

Plug in: to Virtual Power Plants



New energy technology has led to some new types of energy services that you may have heard of but not know much about. Here we give you the lowdown on Virtual Power Plants, a new offering that is growing in popularity.

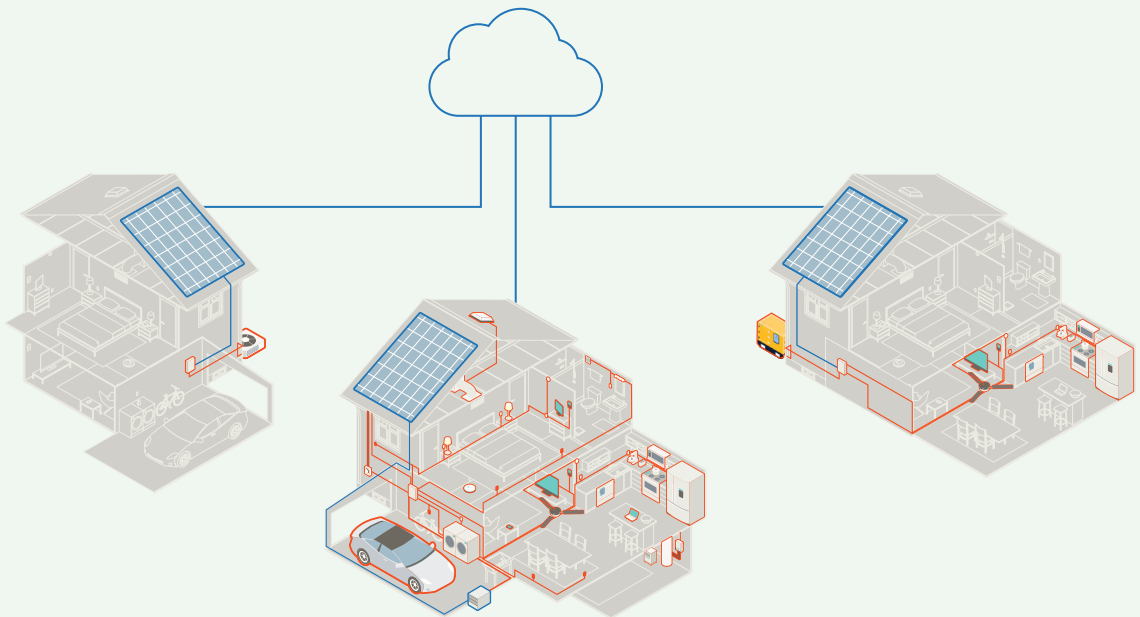
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Virtual Power Plants

What is a Virtual Power Plant?

A Virtual Power Plant (VPP) is a large number of small solar panel and battery systems installed at lots of different properties but operated as a group by an energy business.

VPP operators have agreements with large energy businesses like networks, power plants and the energy market operator, to use or produce certain amounts of electricity at times when it helps the energy system as a whole. They also have agreements with the owners of all the systems (usually houses, sometimes businesses) about how much and how often the VPP operator can use their solar or batteries, and what they will give the owner in payment.



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Why are Virtual Power Plants needed?

VPPs help to balance the energy system, and make sure we have enough energy when we need it. As old coal power generators close and are replaced by large wind and solar farms and rooftop solar systems, the electricity system is changing. This means that the way energy is produced, and the way that we use it, has changed. Sometimes the whole energy system produces more electricity than is needed (such as in the middle of a sunny day), while at other times demand is so high the system struggles to provide it.

VPPs can help to balance the system by providing extra, stored electricity when it's needed, or storing excess for later. They do this by charging up batteries, sending electricity from the batteries into the system, and even by shutting off solar systems at certain times if they are producing too much energy.

What's in it for me?

Earn or save money

- VPPs use your energy equipment from time to time, and while they are doing so, you can't use it yourself. In return, they give you something. This might be a payment – a one-off payment, a fixed payment per month or year, or a payment each time they use your equipment. Or it might be a discount on the equipment they will be using – for example, a half-price battery with an agreement that they can use it a certain number of times per year.

Help reduce emissions

- VPPs allow more rooftop solar and other, larger renewable power plants to be a bigger part of the electricity system. Without them, we might need more gas and coal power production. In this way, VPPs will help us to move toward a low-emissions renewables-based electricity system.

Support new solutions

- VPP operators are using new technology to do new things in the energy system. They are still working out how best to balance the needs of households and the larger energy system, and how to make it a viable long-term business. Being a part of the early development of VPPs means you play a part in helping develop these new approaches.



