Quick Comparison Chart




	Ape Hybrid System	Gas Generators	Portable Solar Generators	Solar Trailers	Home Energy Storage
Price Range	$2,000-$9,999	$700-$12,000	$1,200-$3,500	$12,000-$70,000	$9,000-$18,000
Feature Benefit					
Mobile/Portable	✓	✓	✓	✓	✗
Easy Installation	✓	✓	✓	✓	✗
Certified for Marine/RV	✓	✓	✓	✓	✗
Supports Off-Grid >5kw	✓	✓	✗	✓	✗
Expandable Battery Packs	✓	✗	✓	✗	✓
No additional equipment for solar	✓	✗	✓	✓	✗
Supports On-Grid Backup	✓	✓	✗	✓	✓
Supports On-Grid Export	✓	✗	✗	✗	✓
Fast Charge Capable <30min	✓	✗	✗	✗	✓
Energy Automation Capable	✓	✗	✗	✗	✗
Expandable Solar Panels	✓	✗	✗	✗	✗
Works with Generator	✓	✗	✗	✓	✗
Easy Off-Grid DIY installation	✓	✓	✗	✓	✗
Autostart Generator Recharge	✓	✗	✗	✓	✗
Generator Power Boost	✓	✗	✗	✗	✗
Schedule "Quiet Time" Recharging	✓	✗	✗	✗	✗
Supports Job Site Power Tools	✓	✓	✗	✓	✗
Transport by Airlift copter	✓	✓	✗	✓	✗
External equipment rack	✓	✗	✗	✗	✗
Wifi and Hotspot capable	✓	✗	✗	✓	✓
Power Storage Capabilities					
2.5kwh	✓	✗	✓	✓	✓
5.0kwh	✓	✗	✗	✓	✓
7.5kwh	✓	✗	✗	✓	✓
10kwh	✓	✗	✗	✓	✓
15kwh	✓	✗	✗	✓	✓
>15kwh <30kwh	✓	✗	✗	✗	✓
Power Output Capabilities					
Single Phase 240v (EU)	✓	✓	✗	✗	✓
Split Phase 120/240vac	✓	✓	✗	✗	✓
3kw	✓	✓	✓	✓	✓
5kw	✓	✓	✗	✓	✓
10kwh	✓	✓	✗	✗	✗
12kw	✓	✓	✗	✗	✗
18kw	✓	✓	✗	✗	✗
Off-Grid Capable	✓	✓	✗	✓	✗

Market Survey Advantages/Disadvantages

Gas Generators

Examples

Major Advantages/Disadvantages

+ **Available at most hardware stores**
+ **Provide basic short term power needs at low cost per usable watt (CPUW)**
- Even in "eco mode", use a lot of Gas for smaller loads like lights, Wifi…they are either "on" or "off".
- 5,000+ watts are extremely loud 80+db
- Heavy maintenance when used for long periods
- Very unsafe in wet weather
- Very unsafe on Homes with grid power due to "Neutral to Ground" bond
- 5,000+ watts produces "Modified Sine Wave" which can damage common electronics (Cell Phones, Computers, TV's)
- Extremely expensive ($7,000+) for higher quality "inverter" quiet generators (e.g. Honda) with limited power (<6,000watts)
- Fire Hazard when used in dry grassy areas due to exhaust and engine temperature and flamable fuel storage
- Cannot be used for long periods of time without access to fuel (desolute wilderness, during disasters, long trips)
- Very limited "Peak" cabalities needed for "well pumps, construction equipment, irrigation)
- Limited expansion for more power, two in parallel max
- Only expensive large ones can turn off and on automatically which means you have to manually "start" and "stop" when used

Portable Solar Generators

+ Great for backpacking and basic consumer electronics or remote environment sensing
- Very little power cabalities to run tools, equipment
- Small batteries packs (<2kwh)
- Optional Solar Panels cannot generate enough power

Trailer Solar Generators

Note: APE Energy has several powerful portable solar generators they have rented to construction and disaster support resources.

+ Great for rapid deployment and when equiped with generator and larger battery packs can be very powerfull
- Limited flexibility to expand solar generation due to limited space on trailer(<2kw solar)
- Not good for field locations where sun exposure is more than 50 yards from where AC power is needed
- Very expensive due to the safety requirement to transport glass panels, weight of batteries, and high voltage
- Limited to transporting with vehicles approved to tow >6,000lbs (3/4 or 1 ton)
- Limited to sites that have available space with "Sun Exposure", safe from mis-use, and secure from theft.

Home Energy Storage Systems

Examples

Major Advantages/Disadvantages

+ High quality product from reputable companies great for residential and commercial customers.
+ Great financing available and government rebates will become available making it more affordable.
+ Can be expanded to support large power needs of most residences.
+ Excellent power management software to monitor and control power usage to maximize savings (e.g. peak shaving).
+ Excellent performance warrantees (10 years).
- 1 year waiting list to purchase.
- Without financing or government rebates, can be very expensive using "certified installers" that often double the cost.
- Currently not available for Off-Grid use. Currently not available for mobile/marine applications. This equipment supported for rigorous requirements of marine, automotive, or temporary power needs (weather, condensation, safety grounding, gas generator recharging).
- Equipment is permanently mounted indoors, makes it difficult to recover costs if home/building is sold within 5 years of purchase.
- Technology is new and there are concerns of long term quality and performance capabilities.
- Although equipment is high quality, it is very proprietary and must be installed and maintained by certified technicians and requre additional solar equipment available from few vendors.
- Require additonal equipment to be installed (solar controller,inverter) or have very limited power output capabilities (<5,000 watts constant current, <10,000 surge)

"Do it yourself" kits

+ Less expensive solutions for DIY customers who have the skills to install safely.
+ Upgrades and maintenance can done easily to add panels, solar controllers, batteries.
+ Can be shipped out to site with all the materials needed
- Require a moderate to high level of skill to install correctly using proper curcuit breakers, fuses, and wiring.
- Higher quality equipment that is dependable can get very expensive and if not installed properly will void the warrantee.
- Usually include lead acid batteries which are heavy, require regular mainteance, and only a 2 to 3 year lifespan under regular use.
- Usually includes lower quality equipment that is prone to problems.
- Is not safe as a portable solution; has to be installed in a fixed location dry indoors location (garage/shed)
- If pre-assembled, require additonal wiring for outlets, sub-panels, solar receptacles. Configuration settings have to be done on-site.
- Support is usually directly with equipment vendors that are not USA and difficult to contact…often there is a lot of "down time" while waiting for replacements or getting support.
- Most don't come with wireless/network applications to make it easier to for customers to stay informed if power is running low, is over heating, batteries are not performing.
- Most require additional equipment to work with gas generators.