REMOTE POWER UK

off-grid renewable solutions brought to you by Raine or Shine

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Off-grid System Sizing calculator

THIS CALCULATOR IS FOR GUIDANCE ONLY

AC Loads	AC Appliance	No. appliances	Watts	Hrs / day	Hrs / week	Wh/week (inc. losses)	Peak use
1					0	0	☐
2					0	0	☐
3					0	0	☐
4					0	0	☐
5					0	0	☐
6					0	0	☐
7					0	0	☐
8					0	0	☐
9					0	0	☐
10					0	0	☐
11					0	0	☐
12					0	0	☐
13					0	0	☐
14					0	0	☐
15					0	0	☐
16					0	0	☐
17					0	0	☐
18					0	0	☐
19					0	0	☐
20					0	0	☐

Weekly AC Wh total **0**

DC Loads	DC Appliance	No. appliances	Watts	Hrs / day	Hrs / week	Wh/week	Peak use
1						0	☐
2					0	0	☐
3					0	0	☐
4					0	0	☐
5					0	0	☐
6					0	0	☐
7					0	0	☐
8					0	0	☐
9					0	0	☐
10					0	0	☐

Weekly DC Wh total **0**

Total DC Watt Hours per week	0	
Battery Voltage (VDC)	12 VDC	
(i) **Peak consumption**	**0 W**	Gives an idea of Inverter size
(ii) **Total average Amp Hours / day**	**0 Ah**	Gives an idea of battery bank size
Total average Ah / day to generate	**0 Ah**	The amp hours that need to be generated by the system daily (allows for losses in battery charge/discharge)

Battery bank sizing

Discharge time in hours	10 hours	C rate
Type of battery	Lead-acid	
(iii) **Battery bank amp hours capacity**	**0 Ah**	Battery bank size
Your estimated budget	£ 0.00	

System designs are based on the information you have provided and Raine or Shine are not responsible if any information has been supplied incorrectly.

This is the first stage in system design and we will be in direct contact with you to ensure the best design is

Instructions

For AC and DC appliances:

- Add each **AC appliance** in 'AC Loads' and **DC appliance** in 'DC Loads' and the number of each appliance.

- Insert wattage of each appliance in **Watts**.

- Insert average length of time appliance is used. If you enter it as hours/day it will calculate the hours/week for you. Alternatively, add the hours / week directly for appliances that are not used daily.

- Tick the higher loads which are likely to be used or automatically start simultaneously in **Peak use**. Consider this with care as this is used to size the inverter.

- Select the **Battery Voltage**, generally a 12V system will suffice for smaller systems. If your Peak power consumption is in excess of 1000 watts a 24V system is recommended. If you are looking to power a larger system such as a whole house we advise a 48V system.

- The **Peak consumption** and **average amp hours** are displayed below.

Inverter sizing

- Inverter should be sized greater than the Peak consumption (i).

Battery bank sizing

- It is best practice to size the batteries at C10 (10 hours discharge time) for domestic and commercial premises. For other applications this does not apply such as remote weather monitoring stations etc.

- Enter the **discharge time in hours**, this is the length of time that storage of power is required.

- Select the **type of battery**. Flooded, AGM, Gel and Open-valve are all Lead-acid.

- Lead-acid batteries are generally discharged to 50% and Lithium batteries to 90% before the need to recharge in order to prevent damage to plates.