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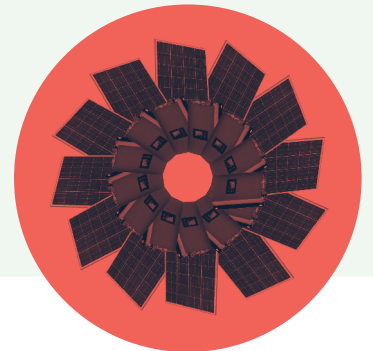
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Finding and choosing a VPP provider

All VPP providers take different approaches, and most are still conducting trials, working together with state governments, energy retailers or networks, or community energy groups. Being part of a trial project means that your views on how the VPP works and your experience with it may influence how it works in the future.

VPPs are not widely advertised. You might find out about one through your energy retailer or network, local council, or a community energy group.

If you are approached on social media or by a doorknocker, ask them for information, including which energy retailer or network they are working with, and check with that energy business that it's legitimate.



Generally speaking, a good VPP operator will answer your questions clearly and usefully, and help you understand whether or not it's right for you.



Here are a few things to find out if you are considering joining a VPP:

- Who are they working with? In particular, which energy retailer and network?
- What do you get in return? A discount on solar or a battery? A once-off or monthly/quarterly/annual payment? Or a payment for each usage?
- How often and how much will they use your equipment? For example, they might say they will use your battery for up to a certain number of charge–discharge cycles per week or month.
- Will their usage of your battery affect the expected lifetime of your battery? If so, how much? Will this affect the warranty?
- Will you still be able to access feed in tariffs and government rebates?
- Will you have the option to 'opt out' for a period of time? And is there a reduction in payments to you for that period?
- Will they let you know in advance if they are going to use your system? If so, how?

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- Does any special equipment need to be installed before you become part of the VPP – for example a communication device to send control signals to your battery or inverter?
- If you already have solar and a battery, can they estimate the value you will lose due to their use of it, so you can compare it to how much you are being paid to let them use it?
- If getting solar or a battery at reduced cost is part of the VPP deal can they estimate the value you will gain from it over a ten-year period (accounting for the reduction due to their usage of it) so you can compare it with the cost you still have to pay, to see if it's worth it?
 - Find out the model and type of battery or solar system and search online to find out how the discounted price you've been offered compares to the regular price.
 - You should also check out our fact sheets about solar and batteries to find out what to look for in a solar or battery system.
- If you are interested in the environmental benefit, will they inform you of how many emissions are being saved through your involvement with the VPP?
- Do they provide an app or website so you can see how the VPP is operating, how much you are being paid or otherwise benefitting, and how and when they are using your equipment?
- Is there an easy way for you to contact the VPP provider if you have any questions or problems with the system?

Make sure you have clear and satisfactory answers to all these questions, before signing a contract.



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Sealing the deal

When you join a VPP there will be a contract or agreement to sign. This should spell out a number of the points listed above such as the type and maximum number and length of VPP events, how and how much you will be paid, and so on. It should also provide the details of any equipment that has to be installed to connect you to the VPP.

If you are getting a discounted battery or solar system as part of the arrangement, it should also say how much you need to pay and the payment terms, and details of the type of battery and/or solar system. Check out our solar and battery factsheets for more information about what you need to know about battery and solar systems, including warranties.



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A good VPP provider will:

- Give you a contract that is clearly written and not full of technical jargon.
- Explain the contract to you and point out any specifics you should be aware of, such as:
 - details of any payments you need to make or that will be paid to you
 - anything you need to do to meet the contract terms
 - what you and they need to do to end the contract.

If your contract involves a purchase (for example, if you are getting solar or a battery for a discount price), there may be a few options for how to pay.

- You could pay up-front.
- Your state government might offer low or no-interest loans.
- You might redraw on your mortgage.
- The provider may offer finance so you pay in instalments.

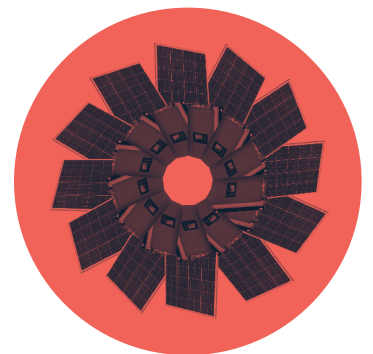
Before accepting finance from your provider, ask:

- Is the total cost different if I accept financing?
- What is the interest payable?
- Are there any additional fees?
- Are there any payment terms or conditions that you must meet?
- Are there any additional fees you'll be charged if you fail to meet terms and conditions?

A good VPP operator will have explained to you how and how often they will be using your solar or battery, and helped you understand the environmental and financial benefit you will get.

There should be a website or app you can use to see how it's going, and a way to contact them to ask questions. If your agreement allows you to 'opt out' for a time if there is a period for which you want to be in full control, they should have shown you how to do this.

You can be confident that by being a part of a VPP you're helping improve the energy system, reduce emissions, and save yourself money.



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