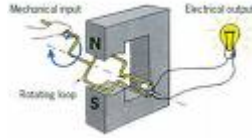


## AUXILIARY STATION POWER TIPS

Basically there are two choices for Auxiliary Power for our Radio Stations.  
Either Generator



or Battery.



There are as many different opinions of which is best, easiest, cheapest, most portable, long lasting, convenient, allowed by situational restraints, etc so choosing one or the other is entirely up to the operator. None of these are inexpensive and do require maintenance.

The FIRST STEP in making any decision is:  
HOW MUCH POWER DO YOU NEED TO OPERATE AND FOR HOW LONG.  
Plan for the worst where you will be "100% key down" 24/7 so you will have the necessary power when needed and not damage your equipment.

An inventory of your station is required. Here are some basic parameters to use in doing this:

Equipment	Power needed	Number used	Power used
HF Radio	100 watts		
Laptop computer	10 watts		
Desk top computer (Tower & Monitor)	300 watts		
Desk Lamp	50 watts		
Printer	100 watts		
TNC	50 watts		
_____			
_____			
_____			
_____			
<b>TOTAL:</b>	_____		_____

An easy way to convert from Watts to Amps is with the factor of 5.  
100 Watts = 20 Amps or 20 Amps = 100 Watts

## GENERATOR OPTIONS

It is recommended that we use Diesel vs Gasoline fuel. Safer and longer lasting to store.

Use it outside due to fumes and noise

Use a Spark Arrester Exhaust muffler for fire safety

Know how long it will operate on a tank of fuel.

Plan appropriate safety methods to refill including alt power while the generator is being refueled.

Use proper extension cords/power bars/grounding for safety.

Cost = \$\_\_\_\_\_ per Watt. Needed = \$\_\_\_\_\_      **TOTAL = \$\_\_\_\_\_**  
Cords & power bars      Needed = \$\_\_\_\_\_

## BATTERY OPTIONS

### **DO NOT USE Car Batteries!**

They are designed for short bursts of Cold Cranking power and repeated major or full power drains will result in the battery failing. They also produce an explosive, noxious vapor when recharging.

### **FOR BATTERY ONLY or BATTERY/CHARGERING SYSTEM OPERATIONS**

Appropriate choices of batteries include:  
DEEP CYCLE, GELL OR FLOATING CELL batteries.



They are designed to sustain a major power drain and be *Deep Cycle* recharged repeated times without failing but not kept in a closed environment. Some of these choices are totally sealed and may be tipped over without damage. These may be recharged with a commercial "Trickle Charger" run from a power grid or generator. These are available for \$35 to \$200 depending on the bells and whistles you want.

### **FOR OTHER ENERGY SOURCE OPTIONS**

There is a long list of ideas on Alternate modes to produce power for our stations. Solar, Wind, Water, Bicycle, Treadmill, etc, etc are all possible. However they all require a storage battery placed in line to our stations for a constant power level being maintained. Here in the Pacific NW we have a limited amount of Solar Power, Wind is a fickle friend, Water needs some real engineering to use, and MAN power (Bike/Treadmill/Hand crank/etc) become a tiring process. None are practical for short term portable operations but do have a place for permanent base stations. You can build the dam and water wheel operation or establish a working Wind Mill Tower but we need to plan for an operation that will only start to produce working amounts of storage power (at 1600 RPM a generator will produce 6 amps for storage) or a bright

sunny day for a solar panel array.

Costs:

MODE	COST	NEEDED
110 AH deep cell battery	= \$100	\$ _____
Trickle charger	= \$ 35 to \$200	\$ _____
Solar	= \$4 to \$5 per watt	\$ _____
Others	= ????	\$ _____
	<b>TOTAL COST</b>	<b>\$ _____</b>

**ROUND FIGURES FOR A PRACTICAL BASE STATION SYSTEM**

Designed for 2 HF Radios, VHF Radio, TNC, Desk top computer & printer, 2 desk lamps, trickle charger and a soldering iron for repairs in an extended (many hour) operation) which would require 1,000 watts (@100% ops). Powered with a 1500 Watt Generator, 110AH battery for generator off times (refueling or quiet hour) with a trickle charger (@min power use), a 100 ft power cable and 2 power strips plus a 12v-110v inverter.

TOTAL COST: Home Depot/NAPA Auto Parts for a back up 1500 Watt diesel generator with 110 AH battery and an 110-12v inverter, 100 ft power cable, 2 power strips working. This would leave ample extra power for other needs.

GENERATOR	\$ 250
BATTERY	\$ 100
TRICKLE CHARGER	\$ 35
POWER CORDS, STRIPS, Inverter	\$ 140
<b>TOTAL</b>	<b>\$ 525</b>

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