Subject: The best opportunities for electricity of any kind for survivors, what this setup will entail
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It's now time to put it all together into an integrated look at the future and what it possibly could look like electrically for the common family after a PS.

The concept of having and using Micro power - A typical person in today's civilization uses in the 10's of KiloWattHours/day, after the PS one will be lucky to be able to generate one thousand times less or in the 10s of watts/day per person. Expect to not use curler irons, irons, Coffee makers, toasters, dishwasher, cloths dryer, electric heaters, air-conditioning, hot plate, blow dryers, popcorn poppers, cooking with electricity, and high powered tools.

Power after the pole shift will mostly take two forms 12 Volt DC and 115 Volt AC. 12 volt batteries will be used for storage and 115 volt AC for use of some items that won't run directly on 12 volts. A DC to AC inverter will be used to convert form 12 Volts DC to 115 AC when needed. Plan on having several inverters each with a different power rating. Use the one with the lowest rating that will work at the time. This saves power usage. The ones with lower power ratings draw lower amounts of current when idling (not in use but turned on) than the higher power unit.

After the PS the use of existing 12 Volt car batteries for some will be the only thing available. When preparing before a PS select and purchase 6 large 2 volt cells and wire them in series to produce 12 volts. For portable batteries use AAA through D size rechargeable NI-MH or NI-CAD. NI-CAD holds less but has a slower internal leakage so it will stay charged up longer. NI-CADs can be use in clocks and things that don't use much current over time.

Gasoline or diesel generators will be used until the fuel runs out. These will be used to charge batteries for a while. Gas generator power output should be matched to the maximum charging rate of the battery bank to minimize run time and save fuel, target to only need to run it maybe once every week or two.

Charging batteries and generating power over the long term will be by using, windmill wind power (such as AirX or Arogen6 that sells for about $1000 tower included), Micro Hydro power (value of which should not be under estimated), hand cranking battery powered portable drill generators, water powered portable drill generators, and bicycle powered portable drill generators.

Water pump induction motor as AC generators and micro hydro power can actually produce 115 Volts AC. AC is easer to step up to a higher voltage to allow it to be piped over a longer distance than DC. For implementing see "Pumps as Turbines A user's guide" by Arthur Williams and "Motors as Generators for Micro-Hydro Power" by Nigel Smith for how to do this.

Because of the low amount of available power one will shift to task lighting being the most important. The charging of two way radios for local and distant communication being second in importance. Occasion laptop computer use to look up needed information as third in importance. Super energy efficient small refrigerators and freezers are a better more efficient choice than peltier junction coolers and could also be a third choice. Providing a low power source of music may be considered a forth priority by some and an unneeded luxury by others (using car stereo CD players or personal Juke box with battery powered external audio amp). Battery operated TV using DVD or tapes would be another luxury for occasional short term use.

Depending on power availably growing lights and water distillation is right up there in priority. These take a lot of power that most will not have. Sodium vapor with mercury vapor being second would be the most cost effective for these growing purposes. LEDs are too costly for most to use for growing and best used for task lighting where only a limited number are needed.

Task lighting is defined as just enough light directed in the needed direction to do the task at hand. This would be head lamps, flashlights, drop lights, and LED tail lights. Energy efficient LED lighting should be used if available as a best case use.

As a worst case low tech Christmas tree bulbs could be used. One can take a string of 30, 40, or 50 bulbs cut out a section and run on low voltage DC (direct current). 115 volts divided by number of bulbs in the full string gives the number of volts needed for each bulb. In this way one can match the number of bulbs to the voltage battery available. 30=3.8 volts, 40=2.8 volts, and 50=2.3 volts. This would result in needing to use 3 bulbs from the 30 string, 4 bulbs from the 40 string, and 5 bulbs from the 50 string for a 12 volt battery hook up.

Krypton and Xenon flashlight bulb are next in efficiency. Fluorescents are next with LED lighting being the most energy efficient. A LED tail light bulb can be made to use less than .5 watt on high and .005 watt on low by adding in the proper resistors in series. LED night lights are easy to make using 4 AA or 12 volts and a proper series resistor.

Amber or yellow is used to avoid bugs and for night lights. White for task lighting and reading. Red for seeing distance at night. Ultra violet for attracting bugs into a traps and for spotting fungus, bacteria, urine and other biologicals. Can be used to detect problems with skin. Green for signaling all is ok.

MikeL