remember here is that an option agreement often includes many of the solar lease terms. Often solar developers will attach the solar lease to the option agreement; others include the option agreement within the lease agreement itself. Under either scenario, once you sign the option agreement, you very well may be agreeing to the terms of the long-term solar lease *if* the solar developer decides to pursue the project.

**Once you sign the option agreement, you can rarely change the lease terms that the option agreement includes.**

We strongly recommend that your attorney review the option agreement before you sign it. This is a legally binding agreement that could establish legal obligations and consequences for decades to come.



### What happens during the development/option phase?

The length of the option agreement is usually between 2 and 5 years, depending on the complexity and scale of the solar project. During the option phase, the solar developer conducts **DUE DILIGENCE** on the land to ensure the project is feasible. The solar developer will determine precisely where they would like to put the solar installation. This is considered the “solar footprint.” It usually does not include the entire parcel of land.

The solar developer will also engage in the **REGULATORY PROCESS** to secure any required permits. They will also try to enter into a **POWER PURCHASE AGREEMENT** with a utility company and secure any additional needed financing.

The solar developer will provide compensation to the landowner for the option phase. This could be in the form of a lump sum payment (all at once) when the option agreement is signed, or, it could be an annual payment per acre for the duration of the option period.

During this period, the solar developer may allow a landowner to continue to use the land for farming, whether for crop production or grazing. However, the landowner will be required to provide access to the land.

If you intend to farm your land during the option period, be sure the option agreement permits it. There should also be provisions for damage to crops or forage if the developer exercises the option and begins construction on the solar project when crops are in the ground. The option agreement should notify the landowner if the solar developer intends to go forth with the lease. This will provide the landowner time to remove crops (if possible) and livestock from the land to prevent damages.



## CONSTRUCTION PHASE: SOLAR LEASE BEGINS

If the solar developer decides to proceed with the project—once financing and regulatory permits are secured—the solar lease will officially go into effect. This is commonly referred to as “exercising the option.” The landowner will begin receiving rent payments.

This also begins the construction or development phase. Some leases separate the development or construction period from the operational phase, providing different amounts for each. Often the landowner will receive a reduced payment during the construction phase.

Depending on the size of the project, construction can take anywhere from **six months to three or more years**.

The site will become a major construction zone with heavy and loud equipment during construction. Landowners can expect grading, soil erosion, soil compaction, and noise. Fences will be installed around the perimeter of the solar footprint.

## OPERATIONAL PHASE: MAINTENANCE AND RENEWAL

Once construction is complete, the solar installation becomes operational. This is the longest phase of the solar lease. A lease usually describes this period as when the site generates solar energy for the grid. Rental payments are usually the highest during this phase.

Maintenance activities will occur regularly. Maintenance responsibility is generally entirely on the developer, including panel cleaning, equipment testing, maintenance and repair, and vegetation control. Depending on the arrangement, vegetation control could include spraying herbicides and intensive mowing. Some projects have incorporated sheep grazing, sometimes referred to as “solar grazing,” into their operations and others have established pollinator friendly habitats to maintain vegetation underneath the panels. We discuss more about these alternative options in Section 3. Exploring Agrivoltaics.

The solar lease will likely allow the developer to extend the lease for an additional time. The renewal provisions are usually automatic, meaning that as long as the solar developer provides the landowner notification by a certain time the lease will automatically renew. Ultimately, the lifetime of the solar panels and infrastructure determine the time frame, which will depend on wear and tear, technologies for updates, and possibilities for the reinstallation of panels.

## DECOMMISSIONING PHASE: SOLAR LEASE ENDS (25+YRS LATER)

The final phase is the decommissioning phase. The solar lease often includes a cleanup period giving the solar developer a specified period to remove the equipment and restore the land. The time allotted is usually around 12 months, depending on the project size. We discuss more about cleanup in Section 5. Recognizing Impacts to Agriculture and the Land.

## TOTAL LEASE LENGTH

When we add up all these phases, we realize how long the land could be subject to the lease:

PHASE	TIME
Option phase	2-5 years
Construction phase	2-3 years
Operations phase	25-30 years
+ Renewals	5-10 years
Decommissioning phase	1-2 years
<b>TOTAL LENGTH</b>	<b>35-50 YEARS</b>

Let's use the general timeline of a solar lease to reflect on your long-term vision for your land. Under each time range, jot down some notes about how you want your land/business to be operating by that time. If any questions arise about how your vision intersects with a potential solar lease, make note of them in the column provided.

### THE 50 YEAR PLAN

TIMELINE	VISION FOR YOUR LAND	INTERACTION WITH SOLAR LEASE PHASE: QUESTIONS/ISSUES
<b>5 Years</b> ↓		
<b>10 Years</b> ↓		
<b>20 Years</b> ↓		
<b>30 Years</b> ↓		
<b>50 Years</b> ↓		



## WHO REGULATES SOLAR ENERGY?

From retail to wholesale markets to siting solar projects

**RETAIL.** Each state's public utility commission oversees the retail electricity markets within their state. This includes the distribution or sale of solar electricity from the utility company to the end-user (i.e., homeowner, business).

**WHOLESALE.** The Federal Energy Regulatory Commission (FERC) is a federal agency tasked with regulating the transmission of electricity, natural gas, and oil between states. Regarding electricity, FERC regulates wholesale transactions that cross state lines. In other words, FERC regulates interstate wholesale transactions. Interstate wholesale transactions occur when a utility purchases electricity generated in another state. In addition, FERC sets reliability standards for the bulk power system. While FERC doesn't fix prices, FERC's decisions affect the markets that determine wholesale electricity prices, including the price of solar energy.

For example, the federal Public Utility Regulatory Policies Act (PURPA) requires electric utilities to buy all energy from renewable generators smaller than 80 megawatts. These are referred to as PURPA qualifying facilities (QF). PURPA instructs FERC to create rules to implement and enforce this QF requirement, including how rates are determined for these wholesale solar electricity sales. FERC finalized its new regulations in 2020. These new rules give states more flexibility in implementing the rates. Solar developers have complained that this process makes the rates less attractive. In 2021, the Solar Energy Industries Association (SEIA) challenged the rule in federal court. This ongoing litigation continues to provide uncertainty in the wholesale solar energy market.

### Solar project siting

It is the solar developer's burden to work through all the regulations required to construct and operate a solar project. Nevertheless, as a landowner deciding whether to enter into a long-term solar lease, it can be useful to know the regulatory process. Generally, state and local authorities approve the siting and construction of power plants, including large-scale solar projects.

### Federal involvement

While FERC does not get directly involved in the approval process (unless it involves federal land), FERC's regulation of wholesale electricity markets can affect what types of solar projects are developed. The federal Environmental Protection Agency may get involved in the siting process of a large-scale solar project if the project affects wetlands or a water body (Clean Water Act) or if it would cause significant environmental impacts (National Environmental Protection Act).

CONTINUED ON THE FOLLOWING PAGE



STATE	SITING PROCESS
Idaho	<p>Idaho does not have a state-level agency or council coordinating the siting of large energy facilities. Local units of government, including county commissions or governing boards and municipalities, have most of the siting authority. The local governments are responsible for providing venues for public comment and participation and granting permits. The solar developer must navigate these local regulatory processes, which will also include zoning requirements through the county or municipality where the solar project will be located. They must also separately navigate any other state or federal requirements that may apply.</p>
Oregon	<p>The OR Energy Facility Siting Council (EFSC) oversees large energy facilities built in Oregon. Before a large energy facility is built, the developer must apply for a site certificate from the EFSC and meet the council’s siting standards. This process consolidates state agency and local government regulations into a single review process. Standards cover issues such as land use, environmental impacts, noise concerns, and cultural and archeological artifacts. The process includes a public comment period, public information meeting, and public hearing.</p> <p>Solar projects that must go through the EFSC’s review process include a solar power generation facility using more than:</p> <ul style="list-style-type: none"> <li>• 160 acres located on high-value farmland as defined in ORS 195.300;</li> <li>• 1,280 acres (two square miles) located on land that is predominantly cultivated or that, if not cultivated, is predominantly composed of soils that are in capability classes I to IV, as specified by the National Cooperative Soil Survey operated by the Natural Resources Conservation Service of the United States Department of Agriculture; or</li> <li>• 1,920 acres (three square miles) located on any other land.</li> </ul> <p>Other projects would need to go through their state or local agencies to get any necessary permits. This includes zoning requirements through the county or municipality where the solar project will be located.</p>
Washington	<p>The WA Energy Facility Site Evaluation Council (EFSEC) oversees large energy facilities built in Washington. Before certain energy facilities can be sited, constructed, or operated the developer must apply to the EFSEC for a site certificate. The process consolidates local and state regulations. It also includes regulations of the federal Environmental Protection Agency. Issues addressed include land use, environmental impacts, noise concerns, and cultural and archeological artifacts. The process includes a public information meeting and a public hearing.</p> <p>For solar energy facilities of any size, an EFSEC review is not required. However, the solar developer can choose to go through the EFSEC process.</p> <p>Otherwise, the solar developer must navigate separately any permitting or siting requirements of local, state, and federal agencies. This includes zoning requirements through the county or municipality where the solar project will be located.</p>

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**Additional resources**

Idaho Energy Permitting & Siting: [oemr.idaho.gov/energy-infrastructure/permitting](http://oemr.idaho.gov/energy-infrastructure/permitting).

Oregon Energy Facility Siting Council (EFSC): [oregon.gov/energy/facilities-safety/facilities/Pages/Council-Jurisdiction.aspx](http://oregon.gov/energy/facilities-safety/facilities/Pages/Council-Jurisdiction.aspx).

Washington Energy Facility Site Evaluation Council (EFSEC): [efsec.wa.gov/about-efsec/certification-process](http://efsec.wa.gov/about-efsec/certification-process).

## Section 3. Exploring Agrivoltaics: Solar and Farming

Thank you to Oregon State University’s Nexus of Energy, Water, and Agriculture (NEWAg) Lab for providing support and guidance on the agrivoltaics section.



### What is agrivoltaics?

When the land underneath solar power generation is used for a secondary purpose such as farming, conservation, or recreation, it is called “dual-use” solar. Agrivoltaics is a type of dual-use where land is simultaneously used for power generation and agriculture. In other words, it’s when solar arrays and active farming are located in the same area.

Agrivoltaic systems have potential to ease tension between the push toward solar and the displacement of agricultural lands. Rather than converting farm- or rangeland entirely to solar, “agrivoltaic” systems allow landowners to continue using the land beneath solar arrays to raise livestock, cultivate crops, and establish pollinator friendly habitats.

Agrivoltaic systems have potential to keep the land in farming while contributing to renewable energy production and providing an additional revenue stream for agricultural landowners. In this way, agrivoltaics could help address many current concerns—whether it be transitioning to renewable energy, mitigating climate change impacts, growing sufficient and sustainable food, managing scarce water resources, or cultivating financial resilience for your farm operation.

### Words of caution: Agrivoltaics carries uncertainties and risks

As agrivoltaics is a new and emerging technology, we are still learning about the long-term impacts of agrivoltaics, including impacts from the installation and removal of equipment. Fundamentally, landowners are encouraged to keep solar off their best agricultural lands and to focus on incorporating it on historically lower producing areas.

As described in the different types of agrivoltaic systems highlighted below, combining solar and food production can be mutually beneficial. However, more research needs to be done to understand whether agrivoltaics, especially at utility-scale, are feasible in the Pacific Northwest. Potential benefits could include water conservation, temperature regulation, and protection from extreme weather, but they need to be researched and understood at scale before we can be certain these assumptions are valid.

Additionally, an agrivoltaic system designed for today may not meet the needs of a future farmer. Once installed on the land, the solar infrastructure cannot be changed, and it may limit what can be cultivated on the land in the future.

Agrivoltaics is an emerging practice that is gaining interest throughout the world. The concept is just beginning to be integrated with utility-scale solar projects. Ongoing research is being conducted that will help refine the technology, and we can expect to see many improvements and innovations in the upcoming years.

#### Agrivoltaics



**Agri-** relating to food production



**-Voltaic** relating to electricity production

## Key aspects of agrivoltaic systems

Here we'll highlight a few key aspects of three agrivoltaic systems: **ROTATIONAL LIVESTOCK GRAZING**, **CULTIVATING CROPS**, and **POLLINATOR HABITATS**.

Throughout this guide, we'll continue to identify issues to remember when contemplating whether and how to integrate an agrivoltaic system into your solar lease.

### ROTATIONAL LIVESTOCK GRAZING

Solar companies face a common problem: shade can negatively impact a solar project. Solar arrays placed in fields are generally angled with the lower edges around 36 inches off the ground, or hip-high. Tall plants, wildflowers, and weeds can cast shadows and reduce the amount of power they can generate.

Operators must constantly cut the grass and vegetation beneath and around the solar array. They might apply herbicides to prevent vegetation from growing, a time intensive and costly practice. The use of chemicals and intensive mowing also creates erosion and degrades the soil quality.

An emerging approach for controlling the vegetation beneath solar arrays is to use a flock of sheep rather than a fleet of lawnmowers. Sheep have proven to be the most compatible livestock with solar installation; goats can be unruly, and cows are too tall and tend to rub against the panels and racks. That said, efforts are being made to integrate cattle grazing and we will see the results of these efforts over the next few years. The additional height needed for cattle leads to additional expenses for the solar developer for the additional materials involved.

Rotational grazing offers a more environmentally friendly approach to vegetation control on solar sites. In addition to replacing fossil fuel-burning lawnmowers and reducing herbicide use, rotational grazing can restore soil quality and sequester carbon. On hot and dry summer days, the sheep appreciate the shade, and the condensation from the solar panels can create a microclimate that increases the soil moisture, resulting in more grasses for the sheep to graze.

One agrivoltaic study in Corvallis by Oregon State University showed that the pasture lands where solar panels had been located dramatically increased soil moisture and biomass after two years. (Adeh et al., 3.3). The study concluded that the solar panels:

- Encouraged plants and grasses to flourish under the shade and resulted in 90% more biomass at the end of the growing season and greater nutritional value.
- Promoted higher soil moisture retention underneath, even during the hottest months.
- Created more water efficiency among the plants and grasses (up to 328% more efficient).

Solar companies throughout the United States, including one project in Yakima County, are hiring shepherders to manage vegetation on their utility-scale solar sites. (Donofrio). The solar company enters a sublease with a "solar grazer" and pays them for their services.

According to a Cornell University report, solar developers find that grazing is cheaper than traditional vegetation management and could save up to \$300 per acre annually for solar site operators. (Kochendoerfer et al.).



In 2019, several pioneering solar grazers got together to establish the American Solar Grazing Association. ASGA provides support for fellow solar grazers and develops best practices. The ASGA has partnered with the Food and Beverage Law Clinic at Pace University Law School to create a Solar Grazing Contract Template. The Template is designed as a Master Services Agreement (MSA) to govern arrangements between sheep grazers and solar companies. It includes a corresponding Statement of Work (SOW) containing specific terms for each solar grazing site.

## CULTIVATING CROPS

While most are still in the research and pilot project phase, numerous studies show that growing crops under solar panels can be done in ways that optimize conditions for both the crops and the solar panels.

Solar panels may be able to provide a stable environment for certain plants that appreciate shade and grow relatively close to the ground. Research studies and pilot programs are being conducted in various universities and institutions throughout the country to determine which crops thrive when grown under solar panels. Studies by the University of Arizona indicate that tomatoes, chiltepin peppers, alfalfa, and more, are higher producing when grown in the environment under solar panels. In particular, the chiltepin pepper harvest was three times greater, and cherry tomato yield was twice as great as when grown in the direct sun. Jalapeno production came out the same, but the plants retained more water as there was 65% less transpiration. Overall, soil moisture levels were 15% higher on average, reducing the need for frequent irrigation.

