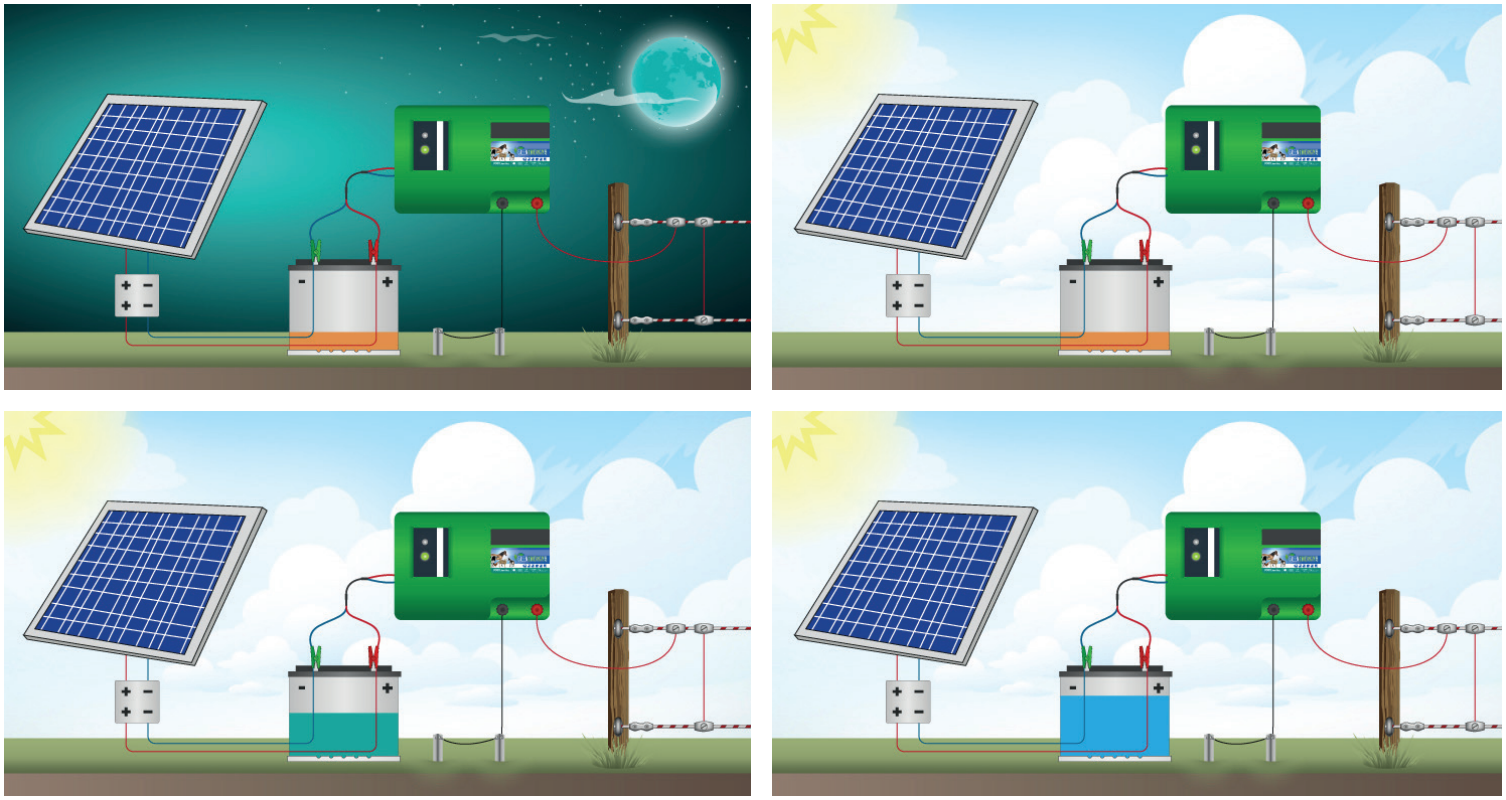
solar energisers

In this issue we will touch upon solar systems and batteries as the two are seamlessly intertwined.

Solar panels are seeing more frequent use with electric fences. Newer and better technologies are also making them economically advantageous. Using solar panels you can enjoy environmentally friendly, low-maintenance and low cost operation of your energiser. The operating principal is: during the day the solar panel converts the power of the sun into energy, which in turn recharges the battery; at night the energiser relies solely on the battery. Next day the cycle starts over. Thanks to solar panels 9 V batteries may last **twice as long** and 12 V - the whole grazing season and beyond.



Solar energisers are of 2 types: **standalone units**, where the battery is built in into the energiser, and **solar systems**, where the solar panel, battery and energiser are separate items put together.

9 or 12 V standalone units are not very powerful, only suitable for short fences and easy-to-keep animals, but are highly transportable and lightweight. **12 V solar systems**, on the other hand, are quite bulky, but offer higher power and fence security.

This year we are bringing our own range of 12 V standalone units. Be on the lookout for **Sunny 200** (Art: 42082) and **Sunny 800** (Art: 42088).

In our solar systems solar panels are conveniently mounted on the metal boxes, which offer extended protection against weather elements and are easy to carry thanks to a convenient handle (Art: 43660, 43665, 43670) or offer additional anti-theft security (Art: 43680, 43685, 43690) by means of electrifying the box.

There is a choice of 5–50 watt solar panels depending on the charging current required. You can enjoy maintenance-free operation throughout the grazing season.

We created some **solar system sets** based on our experience and they cover all possible needs. **All 12 V energisers** can be paired up with a solar module, if done through the battery. Some energisers can be connected directly to the Solar Panel, however, this somewhat defeats the purpose since at night or in bad weather the fence becomes unsecure. Each secure box in our store fits each and every one of our 12 V energisers and 12 V batteries (of course, not all at the same time).

So, if you have a special energiser preference just pick a suitable solar system, a 12 V battery and any accessories you require and ask us for a quote.

solar energisers

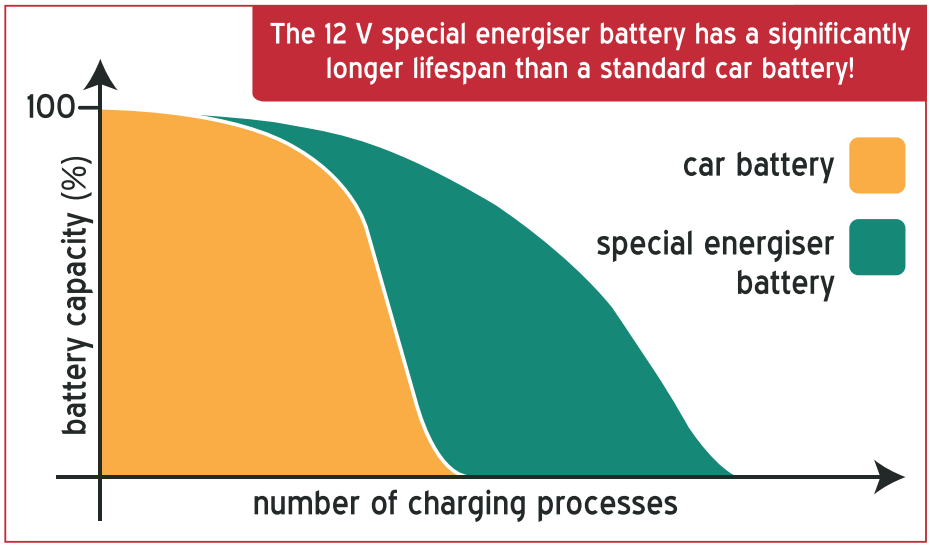
12 V Batteries

						
	12 V	12 V	12 V	12 V	12 V	12 V
Article	34435	34437	34439	34460	34461	34462
Capacity	50 Ah	85 Ah	120 Ah	65 Ah	85 Ah	120 Ah
Type	Lead-acid	Lead-acid	Lead-acid	Lead-acid	Lead-acid	Lead-acid
Acid required	2.4 L	3.1 L	4.2 L	3.2 L	4 L	4.5 L
Rechargeable	YES	YES	YES	YES	YES	YES
Weight	8.4 kg	12.7 kg	15.6 kg	8.8 kg	10.8 kg	16 kg
"Dimensions L x W x H, mm"	205 x 175 x 190	240 x 175 x 190	355 x 175 x 190	205 x 175 x 190	240 x 175 x 190	350 x 175 x 190

What do you need to consider before buying a 12 V battery?

