



TERRA ENERGY SOLUTIONS

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# POWER PURCHASE AGREEMENTS

An overview

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## Contents

<b>1. INTRODUCTION</b>	<b>3</b>
<b>2. GLOSSARY</b>	<b>4</b>
<b>3. WHAT IS A POWER PURCHASE AGREEMENT?</b>	<b>5</b>
<b>4. WHY USE A PPA?</b>	<b>5</b>
<b>5. WHAT TYPES OF PPA ARE THERE?</b>	<b>6</b>
<b>6. THE PROCESS</b>	<b>7</b>
<b>7. FAQ'S</b>	<b>9</b>
<b>8. SUMMARY</b>	<b>12</b>



## 1. INTRODUCTION ✓

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This report provides a short overview of the power purchase agreements (PPAs) offered by Terra Energy Solutions.

The aim of the document is to advise you of what a Power Purchase agreement is, how the process works, and to answer some any questions you may have. This information is by no means exhaustive, so please contact us for more information after reading.

Regards,

Dan Payne  
Director

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## 2. GLOSSARY

The renewable energy sector and power purchase agreements use a lot of sector-specific terminology. This glossary helps explain some of the most common terms.

	Meaning
PPA	Power Purchase agreement
MCS	Micro Generation Scheme
NAPIT	National Association of Professional Inspectors and Testors
DNO	Distribution Network Operator
Solar PV	Solar Photo-voltaic
kWh	The unit for energy - "Kilo-Watt hours"

### 3. WHAT IS A POWER PURCHASE AGREEMENT?

A Power Purchase Agreement (PPA) is a long-term contract for electricity between a buyer and a power producer.

In the past, electricity suppliers were the main buyers of PPAs. This has changed over the last five years as corporate bodies have started to buy renewable electricity directly via PPAs. For the purposes of this document, we will be discussing the purchase of 100% solar energy from an on site solar PV array.

As solar is generated and used by your business, you will pay us for each kWh. This is guaranteed to be less than the rate you pay your current energy provider. Win-Win.

### 4. WHY USE A PPA?

Without a PPA, a business would have to fully fund the solar PV installation themselves, which is a significant capital expenditure. Commercial scale systems can range from £10k-£200k in total costs.

Maintenance would also fall on the owner of the system, unless a separate maintenance contract was agreed upon, at further expense to the purchaser.

A high degree of trust in the underlying solar PV technology is also required, if a large amount of capital is to be deployed.

Our PPA's are designed to move all risk away from you the customer, and onto us.

We have designed the agreement this way to make it as easy as possible to facilitate your move to solar.

We will fully fund the cost of the system, and handle all maintenance. A true set-and-forget experience.

We put our trust in solar, so you don't have to.

Not sure between PPA or buying outright? Purchase your system from us at any time.

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## 5. WHAT TYPES OF PPA ARE THERE?

There are many types of PPA. The simplest and most cost effective is using direct on site generation:

### 5.1 Direct or Private Wire PPA

**Figure 1:** Private Wire PPA



In a direct/ onsite PPA, the buyer's site is close enough to the renewable generation site that a physical wire can connect the two. The actual electricity generated is used by the buyer, who pays the developer directly. This is the only kind of PPA where the actual electricity generated via the PPA is consumed by the buyer.

A private wire PPA means that the electricity does not get transported over the national grid so there are no regulated charges. As regulated charges make up just over half the retail cost of electricity, private wire PPAs generally are the most cost effective PPA option.

The buyer will still need a grid connection to supplement their energy usage, for when there is no/little solar production.

This is the PPA type that we will focus on for your business. We will look to install the array on appropriate rooftops / ground within your business grounds, and feed all generation directly to your business.





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## 6. The Process

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### 6.1 Survey and design

As a first step, we will come out to your business for a full in person survey. We will be looking for array mounting positions, suitability of the roof, existing electrical infrastructure, length of cable runs required. We will collect as much data and imagery as possible, to provide an accurate quote.