### EXISTING AND FUTURE RESEARCH ON AGRIVOLTAIC CROP CULTIVATION

- In the Pacific Northwest, research studies are being conducted by Oregon State University, where they've created a five-acre model for agrivoltaics at OSU's North Willamette Research and Extension Center in Aurora, Oregon.
- Oregon State University Extension Small Farms Program is conducting additional research on dryland farming in agrivoltaic systems. It includes tomatoes and potatoes, among other vegetable crops (Amy Garrett, Professor of Practice, Small Farms Program).
- Across the western states, research is being conducted by the University of Arizona, Colorado State University, the National Renewable Energy Laboratory (NREL), and Jack's Solar Farm in Boulder County, Colorado (see case study below).
- Elsewhere in the United States, research is being conducted by the University of Illinois, the University of Maine, the University of Massachusetts, Temple University, and Cornell University, to name a few.
- In 2021, the U.S. Department of Agriculture's National Institute of Food and Agriculture awarded the University of Illinois a \$10 million grant for a four-year project to determine which row crops, foraging crops, and specialty crops are best to couple with solar panels in agrivoltaic settings. The project is called "Sustainably Co-locating Agricultural and Photovoltaic Electricity Systems" (SCAPES). Research sites will be located in Illinois, Colorado, and Arizona.

Early research has shown the potential for reduced water needs of plants grown under solar panels. Water efficiency is a growing concern as the Pacific Northwest continues to experience increasing aridity and drought conditions. The shade from the panels can also reduce plant stress due to heat. Additionally, solar panels could shield crops from torrential rains, hail, and high winds.

Growing crops under solar panels may also be beneficial for solar energy generation. Plant transpiration can have a cooling effect on solar panels which could result in improvements to electricity production. The cooling effect may be able to increase the lifespan of solar panels, as overheating makes them less efficient over time. Field trials in an Oregon State University Extension project have shown that panels positioned above plants produce up to 10% more electricity (Oregon State University).

The solar facility must be designed to optimize crop yield, quality, and solar energy generation when growing crops under solar panels. Generally, the system will need to use rotating panels, and/or the height of the solar panels will need to be raised and spaced widely to allow farm equipment to get through easily.

Raising the height of the solar arrays can be cost-intensive for solar developers. For every foot of height, an additional 2 feet of steel is required—one foot up and one foot underground to provide support. However, as the cost of solar installations decreases over time, solar companies might have more incentive to integrate technologies that would promote crop production and retain the agricultural value of the land.

Innovative technology is being developed to harness optimal sunlight, shade, and moisture for crop production and solar power generation. This includes rotating panels (“trackers”) and translucent panels. Instead of stationary panels that face the same direction all day, tracking panels rotate on a fixed axis to follow the sun throughout the day. While designed to optimize energy production, this technology could also be used to optimize crop production.

For example, during high heat, the panels could rotate with a remote control or smartphone to provide more shade for the crops, avoiding scorching. On the contrary, when fields need to be plowed, panels could be rotated to provide maximum farm equipment access. With translucent panels, the amount of sunlight could be adjusted to optimize the sunlight. Another technology, bifacial panels, are semi-transparent and absorb light from both sides of the panel, allowing more light to pass through and reach crops, and allowing the panel to use light reflected by the plants and ground.

Cultivating crops underneath a solar installation is currently being done at a relatively small scale, primarily for research purposes. However, interest is growing in the industry as research studies and pilot projects show promising results. Researchers and solar developers hope to integrate these trials into larger and utility-scale solar projects in years to come.

## **ESTABLISHING POLLINATOR HABITATS AND APIARIES**

Another emerging system for agrivoltaics is to plant and maintain pollinator-friendly plants under solar arrays. This approach sometimes includes keeping bee apiaries at the perimeter or inside the solar footprint.

Planting pollinator habitats at a solar site is a growing trend throughout the Midwest. Estimates show that over half of the 4,000 acres of large-scale solar projects in

Minnesota in 2016 and 2017 contain pollinator habitats (Benage). The largest solar farm with pollinator habitats and apiaries in the United States is the Eagle Point Solar Farm in Jackson County, OR. (See case study below).

These dual-use pollinator-friendly solar sites provide mutual benefits. Wildflower meadows help prevent erosion, increase soil quality, and provide habitats for bees, insects, butterflies, and birds. In addition, growing a field of native wildflowers requires less mowing and pesticides than growing conventional grass. Initial case studies show that maintaining these wildflower meadows costs less over time than traditional maintenance approaches. (Helmer). The plants also help keep panels cool, improving energy efficiency.

Studies are underway to determine the best mixes of wildflower seeds. Initial studies indicate that native plants that take a bit longer to establish might be more promising in attracting a diverse set of pollinators over the long run. (Helmer). NREL is conducting a study on one acre of the Eagle Point Solar Farm’s pollinator-friendly habitat, along with three other solar sites in Oregon. (Waltson et al.). NREL intends to use the results to educate other solar companies about ideal types of native plants to grow within different sections of a solar site, for example under panels, between panels, etc.

Many states, including Oregon, have developed a Pollinator Friendly Solar Scorecard. These scorecards establish entomologist-approved standards for what constitutes “beneficial to pollinators” within the managed landscape of a solar facility.

### **Next steps for landowners interested in pursuing agrivoltaics**

Agrivoltaics is a new and emerging technology, and as such, farmers and ranchers should work with local extension agents or other agricultural technicians to keep up with research. Landowners will want to put in some time to understand what is ideal and what is possible for their land, as new research unfolds. To reiterate, landowners are encouraged to keep solar off their best agricultural lands and to limit it to lower producing areas.

**Landowners interested in pursuing agrivoltaics within the context of a solar lease, whether at the outset or some stage down the road, will want to be sure to preserve this option early in the process.** Seeking out solar companies who are committed to designing a project with agrivoltaics is essential. Solar developers are increasingly interested in designing projects with agrivoltaics. Many are realizing that making a commitment to agrivoltaics can be helpful in securing a solar project’s approval as many local municipalities and governments care about preserving agricultural land and uses.

Landowners will want to raise the priority of agrivoltaics at the beginning of their conversation with the solar developer. Certain design elements will need to be considered at the earliest planning stages and specific terms will need to be incorporated within the solar lease agreement.

### **Perimeter and Adjacent Farming**

Some landowners are experimenting with growing pollinator-friendly plants or edible perennial crops at the perimeter of the solar array footprint on their land. While not generally considered “agrivoltaics” per se, these “perimeter” or “adjacent” food production approaches can also be beneficial to mitigate environmental impacts from a solar project.

In Section 8. Navigating Legal Documents, we will highlight key legal issues to consider for landowners who want to pursue or preserve the option for agrivoltaics when entering a solar lease.

CASE STUDY  
Jack's Solar Garden

Jack's Solar Garden is one of the largest agrivoltaic research projects in the United States. Jack's Solar Garden is a 1.2 MW solar installation located on a privately owned 24-acre farm in Boulder County, Colorado. Jack's Solar Garden is a community solar project that includes multiple types of vegetation at a single site: pollinator habitats, pasture grass to support grazing livestock, and specialty crops.

Jack's Solar Garden has partnered with Sprout City Farms, a non-profit in Denver, to grow specialty crops on site. They are experimenting with planting crops in different locations to understand better which plants grow well in certain conditions and which crops don't grow well under solar panels. Crops planted in 2022 include carrots, tomatoes, salad greens, herbs, peppers, and tomatoes, to name a few.

Jack's Solar Garden has partnered with Colorado State University, the University of Arizona, and the National Renewable Energy Laboratory to provide research opportunities. It also serves as a local hub for education and community service to inspire aspiring dual-land-use farmers through its nonprofit arm, the Colorado Agrivoltaic Learning Center.

CASE STUDY  
Eagle Point Solar Farm

Eagle Point solar farm in Jackson County, Oregon is currently the largest solar farm apiary in the United States. It's a utility-scale project with a capacity of 9.9 MW that spans over 41 acres. Native wildflowers cover the ground under solar arrays. Along the perimeter sit 57 honeybee hives.

The solar site is owned and operated by Pine Gate Renewables. This solar company established a Solar Culture initiative to promote permaculture principles at its Oregon and North Carolina solar sites.

Landscape design consultant Regenerate designed the Eagle Point Solar Farm pollinator habitat. John Jacob, the then president of the Southern Oregon Beekeepers Association, was enlisted as the head beekeeper. Recognizing the collaborative and mutually beneficial relationship, Pine Gate does not charge Jacob to keep his hives on the property.

These hives are kept at the perimeter of the solar fence line, which is still within the leased area of the project, to ensure that the operational and maintenance crews do not encounter any safety issues with the bees. Pine Gate is developing safety protocols and agreements for third parties visiting the site. They hope to move the hives within the solar fence line once those protocols are in place.

Landowners should consider keeping solar off their “best” or most productive land and directing solar to lands not well suited for agriculture. Take a moment to reflect on and identify which areas of your land might be most suitable for the following. You can do this by sketching a map or describing it in words:

Solar:

Agrivoltaics:

Preserved for agricultural or other uses (i.e., kept free of a solar project altogether, including arrays and infrastructure):



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## Additional resources

- American Farmland Trust’s Farmland Information Center: [farmlandinfo.org](http://farmlandinfo.org).
- American Solar Grazing Association: [solargrazing.org](http://solargrazing.org).
- OSU’s North Willamette Research and Extension Center: [agsci.oregonstate.edu/nwrec](http://agsci.oregonstate.edu/nwrec).
- OSU’s Extension Small Farms Program: [smallfarms.oregonstate.edu/smallfarms/projects/dry-farming](http://smallfarms.oregonstate.edu/smallfarms/projects/dry-farming).
- USDA and the University of Illinois “Sustainably Co-locating Agricultural and Photovoltaic Electricity Systems (SCAPES)” project FAQs: [scapes.illinois.edu/about-the-project/project-q-a](http://scapes.illinois.edu/about-the-project/project-q-a).
- Pollinator Friendly Solar Scorecard: [fresh-energy.org/beeslovesolar/pollinator-friendly-solar-scorecards](http://fresh-energy.org/beeslovesolar/pollinator-friendly-solar-scorecards).
- American Solar Grazing Association: [SolarGrazing.org](http://SolarGrazing.org).
- Jacks Solar Garden: [jackssolargarden.com](http://jackssolargarden.com).
- Eagle Point Solar Farm: Case study: [Eagle Point solar farm sets precedent for solar apiaries in the United States](http://Eagle Point solar farm sets precedent for solar apiaries in the United States).
- Pennsylvania State University Extension Webinar, [Agrivoltaics and Solar Utility Considerations](http://Agrivoltaics and Solar Utility Considerations), August 2022.

## Section 4. Weighing Financial Opportunities, Losses, and Risks

### Planning for the long term

When evaluating the financial upsides and downsides of leasing your land for solar, it's critical to acknowledge that utility-scale solar leases are long-term. It's important to anticipate potential events well into the future to determine whether the solar project will conflict with your or your successors' desired or required financial needs associated with the land.

This section highlights some key financial issues to consider. As a way of organizing the multitude of factors at issue, we've divided financial considerations into three broad categories: (1) financial opportunities, (2) financial losses and opportunity costs, and (3) financial risks. Each category carries complexities and uncertainties that are greater than the scope of this guide.

**It's highly recommended that you consult a trusted financial professional to assist you in evaluating relevant financial issues** (i.e., an accountant, tax professional, financial advisor, insurance agent, attorney, or extension agent).

### Financial opportunities

#### SOLAR LEASE PAYMENTS

There are many ways to calculate rental rates in solar leases. As the solar industry is still evolving and energy prices continue to fluctuate, the data is still limited for determining market trends. However, some helpful guiding points are emerging to help landowners evaluate and negotiate compensation arrangements.

#### Account for varying rental rates depending on the phase

Solar leases often provide different payment terms based on the project phase. Generally, solar projects are divided into four phases:

- “option,” “development,” or “pre-construction” phase (when the project's viability is being assessed),
- construction phase (once the project is approved and the “option to lease” has been exercised but before energy production has begun),
- operational phase (when the project is generating energy), and
- decommissioning phase (when all materials are removed and the land is cleaned up).

The operational phase can last between 20-45 years, so the value of rental rates here is most critical. Knowing what to expect in terms of payment during all the phases can be helpful. Here are a few financial considerations for each phase:

The lease should clearly define the milestones for each phase so that you can easily determine once those milestones have occurred and when a new payment system is triggered.



## 1. Development Phase (i.e., “option phase”)

The solar developer often begins the leasing process by reaching out to the landowner with a “Letter of Intent” or “Option to Lease.” Sometimes the lease agreement includes option provisions. Once you sign an agreement with a lease “option,” the development phase—also referred to as the “option” or “pre-construction” phase—begins.

The solar developer uses this period to engage in due diligence, obtain leases or purchase commitments from other landowners, and secure financing and regulatory permits.

During this phase, the solar developer will likely need intermittent access to your land to test the soil, track the sun, or monitor the weather. The landowner will generally be permitted to use and access the entire property, including continuing crop production or grazing, so long as these activities do not interfere with the solar developer’s due diligence.

Typically, the solar developer will compensate the landowner with a lump sum payment for this development phase. This payment, often called a “**bonus payment**,” is paid upfront within a short period after you sign the option or lease agreement.

The solar developer may also offer **annual payments on a per-acre basis** throughout the development phase. Depending on the size of the solar project, the development phase may last as little as one to several years. Two to five years is common.

That said, per-acre payments will be low during this phase. Landowners can expect less than 10% of the annual rent received during the operational phase.

If the payment is on a per-acres basis, ensure the acreage involved is clearly defined, so the landowner knows what acres are “in” and “out” of the rental payment equation. This clear definition of acreage should include an accurate legal description and a land map, which is ideally based on a new land survey. The rental rate should account for extra acreage if the company installs and uses transmission lines or exclusively uses any other portion of your property. The importance of the legal description is discussed more in Section 8, Navigating Legal Documents.



In the development phase, the solar company may want rights to access the entire property to assess which portions are optimal for solar production. The per-acre calculation would then include the entire acreage. If you want to reserve certain areas of your property for production or other uses indefinitely (i.e., ultimately exclude them from the solar lease), it is best to express and negotiate this upfront.

Finally, during the development phase, you will likely incur attorney costs and other professional fees related to negotiating the solar lease agreement. Many solar developers will provide compensation of a few thousand dollars as **compensation for attorney costs**. You will want to insist on this during the outset of the negotiations. This should give you added affirmation and confidence to engage with an attorney early in the process.



## 2. Construction Phase

The construction phase begins once the solar developer decides to proceed with the solar project and begins construction. It's often referred to as “exercising the option.”

During this phase, it's typical that the landowner will receive **annual payments on a per acre basis**. Often the per-acre amount is higher during this phase than in the pre-construction phase.

That said, the total acreage involved during the construction phase may be less than that of the pre-construction phase. It's important to keep both factors in mind—higher per acre amount but less acreage—when calculating financial projections here.

The payment amount per acre is generally higher because the solar developer's access to and use of the land included in the lease agreement is more intensive during the construction phase. This includes the “solar footprint” where the solar panels and equipment are installed and the “right of way,” including roads, pathways, and transmission lines to the power substations. The total acreage may be less in this phase than in the pre-construction phase if the solar developer chooses to limit the solar project to a smaller section of the property based on due diligence.

The landowner will likely be restricted from continuing to use and access the land included in the solar lease—both the “solar footprint” and perhaps certain “rights of ways”—during some or all of the construction phase. If these areas were in production, the landowner could negotiate additional **compensation for loss of production** annually using revenues from years past.

In addition, the landowner can request the solar developer to include provisions in the lease that provide **compensation for any damages to crops or forage** if the construction phase begins when crops are still in the ground.

## 3. Operational Phase

During this phase, there are various payment options: per acre basis, nameplate capacity, royalty payments, or some combination of these.

*Most common payment arrangement: “per-acre basis”*

For most solar leases, the market trend has been to provide **annual payments based on a per-acre basis** during the operational phase. However, the rates per acreage are significantly higher during this phase than in previous phases.

Exactly how much more a landowner can expect is challenging to gauge. Here are a few factors to keep in mind when negotiating payments for this phase:

- Solar energy development has the potential to generate higher revenues than agricultural production. Accordingly, **a per-acre lease rate should be higher than the market rate for agricultural leases in your area.**
- **Certain land characteristics can be used to negotiate a higher rental rate** as solar developers consider them more favorable. These include
  - Proximity to transmission lines and a power station
  - Proximity to other solar projects
  - Minimal complexity and cost of preparing the site, and
  - Stability of the regional weather

You may start by searching for other regional solar projects to determine prevailing lease rates. You may also consider negotiating a “most favored nations” clause, which requires the solar developer to match the highest lease rate offered to a landowner within a specified distance.

#### *Somewhat common: nameplate capacity*

While per-acre basis is the most common method for determining payments, some solar leases base payments on the “**nameplate capacity**” of the solar equipment. Nameplate capacity is the estimated solar energy capacity the solar equipment installed on the property generates when it operates under optimal conditions. Lease agreements that include nameplate capacity rates offer a flat payment per unit of capacity (e.g., megawatt) of the solar equipment installed on the property.

#### *Rare but negotiable: royalty payments*

Finally, some solar agreements may provide the landowner “**royalty payments**” based on the actual production of the solar equipment installed on the property. Royalties or revenue-sharing models are commonly used in mineral leases and sometimes in other forms of renewable energy leases, such as wind leases. So far, royalty payments have been far less prevalent than acreage or nameplate payments in the solar energy industry.

Fundamentally, if you prefer to secure royalty payments, you must agree upon the basis of the payment. The basis could be several measures, including per megawatt, kilowatt-hours of power produced, “gross proceeds” from electricity sales, “net revenue” from power sold, etc. Ultimately, the basis term will need to be well-defined in the lease agreement.

If you choose the royalty route, you will need to decide the level of risk that feels comfortable to you. An attorney experienced in mineral leases will be able to advise you on structuring royalty payments. Your accountant or financial advisor may also be able to assist you with calculating best, average, and worst-case projections.

#### 4. Decommissioning Phase

The lease should include a timeline for cleanup. Currently, the range is between 6 and 12 months. The common payment method here is a per-acre basis as the solar energy generation will have stopped. Likewise, the rental rate will likely be less than the operational phase as the solar developer is no longer receiving revenue. Nevertheless, rental payments should continue during the decommissioning phase.

The most significant financial issues to consider during this phase are the liability risks and costs if the solar developer doesn’t fully clean up the site or if there is unrecoverable damage. We discuss this more a bit later in this section.

#### Account for rental payment schedules and increases

Regardless of the agreed-upon rental payment method, rental rates are usually paid at the beginning of the calendar year; a different payment schedule is negotiable. It can be helpful at the outset to consider your cash flow needs, including when the mortgage or other large payments are owed. Rental rates should increase at a set interval during the operational phase of the lease. You’ll need to negotiate and agree upon the mechanism for these incremental rental payment increases.

It is standard for solar leases to include a built-in rent escalation clause that increases the payment amounts for acreage or capacity. Often solar leases have a fixed percentage increase at set intervals. Another option is to tie the rental rate adjustments to the rate of inflation or price index based on an objective, publicly available number (e.g., the U.S. Bureau of Labor Statistics Consumer Price Index, U.S. Energy Information Agency wholesale electrical price, etc.).

The interval at which increases are triggered is also up for negotiation. It could be annually, every other year, etc. You will want to account for these increases.

## SOLAR TAX INCENTIVES

Federal tax incentives for solar array purchasing were extended in the 2022 Inflation Reduction Act. In addition, Washington, Oregon, and Idaho have tax incentive programs for solar projects. As a landowner leasing land for a solar project, these incentives do not extend to you. Rather, they extend to the solar developer who owns the solar panels.

Nevertheless, it is a good idea to be familiar with the state and federal tax incentives for which the solar company is eligible. This puts you in a better position to negotiate the rental rate. This is especially the case if you can negotiate royalties or profit-sharing. You will need to know the solar company's costs before and after-tax credits to calculate your portion of the profits.

## AGRIVOLTAICS INCOME

Landowners who decide to pursue agrivoltaics, whether rotational livestock grazing, cultivating crops, or maintaining pollinator habitats, gain the opportunity for additional income during the operational phase of the solar lease. It may take some time to establish financial gains from the agrivoltaic operation, depending on the state of the soil during the construction phase, the chosen agrivoltaic system, and the arrangement.

Often with rotational grazing, the solar developer enters the sublease with the grazing operation to maintain the ground underneath the solar arrays. The solar developer retains any profits from this arrangement. Case studies show that rotational grazing saves the solar developer money over the alternative of maintaining conventional grass. An agrivoltaic arrangement that retains agricultural use might also be looked upon more favorably in the permitting process. You can use this data to negotiate a higher rental rate.

If the solar leasing company is not interested in managing the agrivoltaic operation, you may still be able to negotiate an alternative arrangement. Whether for grazing, cultivating crops, or maintaining pollinator habitat and apiaries, you could manage the agrivoltaic operation yourself or sublease the land within the solar footprint to another farmer. If you desire either of these arrangements, whether at the outset or in the future, it is crucial to include clear terms in the solar lease agreement that reserve these rights to the landowner.

Ultimately, the financial upside from agrivoltaics will depend on several factors, including the chosen agrivoltaic system, the operation's size and success, and the arrangement. You may want to contact OSU extension or another research institute piloting agrivoltaic projects to better understand appropriate financial projections.

## WATER RIGHTS TRANSFERS\*

If you convert some or all your land to solar, you may have excess water rights. This is particularly true if you take your land out of agricultural production altogether.

Landowners holding excess water rights face a unique financial opportunity.

It's helpful to know how much water is needed for solar production. PV solar facilities do not require water for operation, however, water is needed for cleaning the panels and maintaining the equipment. Often the solar company will bring their water supply for this purpose.

On the other hand, Concentration Solar Power (CSP) projects require water for cooling or heat exchange to generate steam to produce electrical power. In this case, you will need to carefully negotiate the amount of water you allow the solar company to use and at what price. The negotiated price may depend on your water rights and your ability to transfer those rights to the solar developer. Each state's laws vary. See the chart below for more information.

If you have excess water rights and the solar developer does not need the water, you may be able to transfer or lease these rights to a trust, water supply bank, or third party.

Discerning the best approach for handling your water rights will take careful planning. If you decide to pursue agrivoltaics or keep perimeter lands in production, you will want to be sure to reserve sufficient water for your production needs.

## Financial losses and opportunity costs

Entering a solar lease might lead to financial losses and opportunity costs—i.e., forgone profits from missed opportunities—that the solar company may not pay for. You will need to do a thorough assessment at the outset, including identifying all potential interests or rights to the land and clearing up any issues or conflicts.

The following highlights some key items involving potential financial losses and opportunity costs when entering a solar lease.

## INCREASED PROPERTY TAXES

Idaho, Oregon, and Washington each have a property tax assessment program for commercial agricultural land. These programs allow agricultural land to be assessed at a lower tax rate to support farm businesses. Leasing all or even part of your agricultural land for solar may remove that land from the agricultural property tax assessment, which could result in a sizable hit.

Taxes for agricultural land in one of these programs are typically thousands of dollars less than the regular tax rate. Depending on state rules, you must pay back taxes for 5–10 years when your land is disqualified from the program. You might also be responsible for interest or penalties. See the chart below for more specific information on your state's disqualification policies and eligibility requirements.

By pursuing agrivoltaics, you may be able to retain the lower agricultural land tax rate.

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\* For more information on who to contact about water rights in Idaho, Oregon, and Washington, see Appendix A.

When making financial projections, calculate the fees and costs that will accrue due to removing your land from the special agricultural tax program. Keep in mind that this cost needs to be accounted for long-term. After the solar lease ends, it could take several years to reestablish your land as agricultural and qualify for the program again.

You can use this increased cost when negotiating the lease terms. For example, ask the developer to cover the back taxes, any additional interest or penalties, and the increased property taxes you will be assessed during the lease period and several years after decommissioning to provide sufficient time for you to re-establish agricultural use.

### AGRICULTURAL LAND TAX INCENTIVE PROGRAMS

	QUALIFICATION	COST OF REMOVAL	SOURCE
Idaho	5+ acres and actively devoted to agriculture- crops, nursery stock, livestock. If less than 5 acres, the annual gross income from the farm must be at least 15% of the owner’s annual gross income or gross revenue must exceed \$1,000.	No penalty for a change of use.	Idaho Code § 63-604
Oregon	To qualify for special assessment, you must use the land for the primary purpose of obtaining a monetary profit through crops or livestock. If the land is not zoned exclusively for farming, an income requirement will apply, depending on your acreage.	Removal from the program triggers owing back taxes for either 5 or 10 years, depending on the characteristics of the land.	ORS § 308A
Washington	Land must be primarily used to produce livestock or agricultural commodities. Federal conservation programs may qualify large farms for this tax status. The farm must be at least 5 acres; if less than 20, there is an income requirement of \$200/acre.	Additional taxes will be calculated for the past seven years. Interest will be charged on this amount. In most cases, a penalty of 20% of the total tax due and applicable interest is also assessed.	RCW 84.34, WAC 458-30-300(4); WAC 458-30-305(3).



### LOSS OF ELIGIBILITY FROM GOVERNMENT AGRICULTURAL CONSERVATION PROGRAMS

Converting agricultural land to solar production will most likely impact the land’s eligibility for federal and state agricultural conservation programs.

For example, solar panels are not permitted on lands subject to the USDA’s Conservation Reserve Program or the Reserve Enhancement Program. You cannot engage in commercial solar development if your land is in a permanent agricultural conservation easement through the USDA’s Conservation Agricultural Easement Program. Government cost-shares for agricultural infrastructure through the USDA’s Environmental Quality Incentives Program (EQIP) may also be impacted if the land is converted to solar.

By pursuing agrivoltaics, you may be able to retain your eligibility for some of these agricultural conservation programs.

You may lose your eligibility if your land is enrolled in these federal programs. You may be required to forfeit future payments, return past payments, and pay a fee for early termination. In addition, you might no longer be eligible for state-specific agricultural conservation programs.

As social incentives for solar production increase, policies at some government agencies might shift. You may want to discuss your plans to enter into a solar lease with the appropriate agency early in the process to determine what, if any, implications there will be. To the extent that you will lose your eligibility and incur early termination costs, you may be able to negotiate a higher rental rate or receive some compensation.

## LOSS OF INCOME FROM STOPPING OR REDUCING YOUR FARM OPERATION

Converting productive agricultural lands to solar will naturally result in opportunity costs. While a solar lease will bring in a secure income stream, you will want to weigh this amount against the income you would receive by keeping the land in production. Identifying which areas of land you want to retain for agricultural use and which you are willing to offer up for solar production is critical.

If you farm fewer acres, your operating costs may increase for the smaller-scale operation. The location of the solar development may also limit or hinder access to farm areas, bringing on additional costs. It can be helpful to plan your goals and vision for your farm operation, including what crops, improvements, and structures you will need, and identify the most optimal locations. You can then more accurately evaluate financial projections for your farm operation, along with those for the solar lease.

## LOSS OF INCOME FROM TERMINATING EXISTING AND LIMITING FUTURE AGREEMENTS

You will want to consider the lease's impact on third parties with legal rights or interests in the property. Existing leases or other agreements may require early termination and/or a buy-out from the existing tenant. Certain interests in the land, including easement rights, may prohibit you from entering the solar lease altogether (i.e., the easement holder will have a right to object to the solar lease.) You will want to read any existing agreements carefully and understand your potential costs and risks. In addition, the solar company may prohibit you from entering into new agreements that affect the land. Some opportunity costs to consider:

- Do you have any existing or anticipated future leases?
- Do you have any existing or anticipated future hunting agreements?
- Do you have any existing or anticipated future oil, gas, or mineral agreements?
- Are easements tied to your property, including utility, conservation, or farmland preservation easements?

## LOSS OF INCOME FROM LIMITATIONS ON MORTGAGES

**Do you have an existing or anticipate a future mortgage on the property?** Mortgages typically have provisions prohibiting the landowner from granting a long-term legal interest to another party or requiring the landowner to seek permission before doing so. By entering a solar lease, you may trigger these provisions. If this were the case, the lender could declare a default and demand full payment of the mortgage balance.

In addition, when land is subject to a mortgage, solar energy developers often require landowners to obtain a subordination agreement from the lender. This ensures that the lender will not evict the solar developer if you fail to pay your mortgage. Your lender may or may not be willing to sign a subordination agreement.

It's best to discuss these issues with your lender at the outset to understand and mitigate the financial implications of entering into a solar lease.

Another key factor to remember is that solar leases often preclude the landowner from further encumbering the land, including getting an additional mortgage. You'll need to consider this if you anticipate needing financing down the road. Sometimes solar companies will allow an additional mortgage if the lender agrees to a subordination agreement, but this is challenging.

## Financial risks

### LIABILITY

Leasing land to a solar developer presents numerous liability risks. Environmental regulations could be violated. Someone could get hurt by solar array equipment or vehicles. The solar array equipment could be damaged. Farm structures or irrigation infrastructure could be damaged. A neighbor could file a "nuisance" lawsuit against you because of the glare or noise from the solar array, etc. These risks are managed by purchasing specific **LIABILITY INSURANCE** to cover potential losses, including fair **INDEMNIFICATION CLAUSES** in the solar lease agreement, and **paying meticulous attention to details during the lease negotiations**.

### Purchasing insurance

You will want assurances that the solar developer has adequate comprehensive liability insurance to cover damages to your land and the developer's equipment. Make sure you are named as an insured on the developer's policy and retain a copy of the certificate of coverage.

You will want to understand who is responsible for cleaning and repairing any damage caused by storms or other natural events. What happens if a tree or limbs fall on the panels? What if a natural disaster, fire, or strong weather damages the panels?

In typical land leases, the landowner is generally responsible for clean-up and repair caused by natural events. This is something that can and should be negotiated, especially if insurance is limited or claims are denied. It would make sense that the solar company would be responsible for damage to the solar arrays and infrastructure they own that a natural disaster may cause. What about the roads and other rights-of-way that are shared? This will need to be addressed.

In light of the lease agreement, it is important to talk to your existing insurance company to determine if you need any additional coverage or higher coverage limits. Given the risks involved, the additional liability insurance coverage will likely be more expensive than a general farm liability plan. You can request increased costs of insurance in compensation negotiations.

### Negotiating fair indemnification clauses and paying meticulous attention to details

Closely related to insurance is how the lease agreement structures indemnification. Indemnification is an agreement to reimburse another party for damages they sustained due to another party's actions. For example, the solar company should indemnify or reimburse you for unforeseen damage to the land caused by construction activities. Conversely, the solar company may request the landowner to indemnify or reimburse the solar company for damages to the solar panels or equipment that you or visitors to your land may cause, such as damaging a solar panel with a tractor or from a hunter's stray bullet.

As a general guideline, it is best to seek an extensive indemnity clause for damages arising from the developer's presence on the land and anyone on the property the developer invited. For your part, it is best that you only offer indemnity or reimbursement for damages resulting from negligent or intentional actions of yourself and anyone you've invited to the property (e.g., workers, tenants, guests, etc.).

The lease should fairly assign responsibility for damages created by trespassers and neighbors' activities, such as crop dusting or spraying. For this, it is best to negotiate indemnity language that explicitly releases you from liability for actions or inactions of any parties who are not under your direct control.

The solar array will emit glare, electromagnetic signals, and low noise levels that might offend your neighbors. You'll want to be sure the project is designed to minimize these side effects for neighboring properties. Ultimately, you'll want to be sure the solar developer indemnifies you for most, if not all, financial responsibility if a neighbor files a nuisance lawsuit against you.

Right to Farm statutes, which deny nuisance lawsuits against farmers who use standard farming practices, will most likely not cover a solar array. Remember that a lawsuit against you, whether by a neighbor, another third party or the solar developer, could be large enough to wipe out all potential lease income.

Agrivoltaics raises additional liability concerns—including who is responsible for injuries to workers and damages to crops, panels, and equipment—when solar and farming activities occur within the solar footprint. Landowners wanting to pursue agrivoltaics will want to discuss this with your insurance agent upfront to be sure insurance coverage and indemnification is adequate and fair based on the specific agrivoltaic arrangement.

Additional insurance coverage is generally available for indemnification. This is something you will want to discuss with your insurance agent upfront. **Getting adequate insurance, negotiating fair indemnification provisions, and firmly negotiating lease details are critical to reducing significant financial risks.**

### **DECOMMISSIONING**

You will want to ensure the project's removal or decommissioning is adequately funded at the outset. The cost of decommissioning is high because the panels must be removed and disposed of, and all the added infrastructure needs to be removed. The land needs to be returned to its original state as well.

