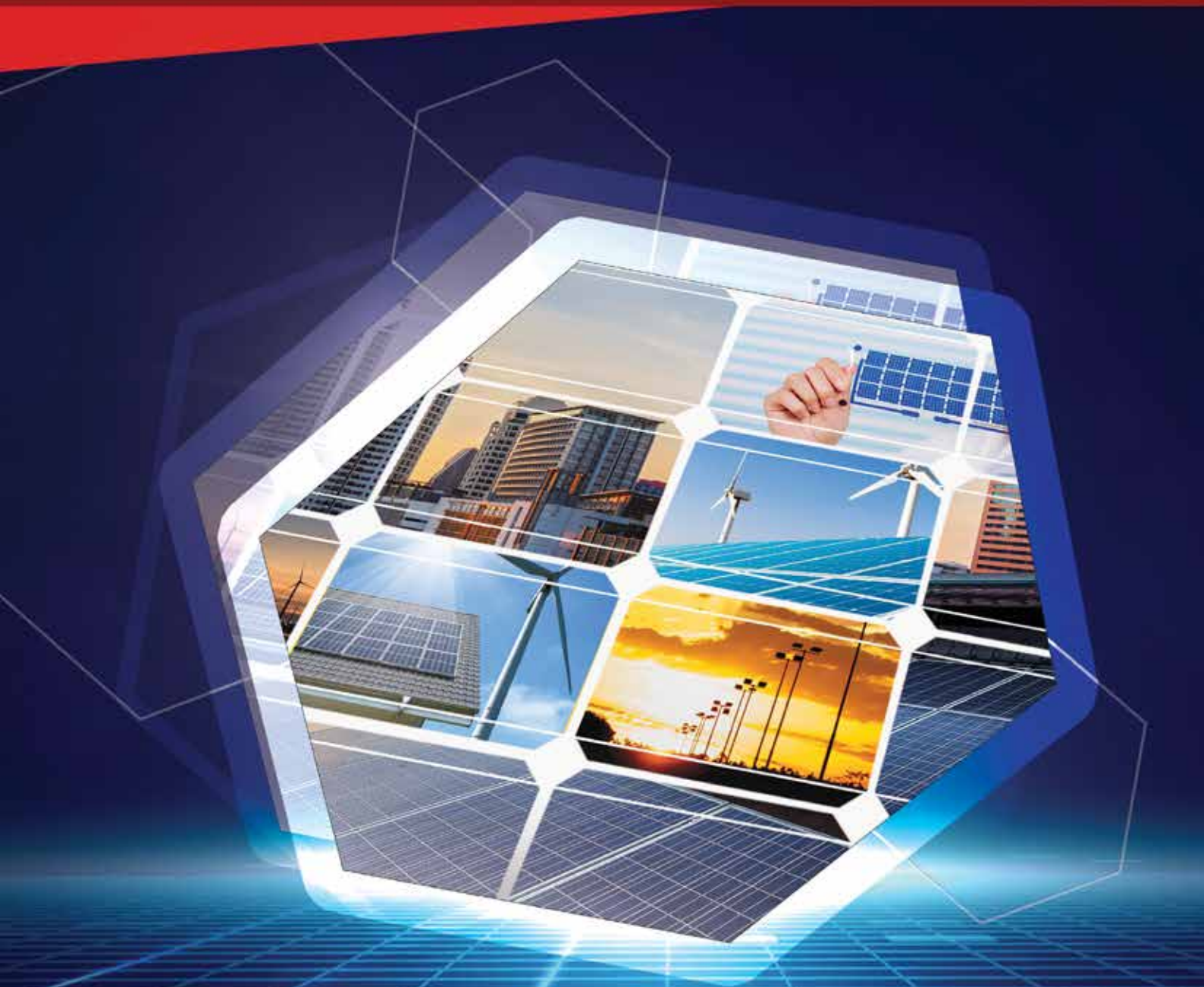
NANOXSOLAR

A division of NXS Technologies, Inc.

"Innovation in Solar for a Bright Future!"



LASER TECHNOLOGY WITH SOLAR

WHITE PAPER

Introduction

Nano X Solar, a division of NXS Technologies, Inc., hereafter referred to throughout this PPA (power purchase agreement) White Paper as NXS is the author of this White Paper. NXS formally and transparently discloses that this information listed herein is partially custom written and designed by our Team and partially referenced from outside resources, all of whom we are going to identify according to our use of it.

