# DOLLAR$ AND $ENSE
# HOW DOES THE COST STACK UP?

BMPRO
INVICTA
A BETTER BATTERY


**Lithium batteries are more expensive than traditional lead acid batteries, At around $1500 for LiFePO4 12v100Ah compared with $300 for AGM 12V100Ah, there's no point trying to dodge that fact.**

But there are a few ways to look at value for money and making the decision about the purchase of an Invicta LiFePO4 battery. One such way is the investment overall.

If you're the sort of caravaner who rarely leaves the confines of the bitumen and spends 99% of your time in a caravan park than save yourself reading further as Lithium batteries are not really going to offer you value until prices come down considerably. But for RVers who like a bit of independence and time off the electricity grid and who choose to take the family off-road for adventures, then read on!

Lithium batteries offer you all the practicality of being lighter, easier to store, lighter to tow your caravan, charge and discharge faster, and that's all before we look at $/watt.

Every RV enthusiast wants the power to last longer. Whether that's to keep the fridge cool, or to re-charge kids' iPads and smartphones, or to be able to flick on the lights at night. A lithium battery holds its voltage up higher for longer and won't give that slow down spiral of the voltage that we all know of with a lead acid battery. Devices that need power draw a certain amount of wattage (Amps x Volts) to operate. Simple mathematics states that if you decrease the voltage the battery needs to supply more amps to maintain the same power which means you will draw your available power down faster. (i.e. draw more Ahr). The lithium battery holds it voltage up higher for longer and therefore doesn't suffer the same fate.

But now, let's get down to the dollars and cents of why it's a good idea to invest in a lithium battery. With a lead acid battery, the recommendation is to not allow depth of discharge lower than 50%. But with lithium, that recommendation drops to 80%, making a difference of 30Ah or 60% more capacity usage.

## We've done the maths for you!

| | AGM | LiFePO4 |
|---|---|---|
| Application | Deep Cycle | |
| Capacity | 100 Ah | |
| Depth of Discharge (DoD) | 50 % | 80 % |
| Cycles @ 50% DoD | 650+ | 6500+ |
| Cycles @ 80% DoD | Not Recommended | 3500+ |
| Available Power | 32,500 Ahr | 280,000 Ahr |
| Standard Voltage | 12V | 12V |
| Watt Hours | 390, 000 | 3, 360, 000 |
| kWh | 390 | 3360 |
| Cost /each Battery | $ 300 | $ 1500 |
| Qty of Batteries Required | 10 | 1 |
| Total Cost of Batteries | $ 3000 | $ 1500 |
| Cost /usable kWh | $ 0.77 /kWh | $ 0.45 /kWh |


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