Oregon
Solar Development Analysis

LandGate Corp.
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Address
201 Milwaukee Street
Suite 200
Denver, CO 80206

Phone
833-782-5837
Business Solutions
Sales & Support

855-867-3876
Listings & Marketplace
Support

Web
www.landgate.com
energy@landgate.com
Schedule demo:

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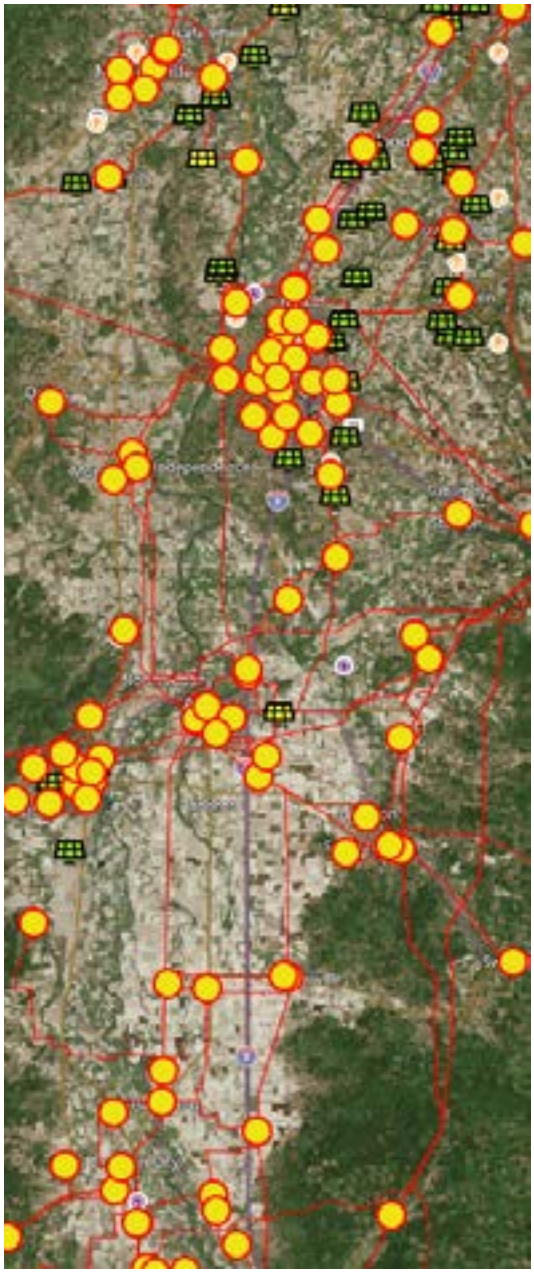
Oregon Solar Development

ANALYSIS

The state of solar development in Oregon can be evaluated by key factors such as federal and local regulations, incentives, grid interconnection and integration. The current state of development activity in Oregon is growing and can be seen in this analysis summarizing all facets of solar energy project development.

We will break down the various federal and state incentives available to solar energy developers in Oregon and how to access them.

LandGate provides key data to the top developers and financiers in the country. To learn more about access to this platform, or to talk about how to apply the information below to your business, book time with a member of our dedicated energy markets team.



Oregon Solar Energy
ACTIVITY

Status	OR Solar Farm Count	OR Solar Farm Capacity (MWac)	OR Solar Farm Generation (MWh)
Operating	118	1,243.40	149,968
Under Construction	2	200	61,912
Planned	28	2,669.96	183,636
Queued Projects	9	3,035	383,716
Site Control (Lease Options)	8	1,728.25	574,569

