



Solar Generator Sizing Worksheet

Complete guide with capacity calculator worksheet, appliance planning, installation checklist, maintenance schedule, and tropical climate protection guide for Malaysian conditions.

Solar generators provide backup power during blackouts, floods, monsoon disruptions, and grid instability. This worksheet helps Malaysian households estimate battery size requirements, prioritize essential appliances, and maintain equipment in tropical heat and humidity.

1. Essential Appliance Power Planning Worksheet

Appliance	Watts	Hours / Day	Daily Wh
Phone Charging			
WiFi Router			
LED Lighting			
Fan			
Laptop			
Portable Fridge			
CPAP / Medical Device			
Emergency Communications			

Daily Watt-hour (Wh) calculation: Appliance Watts x Hours Used Per Day = Daily Energy Requirement.

2. Basic Solar Generator Sizing Guide

Usage Level	Suggested Battery Capacity	Typical Use Case
Light Emergency Backup	300–500Wh	Phones, lighting, small electronics
Family Essential Backup	500–1500Wh	Fans, router, lighting, laptop
Extended Blackout Setup	1500–3000Wh	Portable fridge, multiple devices
Large Household Backup	3000Wh+	Long-duration emergency support

3. Malaysian Tropical Climate Protection Guide

Condition	Protection Recommendation
Heat	Avoid direct sunlight and enclosed hot vehicles
Humidity	Use dry storage and silica gel packs
Flood Risk	Store elevated from floor

Condition	Protection Recommendation
Monsoon Rain	Use waterproof cable routing and covers
Salt Air (Coastal Areas)	Inspect terminals regularly for corrosion
Long-Term Storage	Recharge batteries every 2–3 months



4. Installation & Safety Checklist

Done	Installation Task
■	Choose dry and ventilated storage location
■	Test all charging cables and adapters
■	Label power output ports clearly
■	Prepare surge protection if needed
■	Keep emergency flashlight near system
■	Store printed operating instructions
■	Test charging from solar panels
■	Review household emergency power priorities

5. Maintenance & Battery Rotation Schedule

Task	Frequency	Completed
Recharge battery to storage level	Every 2–3 months	■
Inspect ports and cables	Monthly	■
Test appliance compatibility	Quarterly	■
Check solar panel cleanliness	Monthly	■
Inspect for corrosion or swelling	Monthly	■
Run blackout simulation test	Every 6 months	■

6. Replacement Parts & Accessories Planning

Accessory	Recommended Backup
Charging Cable	1–2 spare cables
USB Adapters	Multiple compatible adapters
Extension Cord	Outdoor-rated backup cord
Solar Panel Connectors	Spare MC4 or compatible connectors
Portable LED Lights	Dedicated low-power lighting
Power Bank	Additional communication backup

7. Household Emergency Power Priority Worksheet

Priority Level	Appliance / Device
Critical	
Critical	
Important	
Important	
Optional	
Optional	

8. Final Solar Preparedness Checklist

Done	Preparedness Item
<input type="checkbox"/>	Calculated household emergency power needs
<input type="checkbox"/>	Selected suitable battery capacity
<input type="checkbox"/>	Prepared backup charging cables
<input type="checkbox"/>	Tested all essential appliances
<input type="checkbox"/>	Stored generator in dry ventilated location
<input type="checkbox"/>	Created blackout power priority plan
<input type="checkbox"/>	Scheduled maintenance reminders
<input type="checkbox"/>	Family members understand safe operation

This worksheet is designed for emergency preparedness planning and educational use. Always follow manufacturer safety guidance and Malaysian electrical regulations during installation and operation.