NXS has no intention to claim ownership of any other copyright information provided by any other resource used in the creation of this White Paper and by giving proper credit to outside resources NXS believes that we are not engaging in any form of copyright infringement.

The subject of this White Paper is on what a PPA (power purchase agreement) is, why it is necessary when working with solar and how to obtain one. SREC's (solar renewable energy certificates) are also mentioned.

NXS is fluent in PPA's and our CBDT (core business development team) has extensive expertise in this area. NXS provides consulting, upon request, to existing and new Clients who have a need to obtain a PPA from a local utility and/or a power line owner.

If you have any interest in further discussions about this White Paper or the services offered by NXS please feel free to use our website to contact us or you may also feel free to call or email us and a member of our Team will respond promptly.

Sincerely,

Nano X Solar
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What is a PPA?

Wikipedia defines a PPA as follows:

A power purchase agreement (PPA), or electricity power agreement, is a contract between two parties, one which generates electricity (the seller) and one which is looking to purchase electricity (the buyer). The PPA defines all of the commercial terms for the sale of electricity between the two parties, including when the project will begin commercial operation, schedule for delivery of electricity, penalties for under delivery, payment terms, and termination. A PPA is the principal agreement that defines the revenue and credit quality of a generating project and is thus a key instrument of project finance. There are many forms of PPA in use today and they vary according to the needs of buyer, seller, and financing counter parties.

A power purchase agreement (PPA) is a legal contract between an electricity generator (provider) and a power purchaser (buyer, typically a utility or large power buyer/trader). Contractual terms may last anywhere between 5 and 20 years, during which time the power purchaser buys energy, and sometimes also capacity and/or ancillary services, from the electricity generator. Such agreements play a key role in the financing of independently owned (i.e. not owned by a utility) electricity generating assets. The seller under the PPA is typically an independent power producer, or "IPP."

In the case of distributed generation (where the generator is located on a building site and energy is sold to the building occupant), commercial PPAs have evolved as a variant that enables businesses, schools, and governments to purchase electricity directly from the generator rather than from the utility. This approach facilitates the financing of distributed generation assets such as photovoltaic, micro-turbines, reciprocating engines, and fuel cells.

Roles of the Buyer and Seller of a PPA?

Wikipedia also states:

The seller:

Under a PPA, the seller is the entity that owns the project. In most cases, the seller is organized as a special purpose entity whose main purpose is to facilitate non-recourse project financing.

The buyer:

Under a PPA, the buyer is typically a utility or a company that purchases the electricity to meet its customers' needs. In the case of distributed generation involving a commercial PPA variant, the buyer may be the occupant of the building—a business, school, or government for example. Electricity traders may also enter into PPA with the Seller.

Regulatory Compliance:

In the United States, PPAs are typically subject to regulation by the Federal Energy Regulatory Commission (FERC). FERC determines which facilities are applicable for PPAs under the Energy Policy Act of 2005.[3] PPAs facilitate the financing of distributed generation assets such as photovoltaic, microturbines, reciprocating engines, and fuel cells.

PPAs are typically subject to regulation at the state and federal level to varying degrees depending on the nature of the PPA and the extent to which the sale of electricity is regulated where the project is sited. In the U.S., FERC determines which facilities are considered to be exempt wholesale generators (EWG) or qualifying facilities and are applicable for PPAs under the Energy Policy Act of 2005.

Applications of a PPA

Continued on Wikipedia:

Power purchase agreements (PPAs) may be appropriate where:[4]

- The projected revenue of the project is uncertain and so some guarantees as to quantities purchased and price paid are required to make the project viable;
- Protection from cheaper or subsidized domestic or international competition (e.g., where a neighboring power plant is producing cheaper power) is desired;
- There is one or a few major customers that will be taking the bulk of the product - for example, a government may be purchasing the power generated by a power plant - the government will want to understand how much it will be paying for its power and that it has the first call on that power, the project company will want certainty of revenue;
- Purchaser wishes to secure security of supply.
- With solar power projects in non-profit companies in order to reduce costs for installation of the solar energy system.

The PPA is often regarded as the central document in the development of independent electricity generating assets (power plants). Because it defines the revenue terms for the project and credit quality, it is key to obtaining non-recourse project financing.

