

FREE PRINTABLE WORKSHEET

Power Station Sizing Worksheet

01

MEASURE THE LOAD

List the devices that truly need backup. Use measured running watts whenever possible. Motors and compressors also need a separate startup-surge check.

Essential-load inventory

DEVICE	QTY	RUNNING WATTS	STARTUP WATTS	HOURS NEEDED	WATT-HOURS
Example: router stack	1	18	18	8	144

Energy calculation

Total load energy _____

Divide by planned usable factor _____

Add desired reserve _____

Minimum nominal capacity _____

Output calculation

Largest simultaneous running load _____

Highest startup event _____

Other loads during startup _____

Required surge output _____



Do not confuse the ratings

Watt-hours describe stored energy. Watts describe output. Both calculations must pass. A large battery can still have an inverter that cannot start a compressor.

Measurement notes

PURCHASE AND TEST GATE

Verify the complete plan

02

CHOOSE AND TEST

Product checklist

- ☐ Nominal watt-hours meet the energy calculation
- ☐ Continuous watts exceed simultaneous load
- ☐ Surge rating covers measured startup demand
- ☐ Required AC, USB, and DC ports are present
- ☐ Transfer behavior suits connected electronics
- ☐ Weight is manageable for intended user
- ☐ Warranty and current US support checked

Recharge checklist

- ☐ AC recharge time fits outage pattern
- ☐ Charging circuit can support input safely
- ☐ Solar voltage and current limits matched
- ☐ Panel placement has realistic sun exposure
- ☐ Car or alternator option follows instructions
- ☐ Recharge temperature limits understood
- ☐ Plan works during multi-day outages

Candidate comparison

MODEL	WH	CONTINUOUS W	SURGE W	WEIGHT	RECHARGE	PASS?	

Controlled setup test

DATE	CONNECTED LOAD	START CHARGE	RUNTIME	LOWEST CHARGE	RESULT AND ACTION



Medical devices require device-specific confirmation

Do not treat this worksheet as validation for life-support equipment. Confirm compatibility and backup procedures with the care team and exact device manufacturer.

Final choice and reason