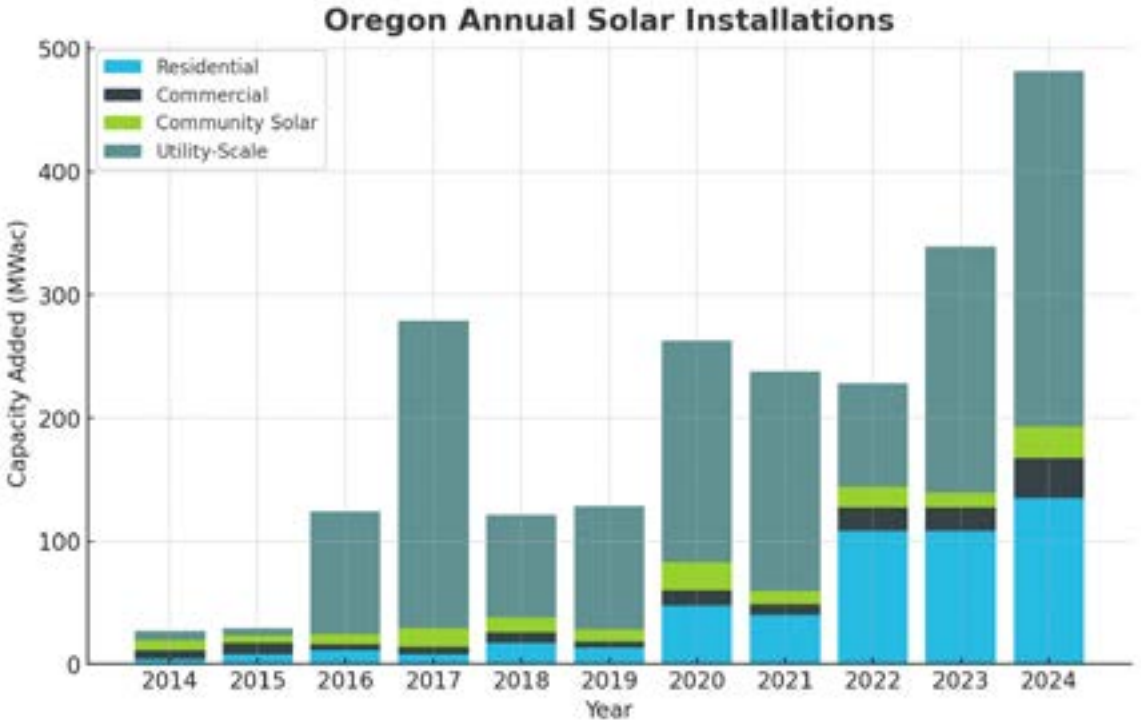
*est is the estimated peak total electricity generation that those solar farms will produce once operational

As of September 2024, Oregon has 118 operational solar farms with a current capacity of 1,243.4 MW and a current electricity generation of 149,968 MWh. Oregon has 2 solar farms under construction with 200 MW capacity total and 28 planned solar farms with 2669.96 MW1 capacity. Oregon has 8 utility scale solar projects in the site control stage, estimated to add 574,569 MWh of generation. Oregon has no Utility-Scale queued solar farms as of August 2024.

Overall, if all planned and under construction farms go into operating status, Oregon will expand its capacity by 2869.96 MW.

Oregon's energy landscape is evolving significantly, with renewable energy, particularly solar power, playing an increasingly prominent role in the state's electricity generation. Oregon currently ranks 24th nationwide in total installed solar capacity, with solar energy contributing 5% to the state's overall electricity production. LandGate data highlights Oregon's impressive

solar growth, marked by a substantial increase in installations since 2021, especially utility scale projects. Oregon is projected to add 2.7 GW of solar capacity from planned projects by 2026. This shift from a traditional reliance on fossil fuels to a robust embrace of renewable energy underscores Oregon's dedication to clean energy. The state's favorable conditions for solar power and the decreasing costs of solar technology have been pivotal in accelerating this transition.



Oregon is a growing state in installed solar energy capacity, with a remarkable surge in 2023. The state plans to maintain that growth as the state's investment in solar initiatives is strengthened by favorable state and federal policies. Incentives like the Federal Investment Tax Credit (ITC) and state-level programs have significantly boosted investment in renewable projects, resulting in job creation and economic growth throughout Oregon. Currently, the state supports 4.032 solar jobs and has 146 companies actively involved in the solar industry. Over the next five years, Oregon is expected to add approximately 2,161 MW of solar capacity. With its ambitious clean energy targets and a robust policy framework, Oregon is committed to a sustainable energy future, standing out as a leader in the west and nationally for its energy efficiency efforts.

Utility-Scale vs. Community **SOLAR**

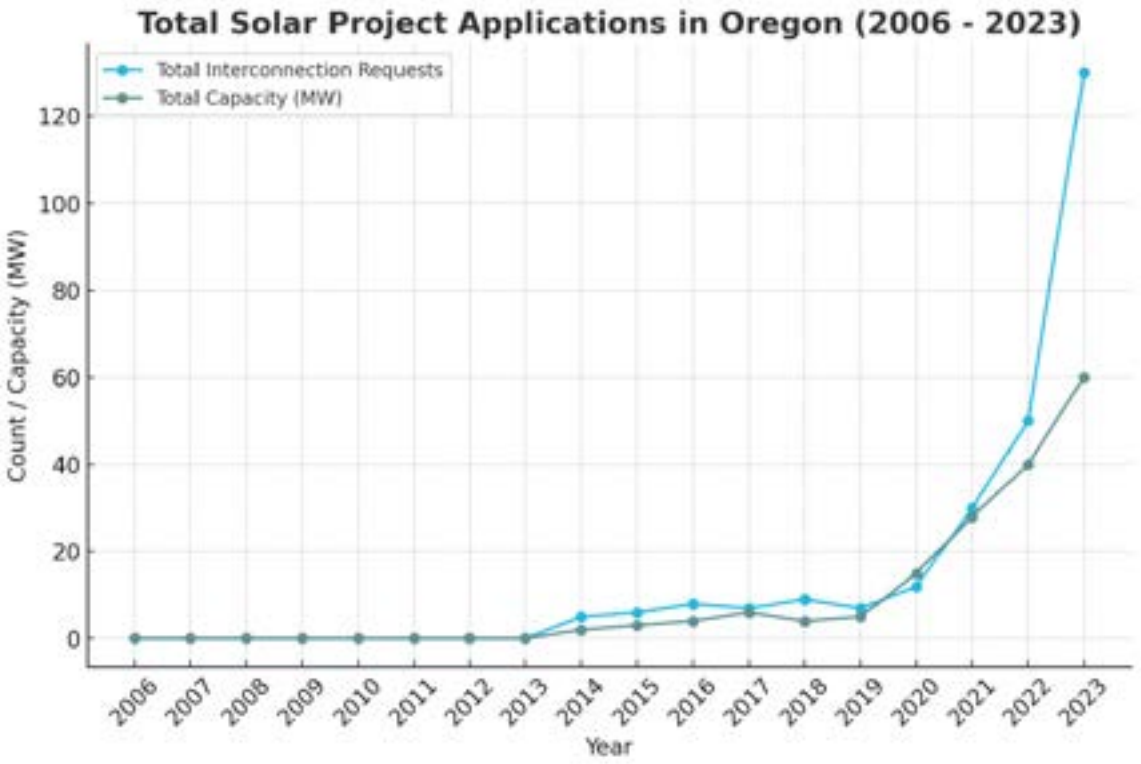
Utility-scale solar refers to solar farms often created and managed by utilities, independent power producers, or energy firms. These projects aim to produce electricity on a large scale and deliver it directly into the distribution grid. These solar farms generally have **more than 10 MW** in capacity.

Contrarily, community-scale solar refers to smaller-scale solar power facilities, **under 10 MW**, that are primarily intended to serve local communities or particular user groups. Below is a breakdown of the different types of solar farms and their development statuses.

Utility-Scale

A project in queue means that the project enters the interconnection queue of that region waiting for regulatory approval. During this period, the analysis of possible engineering and land factors is conducted to determine the feasibility of the project to be constructed and connected to the grid. The average amount of time it takes for a farm to go from queue to operational in Oregon is **40 months**. As per the Generator Interconnection Queue, Oregon will add 23 solar farms into the queue by 2026, totalling **1.7 GW** in capacity.

