

# Optimized New Alternative Energy Primer

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This paper reviews the progress in carbon alternative energy during the last four decades, since the first energy crisis appeared on the world stage in the early 1970s. In particular, it will examine promising technologies that are an order of magnitude larger in power density than solar, wind and hydro.

## 1. Introduction

Nuclear power has the high energy density all right, but its overall system energy conversion is low at about 20% when compared to combined-cycle power plant efficiencies approaching 60% and therefore add substantially to the waste heat component of global heating of the earth's surface. Since all generated electric energy-use reduces to thermal energy, it is important to keep the waste heat fraction low. It is already more than 30% of the earth's temperature rate of increase and will only become more as global energy use escalates, unless the global waste heat load to generate power is drastically reduced from being presently about 4 times the thermal load equivalent of global energy use. We can conclude that the carbon free nuclear energy advantage is overshadowed by its waste heat thermal load contribution to global warming, as well as by the thermal load of the spend fuel pools. In addition, the manpower requirement to run the nuclear power industry is more than 10 times that for operating combined cycle power plants for the same energy production.

There is however newer technology that is capable of improving or replacing today's century-old standardized electrical generation, long distance transmission and motor systems. This can be accomplished at power conversion efficiencies that are today believed to be impossible by the mainstream media and even academia, as long as they are continuing to only teach the present technology without the vision of new knowledge. The basis of the new knowledge is the realization that there is an energetic medium in interstellar and inter-matter space. This medium can be said to facilitate the propagation of light at light speed, as well as the propagation of electromagnetic and gravitational fields. With the advent of the Einstein theories the scientific community at large however dropped the concept of the ether space medium. They did not emphasize the physical scalar properties of the vacuum anymore after the misinterpreted Michel-Morrison Experiment and eventually caused the cosmologists to assume that the cosmological constant, which is the energy density of interstellar space, is very small, while the quantum theorists calculated it to be enormously high. In reality, the engineering value of it is somewhere in the middle and is surprisingly close to the old classical value of the energy density of this eighteenth and nineteenth century space fluid, called the ether. Charles Muses quotes it to be about  $1.4 \times 10^{30}$  Joules per cubic meter =  $2 \times 10^{26}$  psi [1]. This energy density is far greater than the energy density of matter and is the source of the entrained energy density for all other fields, being merely singularities in this scalar background. By exploring the matter interactions with this ether, methods to tap this energy can be developed.

## 2. Prior Work with Electric Motors and Generators

In 1975 Bob Teal of Florida received a US patent for an electric motor with a crankshaft driven by electric solenoid pistons [2]. He built many models and reported getting much more shaft horsepower output than standard industrial induction motors with the same electrical power input. In 1978 Edwin V. Gray patented a direct current high voltage motor driven by pulsed power [3]. Again here is a Motor that was claimed to deliver more horsepower than our state of the art induction motor. A more recent development is happening in the Philippines, where the Department of Energy claimed to have verified that an 11-kilowatt DC motor ran at 45% efficiency of the main power of the electric grid, but was running at 133% efficiency with the inventors system powered by a single 12-volt battery [4]. His system has capacitors, coils, a toroidal inductor, a special transistor that is high voltage spike resistant and a microcontroller. The circuit is pulsed at a few thousand Hertz, and generates harmonics in the megahertz from collapsing magnetic fields. His drive system with the DC motor ran hot. Applying similar technology to a large 3-phase AC induction motor in a present setup, eliminated the overheating of the coils in his system.

The above cannot be explained within the rules of electrical science without further analysis its basics, that very well could have escaped our attention in the past. Induction motors have been around for more than a century and their standardized design has been improved and optimized without much questioning if other motor designs can perform better. Times are changing however since energy costs are at a premium. Since the Alternate Energy Conference in Idaho in November 2010 [5], public attention has been directed to look much deeper into reducing and possibly eliminating the back EMF of induction motors that is typically 80% of the utility line voltage at their operating design speeds. Back EMF is zero at zero rpm and increases nearly linear with increasing rpm to its design value. This is manifested in the large fivefold ratio of the motor startup current when compared with the running design load current of induction motors. It implies that only 20% of the line voltage is responsible for actually generating the shaft torque. Therefore only one fifth of the applied wattage generates all the shaft horsepower and a 90 percent efficient motor is in reality not more than  $90/5 = 18\%$  efficient. Motor configurations without back EMF can be called over-unity at  $5 \times 90\% = 450\%$  efficiency with today's efficiency formula, but are in reality 90% efficient with a new efficiency formula that incorporates the zero power production of the back

EMF opposing potential, because of its zero current, into the accounting of the energy balance. That will make the term over-unity a misnomer.

The pulsed electric drives of the "over-unity" motors of Bob Teal and E.V. Gray are in principle zero back EMF motors and therefore are expected to give the much higher energy conversion efficiencies at a reduced electrical power input per shaft horsepower output. The Philippino inventor also stated that he can get 400% more power than he uses with his drive system.

Electric generators also have to overcome back EMF with their separate engine driven shafts, since their operation is also by induction. During the recent decades Zero back EMF generators have been researched in the non-induction discipline as superconducting generators and homopolar generators. Their high power generating capacity has not been widely accepted. Superconducting generators in particular have been able to show five-fold electric power output and therefore confirm their absence of back EMF.