1. Purpose **2.** Capacity **3.** Size **4.** Weight **5.** Energiser

Firstly, you may, but should not use car batteries as they are not suitable for frequent charging and discharging – they quickly lose their capacity and become unusable. In our shop you will find 2 series of batteries: **Power** and **Special Purpose** battery. The **Power** series are particularly suitable for solar systems. We recommend the **Special Purpose** series for non-solar systems. These special batteries from VOSS.farming have been specially developed for use with energisers. The reinforced grid plates in the battery housing allow for **more charging cycles** and have increased reliability and longer lifespan.



The other three reasons are directly correlated: the higher the Capacity, the larger the Size, the heavier the Weight. If you have to carry your battery back and forth to where your fence is installed than you'd want a lighter option, but if you can get there easily with your car, then larger battery is best, you also don't need to worry about recharging it as often. The energiser also influences the required capacity, since more powerful energisers will drain your battery much faster, and if you do not want to recharge your batter every 3 days then make sure the battery capacity matches the energiser's power consumption.

The final step is to charge the battery. Our 12 V batteries are pre-charged and ready for use as soon as they are filled with proprietary **battery acid** - 60% charge. We recommend that you charge the battery fully once again before use.

Please note: some 12 V car batteries need to be topped up with distilled water, therefore, if you decided to give your battery to the garage to charge, make sure to warn them to **use only acid - sulphuric acid 37 % = density 1.28**. Using distilled water makes our batteries inoperable and voids the warranty. Battery acid is not something you can buy at Halfords, B&Q or most garages; however, it is available in various online shops.

solar energisers

9 V Batteries

First thing you should know about 9 V solar systems is that 9 V electric fence batteries are not rechargeable. So if you are looking for a rechargeable unit look for a 12 V device.

					
	9 V	9 V	9 V	9 V	9 V
Article	34400	34420	34451	34453	34455
Capacity	55 Ah	130 Ah	75 Ah	120 Ah	175 Ah
Type	Zinc-Carbon	Zinc-Carbon	Alcaline	Alcaline	Alcaline
Acid required	-	-	-	-	-
Rechargeable	NO	NO	NO	NO	NO
Weight	1.8 kg	3.9 kg	2.1 kg	2.8 kg	3 kg
"Dimensions L x W x H, mm"	165 x 110 x 110	190 x 125 x 163	165 x 110 x 110	165 x 110 x 110	190 x 125 x 163

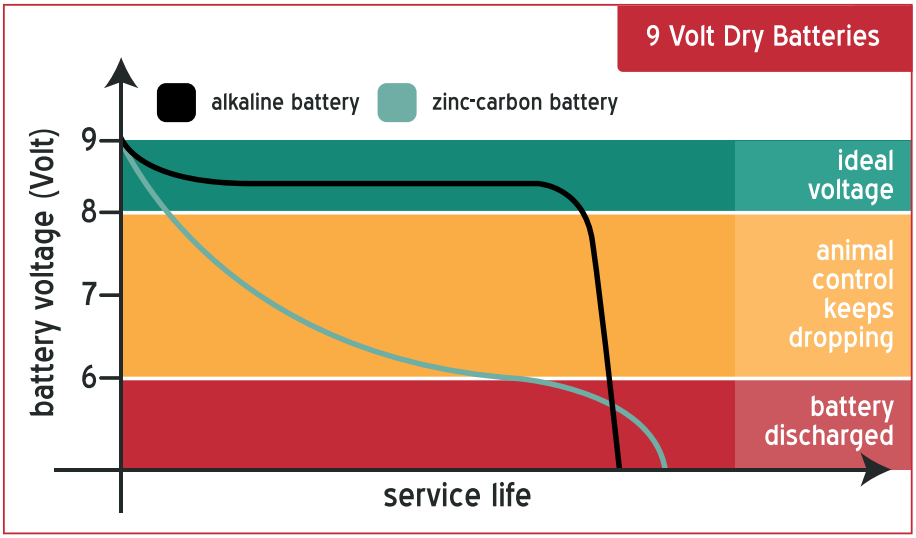
One of our 9 V Solar energisers (Art 42035.UK) has been modified to carry a 12 V 12 Ah AGM battery, hence it carries a 10 W solar panel. AGM stands for Absorbent Glass Mat, which means the same as lead-acid. Unlike conventional electric fence batteries, the AGM battery has no liquid that could leak out, its passive discharge is low and capacity does not diminish even if it is not used for an extended period of time.

