JM ELECTRICAL GREEN ENERGY

Commercial & Domestic | Solar PV | Battery Storage | EV Charging

MCS CERTIFIED Approved Solar & Battery Installer

Office for Low Emission Vehicles Approved EV Charge Point Installer

Can you have a Home Storage Battery system without solar panels? Absolutely!

Battery storage systems allows you to store electricity from the Grid overnight when electricity prices are lower. By storing energy in your battery, it can then be used later when you would be using more expensive peak rate charge electricity, also during a power cut/blackout your battery can power critical infrastructure in your home. Dependent on your energy tariff and design of the Battery Storage System you can save significantly on your energy costs.

There is a wide range of Battery storage system solutions available in the UK. From containerised units suitable for commercial properties, to stand-alone 5kW batteries more suitable for domestic properties. And it is for this reason that home battery storage without solar is feasible.

- By charging your battery during off peak periods and discharging it to your home during peak periods you can save on the difference in electricity cost (say 12p/kWh off peak versus typically 48p/kWh peak)
- Increases energy independence — A storage battery will give you more control over the energy you use.
- You could break even on your solar battery after 5 to 8.5 years depending on your daily electricity consumption and the size of battery fitted.

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EVCC CONSUMER CODE FOR HOME CHARGEPOINTS

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- The average three-bedroom home in the UK will need an 8-kWh storage battery to meet its needs, 1–2 bedroom properties will be fine with a 2–5 kWh battery, and 4 -5 bedroom home between 9 and 13 kWh of battery capacity.
- If the Battery is to be installed within the home, careful consideration should be given to its location to avoid impeding safe egress routes in the event of fire.

If you want to add Solar Panels or other generation to your Battery System later the system can be designed to accommodate this. It is straightforward for a qualified installer and is known as retrofitting. Due to the flexibility of the current products on the market, you also have the option to expand your home energy storage system later.

In conclusion

A storage battery is a great way to become more energy independent, even without Solar and despite the increased upfront cost, you may well make a profit.

A Battery Energy Storage System is a green and affordable way to store energy in your home. More importantly you will reduce your reliance on the Grid at peak times, meaning less strain on the grid, fewer CO2 emissions, and an important step to a cleaner world for all. Unfortunately, the Government incentive of zero-rated VAT for renewable technologies does not apply to home battery storage, however if the battery storage is installed as part of the solar installation, it would attract the zero rate in terms of VAT.

JM Electrical only use quality components from UK based organisations in their installations and give a high degree of attention to safety considerations for both installation and for long term user convenience. Our installations are covered as standard by 3-year workmanship warranty; 5yr warranties are also available at additional cost.

QANW QUALITY ASSURED NATIONAL WARRANTIES

A well designed fully installed 5kwh system will cost in the region of £4,995+VAT, with a 10kWh system coming in at £7,800+VAT.

TESLA POWERWALL TESLA HOME BATTERY

GivEnergy Approved Installer

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Important Considerations regarding battery size and use in a home setting.

A typical home (depending on size) will consume between 8 and 13 kWh of electricity in a day. Therefore, it seems logical to purchase a battery to suit the size of your home (4-5 bedroom home – 13kWh). However, having a fully charged battery does not necessarily mean that you will not require to draw electricity from the grid. There are two important factors that you must consider.

1) The capability of your invertor to discharge the battery into your home. For example, a 3.6kWh inverter would be able to continuously discharge 3.6kWh.
2) Therefore, in a simple scenario, say lunchtime and your battery is fully charged. You boil some eggs to make a sandwich, toast some bread and put on your kettle for a cup of tea.

a.	Hob	(2.0kWh)	10mins
b.	Toaster	(1.8kWh)	5mins
c.	Kettle	(3kWh)	5 min

For 5 mins you will have all 3 appliances operating (6.8kWh) over that **5-minute period** you can only draw 3.6kW from the battery the remaining 3.2kW of power will come from the grid.

3) Another typical scenario would be teatime. You have your oven on, using your hob, watching tv, you have music playing and you something in the microwave.

a.	Hob	(2.0Kwh)	30mins
b.	Oven	(2.15kWh)	60mins
c.	Tv	(0.156kWh)	60mins
d.	HiFi	(0.45 kWh)	60mins
e.	Microwave	(1.7 kWh)	10mins

Let us assume everything, other than the Microwave (10mins) and hob (30mins) is on for **1hour**. The total consumption over that hour would be 5.46kW, again 3.6kW would be delivered from your battery (despite it having 13kW available) resulting in 1.86kW coming from the grid.

So, it is important to understand that when there is any electricity use in the house that is greater than the Invertor/battery can deliver continuously (3.6 kWh in this example), the excess demand will have to be satisfied from the Grid **regardless of the battery charge** level. These simple examples highlight that without appropriate vigilance this could happen many times during the day/week.

The table below shows that you can run any commonly used single appliance from your battery (excluding the shower and electric boiler) but not many simultaneous combinations of appliances without resorting to using grid power. It is key to consider your lifestyle patterns and amend where appropriate without overly changing your lifestyle.

Household Category	Appliance	Average Consumption (kW)	Running Time in hours		
			5kWh	9kWh	13kWh
Computing	Desktop Computer	0.45	11.1	20.0	28.9
Computing	Laser Printer	0.80	6.3	11.3	16.3
Computing	Home Internet Router	0.02	333.3	600.0	866.7
Computing	Laptop Computer	0.10	50.0	90.0	130.0
heating	Electric Boiler	14.00	0.4	0.6	0.9
heating	Electric Heater Fan	3.00	1.7	3.0	4.3
heating	Single point Water Heater	3.00	1.7	3.0	4.3
heating	Hot Water Immersion Heater	3.00	1.7	3.0	4.3
heating	Electric Shower	10.50	0.5	0.9	1.2
kitchen	Dishwasher	1.50	3.3	6.0	8.7
kitchen	Electric Kettle	3.00	1.7	3.0	4.3
kitchen	Microwave	1.70	2.9	5.3	7.6
kitchen	Oven	2.15	2.3	4.2	6.0
kitchen	Toaster	1.80	2.8	5.0	7.2
kitchen	Fridge / Freezer	0.40	12.5	22.5	32.5
kitchen	Electric hob	2.00	2.5	4.5	6.5
Kitchen	Washing Machine	0.50	10.0	18.0	26.0
lighting	100W light bulb (Incandescent)	0.10	50.0	90.0	130.0
lighting	LED Light Bulb	0.01	500.0	900.0	1300.0
tv	55 Inch LED TV & Sky Q 2TB Box	0.16	32.1	57.7	83.3

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[5 Reasons To Get A (Bigger) Home Battery - YouTube]

[Daily Solar Modelling Utility (garydoessolar.com)]

JM Electrical Green Energy are experienced in all aspects of electrical energy and renewable technologies. We are certified MCS installers for Solar PV and Battery Storage solutions.
We are also OZEV-approved EV Charge point installers and adhere to the RECC and EVCC codes of practice. Qualified and trained in all the latest techniques and products; you can be assured our workmanship and customer service will always be the best.

Call now to discuss any other electrical needs!

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