Clean Energy Inventions

Gary Vesperman

First edition - 2013

588 Lake Huron Lane
Boulder City, NV 89005-1018
702-435-7947
garyvesperman@yahoo.com
www.padrak.com/vesperman

TABLE OF CONTENTS

INTRODUCTION

A portfolio of disruptive clean energy-related inventions has been accumulated after two decades of research and collaboration with numerous inventors – a few of whom may be among the world's most creative. Some of these inventions are so radical that they could require tens of millions of dollars each to fully exploit.
It seems likely that some of these inventions of new energy sources actually work as claimed and are suitably practical for worldwide deployment. An ideal energy source satisfies all these requirements:

- Is practical, economical, and scalable from 1 kilowatt through 1000 megawatts.
- No rare elements for construction or fuel are needed.
- Operates standalone or needs minimal fuel or auxiliary energy input.
- Does not pollute.
- Can be stored and operated reliably and safely without burdensome maintenance in Death Valley during summer and the South Pole during winter.
- Is quiet.
- Inventor(s) is (are) reasonable to do business with.

Other energy researchers can provide similarly extensive compilations of new energy technologies. Tom Valone's Integrity Research Institute (see www.IntegrityResearchInstitute.org http://www.newenergytimes.com/, Sterling Allan's http://FreeEnergyNews.com/, http://www.infinite-energy.com/, Jerry Decker's http://escribe.com/science/keelynet/, Bruce Meland's http://www.electrifyingtimes.com/, and Russia's http://www.faraday.ru have all accumulated large databases of reports and comments on energy. Robert A. Nelson, P.O. Box 19250, Jean, Nevada 89019 amassed 10,000 pages on energy inventions and other scientific and technological subjects in his www.rexresearch.com – the contents of which are available on a $13 CD.

Development and commercial manufacturing of a proven new energy source requires competent people, a doable business plan, integrity, and sufficient money to carry the enterprise until it reaches profitability. Each energy invention may be burdened with the baggage of its own unique little tale. Some energy inventors may be brilliant, of course, but are otherwise incompetent businesspeople. Development may be hampered by unethical investors or associates, an inventor's illness or death, or suppression by existing energy industries and the tangle-footed US federal government. Shortcomings in the energy invention itself may need further research to be mitigated or eliminated, if possible.

New energy sources typically do not qualify for financial support from venture capital, large corporations restricted to operating within their chosen missions, charitable foundations, and governments unaware of or even hostile to unconventional energy sources.

Carlos Aliaga Uria and his wife Anna Hosbein live in Cochabamba, Bolivia. Anna owns and manages a Bolivian company AHA Bolivia www.ahabolivia.com. See Anna talking at the beginning of a video at http://www.youtube.com/watch?v=gZHV9qKyKIo. Anna has a network of 200 Bolivian natives who knit high-quality alpaca sweaters, etc. She then wholesales their products mainly in USA and Europe. Carlos has been an environmental activist for a long time. Anna studies investments besides running AHA Bolivia.

They and their business associates and friends are looking for clean energy inventions in the ranges of 5, 10, 20, 50, and 100 thousands of dollars. Carlos and Anna will be visiting Gary Vesperman for a few hours June 7, 2013 to discuss clean energy inventions.

BRIEF SUMMARIES

LARGE GENERATORS

Thorium Power Pack – The thorium power pack generates 50 to 1000 kilowatts of electricity at one-tenth of current electricity prices. Thorium is sufficiently abundant that the entire planet can be powered for millennia. After ten years of continuous operation, a trace amount of U-233 is produced. U-233 recovery to re-purify the thorium is easily accomplished.

Micro-Fusion Reactor Employing Stable High-Density Plasma Electron Spiral Toroids in Neutron Tube – Based on ball lightning, safe, pollution-free micro-fusion reactor-powered generators could reliably generate electricity with capacities ranging from 10 kilowatts through 1000 megawatts at the cost of 10% of today's electricity. All transportation vehicles could be reliably and safely powered with micro-fusion reactors with substantially lower production, operating and maintenance costs and without poisonous emissions. The mass and cost of aircraft could be reduced by 70%, and space launch costs reduced by more than 95%.

Induction Coil Coating Increases Generator Output by One-Third – Coating the induction coils of generators with a proprietary material increases their output by one-third using the same amount of fuel.

Wind Turbine Conversion – The gearbox and brake mechanism is removed. The propeller blades are redesigned to operate at wind speeds in excess of 60 mph. