

# **PPA EXPLAINED**

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 counterparties. PPAs facilitate the financing of distributed generation assets such as photovoltaic, micro turbines, reciprocating engines, and fuel cells.

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.

The SELLER under a PPA 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 is typically a utility 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.

PPAs are subject to regulation at the Union or State Government 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

Power purchase agreements (PPAs) may be appropriate where:

1. the projected revenues of the project is uncertain and so some guarantees as to quantities purchased and price paid are required to make the project viable;
2. protection from cheaper or subsidized domestic or international competition (e.g., where a neighboring power plant is producing cheaper power) is desired;
3. 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;
4. purchaser wishes to secure security of supply.
5. 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 from a bank or other financing counterparty.

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.

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.

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. 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.

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.

The PPA will distinguish where the sale of electricity takes place in relation to the location of the buyer and seller. If the electricity is delivered in a "busbar" sale, the delivery point is located on the high side of the transformer adjacent to the project. In this type of transaction, the buyer is responsible for transmission of the energy from the seller. Otherwise, the PPA will distinguish another delivery point that was contractually agreed on by both parties.

Electricity rates are agreed upon as the basis for a PPA. Prices may be flat, escalate over time, or be negotiated in any other way as long as both parties agree to the negotiation. In a regulated environment, Electricity Regulator will regulate the price. A PPA will often specify how much energy the supplier is expected to produce each year and any excess energy produced will have a negative impact on the sales rate of electricity that the buyer will be purchasing. This system is intended to provide an incentive for the seller to properly estimate the amount of energy that will be produced in a given period of time.

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. There is a defined timeline when PPA Provider has to send 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.

The buyer will, in most cases, 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 reimbursing 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.