### 3. Future Work with Electric Motors and Generators

The new technologies are designed to engage the high energy (non-matter) ether medium in new energy power cycles in hybrid chemical-electromagnetic dynamic cycles, rather than the contemporary all matter Otto cycle (car gasoline engine), Brayton cycle (jet engine), etc. It is here important to realize that the new electromagnetic, electro-gravitic and magneto-electric technologies are discarding the second law of thermodynamics for local energy conservation, that actually only applies to a closed matter system, since incorporating the dynamic non-material medium of the cosmos entails the inclusion of a medium that propagates its perturbations at the speed of light in all directions and therefore cannot be enclosed in any finite material space, for the purpose of calculating a true energy balance to satisfy the law.

The new technologies also assign more attributes to electric power from our utilities than are presently acknowledged, once back EMF is eliminated. The flow of electrons through conductors can also be connected with displacement or flow of the space medium. The heat energy equivalent of a kilowatt-hour = 3416 British Thermal Units (BTU's) has been calibrated by a non-inductive resistance heater, but in new technology terms could only be the heat developed in thin ether medium boundary layers around the stationary atoms, while the larger fraction of power continuous as core flow more or less unimpeded and therefore does not produce additional thermal energy, that otherwise would increase the thermal energy equivalent of electrical power.

Recapping: We can conclude that the first quantum leap for better use of utility power is the reduction or elimination of counter EMF in our industrial squirrel cage induction motors and generators. Today's motors and generators are designed for a value of counter EMF that is about 80 % of the applied utility line voltage at their design speed (counter EMF = 0 at 0 rpm). Therefore elimination of counter EMF from motors would produce 5 times the shaft horsepower with the same applied wattage. Elimination of counter EMF from generators would produce 5 times the electric power from the new generators driven by the same

jet engines, nuclear steam turbines and water turbines in hydro dams.

Further advances with the new technologies are envisioned by analogous "heatpump" processes as in matter refrigeration cycles, by creating interactions between the ether field singularities of the ambient scalar ether. Achieving coefficients of performance (COP) greater than one will increase the conversion efficiencies in excess of those obtained with eliminating the back EMF only.

To clarify: The scalar space energy density (the cosmological constant) has the same dimensionality as hydrostatic pressure [lbf-inch / cubic inch] if divided by length [inch] in the numerator as well as in the denominator, to give psi [lbf / square inch]. Herein lies the understanding of how forces come about: They are energy density gradients or field energy gradients, which are changes in energy density arising here from ether flow velocities in accordance with the fluid dynamic equations of Bernoulli, giving rise to pressure differentials in a vector direction, which then, while acting on a finite square inch perpendicular surface, cancel the [square inch] dimensionality of psi by multiplication and then leaves nothing else than just the force [lbf]. Forces are thus in general energy density gradients due to motion in energetic media. The media can be matter, such as air, or non matter, such as the space medium. When the force vectors are locked in the matter matrix, their opposite reaction forces engage that matter.

### 4. Prior Work with Hydrogen

By far the most important advance with hydrogen as a source of energy has been pioneered by Dr. Randell L. Mills, CEO of Black Light Power Inc., New Jersey [6], and author of **The Grand Unified Theory of Classical Quantum Mechanics** [7]. The January 1999 Edition has 1022 pages of text, formulas, tables, graphs and pictures, with a theory of new ground states of the hydrogen atom, that have reduced electron orbit radii around the central proton of  $1/n$  times its well known orbit radius. Here  $n$  is any integer from 2 to 10 and possibly beyond. The website has all the information of his developments as well as access to the book content. Previously unexplained spectral lines of the suns spectrum confirm the theory. Calorimetry experiments have shown that 200 times more energy can be released as thermal energy by shrinking the electron orbit radius of atomic hydrogen than is produced by the combustion of molecular hydrogen with oxygen. In theory the multiplier can be 1000.

That is about the same number found by Irving Langmuir, 1906 Ph.D. in physical chemistry (Chemistry 1932 Nobel Prize winner), in the early 1920s during his research for General Electric of the effect of each gaseous element on the life of incandescent light bulbs. "He found 100 cal for  $H_2 \rightarrow H + H$  and 90 kcal for  $H + H \rightarrow H_2$  respectively for the dissociation and recombination and went on to develop an atomic hydrogen blowtorch capable of attaining temperatures comparable to those of the Sun's surface." [8] A multiplier of this magnitude leaves enough energy to drive pumps and blowers and power a catalytic atomic hydrogen generator to close loop the process and have enough left over as free energy.

The next major hydrogen-as-fuel development is the resonant splitting of water by combining Faraday DC water electrolysis with mixing of the dissociation products oxygen and hydrogen to form what is called Brown's Gas at low pressure of 5 to 10 psi and spiking the DC current with a quarter amplitude of 42.8 kHz superposed AC.

Adding the 21.4 and 10.7 kHz harmonics an inventor achieved 6 to 10 times increased hydrogen production, with a driver circuit at the same power input as for battery power DC. A multiplier that high is sufficient to do as much work as is needed to power the next equal time interval, provided the conversion efficiency in the hydrogen fuel combustion engine is in the range of 33.3% for 6x to 20% for 10x.

The end result for this process is the ability to run cars on water as fuel in a self sustained manner. The first American to accomplish this was Stanley Meyer [9].

## References

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