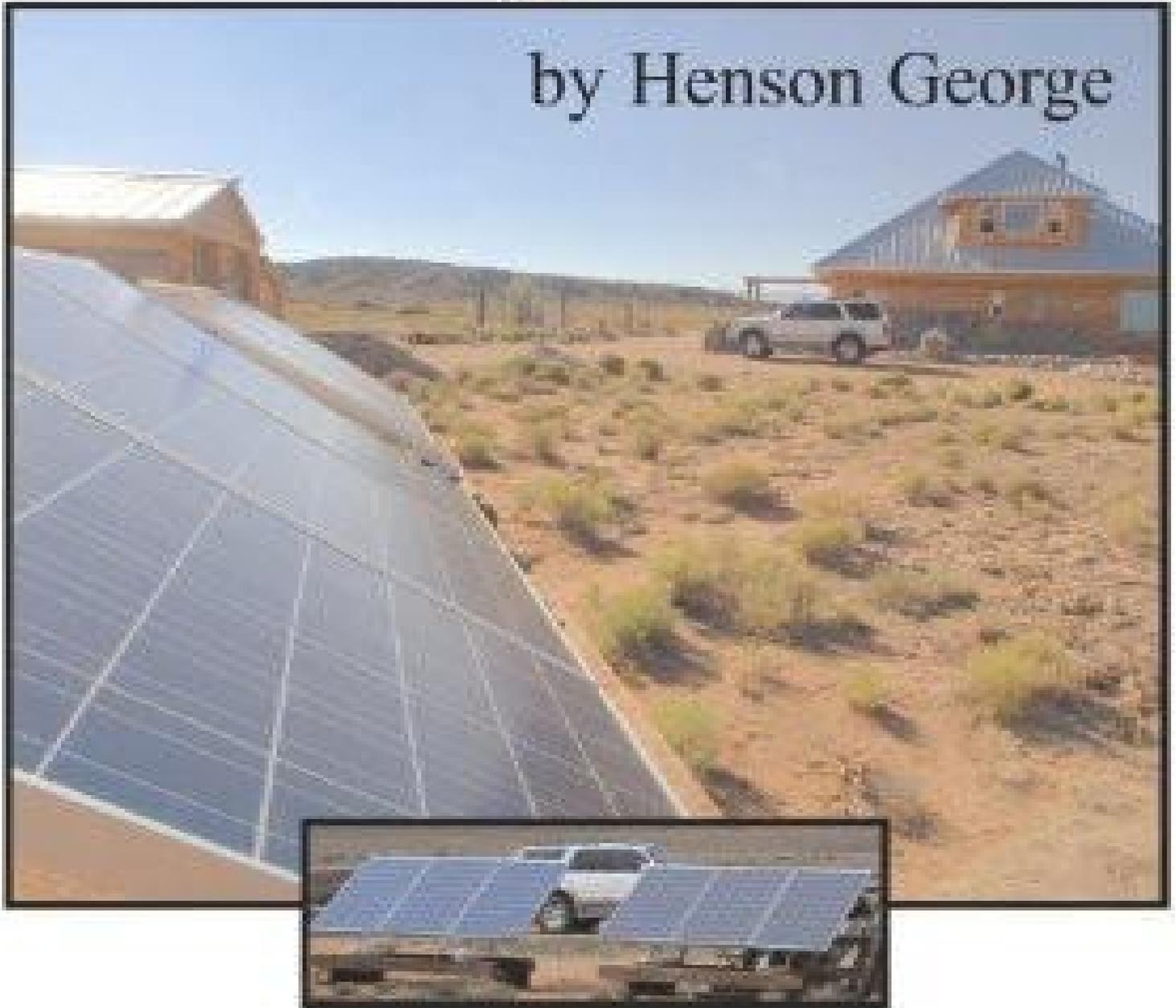


Why I Built my Solar Home Off the Grid

by Henson George



21st Century Self-Reliance:
A Survival Preparation Anthology

Why I Built my Solar Home Off the Grid

From the Anthology

21st Century Self Reliance: A Survival Preparation

By

Henson George

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Preface

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WHY BUILD OR BUY OFF GRID?

Freedom

“Freedom from what?” you might ask. Freedom from RELIANCE on municipal, county, state and federal governments to provide essential utilities and services, including water, power, sewer, and even food and protection. It is my contention that the necessities most Americans rely on and rarely consider to be vulnerable could easily be interrupted or eliminated completely. With the great frequency and severity of natural disasters, potential terror attacks, an aging infrastructure, paralyzed, uncooperative government, not to mention a failing economic system worldwide, it becomes imperative that we each begin to take steps toward becoming more self-reliant and less dependent on the rhetoric from Washington. With today’s technology we can individually acquire most of these necessities without assistance from the establishment. When the power goes out, the water goes bad or the garbage-men go on strike, a person living off the grid is not subject to the same inconvenience, distress and anxiety as a mainstream customer. They are not left in a position of vulnerability or danger. The off-grid person’s world does not come to a standstill every time the electrical/industrial infrastructure breaks down. Living free from the umbilical of the mainstream system gives a person freedom and self-reliance, making him/her almost impervious to the whims of other providers and governments; untouched and unfettered by constraints, regulations, and costs of living tied to the grid. Well maybe not all the whims!