Solar panel technology is advancing quickly, and state-of-the-art panels may lose value soon due to innovations. Rapid technological advancements could create a scenario



where solar arrays installed on your property become too expensive to operate relative to their value. The solar company may choose to decommission the project early.

You can require the developer to set aside funds to cover the costs of decommissioning the project and remediating the land. **Bonding protection is highly recommended and should be a top priority during initial negotiations.** The lease agreement could require that these funds are set aside in escrow or a surety bond.

Your state might have specific laws requiring the solar company to purchase a decommissioning bond. Take some time to confirm that securing adequate costs for decommissioning is either legally required by your state or that the solar company has made plans to ensure there are funds for the end of the project.

## SOLAR COMPANY BANKRUPTCY

Many solar companies are entrepreneurial start-ups. Whether due to undercapitalization, market fluctuations, or bad decisions, the nature of the industry holds a risk that the company may become insolvent or bankrupt. It's critical to do your due diligence at the outset to explore the financial viability and reputation of the solar company. See Section 9: Negotiating with Power, for more.

Nevertheless, bankruptcy can still happen. This leaves the possibility that the solar company abandons the project during construction or once the solar arrays are installed. There is no guarantee that another solar company will purchase the assets. The bonding protection secured for the decommissioning process must be released if bankruptcy or insolvency occurs. This will help alleviate your financial risk of having to foot the bill for the decommissioning process.

## FUTURE VALUE AND SALE OF YOUR PROPERTY

Another factor to consider is what happens if you want to sell your property. It is highly speculative to know whether the solar lease will increase or decrease the value of your land in the future, given market fluctuations for agricultural land coupled with the uncertainty of the future of energy production.

The solar lease agreement will “run with the land.” The solar lease agreement will bind any future owner. The new owner will receive the lease payments and take on the liability risks. This carries both an upside and a downside for future owners.

It may be worth speaking to your accountant or financial advisor to understand better the impact the solar lease will have on your future ability to sell your property if you anticipate doing so within the lease period. Another issue to consider if you were to sell your property is how to account for the improvements that the solar company adds during this lease, including the solar infrastructure, roadways, fencing, etc. Generally, in commercial ground leases, which the solar lease resembles, the lessee (here, the solar company) owns these improvements and is compensated for their added value if the property is sold. This needs to be specified in the lease, including the process for appraising the land's value and the improvements' value.

If you plan to leave your property to your descendants, you may want to speak to your accountant or estate planner for a better understanding of the implications the solar lease may have in this process.

Many potential issues can result from a long-term solar lease. Take some time to identify the financial issues that are most relevant to your situation. Write any questions/concerns in the middle column and identify someone you could contact for help in the right column (e.g., financial advisor, accountant, tax professional, attorney, insurance agent, government agency official, extension agent, etc.). If no one comes to mind, consider asking other farmers in your area or your extension agent for recommended contacts.

ISSUE	QUESTIONS/CONCERNS	CONTACT
<b>FINANCIAL OPPORTUNITIES</b>		
Solar lease payments (development phase, construction phase, operational phase, decommissioning phase)		
Additional solar lease compensation opportunities (attorney fees, crop damage, loss of production, compensation for other financial losses, etc.)		
Solar Tax Incentives		
Agrivoltaics Income		
Water Rights Transfers		
Other?		
<b>FINANCIAL LOSSES/OPPORTUNITY COSTS</b>		
Increased property tax (i.e., due to conversion from agricultural designations).		
Financial losses from loss of eligibility for government agricultural conservation programs (e.g., USDA's CRP, CEP, CAEP, EQUP, etc.)		
Loss of income from stopping or reducing your farm operation		
Loss of income from ending existing/limiting future interests in the land (e.g., leases, hunting agreements, mineral rights agreements, easements)		
Financial losses from implications on mortgages		
Other?		



CONTINUED ON THE FOLLOWING PAGE

ISSUE	QUESTIONS/CONCERNS	CONTACT
<b>FINANCIAL RISKS</b>		
Liability (insurance/ indemnification / firm negotiations)		
Decommissioning (bonding protection)		
Solar Company Bankruptcy (bonding protection)		
Future sale of your property		
Other?		

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## Section 5. Recognizing Impacts to Agriculture and the Land

Landowners considering leasing their land for a utility-scale solar project bring many motivations. Some might do it purely for financial reasons, some because of their desire to transition out of farming, some because of climate changes affecting their land, some because they believe solar energy offers a promising solution for a cleaner and more reliable energy supply, and many for some combination of the above.

### Zooming out: National and global impacts

While the following broader concerns may not impact you directly as a landowner, they may be something you will want to consider when deciding whether to enter into a solar lease.

#### OVERALL, SOLAR POWER IS A CLEAN ENERGY SOURCE

Experts generally perceive the solar industry as a net positive for the landowner interested in the broader impacts of solar energy production. On the one hand, mining for raw materials, manufacturing solar panels, and transporting materials and panels are energy intensive. On the other hand, solar energy generation results in low emissions, limited water usage, and minimal wildlife impacts.

Materials used to make solar panels include silicone and rare earth and precious metals like silver, copper, indium, and tellurium. Lithium is needed for battery storage. Mining these substances generates greenhouse gas emissions and can contaminate the air, soil, and water.

The production of solar panels requires melting silicone at extremely high temperatures before applying it to the panels. This process often relies on fossil fuels, especially coal. New technologies are experimenting with replacing silicone with perovskite, proving to be promising in decreasing carbon emissions in production, increasing the panels' efficiency, and reducing costs.

Depending on where the panels are manufactured, emissions for transportation are another impact.

Nevertheless, solar power production is significantly lower on the greenhouse emissions scale than coal and natural gas. Studies show that solar power has a lifetime carbon footprint of about eighteen times less than coal and thirteen times less than natural gas on an equivalent kWh basis. (Pehl, Michaja, et al.).

Ultimately, estimates conclude that solar panels can pay back their “carbon debt” from mining, manufacturing, and transportation in as little as one to three years. (de Wild-Scholten, M.J). Solar companies typically guarantee that panels will last between 25 and 30 years. Based on these estimates, solar panels can usually generate emission-free energy for decades. More on the impact of solar materials is discussed in a bit.

Keeping your motivation(s) in mind, in this section, we'll highlight some actual and potential impacts on agriculture and the land that landowners may want to evaluate before entering a solar lease. We'll begin with a broad perspective at the national and global level and narrow it to impacts that you and your local community may face.

## LARGER-SCALE SOLAR PROJECTS RESULT IN LARGER-SCALE IMPACTS

While solar power is perceived as an environmentally friendly energy source, the push for larger-scale solar energy brings larger-scale impacts.

### Impact on agricultural lands and local economies

The vast conversion of farm and ranch lands to solar, coupled with the possibility of making those lands unsuitable for future agricultural production, is a leading concern.

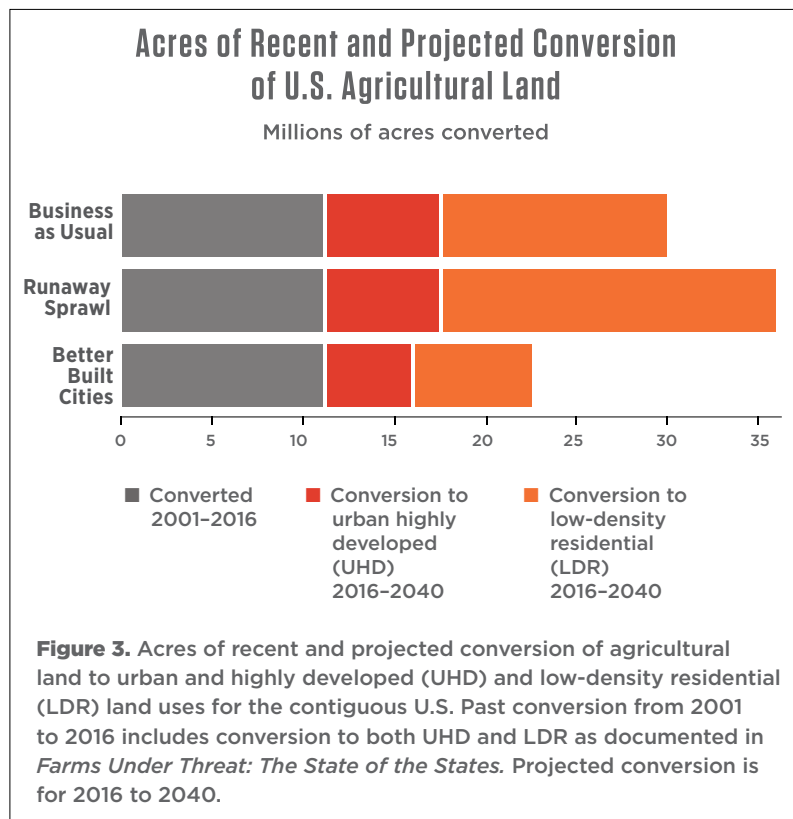
Solar production is land intensive. The amount of land required for solar projects falls in the middle compared to other forms of energy production. Per megawatt, solar projects require more land than coal, nuclear, or natural gas production but less than hydro or wind production.

Farm and ranch lands are a natural fit for large-scale solar projects as they are already cleared, typically graded, and have sufficient sun exposure. While agricultural lands are optimal for the solar industry, agricultural landowners must ask whether the solar industry is good for agricultural lands.

Agricultural lands are already threatened by conversion to development. In 2021, the USDA reported that 1.3 million acres of farmland were lost. If more income is generated from leasing farmland to a solar company, farmers wanting to lease land for crop production will be forced to pay more. At some point, it may become cost prohibitive. This will have adverse impacts on the nation's food supply.

If enough agricultural land is converted to solar development, it may begin to impact the viability of agriculture in the region. Communities require a critical mass of farms and farmers to sustain agricultural suppliers, markets, processors, storage facilities, and other industry infrastructure. As more land transitions out of agriculture, the demand for these supportive services erodes. Yet, as those supportive services go out of business or consolidate, it is more difficult for remaining businesses to continue operations. If enough

In 2022, American Farmland Trust (AFT) released its *Farms Under Threat: Choosing an Abundant Future* report, highlighting three projected farmland loss scenarios.



landowners convert their land to solar, it could significantly impact those who choose to keep their land for agriculture.

In addition, once agricultural land has been converted to solar, it may not be easy to return it to crop production. As solar leases can last from 20 to 45 years, the decommissioning process might occur when the farm is in the next generation's hands. Decommissioning has yet to happen on a large scale. It is difficult to know the full extent of the long-term physical impacts on the farmland and whether and how quickly the land can be converted back to agriculture.

### **Waste after decommissioning**

Another broader concern is the waste from decommissioning a large-scale project. A lack of clarity exists on how we will handle the tons of materials, including the solar panels and supportive structures.

Many in the industry are optimistic that recycling programs will be developed soon. (International Renewable Energy Agency). However, other researchers argue that considering the exponential rate at which solar technology is expanding, we are in for a much higher waste load and little incentive to recycle panels into other valuable materials. (Atasu, Atalay, et al.).

Do the broader concerns of solar energy production affect your decision to pursue a utility-scale solar project on your property?



## **Zooming in: Impacts to your land and your community**

The solar project will directly impact your land and adjacent lands in your community. As this is close to home, these local land-based considerations may feel more significant to your decision on whether to enter into a solar lease and identify key negotiating points.

### **IMPACTS ON SOIL HEALTH**

#### **Deep soil disturbance**

A primary concern is soil impacts. The initial construction phase is intensive and requires substantial soil disturbance. For farmers who have adopted no- or low-till practices, the construction of a solar array will disturb the carefully nurtured soil health. For farmers who do till the solar array, construction requires digging depths greater than one would till for at least some parts of the leased acreage.

In addition, intensive construction activities could disrupt subsurface drainage systems and could render subsurface drainage tiles inaccessible in the future. (Kirk Hall). As discussed later, some buried infrastructure may remain underground after the solar lease ends, forever altering the subsurface environment.

Ideally, the lease would include a thorough (1) development or construction plan and (2) decommissioning and reclamation plan that must be approved by the landowner so that clear expectations are set during these phases. These plans would set protocols for addressing any issues or concerns, including soil damage, noise, traffic, remediation, revegetation, etc.



### Loss of topsoil, erosion, and depletion of soil health over the long-term

Surface soils will also be disturbed. Damage to and loss of the topsoil is a serious concern, as is erosion due to land alterations. The heavy equipment used during the construction phase will cause soil compaction.

Ideally, you will demand that the lease requires the solar company to use double ditching during both construction and removal of the solar array. This strategy will ensure that topsoil is segregated from subsoils and replaced in the proper order so that each soil layer is returned to its appropriate depth. (Kuen, 9; Brown, 10). While double ditching will mitigate the damage to the soils, keep in mind that there is no way to guarantee the same soil health the land had at the beginning of the project.

In addition, you might encounter storm-water run-off, depending on the topography of your land, the number and types of storms you get annually, and the number and angle of the panels. The lease should specify who is responsible for damages and remediation if damages from storm-water run-off occur on your or a neighbor's property.

Despite remediation, continued soil deficiencies may be after the expired solar lease term. One study found that a revegetated solar farm site had significantly lower total carbon (38%) and nitrogen (50%) levels than a similarly vegetated, previously undisturbed grassland. (Choi et al.). This study also found that soil moisture at the site, which had seven years to rehabilitate since the removal of the solar array, was still unevenly distributed.

### Potential for heavy metal contamination

Current research assures us that solar panels will not leach harmful heavy metals at levels that will be toxic to the environment or human health. Many newer panels are manufactured with silicone, which is considered safe. Some older panels are made with cadmium telluride, which contains trace amounts of toxic cadmium. Lead can be present in the soldered joints of the panel and in the material used to create sufficient contact between the front and rear electrodes, but not in quantities thought to be dangerous.

The impact of toxic heavy metals from solar power production is considered negligible on a grand scale. While no established research would lead you to expect heavy metal soil contamination from a solar array, you may decide to test the soil for heavy metal contamination routinely. You may consider asking the solar company to do soil testing or at least cover routine soil testing costs. If the company agrees to do this testing themselves, ensure the results are available to you promptly.

## OPERATION AND MAINTENANCE ACTIVITIES, INCLUDING CHEMICAL SPRAYING AND MOWING

Operation and maintenance activities will occur regularly during the operational phase, including panel cleaning, equipment testing and maintenance, and vegetation control. Depending on the arrangement, vegetation control could include spraying chemical herbicides and mowing, which can lead to further erosion.

To the extent you do not want chemical spraying or would prefer to conduct the maintenance yourself, you will want to negotiate these considerations at the outset and be sure the lease includes details.

Utilizing agrivoltaic systems for vegetation control—including rotational grazing, cultivating crops, or growing pollinator plants—provides more environmentally friendly alternatives to growing conventional grass under the solar arrays. Should you prefer to pursue agrivoltaics, whether at the outset or possibly sometime in the future, details of the arrangement need to be specified in the solar lease agreement.

## IMPACTS ON WILDLIFE

You will want to consider the potential disruptions to wildlife movement and impacts to native habitats the solar project will have. The solar footprint will be fenced along the perimeter, which could disrupt wildlife migration, particularly if it is a large area. Right of ways and infrastructure sites can also adversely impact native habitat and migration patterns, including increasing risks of collisions from vehicles. In addition, some birds are attracted to solar sites because they resemble large water bodies. Birds migrating, nesting, and foraging in or near solar sites face potential fatalities from colliding into panels or being stranded if they cannot take off from land. (US Department of Energy).

Impacts on wildlife are generally assessed during the siting process. The solar developer must comply with federal statutes protecting sensitive species and their habitat. These laws include the federal Endangered Species Act, Clean Water Act, and National Environmental Policy Act. Landowners should take note of regionally specific protection for species, for example, the sage-grouse in the PNW. This federal review process is often less rigorous on private lands than on public lands.

The solar developer must also comply with relevant state wildlife and habitat preservation laws, including state wetland conservation laws and endangered species acts. Concerns about wildlife are also often raised during state public utility commission (PUC) hearings and public comment periods for the solar project. However, the effectiveness of these laws and processes varies by state. The permitting decisions at the state and local levels do not always fully consider impacts on wildlife.

As the landowner, you know best the larger ecosystem of your property. It is critical that you take time to consider how the project will adversely impact the wildlife habitat and migration on your property, including habitat loss, habitat fragmentation, habitat degradation, and collision risks. Are there places you want to reserve as habitat corridors on your land? Are there native habitats you want to protect? This will need to be addressed at the outset.