Projects Queued for Development in Oregon



Projects Under Site Control

Site Control is land under lease or under option to lease. Solar developers run an initial assessment of the suitability of parcels for solar farms. After they put the land under option, they need time to run their due diligence and submit the project to the queue. When the solar project is about to be approved by the queue, the solar developer exercises the solar farm option agreement to convert it to a solar farm lease agreement. These site control projects have not entered the interconnection queue yet. Currently there are 8 project leases with an estimated capacity of 1,728.25 MW. LandGate analyzes county tax & deed assessor records to find lease agreements already in place between developers and landowners. This unique dataset is continuously updated by a process that locates new lease documents within days of new agreements being filed with each county.

How do developers screen and run due diligence for those solar farm projects in queues?

Factors to take into consideration:

- Electricity generation
- Electricity commodity prices (LMP, incentives, PPA)
- Capital costs
- Operating costs
- Timing
- Risks

Using the factors above and a standard solar panel size, the buildable acreage and a land coverage ratio (encompassing row spacing and maintenance spacing) we calculate the maximum number of panels that could fit on the parcel. This helps us estimate the capacity the project lease will add to the grid and calculates a Market Value of the solar project.

Solar PowerVal enables similar capabilities to evaluate land parcels for solar development and get an independent economic report for solar projects of all statuses. This tool allows developers and project financiers to fast-track the process of submitting a feasibility study to the queue for approval through independently produced Engineering & Economic analytics and Solar 8760 reports or evaluate projects and parcels for origination and M&A.

How is a Utility-Scale solar project submitted to the queue to connect to the Electric Grid?

Typically, the queue submission process within an ISO or Utility area follows similar steps. The solar developer needs to complete and submit an official interconnection request form provided by the ISO or utility, that captures essential project details and starts the interconnection process. Project specifications should include details like name, location (latitude and longitude), point of interconnection, capacity, expected energy production, environmental impact, technology layout-inverters, solar panels, system layout through a Feasibility study with an 8760 report to help initially assess the project's compatibility with the existing grid infrastructure. The Solar developer will also have to pay an initial payment to secure a position in the interconnection queue and contribute towards the cost of initial studies and evaluations conducted by the ISO/Utility. Post the submission of the form, reports and payment, the project is now effectively in the queue.

After the project has entered the queue, Injection reliability study and system impact study is conducted. These studies determine the exact impact of the project on existing infrastructure and identifies any potential network updates required to reliably interconnect the solar project to the grid. Once the study is completed, the developer gets a complete picture of the financial cost of the solar farm with regards to the complete CAPEX and Budget. This helps the decision making process of whether to move forward with the development of the solar project or withdraw the application from the queue. If the project seems viable to move forward the developer signs an interconnection agreement with the ISO/Utility and essentially looks to produce Economic and Financial reports for Bankers and Investors to help facilitate the construction of the solar project.

Commercial, Community & Behind-the-Meter Solar Farms

Oregon is primarily regulated by Portland General Electric, Pacific Power, and rural electric cooperatives for small-scale community solar farms. Oregon's regulatory framework has allowed the state to see significant growth in Community and Distributed generation. The state is currently building out a pipeline for small-scale solar project development and has set the stage through policies like the Oregon Community Solar Program, which allows multiple subscribers to share the benefits of a single solar installation. These community solar projects can be up to 3 megawatts in size and allow participants to receive credits on their electricity bills for their share of the solar power produced.

Oregon has a tradition of cooperative utilities, which are member-owned and often more responsive to local interests. This structure can facilitate community solar projects as cooperative utilities are more inclined to support community initiatives. These programs typically allow consumers to access solar energy without the need to install their own solar systems, typically benefiting from energy generated at an external solar array.