I live in southern Colorado beneath four, 14 thousand foot peaks which act as my sole and pristine water source. My power is generated from six, 225 watt solar photo voltaic panels, which convert the sun’s rays directly into electricity. This direct current (DC) power is then taken through a Maximum Power Point Tracking charge controller to control and regulate the charge of electricity into the battery bank. By monitoring my state of charge through this device I can keep my battery bank in optimal health without over charging or depleting the bank to dangerous levels. I use eight L-16 batteries which store and provide 19.5 kilowatt hours of power when the sun doesn’t shine, and which require minimal maintenance about every third month. In the last 11 months I have not had to recharge my batteries one time with an external generator. This DC (direct current) power from the batteries is then pushed and converted into AC (alternating current) by means of a pure sine wave inverter. From the inverter the power is fed into the home through an electrical panel which distributes the electricity throughout the home exactly like it does for an on-grid home.

This charge then seamlessly powers my entire home, including refrigerator, microwave, hairdryers, lights, computers, internet access, television, washer, dryer, on demand hot water heater as well as all my other electrical devices.

My system is designed to provide about 6.7 kilowatt hours of electricity per day. This has proved to be more than enough power for 2 people living at 8000 feet in the Rocky Mountains of Colorado.

If you look at your electric bill it will tell you what your kilowatt hours of usage are for the month. Divide that number by 30.5 and you have a kilowatt hour usage average per day. My system cost just around \$10,000 including the small building that houses the batteries and inverter / charge controller. Obviously I have to amortize that cost over 20 years to get a realistic cost for living off the grid but this cost is a marginal cost and less noticeable when building your home. When amortized

over 20 years this works out to \$41.67 per month, \$10.42 per week or a \$1.49 per day. My power station is located about 75 feet away from my house so there was a lot of wire and electrical conduit expense that I could have avoided if I had built it closer by. My next micro off-grid self-sufficient home will have all of this incorporated into the house itself including the garage and greenhouse. Live and learn.

Most of my friends live on-grid without the benefit of solar photo voltaic panels. The sun that strikes their homes each day is totally unutilized, unnoticed and unappreciated. After living off the sun's rays for just a short while you will be converted, or should I say inverted into a solar panel advocate. Solar living is a wonderful experience and you can shortly feel the difference from fossil fuels. You can actually feel they are cleaner. Less polluting! More animal friendly! Living off the power of the sun is clean and fresh. And seriously it is noticeable. It doesn't take long to appreciate the electrical expense saved each month and how it makes a noticeable difference in the pocketbook not to mention the reduction in greenhouse gases one emits. I will make both of these issues plain and apparent in another page or two. Burning power each day all day without having to pay this expense spoils a person and makes them highly resistant to ever paying another electric bill again. A novel idea using the sun's rays to actually power a home with all the necessary electricity needed for normal life is operationally no different than my friends who are attached to the national grid. Electric bills, gas bills, sewer bills, trash collection bills reduce the FREEDOM for most of us. I prefer to be FREE and self-reliant using renewable power resources, reducing my carbon footprint instead of increasing it, living more independently. I prefer greater self-sufficiency, and being more prepared for political or economic disruptions, natural disasters, or infrastructure breakdowns. Mankind was able to live for thousands of years without destroying his environment and yet in the last 200 years we have exploited the planet to a point of no return. We have reached a number of tipping points. Solar power enables and empowers us to recapture part of the legacy of the ancients.

Do we really need over 600 coal fired power plants, 104 nuclear power plants, and 493 natural gas plants in the United States? I am not using any of the electricity generated from any of these sources. I don't need them. All of my power is star power. Not insignificantly, my solar system contributes zero greenhouse gases to the environment! It is nearly 9pm now and dark for the last 12 hours. I have been on the computer and internet since early this morning as well as burning power for lights, television, refrigeration among other electrical expenditures and I still have a state of charge (SOC) of 96% in my battery bank.

Unfortunately most of us would not know really how to live off the grid if we had to. If anything happened suddenly most people would be desperate. Living off-grid has become unknown to the majority of us living in the U.S. and is actually a fairly recent phenomenon. Two hundred years ago the grid did not exist and everyone knew how to take care of themselves without assistance. How many of us today know how to grow crops? How about hunt, clean, and preserve wild game? Raise livestock? Gather berries and other edibles? Who knows how to do this anymore? Luckily I can still buy food at the local grocery store. I could probably kill an elk if I had to, catch small game and maybe grow a potato or two. This is not the position that I want to be in. If anything disrupts our power, water or food supplies people will become desperate. How many of us could actually take care of ourselves and our families? My FREEDOM has not quite encompassed the food issue yet but I am planning an aquaponic system under a geodesic dome in my backyard as a beginning.