As the utility-scale solar industry is still evolving, knowledge about solar-wildlife interactions and best practices for minimizing adverse impacts on wildlife are also still evolving. You may consider consulting with your conservation district or a conservation



organization you trust to explore updated best practices for designing the site to protect wildlife.

## **DECOMMISSIONING AND SITE RECLAMATION PROCESS**

Decommissioning the solar project is a process that will take anywhere from six months to a year. The lease should spell out the expected timeframe for removal of the panels after the lease expires.

The lease should require the solar company to remove the infrastructure and restore the topsoil, providing as many details as possible to ensure this is done adequately. The lease should also require the solar company to revegetate the land after the panels are removed. What do you expect with revegetation? Native habitat? Specific plant species?

If you are unsure what type of revegetation would be ideal for returning the land to agricultural production, consider engaging your local Conservation District, Extension agent, or other crop advisors. The more detailed the lease describes standards or protocols for these obligations, the better the solar company will restore the land appropriately at their expense.

In addition to infrastructure that is added to the surface (e.g., panels, battery banks, transmission lines, roads), materials will be buried underground (e.g., cables, footings, foundations, etc.). Sometimes underground materials are only removed to a certain depth. Make sure the solar company is transparent in telling you what is left behind.

Finally, given the rapid pace that solar technology is improving, it is essential to realize that the solar company may engage in an early decommissioning process to replace the panels. This additional replacement process would increase the impact on your soil from other construction activities. It would also create more waste. You will want to raise this issue with the solar company to understand their policy for decommissioning panels before the end of their life span and be sure your land is remediated appropriately. Hence, the solar company bears the costs.

Ideally, the lease agreement includes a thorough decommissioning and reclamation plan. The plan should clearly specify how any agreed-to terms for the decommissioning phase will be enforced decades into the future. One option might be to include a requirement that a mutually agreed upon third-party oversees and verifies the decommissioning and reclamation process according to specified standards and terms.

## **OTHER ANNOYANCES AND DISTURBANCES: VIEWS, GLARE, DUST, TRAFFIC, AND NOISE**

The aesthetics and “project effects” of constructing and operating a utility-scale solar project are not a welcome change for everyone, whether for you or your neighbors.

The number of solar arrays required for a larger-scale project will dramatically alter the landscape in the surrounding vicinity. If you live on or near your property, you will need to realize your panoramic views of the horizon will be altered for decades. Your neighbors may feel resentment and frustration if their views are affected. Agricultural operations on adjacent lands may be impacted in both the short and long term.

Solar panels can cause glare that can be disturbing. Glare occurs when sunlight reflects off a flat, shiny surface. While solar panels are designed to absorb and not reflect light,

they are flat and somewhat shiny, so some glare occurs. Proper siting, angling, and orientation of the panels can prevent or limit glare, guided by sophisticated software and engineers. You will want to discuss the issue of glare with the solar company at the outset to be sure the project is designed to limit glare.

During the operational phase, solar arrays make minimal sound. However, noise, dust, and traffic can cause disturbance during the construction and decommissioning phases when intensive work is being done. For example, during the construction phase, you can expect heavy equipment grading access roads, dump trucks delivering gravel to build laydown yards, flatbed trailers delivering equipment to build the solar arrays, trencher ploys laying cables, cranes, and concrete trucks setting power enclosures, and hydraulic post drivers setting racking. Such activities may disturb you as well as your neighbors.

The solar company will often include a provision in the lease agreement that prevents the landowner from filing a nuisance or other lawsuit against the company for view obstruction, light reflection, noise, or other issues caused by the project.

Keep in mind, this provision does not prevent a neighbor from filing a nuisance or other type of lawsuit against you. As discussed in Section 4. Weighing Financial Opportunities, Losses, and Risks, you will want to be sure you get adequate insurance coverage to cover any costs to you from such a lawsuit. Ideally, you will negotiate a favorable indemnification clause in the solar lease, which would require the solar company to reimburse you for any costs should such a lawsuit be filed against you.

An ideal approach is to identify any issues that may annoy or disturb you or your neighbors and proactively discuss these issues with the solar company at the outset to find ways to minimize the impacts.

Imagine the following scenarios for your land and notice how you feel. Make a note of your reaction, and then consider what can be done to minimize or prevent the impact on your land.

IMPACT ON YOUR LAND	REACTION	ACTION STEPS TO MITIGATE
Deep soil disturbance and compaction during the construction and decommissioning phase		
Noise pollution and dust from construction, maintenance, and decommissioning phases		
Glare from the solar panels and obstruction of your views		
Chemical spraying and mowing to maintain vegetation under the solar arrays		
Loss of topsoil, erosion, and depletion of soil health over the long-term		
Potential for heavy metal contamination		
Adverse impacts on wildlife and habitat		
Improper solar panel removal at the end of the lease degrading the land		

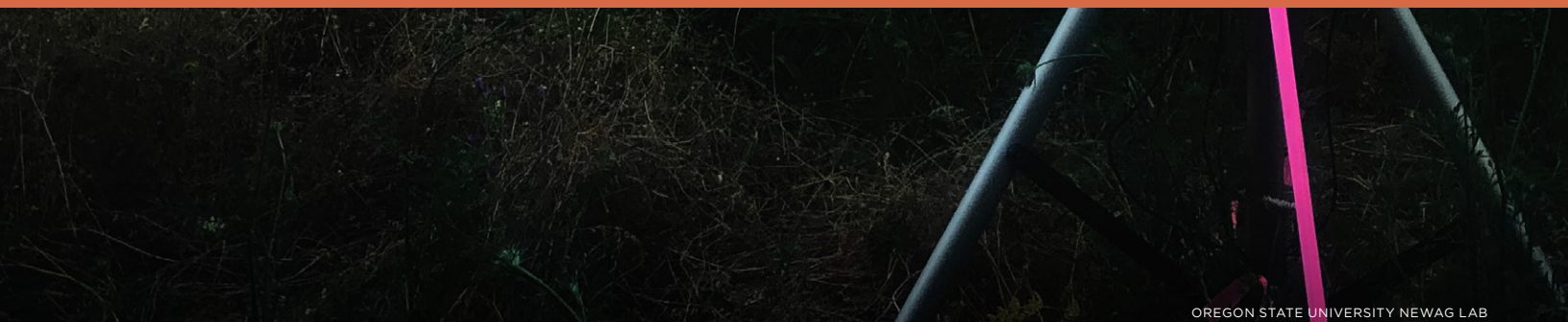


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## PART II. MAKING A DECISION



## Section 6. Respecting Relationships: Having powerful conversations with others who have connections to your land

Now that you have a general understanding of what utility-scale solar projects can entail—including the phases and length of a solar lease, possibilities for agrivoltaics, associated financial issues, and impacts on agriculture and the land—it's time to focus on the people involved and conversations you need to have to help you decide whether and how best to go forward.

### **If you have already signed a legal agreement with a solar developer, STOP.**

It is critical to be careful when discussing the arrangement with anyone. Typically, solar lease agreements, including the letter of intent and option agreement, constrain landowners to a confidentiality agreement. This limits your ability to discuss the arrangement with anyone other than your attorney. You will want to discuss this with your attorney before having any conversations.



### **First step: Reflect upon your vision for your land**

By reflecting upon your vision for your land, you will be in a better place to clearly articulate your values and needs for the land going forward. You will also identify others involved who might have important insights to consider when evaluating whether to enter into a solar lease and, if so, how best to negotiate the agreement.

Take some time to answer the following questions about your vision for your land. Write down your responses in a word document or on paper or use a voice recorder to speak aloud freely.

- What are the priority qualities and functions of the farm property right now?
- What do you want to happen to the farm property in the future?
- What qualities and functions of the property need to be preserved to make this happen?
- Who is involved in overseeing the land in the future?
- How will entering a solar lease shape the future of the farm property?
- What extent of protection and access to the farm property is necessary for the present and future owners or caretakers, including family members and business partners?



## Next steps: Identify people who have a connection to the land and prepare for and engage in powerful conversations

Your vision for the land often hinges upon how the property is owned and protected, now and in the future. Current stakeholders in the land—co-owners, business partners, family members, tenants, other users, mortgage holders, etc.—also control the land’s future. It helps to involve them right away.

Here are some considerations to keep in mind when identifying which stakeholders to invite into a conversation about your vision and what to discuss:

**CO-OWNERS OF THE LAND:** All owners of the property must agree to a solar lease. In addition, if a business entity or trust holds title to the land, the business or trust must be a party that enters into the lease.

**BUSINESS OWNERS:** Depending on the decision-making terms established in the business’ governance document (i.e., the partnership agreement, operating agreement, or bylaws), it might be that all farm business owners must agree to the solar lease.

Farm business owners will most certainly need to be included in the decision if the business holds the title to the land. The ultimate decision may be based on consensus, majority vote, or other decision-making processes outlined in the governance document or otherwise agreed upon by the owners.

**FAMILY MEMBERS AND SUCCESSORS TO THE LAND:** Any succession or estate plans in place may need to be revised if you pursue a solar lease. In particular, entering a solar lease may impair future generations’ ability to farm the land. You will want to consider discussing these matters with family members and other successors to the land who may be impacted. Financial planners and attorneys involved can help you navigate these sensitive matters.

**NEIGHBORS AND COMMUNITY MEMBERS:** Landowners considering a solar lease should be prepared for negative and positive reactions from neighbors. These reactions could be made public through the regulatory process. For each neighbor, consider whether, how, and when to notify them personally about the solar lease. Here are some considerations to remember when deciding whether, how, and when to engage in these conversations:

### ANTICIPATE NEGATIVE REACTIONS

Solar projects are often divisive in local communities, raising conflict between the community and neighbors. On the one hand, some neighbors may not like solar or do not want to see solar panels on the landscape. Some may be concerned about the potential for reduced property values. Neighbors may complain about the inevitable noise, traffic, and dust during a solar project’s construction phase. Others may voice concerns about erosion and other environmental impacts affecting their land.

The approval process for a large-scale solar project usually allows interested parties to review the project’s proposal and related materials. For example, the state’s public utility commission (PUC) generally holds public hearings or comment periods, providing opportunities for the public to voice concerns and submit written comments.

Often, neighbors and community members use local zoning laws to limit or stop the project. Neighbors can seek reviews and appeals through the local zoning board if they

do not think the project fits within the parameters of the zoning code. Engaging in the zoning appeal process is also a strategy neighbors might use simply to delay the approval process in hopes the developer will eventually pull out.

In addition, local governments throughout the Pacific Northwest and across the country are updating their zoning ordinances in response to the increase in utility-scale solar projects. It can be challenging to stay on top of these changes. Overall, zoning disputes can be unpredictable, long-winded, and exacerbate tensions between neighbors and the community.

## CONSIDER COLLABORATING WITH OTHER NEIGHBORS INTERESTED IN A SOLAR LEASE

On the other hand, some neighbors may be considering entering into a solar lease on their property. If the solar project includes multiple properties, you and your neighbors could be engaging with the same solar developer.

Collective negotiations could be beneficial to everyone involved. From the solar developer's perspective, it can help streamline the project approval and development phase. From the landowner's perspective, it can help bolster negotiating power and share the legal and other professional costs.

Suppose you sense that other neighbors are also interested in a solar lease. In that case, you will want to navigate this issue carefully, especially if you have signed a legal document. You will also want to be sure you share a similar vision for the project with these other neighbors. An attorney can assist you with broadening a confidentiality clause and engaging in collective negotiations.

**THIRD PARTIES WITH LEGAL INTERESTS IN THE LAND:** As we highlighted in the previous section, you will need to consider the solar lease's impact on third parties with legal rights or interests in the property. These legal interests may include:

- **AGRICULTURAL SERVICE AGENCIES**
  - **CONSERVATION PROGRAMS:** It is unclear whether and how a solar lease would affect eligibility for federal and state government agricultural conservation programs, including the USDA's Conservation Reserve Program, Environmental Quality Incentives Program, and Reserve Enhancement Program. Consider discussing the situation with the appropriate agency to determine what, if any, implications there might be.
  - **IMPACTS ON WILDLIFE:** You may also want to discuss the solar project's potential effects on wildlife and habitat with local, state, and federal agencies interested in habitat and endangered species protection.
- **TENANTS AND OTHER THIRD PARTIES WITH RIGHTS TO USE OR ACCESS YOUR LAND (E.G., HUNTERS, EASEMENT HOLDERS, MINERAL RIGHTS HOLDERS, ETC.):** The solar lease could impact existing tenants and holders of other licenses or agreements that give them access or usage rights to your land. It is best to arrange discussions with these parties to set appropriate expectations and negotiate how these arrangements can go forward or end amicably and fairly.
- **LENDERS WITH MORTGAGES OR OTHER LOANS TIED TO YOUR PROPERTY AS COLLATERAL:** You'll need to investigate whether any mortgage or financing agreement tied to your land prohibits you from granting a long-term legal interest to another party or requires you to seek permission before doing so. If so, does the solar lease



trigger this provision? Can this be negotiated? In addition, does the solar lease require you to obtain a subordination agreement from your lender? You'll need to discuss these issues with your lender at the outset to minimize your financial risks.

**INSURANCE AGENTS:** In Section 4. Weighing Financial Opportunities, Losses, and Risks, we highlight two ways to protect yourself from liability risks that inherently come with a solar lease—liability insurance and indemnification. Take a moment to review that section, including your notes in the reflection exercise related to liability. Write down questions you have for your insurance agent.

**ACCOUNTANT, FINANCIAL ADVISOR, AND TAX PROFESSIONAL:** Again, take a moment to review Section 4, including your notes in the reflection exercise. Write down any remaining questions you'd like to discuss with a financial professional.

Make a list of all the people who have a connection to the property, legal or otherwise, now and in the future.

Next to each person, note:

- Any specific questions you have for them. This may include asking about their goals and objectives for the property.
- Whether or not you think they would put a hard stop to the project.
  - For those you think would be against the project, identify the reason(s) why you believe this.
  - To inspire productive discussion, identify one question you could ask them for each reason based on your sense of their level of openness. This question could be general, “what are your thoughts about solar energy?” or “what do you know about agrivoltaics?” or, more specifically, “what are your thoughts on my land being used for solar energy/agrivoltaics?” Then it’s up to you to carve out time and space for this conversation.

Remember, hard conversations are often the pathway to deeper understanding and connection. When engaging someone in a conversation about a solar lease, realize that you may disagree with their stance. One tip is to listen with an intention to understand their perspective rather than try to persuade them toward your vision or conclusion. A helpful question to remember while listening to what they have to say is: **What can I learn from their perspective?**



## Section 7. Identifying Non-Negotiable Issues

Assume you've gotten this far. Your land is considered viable and sought after for a solar installation. Now *you* have the power to decide: do you begin negotiating a solar lease? Under what circumstances will you refuse to sign an agreement (i.e., option agreement or solar lease)?

To help you determine your hardline, non-negotiable points, begin making a list of issues that matter most to you. Here's a list to get you started; check off any that apply to you, then add any other critical issues you may have at the end. Note comments or questions in the column to the right.

THE SOLAR LEASE MUST: (EXAMPLES)	NOTES
<input type="checkbox"/> Protect certain specified areas (including prime agricultural lands and wildlife corridors)	
<input type="checkbox"/> Incorporate agrivoltaics: <ul style="list-style-type: none"> <li><input type="checkbox"/> Design the project to optimize the cultivation of crops underneath</li> <li><input type="checkbox"/> Ensuring there is a sufficient water source within the fenced area for agrivoltaic needs</li> <li><input type="checkbox"/> Agree to enter a sublease with a solar grazer for rotational grazing, a farmer for crop production, or a beekeeper for apiaries.</li> <li><input type="checkbox"/> Agree to permit the landowner to access and use the land within the solar footprint for cultivating, rotational grazing or establishing pollinator habitats.</li> </ul>	
<input type="checkbox"/> Permit the landowner to access or use certain areas of the property (including roads, rights of way, or areas at the perimeter of the solar footprint fence).	
<input type="checkbox"/> Permit the landowner to build structures or improvements on certain areas of the land.	
<input type="checkbox"/> Permit certain leases or agreements allowing third parties to access or use the land to continue.	
<input type="checkbox"/> Restrict chemical spraying.	
<input type="checkbox"/> Require the solar company to double ditch during construction and decommissioning to limit damage to the soil tiles and topsoil (i.e., requiring a clear construction and decommissioning plan that the landowner approves).	
<input type="checkbox"/> Require the solar company to return the land to a specific state (i.e., a clear reclamation plan that the landowner approves).	
<input type="checkbox"/> Set aside sufficient security for decommissioning.	
<input type="checkbox"/> Require fair indemnification (i.e., require the solar company to pay for or reimburse the landowner for any damages to the property resulting from the solar project).	