An AGM battery has also longer lifespan. Unfortunately at the moment this technology is rather costly, and we do not see it making it into the 9 V battery market any time soon.

You could use a rechargeable 12 V battery with any of our 9 V energisers, however, it won't fit into the energiser casing, won't be charged by the Solar module, would require protection from the weather and moisture and you would require a set of connection cables (Art: 44173).

Zinc-carbon vs Alcaline

The difference between zinc-carbon and alkaline batteries is that the latter hold the ideal voltage much longer, whichguarantees optimal andstable output from the energiser.



Important: Batteries **MUST NOT be disposed of in normal household refuse**. They contain harmful substances which damage the environment or your health.Batteries contain important raw materials which can be recycled. Dispose responsibly at garages, scrap metal facilities and recycling centres.

In the next issue we will look discuss different types of conductors.

							
	43662 Green Energy	**43667 AVi 8000**	**43672.UK AVi 10000**	**43855 AURES 3**	**42011.UK Extra Power 9 V**	**42025.UK BV 2600**	**42035.UK BV 3900**
Battery	-	-	-	9 V 55 Ah not rechargeable	9 V 55 Ah not rechargeable	9 V 55 Ah not rechargeable	9 V 12 Ah rechargeable
Solar panel	10 W	30 W	50 W	5 W	5 W	5 W	10 W
Technical Specification							
Power source	12 / Mains	12 / Mains	12 / Mains	9 / 12 / Mains	9 / 12 / Mains	9 / 12 / Mains	9 / 12 / Mains
Stored energy (J)	2	5	7,6	0,28	0,22	0,32	0,48
Output energy (J)	1,5	3,5	5	0,16	0,15	0,23	0,39
Voltage in open circuit (V)	9.000	9.700	10.000	9.600	10.000	10.500	10.800
Voltage at 500 Ohm (V)	5.000	7.200	7.200	2.500	2.500	2.900	3.300
Number of connectable nets	5	14	18	0	0	0	2
Fence Length							
Optimal. lab (CEE 1500V) (km)	48	110	150	7	4	8	15
No vegetation (km)	15	33	40	3	3	5	7
Light vegetation (km)	4,5	12	15	1	1	3,5	4,5
Heavy vegetation (km)	2	4,5	5,5	0,3	0,3	0,8	1,2
Farm animals							
Horse	x	x	x	x	x	x	x
Pony	x	x	x	x	x	x	x
Galloway			x	x	x	x	x
Cattle	x	x	x	x	x	x	x
Sheep	x	x	x				x
Goat	x	x	x				x
Pig	x	x	x	x	x	x	x
Poultry	x	x		x	x	x	x
House pets							
Dog				x	x	x	x
Cat				x	x	x	
Rabbit				x	x		
Wild animals							
Buck		x	x				
Deer	x	x	x				x
Wild boar			x				
Fox	x						x
Raccoon	x			x	x	x	x
Badger	x			x	x	x	x
Marten	x			x	x	x	x
Heron	x			x	x	x	x