I keep the house warm with wood that I burn in a contra-flow masonry heater. This I designed and built myself and if you are interested this subject matter is contained in another eBook in the anthology "21st Century Self Reliance". I do use propane that I store underground in a 500 gallon tank.

that powers my clothes dryer, stove, on-demand hot water heater and a couple of small wall heaters for extra cold mornings. ~~Everything else is electric and powered by the sun.~~ Eventually my preference will be to eliminate the necessity of burning propane as well.

When I was younger I had the forethought (amazingly enough) to work and save my money. I did make a few good investments in my youth which enabled me to pay off my former "on-grid" home and sell it for more than twice what I purchased and fixed it up for. This coupled with learning how to manage my money (another eBook in the "21st Century Self Reliance" anthology) and actually earning a decent return has allowed me to build my off-grid home and pay for it along the way so that I am currently debt free without a mortgage and only a few small bills due each month. This is true FREEDOM from worry, want, anxiety, dependence, and reliance on anyone or anything other than myself. I don't live like a hermit. I am on the internet all day long and usually watch TV in the evenings and weekends. My clothes are washed and dried right here in my home with an electric washer and electric/propane dryer. My food is kept cold in a modern large energy star refrigerator. We have a micro wave as well as conventional oven for cooking our food. Our water is heated from an "on-demand" hot water heater so I am NOT constantly heating water 24/7. If you didn't know it was "on-demand" you would not be able to tell the difference from a traditional hot water tank heater. My lights all turn on every time we need them although we do use compact florescent bulbs as well as surge strips so that all devices can be shut off completely when not in use.

I recently saw a picture of a woman living off-grid washing her clothes in a bucket with a stick. NOT NECESSARY. I live no differently than I lived in my last house (on-grid). The only difference is the sun light powers my home and I have no monthly bills. I live in an area where the sun shines 330 days a year. I finished my power station 11 months ago and have NOT had to charge my batteries ONCE with a generator since it was built. This is FREEDOM. My engineering friend who lives up on the mountain told me that I might have to charge my batteries every once in a while when the sun doesn't shine for several days in a row. This HASN'T HAPPENED in 11 months. The sun almost always shines at least part of the day here. Life is good. It was snowing this morning and now the sun is shining. It is currently 3:19 pm and my battery bank "state of charge" is 97%; a reading from my Maximum Power Point Tracking charge controller. In the winter when it is cold the electricity generation is even greater than when it is warm. Cold temperature and equal sun means more power.

Security

Let's see. Hurricane Sandy just roared through the northeast and wiped out a lot of people including homes and businesses. I don't know the exact number but it seems as though there were a number of states that were deprived of power for a number of weeks. A recent article in the National Geographic about billion dollar storms indicated that the severity and frequency of these kinds of storms is on the rise. How does it go again? Let's see. "There is no such thing as global warming" This line of rhetoric is becoming so annoying and yet so standard and expected. Take a look at the pictures of glaciers and the following chart of carbon dioxide levels in our atmosphere.



Photo #1



Photo #2

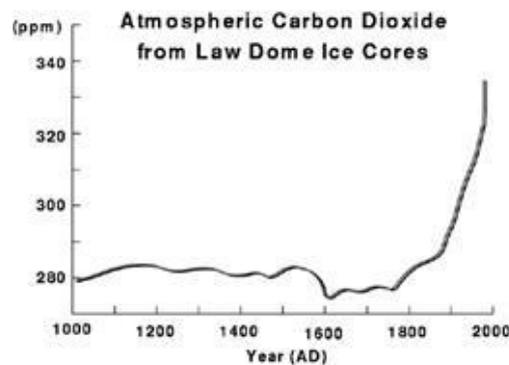


Photo #3

This graph shows carbon dioxide levels measured from the DE 08 ice core taken from the summit of Law Dome, Antarctica. This data was measured by Dr. T.H. Jacka from the Glaciology Program at the Antarctic Cooperative Research Center and Australian Antarctic Division.

I do not have a PhD behind my name and yet I can see a distinct correlation here. Ice melting all over the planet and that steep increase in carbon dioxide in the atmosphere around the beginning of the industrial age, can this be purely coincidence? The only security that I can depend on is that which I create myself. My faith in my government is waning fast. Don't get me wrong I would still rather live in the U.S. than anywhere else, but I can still take proactive steps to plan for and prepare for a number of different scenarios which could impact my life, livelihood, family, food supply, water supply, power supply, connection to news, etc. SECURITY is a real issue these days. I sleep better knowing that my water, food, power and shelter are not dependent on anyone or any entity. If there ever is a power surge or blackout anywhere or everywhere at any time I am not affected. I am listening to Acoustic Alchemy over my internet connection at present and have been for the last 6 hours as well as writing this eBook since early this morning. It is currently 6:40 pm and my "state of charge" monitored by my MPPT (maximum power point tracking) charge controller is still at 97%. I am secure and comfortable.