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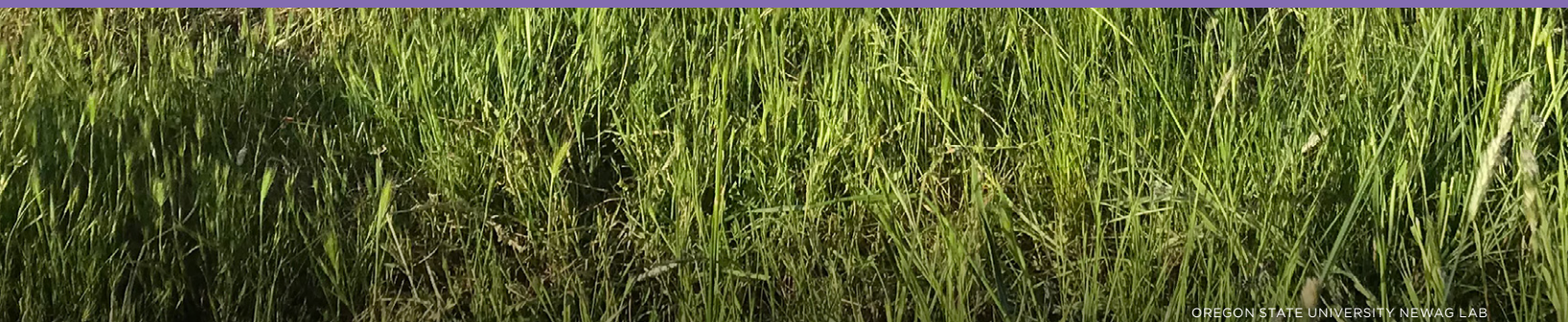
THE SOLAR LEASE MUST: (EXAMPLES)	NOTES
<input type="radio"/> Assure that the solar company will cover all costs associated with a nuisance or other lawsuit filed by a neighbor or community member associated with the solar project.	
<input type="radio"/> Require the solar company to get sufficient insurance, including: <ul style="list-style-type: none"> <li><input type="radio"/> Commercial liability insurance to cover general damages, including damages from storms and natural disasters.</li> <li><input type="radio"/> Workers' compensation and other liability insurance to cover injuries to workers or guests on the property associated with the solar project.</li> <li><input type="radio"/> Environmental insurance to cover potential environmental contamination, damage to the soil tiles, and subsurface.</li> </ul>	
<input type="radio"/> Provide a specific structure and minimum amount in rent payments (perhaps that you've determined with your accountant or financial advisor).	
<input type="radio"/> Provide compensation to cover financial losses, including: <ul style="list-style-type: none"> <li><input type="radio"/> Lost eligibility in government conservation programs.</li> <li><input type="radio"/> Reduced crop production (based on previous annual revenues).</li> <li><input type="radio"/> Cancellation penalties and/or future income from leases, hunting agreements, mineral rights agreements, etc.</li> </ul>	
<input type="radio"/> Provide compensation for attorney costs in negotiating the agreement.	
<input type="radio"/> Provide compensation for other professional fees associated with the agreement (accountant, financial advisor, etc.).	
<input type="radio"/> Provide compensation for increased costs in securing additional insurance coverage.	
Other:	

### Priority issues: Which of the above are most critical to you?

Once you have completed your list of critical issues, take some time to prioritize which issues mean the most to you. Put a star or other notation next to these. Perhaps it's all of them, maybe some more than others. This prioritization process will help you hone in on your non-negotiable issues.



## PART III. GOING FORTH: NEGOTIATING THE SOLAR LEASE



## Section 8. Navigating Legal Documents

Once a solar developer has approached you, it typically will not be long before they offer you some sort of legal document to sign. As highlighted in Section 2. Realizing the Phases, this legal agreement could come in the form of a letter of intent (LOI), an option to lease agreement (option agreement), a solar lease, or some combination of these legal documents.

Before diving into the details of the legal documents, **realize that the legal agreement the solar developer offers you was written by their attorneys.** While the agreement will strive to create a mutually beneficial arrangement, it will be written as favorably as possible for their client, the solar developer. You must look out for your own best interest.

### Working with an attorney

**It is highly recommended that you seek advice from an attorney before signing any legal documents or paperwork provided by a solar developer.** It is also advisable that you discuss the document with your accountant, tax advisor, or any other professional you trust to support you with the financial implications of the agreement.

Solar leases are complex legal documents and will impact your land for decades. Ideally, you find an attorney who has some experience with solar leases, renewable energy leases, or other long-term leases of agricultural land. Solar leases are very different from oil and gas or other commercial ground leases, so it might not be sufficient for the attorney to have experience with these lease arrangements. An attorney with experience advising agricultural clients can provide critical insights into crucial provisions of the agreement, including crop damages, land use, and easements.

How do you find an experienced attorney? Speaking to landowners in your region who have entered into a solar lease or extension agents who know landowners who have entered into a solar lease are good places to start in getting a referral.

When initially contacting an attorney, ask questions to gauge their experience:

- How many solar leases have you reviewed?
- Are you familiar with this solar developer?
- Can you answer these specific questions I have?
- How much do you expect it will cost to review and negotiate the lease?

By doing your research and due diligence, including identifying critical, non-negotiable issues you have and any key questions that remain, you can help streamline the process. This can help reduce your legal costs and ensure you will achieve a more favorable solar lease. Remember, you can negotiate with the solar company to compensate you for some or all your legal costs in negotiating the solar lease agreement.



## Recognizing the complexity of legal documents

Solar lease agreements are complex. The first thing you might notice is the sheer length. They generally range between 20 to 40 pages long and can be more than 60 pages in length.

While they are typically called “lease agreements,” they often serve multiple functions simultaneously, including an option to lease, easement, and lease. Let’s unpack these legal functions as we highlight some common components in solar lease agreements and related legal documents.

## Understanding key components of the solar lease and related legal documents

### LANDOWNER OBLIGATIONS

Whether the solar developer initiates discussions with a letter of intent, option agreement, or lease agreement, the initial agreement will likely include landowner obligations that set the tone of the relationship. These obligations include:

- **EXCLUSIVITY:** You cannot engage with or lease your land to another solar competitor.

You will want to ensure the exclusivity provision does not prohibit you from (1) entering a lease with a farmer or rancher on other areas of the property or (2) farming the land under the solar panels if you choose to pursue an agrivoltaics arrangement.

- **NON-INTERFERENCE:** You must agree to give the solar developer access to your property and not interfere with their activities. This includes their ability to conduct due diligence during the development stage, construct and operate the solar project, and do anything else allowed under the agreement during all phases subject to the agreement.
- **QUIET ENJOYMENT:** Similar to non-interference, you must allow the solar company to peacefully enjoy all its rights under the agreement.
- **CONFIDENTIALITY:** You cannot discuss the details of the arrangement with anyone except for your attorney or other professionals referred to in the agreement.

Note that confidentiality agreements will restrict your ability to negotiate with other landowners if the solar project involves multiple properties. If you want to engage in collective negotiations, you will want to negotiate a broader confidentiality agreement to allow for it.

- **WARRANTY OF TITLE.** In addition, the solar lease will include a “warranty of title.” This requires the landowner to ensure that they own the property free and clear of any encumbrances. You will want to ensure the title clause’s warranty includes exceptions for any existing and recorded encumbrances, such as easements or leases.



- **SUBORDINATION.** In addition, solar leases typically require guarantees that their financial investments in the project are protected or “first in line” from any other liens on the property. If an existing mortgage or loan is tied to the property, the lease will likely require you to obtain a subordination agreement from your lender. You will need to discuss any lender protection provisions requiring subordination with your lender.

## LETTER OF INTENT AND OPTION AGREEMENT

If your engagement with the solar developer begins with a letter of intent or option agreement rather than an entire lease agreement, here are a few essentials to keep in mind:

### Letter of Intent (LOI)

#### LEGAL IMPLICATIONS:

- Exclusivity
- Non-interference
- Quiet enjoyment
- Confidentiality

#### LEGAL TIPS:

- Get everything in writing
- Have an attorney review the document
- Negotiate compensation for rights of access
- Negotiate compensation for legal costs in reviewing the LOI

### Option Agreement

#### LEGAL IMPLICATIONS:

- Exclusivity
- Non-interference
- Quiet enjoyment
- Confidentiality
- Binds landowner, but not the solar developer
- Tied to the lease

#### LEGAL TIPS

- Have attorney review
- Be clear about the lease arrangement before signing, as the lease agreement may be tied to the option agreement (i.e., you are signing the lease agreement when you sign the option agreement)
- Negotiate appropriate compensation for the option phase. Note that many option agreements are written to allow solar developers access to all your property while only obligating them to pay for the portion they use.
- Negotiate compensation for legal costs in reviewing the option agreement and corresponding solar lease agreement



## PARTIES

The solar lease agreement should specify who the parties are. Typically, the solar developer will be referred to as the “lessee” or “tenant” and the landowner as the “lessor,” “landlord,” or “owner.”

You will want to ensure that whoever owns the land is explicitly named in the agreement. For example, if the land is held in trust or by a business entity, this needs to be specified, and the trustee or the authorized business representative will need to sign the agreement.

The provision describing the parties might also refer to assignees or successors. It is important to remember that the lease will run with the land, which means that any future landowner will be obligated to abide by the terms. The lease will likely allow you to sell or transfer your land or interest, but only if the new person or entity agrees to assume all your obligations under the lease. You must notify the solar company before the sale or transfer. In addition, upon your death, your executor or successor in interest must promptly notify the solar company.

On the other hand, the agreement will likely permit the solar company to assign or otherwise transfer the lease to another party. This might happen, for example, if the solar company merges with or is acquired by another company. For example, let’s say you arrange with the solar company to incorporate agrivoltaics during the operations phase or commit to certain revegetation or remediation approaches during the decommissioning phase. Meanwhile, the solar company changes hands. An unfortunate situation could arise if these arrangements are not clearly stated in the agreement or if there is a way for the successor or assignee to evade certain obligations in the lease.

Another unfortunate scenario could arise if the solar company defaults on its loan for the solar project or declares bankruptcy and the company’s lender or successor takes over the lease.

It is critical that the lease explicitly requires any successor or “assignee” to abide by the exact terms of the lease unless otherwise agreed to by the landowner. The lease should specify that if a new lease is necessary for any reason, it must contain substantially all of the exact terms of the original lease.



## TIME PERIOD

The solar lease agreement will likely refer to distinct phases, generally referred to as the development or option phase (if the option agreement is included in the lease), the construction phase, the operational phase, and decommissioning phase—which we’ve already described in previous sections.

You will want to ensure that milestones for each phase are clearly defined so that you and the solar developer know, without a doubt, when any new compensation arrangements or different obligations begin.





In addition, solar leases typically include a renewal clause allowing the solar developer to renew the lease for a set period. Typically, renewals are at the developer's option and occur automatically if the developer notifies the landowner by a specified time. Rental payments and other lease agreement terms can sometimes be renegotiated if/when a lease is renewed.

## COMPENSATION

The solar lease payments will likely be a significant area for negotiations. As discussed in section 4, there are many structures and opportunities for compensation. Take time to review that Section when going through the lease agreement.

You will want to make sure the rental payments are adequate for each phase and that the solar company pays you for other compensation you negotiate (e.g., attorney or other expert expenses during negotiations, crop damages during construction, other losses that you incur and can successfully negotiate such as differential property tax assessment, loss of eligibility in a government conservation program, penalties or opportunity costs in canceling leases or other interests in the land).



In addition, the lease agreement should provide a precise mechanism for rent increases, whether by an automatic annual percentage increase or escalation based on a publicly available index (e.g., Consumer Price index).

You will want to ensure that the mechanism for rental payment increases and any associated technical terms for making rent increase calculations are well described, defined, and understood.



## DESCRIPTION OF THE PROPERTY

The solar lease must accurately describe the property subject to the lease. Especially critical is identifying the number of acres as well as the type of access or uses for each area—i.e., the solar footprint (or inside the fence), any right-of-ways (ROWs) that the solar company can access, and any remaining areas of the property that the solar company needs for storage, maintenance, or construction.

In addition, the description of the property will likely be different for each phase. During the option or development phase, the solar company will probably want access to more of the property to determine the optimal area for the solar footprint.

You will want to ensure the acreage subject to each lease phase is well defined and described so that the compensation can be determined accurately.



The property description could include a formal legal description, which might be taken from the deed. However, there may be discrepancies if the deed is old. The parties may want to conduct a new survey of the land. If this is the case, the solar lease should specify who pays for these costs and what type of survey is acceptable.

It is recommended that the lease also includes a map or aerial photograph to identify the project's boundaries for each phase of the solar project.

When reviewing the property description, it can be helpful to keep your intention for three main areas: Solar footprint (i.e., Inside the fence), rights-of-ways (ROWs), and remaining areas of the property. Are these clearly delineated? Do they conflict with your intentions to access or use your property?



### Solar footprint (i.e., Inside the fence)

Most solar arrays will be fenced. The area inside is often referred to as “inside the fence,” “behind the fence,” or the “solar footprint.” Landowners will likely have limited access to these areas and need permission to enter.

You will want to ensure the lease document addresses your access rights within the solar footprint. If you anticipate wanting to use this land, for example, to integrate agrivoltaics, make sure the lease agreement provides a mechanism for you to do so.



### Right-of-ways (ROWs)

The energy produced on a solar site must be transported to high-voltage power lines. The solar developer will create a path to get there, either by trench or pole. Neighboring properties may also host solar arrays that must go through your property. This will create additional ROWs. The landowner will have restricted use of these ROWs. Depending on how the ROWs are configured, other areas of your property could be affected.

You will want to consider your current and future uses of the property. Will the ROWs affect these uses? Are you able to access all the areas of the property that you need?

You will want to make sure you are adequately compensated for the restricted use of areas affected by right-of-ways (ROWs).



### Remaining areas of the property

Many lease arrangements allow the developer to use the property outside of the solar footprint or ROWs for various reasons, e.g., access during development and construction phases, equipment storage, etc.

The lease agreement should specifically describe allowable reasons for the solar company's access to the remaining areas of the property and restrict access to areas where you do not receive compensation.



## SOLAR COMPANY'S RIGHTS TO ACCESS AND USE THE LAND

Going hand in hand with the property description, the lease agreement will describe specific rights that the solar company has in accessing and using various parts of the land—i.e., solar footprint, ROWs, and remaining areas of the property.

Typically, a solar lease will do this by including multiple easements. An easement is a legal right to use the property of another for a specific purpose. When reading the solar lease, pay close attention to (1) which type of easements exist, (2) on which part of your property, (3) at which phase. Here are some easements that are commonly included:

- **CONSTRUCTION EASEMENT** grants the solar developer the right to access the land to prepare, develop, and install solar equipment. The areas affected by this easement will include the solar footprint and access roads and “laydown areas” used for storing and staging equipment, parking, office trailers, etc.

You will want to carefully consider the location and impact subject to a construction easement as these activities involve heavy equipment and machinery.



- **ACCESS EASEMENT** grants the solar developer the right to cross this area to access the solar facility. The access easement often gives the solar company the right to build or improve existing roads or access points.

If you want a say in whether, where, or how any new roads are built, you will want to negotiate these terms at the outset and include specifics in the lease.



- **TRANSMISSION EASEMENT** grants the solar developer the right to install, maintain, and repair equipment to transmit solar energy to the grid. This easement typically includes allowing the solar company to install power lines, polls, and passageways above and below parts of the property.

If you want any restrictions on the whereabouts or placement of transmission lines, you will need to negotiate them before signing the lease.