We also ask that you send us your latest energy bill, as soon as possible. This is the basis for the entire survey and design, as is vital to produce the best system for you. Please also let us know of any imminent plans to increase / decrease energy consumption within these premises.

From here we will design a solar PV system to match your usage and demands. This will be modelled either with satellite or drone imagery, so you can see how the array will look visually, and how it will perform for you in the years ahead.

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### 6.2 Choose your contract length

Contracts are available for 5, 10 and 20 years.

Your solar PV system will continue to perform for 20-25 years. Hence we can offer the best value to you with a 20 year contract.

At the end of the 5 and 10 year contract periods, we will offer you first refusal to keep the system and sign a new contract. Normally at the end of the contract, it is in both party's interest to extend the agreement, which is why we recommend 20 years as the standard contract length.

You will also be given a purchase price to buy your system outright at any point in the contract. We want to give you as much flexibility as possible, and prevent concerns over whether to buy outright, or use a PPA.



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## 6.3 Installation

We will arrange a set amount of time for installation. As you can imagine, it is in everyone's interest to avoid periods of heavy rain/snow/ wind when installing. We would suggest that you provide an on site correspondent for us to communicate with throughout the installation process. For the most part our team will be on the rooftop and unlikely to interfere with your operations. There will be some electrical installation work however, so we will need access to your plant room, as well as right of way and room to work where and when needed.

There will be a small period where we may need to disconnect the power in the building. We will of course communicate with you as to the best time to do this, to keep disruption to a minimum.

Overall, for an installation of its size, solar PV has remarkably little disruption to ongoing business operations.

Due to the sheer quantity of equipment being delivered, we often prefer to have this delivered directly to site. We do ask for a designated area to store this equipment, preferably inside to protect from the elements, and for added security. We will discuss these aspects with you during survey.

At the end of installation, we will walk you around the system, and show points of isolation and best practices for the equipment.

As soon as the installation is complete, your system will be live and you will have access to cheap renewable energy.

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## 6.4 Payments and maintenance

Our payment system is designed around being as simple and time efficient as possible, to deliver the best value to both parties. We will use the estimated annual generation for your system, to calculate how much is to be paid, and Direct Debit these as 12 equal monthly installments. We find this helps customers better deal with the seasonality of the savings, as well as simplifying our direct debit process.

Your system will be designed so that you use 100% of the power generated. There are more complex design and payment options. Please ask us about this if these are required.

We will attend your premises once per year, to conduct maintenance checks on the system.

Most maintenance issues will arise from a notification from our remote monitoring system. If this happens, we will make contact with you (or our designated contact point) and arrange to attend site to carry out maintenance on the system. At this point it is in both of our interests to get the system operational as quickly as possible, so we will attend as quickly as possible, and will ask for access to your site at this time.



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## 7. FAQ

We appreciate there will be many questions you may have. We have taken this opportunity to answer some below. For further questions, please feel free to contact us on email or phone, or during your survey.

### 7.1. Who owns the equipment?

Terra Energy Solutions will maintain ownership of the equipment for the duration of the contract. We would ask that all equipment remains untouched by your company and staff at all times.

Any tampering of equipment may force us to charge for repairs. We will sign post all equipment to discourage accidental tampering.

At the end of the contract, we will return to site and dismantle and remove all equipment provided. In practical terms, it is quite rare that equipment is removed, as both parties are interested in the continuation of the system. Please see full T&C's for details surrounding removal of equipment.

### 7.2 Do I need to tell my energy provider? What paperwork is required?

No. Your energy provider will sell less energy to you as a result, but they will not require anything from you. The only exception to this would be if you have an existing energy agreement based on a minimum usage, but this is rare. In this situation, your solar PV generation may well take you under the minimum usage.

We will handle all regulatory paperwork for you. We are required to write to your network operator for permission to install the system. They can choose not to accept the connection at all, or to limit the system size. sometimes they allow the system but ask for a fee to do so. Whatever they say, we will report back to you so we can discuss how best to continue.