If anything happens such as natural disaster, terror attack, solar storm or fiscal cliff the world may go to hell in a hand basket and guess what? I remain secure, safe and comfortable in my little abode up on the hill. My electricity, connection to the world and the mere basic conveniences of life have not been cut off. The worry and anxiety of a short or prolonged curtailment of power does not in any way arouse the slightest emotional output or expenditure from me. Survival preparation is a prudent lifestyle to adopt and pursue. I have to stop and thank all the people who have helped me get to the position I am currently in. I don't have all the questions answered but I am well on my way. Insurance, albeit costly is an expensive proposition which, when needed, is a necessity worth every penny. My off-grid SECURITY system or "insurance plan" is provided by the sun, my well, my rain water capture system and soon to be hydroponic greenhouse and aquaponic food source. It is not difficult to define in dollar terms what this security is worth or that its "premium" is well worth the tradeoff.

Savings

The cost of power or electricity is an issue that becomes more noticeable with each passing month. According to the U.S. Department of Energy in 2008, the average annual electricity consumption for a U.S. household was 11,040 kilowatt hours or 920 KWHs' per month. At an average of \$.12 per KWH across the U.S. this cost equates to \$110.40 per month or \$1,324.80 per year. If you invest \$110.40 at 4% over a 30 year period this would equate to \$76,878.46, or \$111,452.95 at 6%, or \$165,632.59 at 8%, or a whopping \$2,579,032.51 at 20%. Outrageous isn't it. This is the future value of an annuity (payment made each month) just like your electric bill. Twenty percent interest annualized is what I earned on my capital over the last 6 months (July 2012 to Dec 2012) and I will be happy to teach anyone interested how to do this. "How to build your Wealth Selling Derivatives" is my latest in the anthology "21st Century Self Reliance". If anyone would like to check these figures here is a link to an annuity calculator: <http://www.free-online-calculator-use.com/future-value-annuity-calculator.html> I just checked the latest data for the average U.S. household electrical usage and it is going up. As of 2010 the average electrical usage per U.S. household per month is now 950 KWH, or 11,496 KWH per year. So the numbers become even more convincing each year we plod into the future. I looked for an average updated cost per KWH but could not find one from the Department of Energy, but did find information from "Mr. Electricity" at <http://michaelbluejay.com/electricity/cost.html>. Prices per KWH vary anywhere from 12 cents to 50 cents across the U.S. from the same electrical provider.

This is a scary proposition and only getting worse. Not having bills each month for electricity, water, sewer and trash make life a lot less expensive. Admittedly the costs of my well, solar panels, batteries, charge controller, inverter and septic system all have to be amortized over the life of the equipment, but I paid for all this stuff when building the house. I didn't really even notice the marginal expenditure for the equipment when the outlay was made and since I did all the construction myself, I saved the money or profit the contractor would have made. My total cost for the power station was less than \$10,000. Again this is a 1350 watt, 6.7 KWH, 120 / 240 volt system. It provides 19.5 KWH battery capacity which provides us with more power than we can use. Amortized over 20 years is \$41.67 per month or \$10.42 per week or \$1.49 per day. Our 245 foot deep water well also costs in the neighborhood of \$10,000 amortized over 20 years would be the same. This could last forever though so who knows what ultimately the cost might be. My septic system was just about \$2500 and this if properly maintained should last forever. Again, this amortized conservatively at 20 years runs us \$10.42 per month or .35 per day.

My house is also a hoot to live in. I have a view that is difficult to describe. Mount Blanca (the highest peak in Colorado along with 3 other 14'ers) is 3 miles to the north. The Great Sand Dunes National Park and Preserve is around the Blanca massif about 15 miles north. The Rio Grande River runs to the west of me about 15 miles out. My view to the south stretches for over 100 miles following the longest mountain range in the United States into the horizon. These are the Sangre de Cristo's. They are gorgeous. To the west I gaze out about 100 miles and scan the continental divide for a stretch of at least 80 miles. Living off-grid allows a person such as me to live where the telephone and utility lines don't reach and thank God they don't. But alas I digress. Back to the story about why I live off-grid.

Living Greener

Living greener today is something that motivates a lot of people including me. If I can somehow reduce my carbon footprint on this earth and reduce the amount of carbon dioxide in the atmosphere by only one person, then that is one person less than there was before. Perhaps when enough people commit to a cleaner lifestyle eventually governments and businesses worldwide will adopt a similar philosophy and practice. Things may start to change exponentially and we may start to see some results in the next 50 years. I will be lucky to be around then but the kids of today, I am sure will appreciate whatever effort I make. Here are a few statistics: China surpassed America as the leading contributor to harmful carbon dioxide levels as a country in 2007. China was responsible, as a country, for contributing 6017.69 million metric tons of CO₂ while America was responsible for 5902.75 million metric tons. Unfortunately if you look at carbon emissions on a per capita basis Americans are still in the lead by a significant margin. The average American is responsible for 19 tons of carbon dioxide per year while the average person from China is responsible for only 4.6 tons per year.