- **NUISANCE EASEMENT** prevents the landowner from bringing a lawsuit against the solar developer for any noise, dust, or other annoyance that the construction or operating activities may create. Note that neighbors are not included in this provision.

It is recommended that you seek assurances from the solar company that they will indemnify or reimburse you if a neighbor files a nuisance lawsuit against you. You will want to ensure this is explicitly stated in the lease agreement.



- **SOLAR EASEMENT** grants an exclusive right to the solar company for unobstructed access to the sun. This ensures that the solar arrays receive sunlight without interference. Note that this provision may apply to all your land and may prohibit you from placing new buildings, structures, or trees on the property.

Be sure to read the solar easement provision carefully; if it affects areas of your property that would not interfere with solar access, you will want to negotiate a more limited scope.



- **CATCH-ALL EASEMENT** grants the solar company unrestricted access and use of the land for broad purposes.

Be wary if a catch-all easement is included in the lease agreement, as it is comprehensive and vague and could lead to problems down the road.



## IMPROVEMENTS

The solar company may require you to ask for permission before building any new farm structures or buildings or impose certain criteria that the landowner must follow to ensure they do not interfere with solar production. For example, they may prevent you from constructing a new structure that will shade the solar panels.

Landowners who want to protect specific structures or guarantee the ability to add structures in the future will want to read the lease provisions regarding improvements carefully to ensure their needs are addressed. The lease should specify that existing trees, buildings, and other improvements on your farm may remain.



For example, landowners may be able to negotiate for an improvement provision that requires the solar developer to consent to a landowner's request so long as the improvement does not negatively impact the solar facility's access to the sun.

The lease agreement should address how to account for any improvements the solar company makes to the land, including building roads or other infrastructure.



Generally, in commercial ground leases, which the solar lease resembles, the lessee (here, the solar company) owns these improvements and is compensated for their added value if the property is sold. This needs to be specified in the lease, including the process for appraising the land's value and the improvements' value.

## MAINTENANCE DURING THE OPERATIONAL PHASE

The lease should specify who will maintain the property in and around the solar project site, roads, and other infrastructure or facilities used for the solar site.

### Maintenance under and around the solar arrays: Reserving your right to pursue agrivoltaics

Maintaining vegetation around and under solar panels can be done through mowing and/or spraying herbicide, or through an agrivoltaic system, including sheep grazing, cultivating crops, or creating pollinator habitats.

Landowners wanting to pursue an agrivoltaic maintenance approach, whether initially or sometime in the future, will want to ensure that the lease explicitly reserves this right. This is critical, as failure to reserve this option at the outset may forever foreclose it, especially if the solar company you initially negotiated with is acquired or changes hands.



One option is to include a “right of first refusal” for the landowner to maintain the property inside the solar array’s fence. This allows you to take care of the maintenance yourself or to lease this area to another farmer to do it under your specifications.

Another option is to explicitly require that the solar site’s land be maintained a certain way—e.g., grazing, cultivating crops, and creating pollinator habitats. This latter option allows you or the solar developer to conduct the maintenance through an agrivoltaic system or enter a lease with another farmer. Either way, the more specific the parameters are, the better. For example, any restrictions on chemical spraying should be specified.

If agrivoltaics is pursued, the lease should require that any needed infrastructure is preserved, built, and maintained.



The construction or development plan associated with the lease will need to include necessary specifications to ensure the agrivoltaic system is feasible and successful (e.g., height, angle, and spacing of the panels, type of fencing, availability, and access to water and irrigation sources, etc.). You will want to ensure that the solar lease does not restrict you from building a well or accessing and using water.

The lease or separate sublease document will need to specify who is responsible for any damages, whether to the crops, livestock, solar panels, or equipment.



You'll also want to discuss this matter with your insurance agent to ensure adequate coverage is available should damage occur. Additionally, safety protocols will need to be established. This is particularly the case if animals are involved (solar grazing) or bees (apiaries). Are fences and gates secure, are protocols established, and is safety equipment available for maintenance and repair workers who visit the solar site?

Landowners interested in solar grazing should look to resources provided by The American Solar Grazing Association for sample solar grazing lease agreements. Landowners interested in cultivating crops or creating pollinator habitats may want to speak to representatives at pilot projects referred to in Section 3. Exploring Agrivoltaics, for advice.

### **Other maintenance activities**

Other maintenance activities will also occur at the solar site, including inspecting and maintaining electrical connections and components. While these activities will be less frequent, landowners will need to consider the access rights for these activities.

If agrivoltaics systems are pursued, liability for injuries and damage or harm to crop or grazing activities, equipment, and infrastructure during these maintenance visits will need to be established in the lease.



### **Maintaining roads and other infrastructure**

Typically, the solar developer is responsible for maintaining and repairing roads and other infrastructure needed for the solar project.

If the landowner and the solar developer share roads or other infrastructure, the solar lease should specify an arrangement for who is responsible for any maintenance and repair activities and paying for any associated costs. Often these responsibilities are appropriated based on usage percentage.



### **Utilities, water-use, and erosion and storm control**

Typically, the solar developer is responsible for paying any utilities associated with constructing or operating the solar facility. The lease will also need to specify any limits on water use and provide adequate compensation to the landowner if the solar developer uses water to clean the panels or for any cooling or other operational function.

The solar lease should establish a system to account for usage, particularly if any utility or water bills remain in the landowner's name. In addition, the lease will need to outline who is responsible for repairing and paying for erosion or damages from storms that occur within any of the areas occupied by the solar site (solar footprint, rights of ways, etc.).



## DECOMMISSIONING PHASE

Most solar leases require the solar company to restore the property to its original condition following the lease period. Restoration includes removing all equipment, restoring the land to its original grade, vegetation, and soil condition, and removing sub-surface materials to a certain depth. Ideally, the lease agreement includes a thorough decommissioning and reclamation plan. You will want to specify requirements or standards for how you want the land to be restored when negotiating the solar lease or decommissioning and reclamation plan.

You will want to review the lease carefully and consider how any agreed-to terms for the decommissioning phase will be enforced decades into the future.

One option for enforcing the decommissioning plan is to include a requirement that a mutually agreed upon third-party oversees and verifies the remediation process according to specified standards and terms.

It is highly recommended that you insist that the solar company set aside adequate funds to cover the costs of decommissioning the project and remediating the land. The lease agreement could require that these funds are set aside in escrow or investment-grade security such as a surety bond.

## EARLY TERMINATION

The solar lease will include a termination clause that outlines various reasons that either party can terminate the lease early and what happens if they do. You will want to ensure this clause includes, at a minimum, your right to terminate the lease early if the solar company fails to make payments for some time.

Some solar lease agreements allow the landowner to terminate the lease if the solar project remains inoperable for some time, such as one year.

If early termination were to occur, the lease should specify that decommissioning responsibilities are triggered and release any security funds to pay for the decommissioning and remediation process.



## INSURANCE AND INDEMNIFICATION

The solar lease will include requirements for the solar company and the landowner to have specific insurance coverage. In addition, the solar lease will include indemnification provisions that outline who is responsible for certain damages and losses. Liability insurance and indemnification were discussed in detail in Section 4. Take time to review this section.

You will want to discuss the specifics of the insurance and indemnification provisions with your insurance agent to ensure they are reasonable and fair.



## RESOLVING DISPUTES

Solar leases commonly include arbitration clauses, which require any dispute between the landowner and the solar company to be resolved in an out-of-court arbitration process. Read this provision carefully, as it often prevents any party from appealing the arbitration decision to a court.

A more favorable arbitration clause will allow for an appeal and require mutual consent when choosing an arbitrator or arbitration service.



In addition, carefully review any “choice of law” provisions in the solar lease. This provision will specify the location and state law to resolve any dispute.

You will want to ensure that any disputes will be handled in the state where the property is located.





Take note of any additional critical or non-negotiable issues you identified when reading this section, reviewing the solar lease, and going through the Solar Lease Review Checklist. Add these to your list in Section 7. Identifying Non-Negotiable Issues.



## References

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- Brown, Parks F. "Solar Lease Negotiations from the Landowner's Perspective," 49 Tex. J. Bus. L. 1 (2020).
- Kirk Hall, Peggy; Bachelor, Evin, Romich, Eric. "Farmland Owner's Guide to Solar Leasing." National Agricultural Law Center, August 2019.
- Ferrell, Shannon L. "Understanding Solar Energy Agreements." National Agricultural Law Center, 2019.

## Section 9. Negotiating With Power

Negotiation can feel like a slippery slope, especially as an individual preparing to negotiate with a solar developer. It can be easy to give away too much information or agree to unfavorable terms, leaving the landowner to ask: how does one prepare to negotiate with power?

It's helpful to think of this question in two ways. The first is negotiating with a commercial entity who has significant power of knowledge, capital, and infrastructure to make or break the project. The second is negotiating with the solar developer using your power to communicate your needs and goals clearly, identifying areas of firmness and flexibility. Let's hold these two in balance as you consider how to move forward in negotiations using a three-step process called ARC (Hoben, 2020).

ARC stands for:

1. **ACKNOWLEDGMENT:** *Who is the solar developer?*
2. **RECIPROCITY:** *How can I contribute to reciprocal engagement with them?*
3. **CLARITY:** *What do I need to know at the outset to move forward?*

### **Acknowledgment: Who is the solar developer?**

Knowing who the solar developer is and establishing a respectful relationship can minimize problems and conflicts down the road.

As you do your due diligence to find out who the solar developer is, keep these considerations in mind:

- Is the developer financially sound?
- Are they a viable vendor?

These financial considerations are important because if they go bankrupt during or after installation, the landowner may be left to foot the bill for cleaning up the site.

Other important considerations include:

- Do they have experience with solar energy production? If not, the project might have delays and incur additional costs.
- What is their reputation with others, including in the industry as well as with other landowners? Reviews can illuminate how a solar developer manages or mismanages projects.

Sometimes the person contacting the landowner initially is a land broker working on behalf of the developer. Their job is to assemble parcels for the developer or to “sell” the project to the developer. Be sure to verify whether the party you are negotiating with is a broker or a developer. If they are a broker, determine whether a developer is also involved or whether the broker has authority to negotiate on behalf of the developer.

Create an action plan for learning about the solar developer. Here are some ways to get you started:

- **THE DEVELOPER.** Ask them for their most recent financial and annual reports, a portfolio or description of the full project. Ask them to refer you to landowners with whom they've previously done business.
- **YOUR STATE'S SECRETARY OF STATE OFFICE.** Confirm that the company is registered to do business in your state. See if financial statements have been filed by creditors of the company.
- **CREDIT CHECK SERVICES.** Consider paying for a credit check on the business.
- **COUNTY RECORDER'S OFFICE.** Check for solar leases that have been recorded in the public records. Consider contacting the landowners. While they are not able to discuss confidential information, they may be willing to talk about aspects of their relationship with the solar developer.
- **SOLAR ENERGY INDUSTRY ASSOCIATION.** SEIA adopted a business code to encourage good faith, understanding and transparency in the solar industry. Ask the developer if it is a member of the association and complies with the code.
- **ATTORNEYS WHO HAVE WORKED ON SOLAR LEASES.** While attorneys will not be able to discuss confidential information about their clients, they may be willing to generally speak about the reputation of a solar developer and their willingness to work with landowners.



### **Reciprocity: How can I contribute to reciprocal engagement with them?**

While some solar developers may have hard terms that need to be met or else they walk away, others may be more open to negotiating depending on what information you bring to the table. What questions can you ask and what knowledge can you contribute to support reciprocity in dialogue with the developer? **Remember, you always have the option to walk away.**

The more you've done your due diligence and research the more you will be able to contribute and influence the negotiation process. Due diligence and research includes gathering information, reflecting upon your values and visions for your land, exploring agrivoltaics, weighing financial considerations, considering impacts to agriculture and the land, engaging in conversations with people affected by the solar lease, identifying any hardline non-negotiable issues, and seeking advice on questions.

**Knowledge is power.** Your increased knowledge and insights about issues most important to you will give you power to engage in a reciprocal dialogue and come to a mutually agreed upon solution, or, to know when it is time to walk away. The reflections and checklists throughout this guide are helpful starting points to get you going.

Take some time to review your answers to the reflections throughout this guide or complete them if you haven't already.

These include:

- The reflections at the end of:
  - Section 1. Understanding the Scale of Solar Projects
  - Section 2. Realizing the Phases of the Solar Leasing Process
  - Section 3. Exploring Agrivoltaics: Solar and Farming
  - Section 4. Weighing Financial Opportunities, Losses, and Risks
  - Section 5. Recognizing Impacts to Agriculture and the Land
- The question prompts in Section 6. Respecting Relationships
- The Identifying Non-Negotiables Checklist in Section 7. Making a Decision
- The Solar Lease Review Checklist in Section 8. Navigating Legal Documents.

Pay particular attention to critical issues you have identified in the Non-Negotiables Checklist and any questions or concerns you've identified in the Solar Lease Review Checklist. Your hardline non-negotiable issues and your well-formulated questions about concerns in the legal documents are where your power lies in the negotiations with the solar developer.



### **Clarity: *What do I need to know at the outset to move forward?***

The thought of negotiating a complex solar lease can feel daunting. The uncertainties of both the process and outcome can feel overwhelming. To help ease your mind, and streamline the process, it can help to clarify the path forward. At the outset of the negotiations, be sure to get clarity on the negotiations process by setting mutual expectations and getting assurances that your fundamental needs will be met.

Your fundamental needs might include getting:

- Clear on how long the negotiation will take (perhaps propose a deadline or milestones),
- Commitment that the solar developer will pay for some or all your attorney costs through the negotiations,
- Assurances that the solar developer is willing to listen and negotiate key issues, not just demand that you sign their template agreement. For this, consider disclosing upfront what your absolute deal-breakers are. Discuss this strategy with your attorney.

In addition, if the solar project involves multiple properties, you may consider proposing to the solar developer collective negotiations with some or all the landowners involved. Collective negotiations could serve both groups. On the one hand, by coming together, the landowners could enhance their negotiating power and share in legal costs. On the other hand, the solar company gains added efficiency and reduced vulnerability of the overall project by negotiating one agreement rather than numerous individual agreements. That said, before engaging in collective negotiations, make sure that you share a similar vision with the other landowners.

By voicing your needs and setting mutual expectations at the outset you can gain confidence and feel comfortable moving forward. You'll set the tone of the negotiations that you bring knowledge and authority, which will increase your chances of entering a solar lease that meets your values and needs.

Take a moment to reflect on your needs for the negotiation process, e.g., deadline or milestones, commitment to pay legal fees, assurances that the solar developer is willing to negotiate, etc. Share these with your attorney so you can develop a strategy for communicating them to the solar developer at the outset.



## References

Hoben, Merrick, "Cultivating Dignity in a Year of Rupture." Consensus Building Institute, October 05, 2020.

## Section 10. Conclusion: Circling back to your values and vision

The decision whether to enter a solar lease carries significant implications for decades into the future. The length of this guide confirms the complexities and challenges involved.

That said, this guide is not exhaustive on the issue of solar leasing. It represents a comma, not a period, in the understanding of the full range of issues involved. The solar energy industry, including agrivoltaics, is rapidly evolving. Depending on when in the future you are making a decision, you may want to seek more current resources on solar leases.

While the power of the decision may lie in your hands, the decision should not be made in isolation. Seeking the advice of professionals, particularly an attorney, is critical. Fundamentally, landowners are encouraged to keep solar off their best agricultural lands and to focus on limiting it to incorporating it on areas not well suited for agriculture.

The more diligence and time you take in gathering information, identifying critical issues, having conversations with those involved, and taking time to develop a negotiation strategy, the greater chance your ultimate decision will be what's best for you, the land, and others impacted now and into the future. A decision you can feel good about.

If you decide to go forward with a solar lease, your efforts in understanding the issues and intricacies involved and getting clear on your priorities and intentions at the outset will help you negotiate a more favorable arrangement.

When feeling uncertain or overwhelmed with the decision in front of you, it can be helpful to circle back to the vision and values for your land. On the following page is an action plan to help you reflect on the ideas presented in this guidebook.