Key Installations in Oregon		
Project	**Utility/Cooperative**	**Project Details**
Boeing Solar Project	PGE	• 2.1 MW capacity • Located in Portland • Powers approximately 500 homes
Outback Solar Project	PACIFICORP	• 50 MW capacity • Located in Lake County • Generates around 124,000 MWh annually
Eugene Community Solar	EWEB	• 1.2 MW capacity • Located in Eugene • Powers approximately 200 homes
Benton County Solar Farm	BENTON P·U·D	• 4 MW capacity • Located in Benton County • Generates around 7,000 MWh annually
Pine Grove Solar Project	AVANGRID RENEWABLES	• 2.7 MW capacity • Located in Hood River County • Powers approximately 450 homes

Oregon
LMP Data

LMP (Locational Marginal Price) is a pricing mechanism used in wholesale/merchant energy markets to determine the cost of electricity at specific locations (nodes) within the grid. LMP considers a number of variables, including the cost of generating power, transmission constraints, grid congestion, losses, and load at certain nodes or locations within the electrical grid. The prices at which electricity is bought and sold in the market in real time or on an hourly basis are reflected in its calculation, which is done through market procedures.

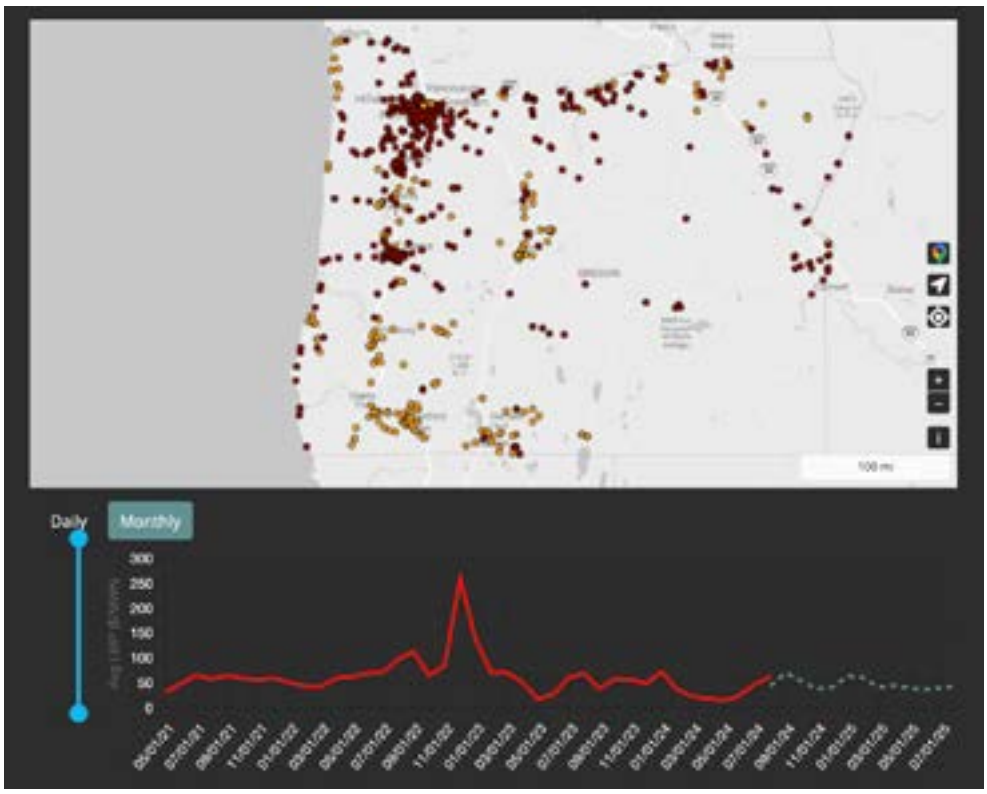
Oregon saw the average LMP price increase by 8.32% in the past 3 years with an average price of 63.79$/ MWh in 2024. This price is expected to decrease by 29.22% in 2025 and attract several renewable energy developers for utility and community scale solar projects. Consumer electricity purchase cost has increased for the past few years in Oregon. The current commercial electricity rate is 10.54 ¢/kWh which is a 15% increase compared to the commercial electricity rate of 9.15 ¢/kWh in 2020.