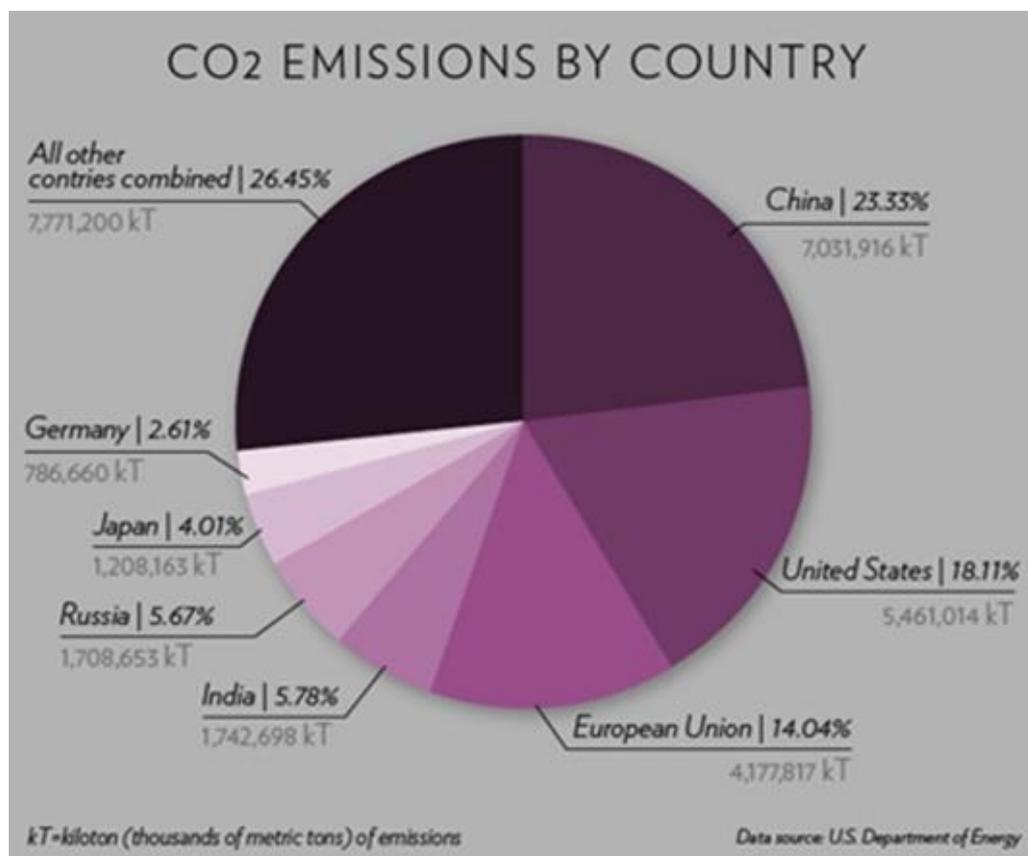


Photo #4

Photo #5 is a representation of just one metric ton of CO₂. That is a person standing in front of that balloon.



Photo #5

Photo #6 shows the CO2 emissions for both China and the U.S. from 1850 through 2002. It is interesting to note that the rate of increase is getting steeper for China. Also only 6% of Chinese people own automobiles. On the other hand 89% of American households own a car. Can you imagine when the Chinese catch up with us what this graph will look like?

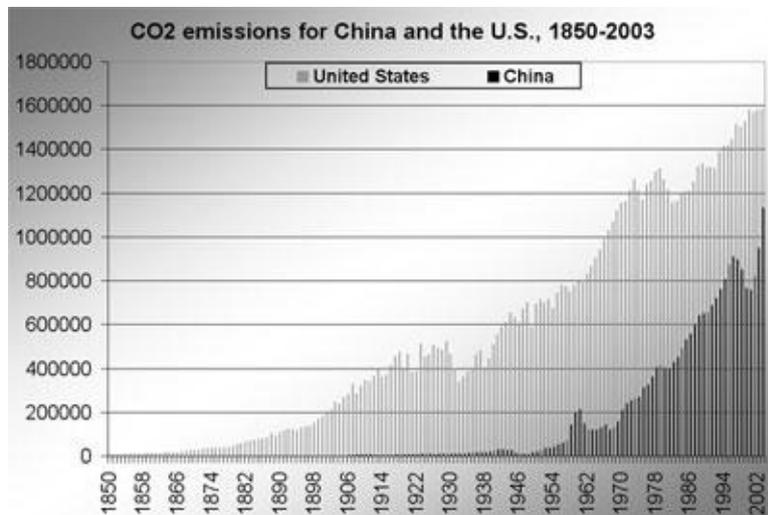


Photo #6

Coal

By moving off-grid and powering our homes with clean renewable sources of energy we reduce the amount of power currently produced from coal fired power plants, nuclear plants, natural gas reserves and hydro-electric plants. Coal plants are responsible for 57 percent of the electricity generated in the United States today, as well as 93 percent of the sulfur dioxide and 80 percent of the nitrogen oxides in our atmosphere. Coal also contributes 73 percent of the carbon dioxide emitted from electricity generators and is a major contributor to the airborne emissions of mercury. The mining and extraction of coal is also a major problem for our environment. Most coal from the west is removed from the earth by strip mining, which contaminates soils with heavy metals and destroys near-surface aquifers.