One of the key benefits of the PPA is that by clearly defining the output of the generating assets (such as a solar electric system) and the credit of its associated revenue streams, a PPA can be used by the PPA provider to raise non-recourse financing[6] from a bank[7] or other financing counter Party.

PPA Contracts

Continued on Wikipedia:

Effective date:

The PPA is considered contractually binding on the date that it is signed, also known as the effective date. Once the project has been built, the effective date ensures that the purchaser will buy the electricity that will be generated and that the supplier will not sell its output to anyone else except the purchaser.

Commercial operation:

Before the seller can sell electricity to the buyer, the project must be fully tested and commissioned to ensure reliability and comply with established commercial practices. The commercial operation date is defined as the date after which all testing and commissioning has been completed and is the initiation date to which the seller can start producing electricity for sale (i.e. when the project has been substantially completed). The commercial operation date also specifies the period of operation, including an end date that is contractually agreed upon.

PPA Contracts

Continued on Wikipedia:

Preemptive termination date:

Typically, termination of a PPA ends on the agreed upon commercial operation period. A PPA may be terminated if abnormal events occur or circumstances result that fail to meet contractual guidelines. The seller has the right to curtail the delivery of energy if such abnormal circumstances arise, including natural disasters and uncontrolled events. The PPA may also allow the buyer to curtail energy in circumstances where the after-tax value of electricity changes.[9] When energy is curtailed, it is usually because one of the parties involved was at fault, which results in paid damages to the other party. This may be excused in extraordinary circumstances such as natural disasters and the party responsible for repairing the project is liable for such damages. In situations where liability is not defined properly in the contract, the parties may negotiate force majeure to resolve these issues

.

Operations and Metering:

Maintenance and operation of a generation project is the responsibility of the seller. This includes regular inspection and repair, if necessary, to ensure prudent practices. Liquidated damages will be applied if the seller fails to meet these circumstances. Typically, the seller is also responsible for installing and maintaining a meter to determine the quantity of output

that will be sold. Under this circumstance, the seller must also provide real-time data at the request of the buyer, including atmospheric data relevant to the type of technology installed.

PPA Contracts

Billing and payments:

The PPA will also describe how invoices are prepared and the time period of response to those invoices. This also includes how to handle late payments and how to deal with invoices that became final after periods of inactivity regarding challenging the invoice. The buyer also has the authority to audit those records produced by the supplier in any circumstance.[9] There is a defined timeline when PPA Provider has to send an invoice to the Generator or vice versa and if that timeline is not met then it has its own consequences, which varies from one PPA Provider to another.

Performance terms:

The buyer will typically require the seller to guarantee that the project will meet certain performance standards. Performance guarantees let the buyer plan accordingly when developing new facilities or when trying to meet demand schedules, which also encourages the seller to maintain adequate records. In circumstances where the output from the supplier fails to meet the contractual energy demand by the buyer, the seller is responsible for retributing such costs. Other guarantees may be contractually agreed upon, including availability guarantees and power-curve guarantees. These two types of guarantees are more applicable in regions where the energy harnessed by the renewable technology is more volatile.

Resource:
https://en.wikipedia.org/wiki/Power_purchase_agreement

About FERC

Resourced from Wikipedia:

The Federal Energy Regulatory Commission (FERC) is the United States federal agency that regulates the transmission and wholesale sale of electricity and natural gas in interstate commerce and regulates the transportation of oil by pipeline in interstate commerce. FERC also reviews proposals to build interstate natural gas pipelines, natural gas storage projects, and liquefied natural gas (LNG) terminals, in addition to licensing non-federal hydropower projects.

FERC is composed of five commissioners who are nominated by the U.S. President and confirmed by the U.S. Senate. There may be no more than three commissioners of one political party serving on the commission at any given time.[1]

The responsibilities of FERC include the following:

- Regulating the transmission and sale of natural gas for resale in interstate commerce;
- Regulating the transmission of oil by pipelines in interstate commerce;
- Regulating the transmission and wholesale sales of electricity in interstate commerce;
- Licensing and inspecting private, municipal, and state hydroelectric projects;
- Approving the siting of and abandonment of interstate natural gas facilities, including pipelines, storage and liquefied natural gas;
- Ensuring the reliability of high voltage interstate transmission system;
- Monitoring and investigating energy markets;
- Using civil penalties and other means against energy organizations and individuals who violate FERC rules in the energy markets;
- Overseeing environmental matters related to natural gas and hydroelectricity projects and major electricity policy initiatives; and
- Administering accounting and financial reporting regulations and regulating businesses of regulated companies.