Higher LMP prices correspond to higher electricity costs, which could mean more money for solar installations. When compared to solar projects in areas with lower LMP pricing, locations with higher LMP prices may result in higher revenue. Power purchase agreements (PPAs) and solar project participation in energy markets are both impacted by LMP. The ability to engage in market transactions and maybe land more advantageous PPAs gives solar projects situated in areas with favorable LMP pricing a competitive edge in the electricity markets. LMP can affect the PPAs for solar projects' pricing conditions, lengths, and general allure.

By offering participants in community solar more potential power bill savings, higher LMP pricing can improve the value proposition. Greater adoption of community solar may result from community solar projects situated in regions with higher LMP prices being more economically feasible and appealing to potential members.

Oregon

LMP Scorecard



Merchant Energy Pricing: **Market: Non ISO** **Hub: Oregon.Hub**	
Number of price nodes active:	**239**
Average LMP price as of 09/01/24:	**$37.08**
Current commercial electricity rate	**11.65¢/kWh**
Percentage change in average LMP in the past 3 years ($63.57 in 2021)	**-41.35%**
Commercial electricity rate in January 2020	**$9.68¢/kWh**

Average LMP Prices: Historical & Forecasts

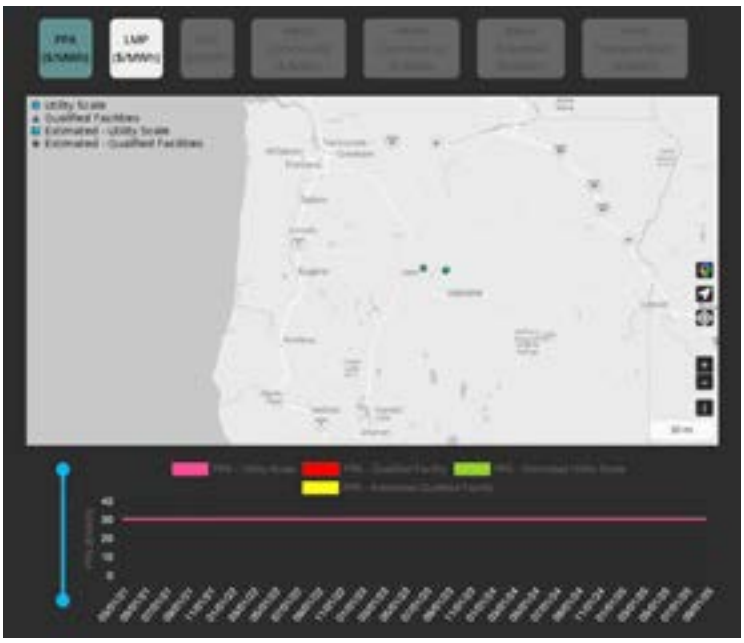
Year	Avg LMP Price ($/MWh)
2019	$31.29
2020	$48.42
2021	$58.92
2022	$97.94
2023	$70.15
2024	$63.79
2025 (est.)	$44.77
2026 (est.)	$45.66

Oregon PPA Data

Utility-scale solar can be integrated into the grid and electricity can be sold at a predetermined price thanks to PPAs (Power Purchase Agreements) with utilities or power purchasers. Even if they are unable to put solar panels on their own homes, PPAs for community-scale solar projects allow local participants to profit from solar energy generation. The time and amount of power sales are governed by the PPA's terms, which guarantees a steady market for the solar installation.