I live in southern Colorado and frequently drive to northern Colorado where my parents, both in their 90's, reside. I pass at least 2 coal fired power plants along I-25 during this trip. These plants run 24/7/365 burning train load after train load of coal coming from Wyoming, Montana and beyond. When watching these trains with hundreds of train car loads of coal, one after the other, day after day, month after month, and year after year, it is difficult to imagine the rape of the earth and the discharge of CO₂ when burned in these plants every day. We have the technology to change this. I am living proof. I have been on the internet all day and the TV is on currently. The washer and dryer did at least one cycle of clothes today. PV panels can be purchased today for .79 per watt and less. They used to be in the 10 dollar range. I bought mine 10 months ago and paid \$1.50 per watt.

Natural Gas

Natural Gas although not as dirty or harmful to the environment as the burning of coal is still a fossil fuel and does emit large amounts of carbon dioxide as well as carbon monoxide, sulfur dioxide, nitrogen oxide, and other particulates. Moreover the extraction of natural gas from the environment has been very controversial as of late with the current fracking technology that is being implemented. I personally have seen whole neighborhoods in the Fort Worth, Texas area abandoned and all of the trees dead from benzene and other harmful contaminants used in the fracking process. See chart below for contaminant levels. It is amusing that politicians seem to conveniently non acknowledge this kind of event.

Here in Colorado, water is a huge issue especially as the natural gas frackers are moving in and competing for the resource. There is a group trying to force a moratorium on fracking in Colorado. I support this measure. Photo #7 shows the pollutants from fossil fuel emissions.

Fossil Fuel Emission Levels
(pounds per billion BTU of energy input)

| Air Pollutant | Natural Gas | Oil | Coal |
|----------------------|--------------------|------------|-------------|
| Carbon dioxide | 120,000 | 160,000 | 210,000 |
| Carbon monoxide | 40 | 33 | 210 |
| Nitrogen oxides | 92 | 450 | 460 |
| Sulfur dioxide | 1 | 1,100 | 2,600 |
| Particulates | 7 | 84 | 2,700 |
| Mercury | 0.000 | 0.007 | 0.016 |

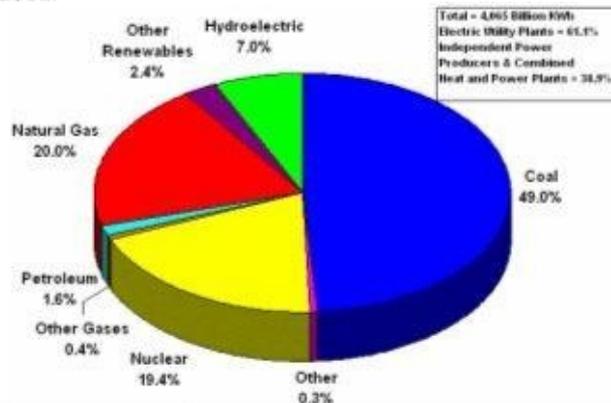
Photo #7

Nuclear Power

Nuclear energy is purported as safe and cheap. Unfortunately neither is really the case. Although it requires very little fuel (U-235 and U-238) to generate a lot of steam to turn turbines which in turn generate electricity, the plants themselves are very expensive to build. The reason...because nuclear accidents can become major disasters. Three Mile Island, Chernobyl as well as the Fukushima Daiichi plant recently. Although not much waste is produced, it is very dangerous and must be contained, stored and buried for many thousands of years. The waste must be secured from earthquakes, floods, terrorist attacks, and other unknown threats. Have you heard of the Hanford site in the state of Washington? This is one of the sites the United States uses for the storage of nuclear waste. If you have not read or heard anything about it please Google it and get up to date. This is scary stuff. Nuclear waste is a real issue and unfortunately no one has come up with a suitable solution to this problem. Currently there are 65 commercially operated nuclear power plants with 103 nuclear reactors in 31 states around the United States. Combined they contribute around 20 percent of the electricity used since 1991. Moreover the costs associated with building these plants continues to go up every year unlike solar costs, which continue to go down.

Solar energy from photo voltaics, concentrated photo voltaics, solar hot water generating panels and concentrated solar reflecting mirrors that heat water or other fluids which power steam turbines contribute ZERO emissions into the environment. Guess how many emissions wind generators contribute? ZERO again. What about geo thermal energy the most abundant energy source on the planet? You're right ZERO! The following is a pie chart of energy generation from its source as of 2006 in the United States.

Figure ES 1. U.S. Electric Power Industry Net Generation, 2006



Sources: Energy Information Administration, Form EIA-906, "Power Plant Report;" and Form EIA-920 "Combined Heat and Power Plant Report."