FERC Authorities

FERC is a large independent regulatory agency within the United States Department of Energy that participates in business oversight.[2]:12 The President and Congress do not generally review FERC decisions, but the decisions are reviewable by the federal courts. FERC is self-funding, in that Congress sets its budget through annual and supplemental appropriations and FERC is authorized to raise revenue to reimburse the United States Treasury for its appropriations, through annual charges to the natural gas, oil, and electric industries it regulates.

FERC is independent of the Department of Energy because FERC activities "shall not be subject to further view by the Secretary [of Energy] or any officer or employee of the Department".[4] The Department of Energy can, however, participate in FERC proceedings as a third party. FERC is composed of up to five commissioners who are appointed by the President and confirmed by the Senate. The President appoints one of the commissioners to be the chairman of FERC, the administrative head of the agency. FERC is a bipartisan body; no more than three commissioners may be of the same political party.

FERC has promoted voluntary formation of Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) to eliminate the potential for undue discrimination in access to the electric grid; regional and interregional transmission planning and cost allocation through the landmark Order No. 1000.

FERC Authorities

FERC investigated the alleged manipulation of electricity market by Enron and other energy companies, and their role in the California electricity crisis. FERC has collected more than $6.3 billion from California electric market participants through settlements. Since passage of the Energy Policy Act of 2005, FERC has imposed, through settlements and orders, more than $1 billion in civil penalties and disgorgement of unjust profits to address violations of its anti-market manipulation and other rules. FERC regulates approximately 1,600 hydroelectric projects in the U.S. It is largely responsible for permitting construction of a large network of interstate natural gas pipelines. FERC also works closely with the United States Coast Guard to review the safety, security, and environmental impacts of proposed LNG terminals and associated shipping.

Resources:

https://en.wikipedia.org/wiki/Federal_Energy_Regulatory_Commission
https://ferc.gov

Content Available on the Department of Energy website

https://www.energy.gov/search/site/PPA

https://www.energy.gov/search/site/PPA%2520Contracts

https://www.energy.gov/search/site/PPA%2520Guidelines

https://www.energy.gov/search/site/PPA%2520Requirements

The US Department of Energy has a wealth of knowledge that is very easy to access and to read.

Please note that the “authorities” referenced in this White Paper by NXS are being mentioned so that the Readers can validate what is being said and/or so that additional information can be easily accessed. Anyone visiting the www.energy.gov website should use the search box to locate articles and information provided by this agency.

You can also search by departments:
https://www.energy.gov/search/site/departments

Different Types of PPA's

NXS would like to credit Urban Grid with providing the best explanation for the different types of PPA's along with visual graphics that further explain and you can read that content here:

https://www.urbangridsolar.com/types-of-power-purchase-agreements-for-offsite-renewable-energy-projects/

NEXT is also a great resource of information and you can read it here:

https://www.next-kraftwerke.com/knowledge/ppa-power-purchase-agreement

Types of PPA's Defined

These are the most common types of PPA's:

1. Onsite
2. Offsite
3. Sleeved
4. Synthetic

Each type of PPA provides different parameters that are best suited for the type of agreement that is the most beneficial. Physical and Virtual PPA's.

What You need to Obtain a PPA

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What You need to Obtain a PPA

NXS, having a need to engage in our own PPA's, as well as consulting on the subject, has determined that the following things make obtaining a PPA much easier and even faster.

1. Create a business presentation that includes the details of your solar build-out and include as addendums any blueprints, land use plans, zoning information, solar panel output estimates and other specifics that showcase your clear understanding of the PPA process.
2. Work with solar panel manufacture and the installation professionals to prepare additional information for the PPA considering by the Utility and/or PPA Partner.
3. Be prepared to showcase the historical weather and climate data to substantiate your output claims.
4. Give specific details on your solar infrastructure related to the equipment being used and the battery storage capacity.
5. If powering your own business or one or more corporate or government level power/energy users make sure you know what the State mandate is for how much power you can produce and consume and how much will be available for sale to the grid.
6. Having a cooperative partner who already has an active PPA and/or who has relationships with the local government and utility gives you an easier line of approach and should be considered.
7. If a new project, a pitch-deck about your project, should be presented along with your PPA request for consideration by the Utility and any other Party(ies) involved.