These applications can take several weeks to be processed (bigger systems take longer generally).

Terra Energy Solutions are MCS accredited solar PV installers. This is widely accepted as the highest solar qualification in the UK. You will receive an MCS certificate as part of your installation. All installations will also be signed off via a CPS (competant person scheme). This is currently NAPIT.

It is good practice to notify your building insurance that you have solar PV installed. As they will not deal with a third party on your behalf, this will be your responsibility.

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### 7.3 How is it free? What's the catch?

We get it. It sounds too good to be true. So let me speak plainly for a moment.

Solar is a no-brainer for every business and domestic property right now, with payback times from 3-6 years for business, and 5-8 years for domestic properties. Solar panels have doubled in power in the last 10 years, with energy bills quadrupling in the same period.

The correct thing to do for almost all businesses is to deploy a vast amount of solar on their rooftop, take the 3-5 year payback period, and make money in years 6 onwards.

The sad truth is that most businesses don't have that kind of capital, or don't have the luxury of investing in something that won't pay off for 5+ years.

This PPA product is our attempt at bridging that gap, and accelerating this move to solar. You get a 20-25% reduction in energy bills from day 1, we get a good investment in something we believe in. You win. We win. Energy companies lose. It's that simple.

### 7.4 What if I don't use all of the energy I generate?

In most cases, we will design your system so that you are always using any generation. There are times when it may make sense to deploy a larger array and capture any export using a separate agreement with your energy provider. They often don't pay nearly as much as they should for this energy, so we will look at this on an individual basis. By far the biggest savings to be had from the system, are when we cover your existing usage from the grid.

We work with several energy providers that allow export tariffs to be paid, however all require you to switch to them for your import. If you would like a larger system to cover a higher % of your energy usage, talk to us about what options are available!

## 7.5 What do I pay? and when?

Payments will be arranged by Direct Debit monthly from your commission date (the date your system goes live). Our default payment plan is for 12 equal payments spread over the year. This helps you by spreading your savings equally over the year, and helps us reduce administrative costs (For variable DD's the customer must be notified of the change each month.) We can of course offer a more detailed payment system, but may have to increase the headline rate slightly to compensate.

Our contracts and processes are designed to be as simple as possible, so we can offer you the best possible price for energy.

After 12 months we will attend site for routine maintenance. We will collect the generation data from the inverter (this is also available to us remotely) and provide you with a year-end summary of estimated generation vs actual generation, and will settle the account so it is a true reflection of that year's generation.

Solar panels will lose ~0.5% efficiency per year, so we will adjust the data and payments slightly for the next year. This will repeat until the end of contract.

The price paid will increase by the CPI measure for inflation, each year.

## 7.4 Are there any financial or credit requirements to enter into a PPA?

We do not currently require any credit checks against you or your company. As this agreement will directly and immediately save you money on your energy bill, you are just transferring payments from your energy provider, to us (and paying less!).

If we deem the investment to have above average risk, we may ask for a deposit for the system, as mitigation. We believe every business should have access to cheap solar energy, and will endeavor to design a system and payment plan that works for you, and for us.

## 7.4 What happens if I can't pay?

Engaging this PPA will put you in a stronger position financially, as your total outgoings will be lower.

We will do everything in our power to keep the system operational, if you have temporary payment difficulties. We ask that you contact us immediately so we can discuss an alternative payment plan.

In the rare case where payments are overdue, particularly if you are not in communication with us, we will firstly disconnect the equipment remotely.

If continued non-payment issues arise, we will attend the site to remove the equipment. Please see our full T&C's for details.

This really is a last resort for us. Disconnection of equipment will only hasten your ability not to pay, which neither party wants. It is in both our interests to keep the equipment generating at all times!



## Summary

### Benefits of a Power Purchase Agreement

- No upfront costs.
- Short and long term contracts available
- Cheaper energy from day 1
- 100% renewable energy
- No maintenance costs
- Buy your system at any time

Thankyou for your time,

Dan Payne

Director

## Contact us

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