Photo #8

With temperatures on the rise no wonder ski ticket sales are on the decline. A few other consequences could include evaporating polar caps, rising sea levels, dying coral reefs, drought resulting in higher milk, beef and commodity prices, and starvation in 3rd world nations. Storm severity and frequency, bark beetles laying waste to forests around the globe, infectious diseases such as malaria and cholera on the rise can also be attributed to rising temperatures. Worst of all on our planet's wildlife is in jeopardy. God only knows what other ramifications there are.

The following photos #9 and #10 speak for themselves. I guess we as a species will only respond when hit in the face with a brick to use an analogy. There are still people arguing about the reality of

global warming and what might be the cause. I am 59 years young but cannot even begin to influence my congress or president. The only way change will come to Washington is for a majority of people to stand together united and force our elected officials to take action.

I moved off-grid in 2006 and continue to this day to improve my self-reliance and ability to function without the establishment's support. I pray that soon other people will begin to help in this endeavor. I can barely get anyone to read this and my other books on self-reliance when I give it to them for FREE.



Photo #9

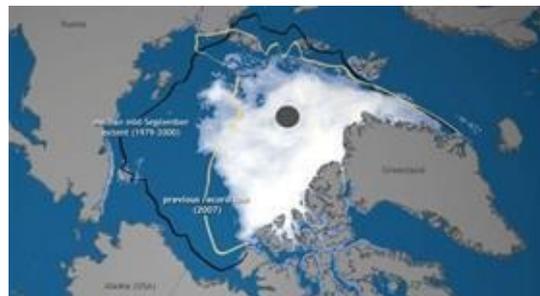


Photo #10

This is a rather pathetic illustration of not only our lack of responsibility but also our denial and indifference toward changing the status quo. Our inability to admit we are wrong, that we made a mistake, possibly lots of them is leading us down a path of disaster. We as a species are selfish, myopic, and seemingly void of logic, and reason. Short term profits have overshadowed all of our common sense. It seems we are more interested in making a buck than we are of taking care of our home and our children. The truly sad part of these photographs is that these effects cannot be remedied overnight. This took a century or two to create. It will take at least that long to remedy.

Why Survival Preparation Makes Sense

Well let's see. If reducing your carbon footprint, saving enough money to retire handsomely, living with greater safety, security and independence is not argument enough for living off-grid, and becoming more self-reliant, then what about preparing for a time that could get really ugly, desperate and dangerous. We can argue over the potential occurrence of a ground moving (SHTF) (TEOTWAWKI) moment occurring, its degree and duration, but considering everything, even a 10% chance is worth some kind of preparation. If you have never seen the above two acronyms before Google them and you may become one of us.

Whether from a religious extremist group, natural disaster, aging infrastructure, economic collapse or just our inability to manage our own affairs is not reason enough for you to prepare for your own survival, viability, and longevity, then I will try to convince you otherwise in the next few paragraphs if I haven't so far.

There are number of perfect storm type events occurring politically, economically, socially, morally, and ethically at the moment. Some would argue that events are pointing directly toward some sort of catharsis occurring sometime in the near future. It is my contention that living a more frugal, self-sustaining, eco-friendly and self-reliant life style is not only prudent but a necessity. I believe that if things don't change quickly it will be too late. Through the few arguments I pose in this writing, sufficient evidence warrants at least a cursory examination of your preparation. Perhaps a small hedge of your position would be advisable. Begin small and slow, work your way to greater independence and self-reliance. Most of us understand, albeit reluctantly, that insurance is a necessary evil we all must pay so that if and when disaster strikes we are not wiped out. "Be Prepared" is the Boy Scout's motto.

If the system or any part of it breaks, how long can you survive without water, food or power? Not long! There are over 7 billion people on this planet presently. There were only 3 billion in 1960. Can you imagine all of them hungry and thirsty?

On the Brink of Financial Disaster

Our gross domestic product (GDP) in the United States is 15 ½ trillion dollars per year. That is the total of goods and services produced by every American working for an entire year. The GDP for the planet is around 70 trillion dollars per year. Now get this: The nine largest banks on the planet have \$228 trillion in derivative's exposure with only a fraction of that in reserve to cover any losses. This is known as fractional reserve banking. Remember in 2008 when Bear Stearns followed by Lehman Brothers, AIG, Merrill Lynch and others went belly up or were saved at the last minute by the government? The 700 billion TARP (troubled asset relief program) was created to prevent what some described as an economic meltdown or collapse within hours without direct financial assistance from the government. Most recently MF Global in late 2011 and PFG Best in early 2012 went belly up. These two companies did not just make poor financial decisions, but many people suspect criminal malfeasance.

In a zero interest rate environment banks, brokerage firms, insurance companies, pension funds, money market funds, large corporations, and even state and local governments need investment alternatives. Can you begin to see the scope of this problem? With the promise of an unregulated derivative market to earn a decent return, everyone has flocked to these opportunities. Unfortunately like the failures before many more bad bets will be made in the future. JP Morgan's Jamie Dimon not long ago was explaining to Congress his bank's "modeling errors" which resulted in a 2 billion dollar loss. This actually turned into a 9 billion dollar loss when all was said and done. With more than 22 trillion in derivative exposure and only a fraction of reserves to back those bets it does not require genius to see that collapse is inevitable. When this happens where do you want to be and what state of readiness do you want to be in?