Every geographic location is different and you can always work with the regional offices of FERC and the DOE.

Solar Renewable Energy Certificates

As defined by Wikipedia:

https://en.wikipedia.org/wiki/Solar_Renewable_Energy_Certificate

Solar Renewable Energy Certificates (SRECs) or Solar Renewable Energy Credits are a form of Renewable Energy Certificate or "Green tag" existing in the United States of America. SRECs exist in states that have Renewable Portfolio Standard (RPS) legislation with specific requirements for solar energy, usually referred to as a "solar carve-out".[1] The additional income received from selling SRECs increases the economic value of a solar investment and assists with the financing of solar technology. In conjunction with state and federal incentives, solar system owners can recover their investment in solar by selling their SRECs through spot market sales or long-term sales, both described below.

SRECs represent the environmental attributes from a solar facility, and are produced each time a solar system produces one thousand Kilowatt-hours (KWh) of electricity. For every 1000 kilowatt-hours of electricity produced by an eligible solar facility, one SREC is awarded. In order for a solar facility to be credited with that SREC, the system must be certified and registered. Information resourced from Wikipedia and other resources identified.

Solar Renewable Energy Certificates

Certification:

In order to produce SRECs, a solar system must first be certified by state regulatory agencies, usually public service commissions or public utility commissions, and then registered with the registry authorized by the state to create and track SRECs. Once a solar system is certified with the state agency and registered with a registry such as PJM-GATS or NEPOOL-GIS (for Massachusetts),[2][3] SRECs can be issued using either estimates or actual meter readings depending upon state regulations.[4] In some cases, smaller installations may be able to use estimates, while actual meter readings are required for large installations. Solar installations may be registered in states other than the state in which they are physically located and many SREC aggregators will navigate the certification process on behalf of their customers to ensure that systems are certified in the states with the highest SREC values so as to ensure long-term price stability.

Solar Alternative Compliance Payment:

Many states have a law called a Renewable Portfolio Standard (RPS) which mandates that the state's utility must produce a minimum amount of solar power every year. If they cannot do so with their own power generation facilities they must purchase SRECs. The Solar Alternative Compliance Payment (SACP) is the fee that energy suppliers must pay if they fail to secure SRECs as required by their state's RPS. Because energy suppliers and utilities may simply pay the fee if SREC prices approach the fee level, a state's ACP generally sets a cap on the value of SRECs. In rare cases SREC prices have approached and even surpassed ACP levels because SRECs can sometimes be recovered by charging more to electricity customers (rate basing), while ACP payments are usually precluded.[4] In many states, the SACP is scheduled to decline over time with the intention of eventually phasing out the solar industry's reliance on SREC sales as an incentive for installing solar.

Solar Renewable Energy Certificates

Market:

Solar RPS requirements are meant to create a marketplace for SRECs and a dynamic incentive for the solar industry. Solar RPS requirements demand that energy suppliers or utilities procure a certain percentage of electricity from qualified solar renewable energy resources in a state. These Energy suppliers and/or utilities can meet solar RPS requirements by purchasing SRECs from homeowners and businesses who own solar systems and produce SRECs. Homeowners and businesses can then utilize the sale of the SRECs they generate to help finance their solar systems. SRECs can be sold a variety of ways, such as on the spot market, at auction, or by negotiating long-term contracts.

Supply and demand:

SREC supply in a particular state is determined by the number of solar installations qualified to produce SRECs and actually selling SRECs in that state. As more solar systems are built, SREC supply will increase. SREC demand is determined by a state's RPS solar requirement, typically a requirement that a certain percentage of the energy supplied into a state originate from qualified solar energy resources.[4] Load-Serving Entities or organizations that supply electricity into the state are required to meet these requirements. RPS solar requirements in many states are set to increase in the coming decade.

Solar Renewable Energy Certificates

Prices:

Typically, there is no assigned monetary value to an SREC. SREC prices are ultimately determined by market forces within the parameters set forth by the state. If there is a shortage in SREC supply, pricing will rise, resulting in an increase in the value of the incentive for solar systems and an intended acceleration in solar installations. As SREC supply catches up to SREC demand, pricing will likely decrease, resulting in an intended deceleration in solar installations. Over time, SREC markets are designed to find the equilibrium price that encourages enough installation to meet the growing demand set forth by the RPS. Generally speaking, SREC prices are a function of (1) a state's solar alternative compliance payment (SACP), (2) the supply and demand for SRECs within the relevant state, and (3) the term or length over which SRECs are sold.

