Frequently Asked Questions

.....How much wood do I want to cut?
Most people say "I have plenty of trees." What they don't realize is the material handling involved in using an unrefined fuel. There is a lot of elbow grease involved in the handling of wood. What you need to realize is that in all practicality, there is just not that much electricity in a stick of wood. In typical steam systems, a small 500 watt genset may consume 20 lbs. of wood an hour while a larger 10KW A.C.. powerplant if run constantly could consume a cord of softwood in three days. Now you see why coal and oil can look like viable options! Sure, you can get more by being more efficient, but that is a matter of **cost**, so...

.....How much $money$ do I want to spend?
A steam system is going to cost you between **$3 to $10/watt**. Used equipment is cheaper and of course, the more efficient and automatic it is, the more expensive it is. You have to determine the practicality aspect vs. your capital investment aspect. Oftentimes, a lot of money can be saved by buying separate components such as the engine and boiler and assembling them your self. This is hard work, but is very self gratifying...not to mention you get a better understanding of your system. Figure a 500 watts system to cost you between $2,000 and $3,000. A 10,000 watt system could cost you $25,000+. ***This may not be cost effective for you unless you have a use for the main product of steam.....*****heat.**

.....What am I going to do with the heat?
Even a 500 watt steam genset will produce 35,000 BTU's of useable heat in the steam exhaust. That's a lot of heat and it makes no sense to waste it. This very point is usually the deciding factor between a steam generator and a diesel generator. Now, if you have a use for large amounts of useable and controllable heat, no other form of alternate energy can touch steam. A typical 10,000 watt steam genset can give you up to 1/2 million BTU's of controllable heat. In other words, steam will light the chicken farm and process the chickens too. Kiln drying, wood bending, food processing, refining and chemical processes all are typical uses for steam heat. With steam, production processes are possible with raw resources. What you can do with the steam depends upon your knowledge and aptitude for mechanical things…

.....Do you have the savvy to utilize unrefined fuels like wood?
We live in a time where the world is spoiled on the luxuries that refined fuels have to offer. Unfortunately, burning a solid and unrefined fuel requires full time attention. That is why there are refined fuels. Refined fuels allow the energy process to be automatically regulated and controlled, or when it's on it's on and when it's off it's off. Not so with fuels like wood. There is an inherent danger when using a raw fuel and storing the energy in a boiler. That is not a problem but the operator must be educated in the process. It is better if the operator enjoys it. If you like it, you're into it. You will always find ways to improve the process. Forget what mom said and remember, *"There is no shame in playing with fire."*

· Spend the money on the load first.
When generating electricity, we usually overlook the efficiency of the load we plan operate. In Alternating Current (A.C.) applications, this load can be dramatically different from a Direct Current (D.C.) application. For instance, a person may have a 5000 AC generator and nothing else. They would find that many loads such as fluorescent lights and capacitor motors have huge startup currents; 4 times running current (4X). Even though they have 1000 watts of fluorescent lights, a refrigerator (450 watts), a washing machine with a 1/2 hp motor (400 watts), a entertainment center (500 watts), and a deep well 1 hp water pump (750 watts), for what looks like a total load of 3100 running watts; they would find that when the 1 HP deep well pump turns on (3000 watts start up) or the washing machine turns on (1600 watts start up), or that 20 CU FT refrigerator starts up (1800 watts) that their 5000 watt generator is not enough.

This means that they really need a generator of 10,000 watts to operate a 3000-watt load!

Another option would be to go with D.C. generation. You can store D.C. electricity in batteries which means you can generate the electricity when it is convenient for you and use as needed, inverting it to A.C. where needed. Today's inverters are inexpensive and bulletproof. Plus, they give cleaner electricity than you can buy from the

grid and they are not cycle sensitive. All this means that you have good surge (start up) capabilities and you can use standard 120Volt A.C. efficient appliances, along with the luxury of operating sensitive equipment like a computer without worry. But the reality is many appliances and shop tools use 240 volts A.C. that most inverters are not capable of.

Another option is to use a standard 120/240 Volt A.C. generator to operate those appliances or shop equipment such as air compressors, saws, grinders and welders, while using your inverter's battery charger capabilities. This is what SteamGen recommends and this is how we live. We have found that low voltage D.C. appliances are extremely expensive, as much as 10 times more than same appliances in standard 120V.A.C. Spend the money on a good solar, inverter battery system; with a diesel or steam engine powered generator as back up and to power the big shop equipment.

SteamGen does not carry items like inverters and batteries. We have found that a person is better off buying these on their own from experts in these fields who can supply adequate support and promise a good price. RV Solar Electric Inc.®14415 N. 73rd Street Scottsdale, AZ 85260 E-mail: rvse@mindspring.com Telephone: (480) 443 – 8520 Toll free: 1 - 800 - 999 – 8520 http://www.rvsolarelectric. We recommend that you spend your battery money on a forklift battery @ Bulldog Battery Corporation: industrial batteries, electric vehicle batteries, battery chargers, forklift batteries. P.O. Box 766, Wabash, Indiana USA 46992 219-563-0551 or toll free 800-443-3492. A golf cart battery will only give you at best 5 years life. A Bulldog forklift battery has a replacement warrantee for 5 years. Is pro-rated warrantee for 20. That's a 25 years warrantee for a battery that is made to deep cycle every day with very heavy use. A Bulldog battery will cost you about $1/amp-hr. In 25 years you will replace those golf cart batteries 5-6 times. Do the math. A forklift battery is very cost effective over time.

· Common Sense...

First of all, any form of alternate energy is going to require various amounts of your time and attention. Buying from the electric company means they do all the material handling of the energy and you turn on the switch. Many people strive to achieve total freedom in their lives. Remember, you are not free until you are self-sufficient. Period. Since freedom is not free, be prepared to spend money, serious money, on your energy production and of course, be prepared to break a sweat now and then. Generally speaking, the less 'automatic' and more labor intensive your resource handling is, the cheaper it will be. You will have to decide for yourself just how far you want to go and how much you will spend to get there. With all that said, consider now the different forms of resource conversion systems (energy production or generation). Steam, as with other forms of alternate energy has its application. Where steam is cost effective over other common systems is in an application that requires large quantities of controllable, useable heat. Common applications include:

· Wood kilns and wood bending
· Food processing and refining, i.e.: cooking, canning, making of vegetable byproducts
· Chemical refining such as the conversion of coal to alcohols, etc.
· Heating of dwellings and commercial buildings

These are just a few ways that a person could actually make quite a profit from a steam system.
All this of course requires also a certain amount of capital investment and this is another area that steam has an edge.

- A small steam system of up to 5,000 watts will cost $3-$5/watt. A system of 10-20,000 watts will cost $2-$3/watt. Larger systems are $1 or less per watt. *And*, good quality, used equipment costs much, much less! Compare that with solar cells ($9/watt) and wind ($2-$4/watt)
- The fuel cost to use a diesel generator for 5 years will pay for that $25,000 steam engine generator.

FINAL NOTE-

Get educated! The best source of information is to go to a local steam show.