## ACTION PLAN

1. Reflect on what you value about your land and why you are considering entering into a solar lease. (Introduction)
2. Identify initial questions you have for a solar company. (Section 1. Understanding the Scale)
3. Develop a 50-year plan for your property and identify any potential conflicts with a solar lease. (Section 2. Realizing the Phases)
4. Map areas of your property most suited for solar, agrivoltaics, and preserved for agricultural or other uses. (Section 3. Exploring Agrivoltaics)
5. Make a list of questions or concerns you have about specific financial opportunities, losses and risks and identify someone you can contact for guidance. (Section 4. Weighing Financial Opportunities, Losses, and Risks)
6. Make a list of questions or concerns you have about potential impacts to agriculture and the land and identify action steps you can take to mitigate those risks. (Section 5. Recognizing Impacts to Agriculture and the Land)
7. Make a list of all the people who have a connection to the property, legal or otherwise. For each person, identify questions you can ask to have a productive conversation. (Section 6. Respecting Relationships)
8. Make a list of issues that matter most to you to help you determine your hardline, non-negotiable points. (Section 7. Identifying Non-Negotiable Issues)
9. Review the solar lease using the Solar Lease Checklist and prepare questions for your attorney. (Section 8. Navigating Legal Documents)
10. Investigate the solar company, finalize your non-negotiable and priority issues, and prepare for negotiations. (Section 9. Negotiating with Power).





## APPENDIX: WATER RIGHTS IN IDAHO, OREGON, AND WASHINGTON

The following information is an overview of resources for water rights holders in Idaho, Oregon and Washington and is intended to point you towards additional resources. It is the landowner's responsibility to ensure that you have taken the necessary steps to protect your land's water rights for future agricultural endeavors. Thank you to the Deschutes River Conservancy and the Washington Water Trust for providing support and guidance on this appendix.



## Idaho: Water Rights (General)

### Landowners with water rights: Where to begin?

The following information comes from the Idaho Department of Water Resources (IDWR), which is tasked with managing water for the state. In Idaho, a water right is the right to divert public waters and put them to a beneficial use in accordance with one's priority date.

- How to find out if you have a water right: [Irrigation Rights Finder](#)
- How do water rights work? Read the IDWR's [Water Rights Overview](#)
- General water right [FAQs](#)

Within the IDWR are Water Districts, government entities that are tasked with distributing Idaho's water in a manner consistent with the water rights on record. [Find your water district.](#)

[Groundwater Irrigation Districts](#) are organized by landowners with groundwater irrigation rights, and serve to represent their members and provide basic functions, such as measuring and reporting (Idaho Code § 42-5224).

The [Idaho Water Resource Board](#) is an elected eight-member board tasked with the formulation and implementation of the state water plan. The IWRB oversees project financing and operates programs that support sustainable management of Idaho's water resources. One such resource is the [Water Supply Bank](#), a water exchange program operated in association with water districts and IWRB-appointed local rental committees. The Water Supply Bank exists to facilitate the acquisition and voluntary exchange of water rights for new and supplemental water uses.

The Bank is operated pursuant to [Sections 42-1761 through 42-1766 Idaho Code](#) and [Idaho Administrative Code IDAPA 37.02.03 \(Water Supply Bank Rules\)](#).

The Water Supply Bank program primarily consists of two water exchange initiatives: the Board's water supply bank (Board's bank) and rental pools. The Board's bank facilitates the statewide lease and rental of water rights and is managed by IDWR personnel while rental pools facilitate the lease and rental of water rights associated with specific watersheds or water sources (e.g. river basins and/or reservoir storage systems) and are managed by IWRB-appointed local committees.

The [Shoshone-Bannock Tribes](#) also operate a Tribal Water Supply Bank, for Snake River water stored in federal reservoirs, under the authorities of Water Supply Bank statutes and [Tribal Water Supply Bank rules](#).

Long-term changes in water use may require a [transfer](#). Five years of nonuse may result in a forfeiture of water rights unless the nonuse meets the criteria outlined in Idaho Code 42-223, which includes but is not limited to:

- Water placed in the water supply bank.
- Cropland contracted through a federal set-aside program.
- Compliance with the provisions of a ground water management plan approved by the director of the department of water resources.

- No portion of any water right shall be lost or forfeited for nonuse if, after the five (5) year period of nonuse, use of the water is resumed prior to a claim of right by a third party.

### **State contacts**

Idaho Department of Water Resources

### **Regional contacts**

Idaho Water Districts

## Oregon: Water Rights and Solar



DESCHUTES RIVER  
CONSERVANCY

If you are considering a solar lease, the best place to locate a solar array is on marginal farmlands without irrigation. If this is not an option, the landowner should weigh the alternatives of what to do with a water right that may be located on the same footprint as the solar array. If the project is in an area with surface or groundwater irrigation rights, the landowner has multiple temporary and permanent options available to them that can either preserve the water right on the farm for future use or can provide additional income by permanently moving the water to a new location or use. The question of what to do with the water right should be addressed prior to construction of the solar project.

### Landowners with water rights: Where to begin?

- Do you have water rights? Surface water diversion or groundwater appropriation (pumped)?
- Is your water in an irrigation district or not related to an irrigation district?
- Do you know the status and requirements for use of your water rights? (may vary by state)
  - Have you used your water in the past five years?
  - Was it used fully (within its mapped area) or partially?
  - Is there something you need to do to make sure all your water is eligible for lease or transfer programs before installing solar arrays?
  - Is your diversion location the location of record? If not, this would need to be resolved.
- Do you intend to use part or all of your water in conjunction with the solar array?
- If you will not use your water while in a solar contract, do you want your water to be available to you again in the future?
- If your water is associated with an irrigation district or water user group—what level of approval do you need from them to make a change (either temporary or permanent) to your water right?

### Beneficial use of a water right to prevent forfeiture

In the state of Oregon, both surface water and groundwater use rights must be beneficially used for the purpose stated on the certificate/permit/groundwater registration (pre-1995) once every five years to prevent forfeiture of the water right.

The specific legal requirements for avoiding forfeiture of a water right are outlined in [ORS 540.610](#).

The water right must be certificated (not just a permit or a groundwater registration) to take advantage of other options such as temporary transfer, lease, or permanent transfer (see next section as options may be different for groundwater than for surface water).

### Options: Depending on future goals for water

Retain and use all of a water right under the solar array.

- Retaining use of the water right under the solar project may still require the transfer or lease of water from some small areas where semi-permanent or permanent structures

will be placed in the irrigated area, or where access roads may be located on the mapped water right to avoid forfeiture for non-use.

Lease, temporary transfer, or permanent transfer of a water right.

- **INSTREAM WATER LEASE**—available in most western states (surface water - SW). In Oregon, a water right holder can lease a water right instream for up to five years but can renew the lease indefinitely—with each year of the instream lease counting as a year of “beneficial use” of the water, allowing it to revert to its original use at some future time. The ability of the irrigation diversion structure and delivery system to take water must be maintained. If the water right is in an irrigation district, they must also approve of this long-term lease of water.
- **TIME-LIMITED TRANSFER** (instream)—available in most western states (surface water - SW). In Oregon, a water right can be placed instream for a period longer than five years with one application, a time-limited transfer. The ability of the irrigation diversion structure and delivery system to take water must be maintained. There may be term limits in your basin or limitations if the water user is a patron of an irrigation district.
- **TEMPORARY TRANSFER TO ANOTHER PROPERTY** (surface water—SW or groundwater—GW)—In Oregon, a surface water or groundwater right can be temporarily transferred to another location for continued use for its intended purpose (use listed on certificate, e.g. irrigation). A temporary transfer is limited to 25 years in the Deschutes Basin (ORS 540.585 ) and might also be limited by irrigation districts, aquifer sources, or by proximity to new location.
- **PERMANENT TRANSFER INSTREAM** (SW)—depending on priority date and stream, there are funding sources willing to pay for water to permanently transfer instream. Prices paid for these transfers can vary dramatically based on priority date and stream. If in an irrigation district, the district must also approve of this type of transfer.
- **PERMANENT TRANSFER TO ANOTHER USER OR ANOTHER PART OF YOUR PROPERTY** (SW or GW)—if in an irrigation district, the district must also approve of this type of transfer. If the water right is for groundwater use, then the transfer may be restricted based on groundwater source – will the new location draw from the same aquifer?

**Legal or administrative references or links** to information on leasing and transfer programs/options.

- If part of an irrigation district, check on district policies regarding leasing and transferring of water.
- Check with the Water Resources Department (state) watermaster for region in advance of lease or transfer to identify potential issues (SW or GW).

Instream Leasing and Transfers (time-limited and permanent) Authority	<ul style="list-style-type: none"> <li>• <a href="#">ORS 537.348</a></li> <li>• <a href="#">OAR 690-077 &amp; 690-380</a></li> <li>• <a href="#">Instream lease Oregon</a></li> <li>• <a href="#">Instream transfer Oregon</a></li> </ul>
Temporary Transfers Authority	<ul style="list-style-type: none"> <li>• <a href="#">ORS 540.523</a></li> <li>• <a href="#">OAR 690-380</a></li> <li>• <a href="#">Temporary transfer Oregon</a></li> </ul>
Irrigation District Transfers Authority (temporary and permanent)	<ul style="list-style-type: none"> <li>• <a href="#">ORS 540.570 to 540.580</a></li> <li>• <a href="#">ORS 540.505 to 540.585</a></li> <li>• <a href="#">OAR 690-385</a></li> <li>• <a href="#">District transfers Oregon</a></li> </ul>
Beneficial use and forfeiture	<ul style="list-style-type: none"> <li>• <a href="#">ORS 540.610 forfeiture of water rights</a></li> </ul>

## State forms

Any transfers of water associated with an irrigation district must have district approvals.

- [Application for instream lease forms—Oregon](#)
- [Application for water right instream transfer forms—Oregon](#)
- [Application for district transfer forms—Oregon](#)
- [State fees for transfer or lease of water—Oregon](#)

## Contacts for assistance

- Irrigation District: If an irrigation district is the water provider, they must provide approval for changes to the water right.
- Local water conservancy:
  - [Deschutes River Conservancy](#): Working in the Deschutes Basin, including its tributaries.
  - [Klamath Basin Rangeland Trust](#): Working in Oregon’s upper Klamath Basin.
- Regional-national water conservancy:
  - [Trout Unlimited: TU Oregon](#), working in SW and NE Oregon (and other PNW states), for contacts: [national staff in Oregon](#).
  - [The Nature Conservancy](#) (active in water transactions for some states).
- [Oregon Water Resources Department region offices and watermasters](#)
- State contacts for transfers and leases: [Oregon Water Resources Department](#).
  - For irrigation district related transfers: Contact your irrigation district.

## Landowners with water rights—where to begin?

- Find out if you have a water right.
- The Landowner’s Guide to Washington Water Rights provides key tools for understanding your water rights.

The following information is adapted from the Washington State Department of Ecology. For full text and additional details, please visit: [ecology.wa.gov](http://ecology.wa.gov).

Washington’s water law, like many western states, holds that water is owned by the public but allowed to be used by water right, and includes the principle that a water right is confirmed and maintained through beneficial use—you may have heard “use it or lose it.” Put simply, a water right may be wholly or partially lost through extended periods of voluntary non-use. If water is no longer used by the rights holder, the rights or portion thereof may be relinquished to the state so that the water can return to maximum beneficial use.

## Sufficient cause

Five or more successive years of non-use triggers relinquishment of a water right unless there is sufficient cause to explain the non-use, with the burden of proof on the rights holder.

The following categories may serve as “sufficient causes” to explain non-usage of water: (RCW 90.14.140)

<b>WATER UNAVAILABILITY</b>	<ul style="list-style-type: none"> <li>• Drought or other water unavailability.</li> </ul>
<b>MILITARY DUTY</b>	<ul style="list-style-type: none"> <li>• Active service in the U.S. Armed Forces during military crisis.</li> <li>• Non-voluntary service in the U.S. Armed Forces.</li> </ul>
<b>LEGAL PROCEEDINGS</b>	<ul style="list-style-type: none"> <li>• Operation of legal proceedings that directly prevent the water right holder from using the water.</li> </ul>
<b>SPECIAL FEDERAL OR STATE PROGRAMS</b>	<ul style="list-style-type: none"> <li>• Federal or state agency leases or purchase options for lands or water rights that reduce or prevent the use of the right by the owner.</li> <li>• Federal laws or voluntary enrollment in a federal program imposing land or water use restrictions, acreage limits, or production quotas.</li> </ul>
<b>IRRIGATION SPECIFIC</b>	<ul style="list-style-type: none"> <li>• Temporarily reduced irrigation due to varying weather conditions, as long as water diversion and delivery facilities remain able to support the full beneficial use of the water right.</li> <li>• Use of water conservation measures as part of the Yakima River Basin Water Enhancement Project, so long as the conserved water is reallocated in accordance with the provisions of P.L. 103-434.</li> <li>• Use of measured or reliably estimated return flows in place of water from the primary source of supply.</li> <li>• Reduced use of irrigation water due to crop rotation when sound farming practice advises the temporary change of crop type, and the remaining portion of the water right is put to beneficial use.</li> <li>• Reduced irrigation water use from an aquifer within the Odessa ground water subarea (as defined in chapter 173-128A WAC), due to drought or low flow period</li> </ul>

## Additional resources

Water rights purchases, leases, and donations provide a flexible opportunity for water users to protect their water in trust and take advantage of financial incentives for allocating some of their water use to conservation purposes.

- Lease—Landowner payments for temporary trust water left in stream
- Sale—Fair market value for permanent trust water
- Donation—Protects water rights, stops potential relinquishment

The Washington Department of Ecology's Trust Water Rights Program (TWRP) allows landowners to manage their water rights and temporarily place them in trust, providing environmental benefits while they are not in use. Other uses of the TWRP are to permanently dedicate water rights to improve streamflow, as well as to provide for the sustainable allocation of new water uses. For more information on water banking in Washington, visit: [Water banks—Washington State Department of Ecology](#).

Information on the TWRP from [ecology.wa.gov](http://ecology.wa.gov):

## Temporary water donations

- Water right holders can temporarily donate all or part of their water right to the TWRP without impacting seniority (priority date) and all other attributes of the water right.
- Donors receive their water right back at the end of the temporary donation period without penalty.
- Water rights held in trust are not subject to relinquishment.
- To temporarily donate a water right or a portion of a water right, a water right holder submits the temporary donation form to the Washington State Department of Ecology. Once the regional office receives the complete form, they will notify the water right holder if they have accepted their water right into the TWRP.
- [How to temporarily donate a water right to the Trust Water Rights Program](#)

If you would like to permanently donate your water rights, you can do so by contacting regional TWRP staff—[click here](#) and scroll to the bottom of the page for contact info.

## Related laws and policies

- [Chapter 90.38 RCW](#): Trust water statutes applied to the Yakima Basin
- [Chapter 90.42 RCW](#): Trust water statutes applied statewide
- [Policy 1010: Administration of the Trust Water Rights Program](#)

## State contacts

[Washington Department of Ecology—Water Resources Program](#): The Water Resources program supports sustainable water resources management to meet the present and future water needs of people and the natural environment, in partnership with Washington communities. See link for regional contacts.

Irrigation Districts: To find out if you are within a water district or company [click here](#).

Washington Conservation Commission: The Washington State Conservation Commission (SCC) is the coordinating state agency for all 45 conservation districts (CDs) in Washington state. Together, the SCC and CDs provide voluntary, incentive-based programs that empower people to practice conservation and ensure healthy natural resources and agriculture for all.

Washington Water Trust: The Washington Water Trust (WWT) collaborates with agricultural producers, conservation districts, irrigation districts, land trusts, landowners, legal experts, state agencies, tribes, and others on innovative strategies to protect water instream. WWT conducts water rights assessments, provides confidential water right consultations with landowners, and develops water rights transactions with water users utilizing the Trust Water Rights Program.

Washington Conservancy Boards: Conservancy boards process water right change and transfer applications only, and forward decisions to Ecology for final approval. Conservancy boards do not review requests for new water rights and lack authority to process applications involving tribal lands. Ultimately, Ecology makes the final decision to either affirm, reverse, or modify the board's decision.

## **Regional contacts**

Dungeness Water Exchange (in Sequim, WA): The Dungeness Water Exchange (DWE) is a mitigation program advised by a diverse group of local stakeholders. DWE allows new water users in the Dungeness Water Rule Area to purchase a certificate that meets state requirements for protecting the Dungeness River.



For more information, please contact  
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