Spot sales:

Spot price for SRECs are generally higher than prices found in long-term contracts since the system owner is taking on market risk. If increases in supply outpace the growing demand, spot prices could fall. SRECs have traded as high as $680 in New Jersey.[8] Meanwhile other state SREC market prices range from $45 in Delaware to $271.05 in Massachusetts.[4] In addition to the strength of spot market demand in states experiencing supply shortages, the general lack of availability of viable long-term contracts and the heavy discounts applied to these contracts have left some system owners and project developers seeking ways to finance solar through spot transactions.[9] In June 2010, Diamond Castle, a New York based private equity firm, announced that it would be financing projects strictly with equity in order to avoid the premiums paid in long-term contracts.

Solar Renewable Energy Certificates

Long-term contracts:

In addition to providing cash flow security and stability, long-term SREC contracts are often required by banks or other lending institutions unwilling to accept market and legislative risk associated with SREC markets. However, SREC contracts longer than 3 years can be difficult to secure in some SREC markets because in deregulated electricity markets, energy suppliers rarely have electricity supply contracts longer than three years.

Some SREC aggregators have managed to negotiate 3-10 year agreements and are able to offer similar length contracts to their residential and commercial customers. In most cases, long-term contracts demand some sort of premium over market prices to compensate the off-taker for putting up the credit to guarantee the contract in the event that prices drop. This premium is also affected by the general lack of availability of credible off-takers in the market. In some markets, however, where short term supply has overtaken demand, long-term prices are competitive and can actually be better than spot prices.

Research for SREC's by State

Use DSIRE to review SREC information by state:
https://www.dsireusa.org

When doing Research

Note that every state within the USA has their own applicable guidelines for both PPA's and SREC's. It is wise to become familiar with all of the aspects within your local area so that you can save time and energy from unnecessary mistakes.

Real World Scenario

NXS would like to outline a real world scenario that we are/have used to obtain a PPA prior to the development of a solar farm whose purpose is to produce power for our facility with the balance being sold to the local Utility through a connection to the power grid. This information is being provided in brief as an example only.

1. NXS identified available land to be leased and/or purchased within a geographic area suitable for both a solar farm and one of our facilities that require new construction.
2. After meeting the Owner(s) individually, NXS discovered one of the land owners had an existing PPA through another property so they knew the local Utility and the process we were proposing.
3. After entering into a land lease agreement between the land owner and NXS that is mutually accommodating we had a powerful document to present to others.
4. NXS began working with the local Economic Development Council to explore all available financial resources to include grants, matching funds, concessions and incentives. NXS was also able to use our new relationships with the land owner and the economic development council to identify other resources and point of contact in addition to those at the local Utility.
5. Land study and land use plans were developed and both contractors and sub-contractors identified for the construction of the facility and the solar farm to be built at the same time.
6. Proper zoning, permitting, PPA and architectural plans were acquired.
7. NXS set forth a time land to present to the various local agencies and others for final approval and for the delivery of concessions, incentives and funding. We also secured capital from Investor(s) to proceed.

Real World Scenario

This scenario is just one of the multiple projects NXS has in development right now. The (7) aforementioned steps outlined in this section also encompass a multitude of additional steps and formal communications with a diversity of points of contact. NXS's consulting services walks our Clients through the processes, step by step to obtaining a PPA and to determine the value and sales conduit for all SREC's.

Fundamental Information

The wealth of information provided by US Government agencies and other organizations will be helpful in your research and steps to obtaining a PPA and selling SREC's.

https://www.energy.gov/eere/bioenergy/state-regional-resources

STAC (state technologies advancement collaborative) is a great resource:

https://www.stacenergy.org

Information and Opportunities from energy.gov should be researched:

https://www.energy.gov/eere/office-energy-efficiency-renewable-energy

Points of Contact

REGIONAL CONTACTS

Great Lakes Regional Biomass Energy Program

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Council of Great Lakes Governors
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(312) 407-0038 (fax)

mailto:dnaftzger@ cglg.org
Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin

Northeast Regional Biomass Energy Program

Anne Stubbs

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nrbp@sso.org

Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont

Points of Contact

Pacific Regional Biomass Energy Program

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Alaska, Hawaii, Idaho, Oregon, Montana, and Washington

Southern States Energy Board

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Southern States Energy Board
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baskin@sseb.org

Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, North Carolina, Puerto Rico, South Carolina, Tennessee, Virgin Islands, Virginia, and West Virginia

Points of Contact

Western Governors' Association

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Western Governors' Association
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Denver, CO 80202
303-623-9378
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pcummins@westgov.org

Arizona, California, Colorado, Kansas, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, and Wyoming

REGIONAL PARTNERSHIP PROGRAM ADMINISTRATION

Fred Gerdeman
DOE Golden Field Office
Golden, CO
303-275-4928
fred.gerdeman@go.doe.gov

US Department of Energy's YouTube Channel:
https://www.youtube.com/c/EnergyGov/videos

Additional Resources and Information

The EPA provides a diversity of valuable information related to renewable energy and PPA procurement:

https://www.epa.gov/greenpower/physical-power-purchase-agreements-physical-ppas

The EPA also provides information and samples of Physical and virtual PPA agreements also referred to as Financial Power Purchase Agreements: https://www.epa.gov/greenpower/financial-power-purchase-agreements

Advantages:

- Potential electricity cost savings with no up-frost capital costs
- Long-term electricity cost stability and predictability
- Enables new renewable electricity project to be developed
- Ability to purchase large volume of electricity through a single transaction
- Customer engages directly with a specific project, which can be desirable
- Customer can negotiate specific terms of the contract
- Potential naming rights to renewable electricity project
- Seller is responsible for project's operations and maintenance
- Allows non-profit organizations to take advantage of tax credits through third-parties

Additional Resources and Information

Challenges:

- Financial contract can be complex to navigate
- Requires long-term contract
- Availability limited to customers with large electricity loads and investment grade credit
- Complexity of deal may make conveying story to stakeholders more difficult
- Customer must ensure REC ownership in order to make green power claims
- May not have same financial benefit of outright ownership

Qualifications for obtaining a Financial PPA (general)

Creditworthy organizations with large electricity loads can use Financial PPAs to hedge their electricity costs in exchange for providing guaranteed offtake to a renewable energy generator. Organizations engaged in a Financial PPA can be located anywhere in the U.S., including being located in a traditionally regulated electricity market.

REC's and SREC's Arbitrage

https://www.epa.gov/greenpower/renewable-energy-certificate-rec-arbitrage
This information is essential due to the fact that SREC's (solar renewable energy credits) are an instrumental part of creating "real revenue" for your solar project.
Actual PDF for REC's:

https://www.epa.gov/sites/production/files/2017-09/documents/gpp-rec-arbitrage.pdf

Better Building initiatives through the Department of Energy

NXS wanted to make this white paper the most comprehensive guide to everything you need to know about obtaining a PPA and working with the SREC's generated through the creation of energy.

https://betterbuildingssolutioncenter.energy.gov/financing-navigator/option/power-purchase-agreement

NREL (national renewable energy laboratory) is another great resource:

https://www.nrel.gov/docs/fy10osti/46668.pdf

This "Energy Analysis" provides an enormous amount of information for Public consumption and should be read thoroughly.

Additional searches through NREL are suggested by NXS:

www.nrel.gov

ACORE (American Council on Renewable Energy)

ACORE has created an informative "Guidebook" on obtaining a PPA specifically written for Corporate and Industrial Purchasers.

https://acore.org/wp-content/uploads/2017/12/Renewable-Energy-PPA-Guidebook-for-Corporate-and-Industrial-Customers.pdf

In Conclusion

NXS has one goal is creating this White Paper on PPA's and that was to give a single document with the most relevant and up-to-date information available. The information contained herein is a combination of the NXS knowledge and copyright information pulled from the public, private and governmental sectors as referenced.

If any of the direct links provided herein are "dead" or they redirect you to a web page that no longer has the information we have referenced the most simple solution is to Google the applicable terms and start with all .gov points of information first.

Please view additional White Papers created by NXS and feel free to contact us anytime and a member of our Team will be happy to provide additional assistance and information within our capacity to do so. Sincerely,

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W: www.nanoxsolar.com
Direct link to NXS White Papers online:
http://www.nanoxsolar.com/whitepapers