The average estimated Utility-Scale PPA price in Oregon is $30.58. This price has increased by just 0.1% over the past 3 years. In Oregon, due to this consistent price, consumers enjoy the benefits of price stability, investor confidence, and long-term planning. The stable PPA price ensures that consumers can anticipate and budget for their energy costs, which is particularly valuable for businesses and industries requiring cost predictability in their operations. Additionally, the consistent PPA price fosters confidence among developers and investors, making them more willing to invest in renewable energy projects, thereby promoting the growth of green initiatives in the state. This stability supports the maintenance and expansion of renewable energy sources in Oregon, making them a reliable and competitive option for both commercial and residential consumers.

Oregon
PPA Scorecard



Average PPA price 2024:	**$30.58** (Utility Scale)
Average Utility-Scale PPA price change in the last 3 years	**+0.10%**
Largest PPA buyer:	**Amazon**

Average PPA Prices:

Year	Price ($/MWh)
2020	$49.72
2021	$30.52
2022	$30.58
2023	$30.58
2024	$30.58

Federal & Oregon State

Tax Incentives for Solar Developers

There are several federal and state incentives available for solar development in Oregon, intended to encourage the use of solar energy by making solar power more affordable for businesses and organizations that install solar systems. These incentives can improve the financial viability of solar projects since they lower the initial costs and increase the return on investment. Solar project incentives aid in the switch to clean, renewable energy sources, which lower greenhouse gas emissions and slow climate change. Incentives aid in increasing the deployment of solar projects by making solar energy more financially appealing, replacing fossil fuel-based power and lowering the environmental effects related to traditional energy sources.

OR Solar Development Incentive	Type	About
Renewable Portfolio Standard (RPS)	State	Oregon's RPS requires that 50% of the electricity provided by large utilities come from renewable sources by 2040. There are also specific carve-outs for small-scale renewable projects and community solar programs.
Federal Solar Tax Credit, Solar Tax Credit (ITC)	Federal	The ITC provides a 30% tax credit on the cost of solar system installation for residential and commercial properties, available through 2032. This federal incentive applies nationwide, including in Oregon.
Renewable Electricity Production Tax Credit (PTC)	Federal	The PTC offers a per-kilowatt-hour (kWh) tax credit for electricity generated by qualified renewable resources, including solar energy. The credit applies to electricity sold to an unrelated third party for up to 10 years.
Renewable Energy Certificates (RECs)	State	Oregon allows solar system owners to generate RECs, which can be sold to utilities or other buyers to meet their renewable energy obligations. Each REC represents 1 MWh of renewable electricity generated.
Energy Trust of Oregon Solar Incentives	State	Energy Trust of Oregon provides cash incentives and support for residential and commercial solar installations. The incentive amount is based on the system size and expected energy production. This program helps reduce the upfront cost of going solar.

Property Tax Exemption for Alternative Energy Systems	State	Oregon offers a property tax exemption for the added value of renewable energy systems, including solar. This exemption helps reduce the overall cost burden for property owners who install solar systems.
Net Metering	State	Oregon's net metering policy requires utilities to credit customers for the excess electricity generated by their solar systems at the retail rate. This credit can be used to offset future electricity use, effectively lowering utility bills.
Oregon Clean Energy Fund (OCEF)	State	The OCEF offers low-interest loans and financial assistance for the development of renewable energy projects, including solar installations, throughout the state. This fund supports both residential and commercial solar projects.
Oregon Solar + Storage Rebate Program	State	This program offers rebates to homeowners and low-income service providers for the installation of solar electric systems and paired storage systems. The rebate amount varies based on the system type and applicant category.

The combination of federal incentives, state-specific programs, and financing options make solar energy projects significantly more accessible and financially attractive in Oregon. These incentives are designed to encourage the adoption of solar power, reduce greenhouse gas emissions, and support the transition to a more sustainable energy future.

LANDGATE

With such a wealth of new data on the state of Solar Development in Oregon, we imagine you might have questions about how to apply these trends, data, and tools to your own solar development efforts in Oregon. Our dedicated energy markets team can help walk you through how to access and interpret this information in a way that is relevant to your business needs. Schedule time with our team here to talk one on one.

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