No one today has the incentive to do anything right. I guess in today's world earning a return for your shareholders is the only important and moral activity. Our congressional representatives are elected by votes purchased for future favors. Why would a person earning millions go to work for a couple hundred thousand? Sounds ridiculous, doesn't it? This is my point. Our problem is "systemic". It is system wide. It is corrupt from the very core. Our money supply is regulated and managed by a private bank that charges interest for its use and is in the business of earning a return for its shareholders. This entity, if you don't know, is called the "federal reserve." The fed and the other central banks around the world have contrived to usurp the real power and control the strings of world markets and political regimes. It is their design to pocket the profits and leave the world's population in their wake. They themselves have become so greedy that they have, through the use of derivative speculation, over extended even their own ability to repay such a highly leveraged position. The only prudent thing to do, at this point, is prepare for economic meltdown. This is the MOST real and ominous reason for preparation and becoming self-reliant in the 21st century. I can think of no other force so pernicious, pervasive, and impenetrable. Prepare for the worst. This is the paramount reason for becoming self-reliant in the 21st century. We Americans have been brought to the brink. We have been lied to, stolen from, killed, raped, and laughed at. Becoming self-reliant is not an option as much as it is a necessity.

Here is a picture of what a trillion dollars looks like
http://demonocracy.info/infographics/usa/derivatives/bank_exposure.html

For those of you who cannot access this at the moment, think of a 4 by 4 foot pallet of 100 doll

bills stacked 5 feet tall. This is 100 million dollars and requires 3500 Americans to work for one year to make this sum. If you can imagine 99 more pallets full of money stacked one on top of the other would reach a height of 465 feet; taller than most skyscrapers. This equals 10 billion dollars. Now you can imagine 100 of these 465 foot stacks of dollars you can visualize one trillion dollars. This outrageous stuff.

In January of 2007 a 90 day Treasury Bill was paying 5.11%. In January 2012 a 90 day Treasury Bill was paying 0.03%. This is for all intents and purposes equal to zero. ZIRP or zero interest rate policy is, as we all know, regulated by Mr. Bernanke our “federal reserve” chairman. This policy is “protect a fragile, recovering economic system.” Unfortunately with the feds purchase of toxic assets (mortgage backed securities, et.al) and the issuance of more “federal reserve” notes (QE 1, 2, 3 infinity) the problem is only exacerbated. ZIRP moreover makes it impossible for anyone to earn a return except in very risky derivative markets.

The average American in 2010 made \$26,364. John Corzine bankrupted MF Global and in the process lost 1.6 billion of customer funds in Oct. 2011 and still walks around a free man. His stewardship, after investing heavily in European debt from sovereign nations like Italy, Spain, Portugal, Belgium, and Ireland, has proven to be something other than adequate several times in his career. Mr. Corzine in the meantime has contributed substantially to a number of political campaigns in the Democratic Party. (I am neither a Democrat nor a Republican.) I can hear what you’re thinking and you are correct. I do not have any confidence or respect for most of my political leaders. In fact when someone spends 50 million dollars of personal money to take a position that pays less than \$200,000 I become doubtful of their motives. Mr. Corzine is just one example of the corrupt nature of our political system. We are being lied to and taken advantage of. As one of my mentors says, “There is no rule of law any longer in the United States”.

Do you remember when Martha Stewart was jailed for her part in an insider trading deal? Are you also aware that it is illegal for any American to participate in profiting from insider information all except for members of Congress and their staff? This has been going on for some time. Mr. Obama said within the last couple of years he would sign a bill to prevent this in the future. The bill still has not been brought before Congress.

The time has come to stop listening to the rhetoric, to expose the abuse, and to unite all Americans and take back our country, and to truly “preserve, protect and defend” our Constitution. At the very least to prepare and become more self-reliant by securing our own water source, power source, food source, et.al. It is not difficult to begin taking positive steps towards greater self-reliance and a reduced dependence on our government and the men and women that control it. Solar panels are cheap and getting cheaper. Today you can purchase photo voltaic solar panels for as little as .69 cents per watt.

These are the reasons I have moved off grid and plan on staying that way for the rest of my life.

Thanks for reading. I have several other practical books on building your own home and setting up a more self-reliant, greener, and less dependent, existence in my anthology “21st Century Self-Reliance.” Below is a photo of my solar off-grid home sitting just below 8000 feet above sea level in Southern Colorado. The solar system provides 1350 watts of electricity and is both 120 and 240 volt. I have not run out of power in 12 months since installing this system nor have I had to recharge my battery bank one time with a generator. We receive 330 days of sunshine a year.



sample content of Why I Built my Solar Home Off the Grid (21st Century Self Reliance: A Survival Preparation Book 5)

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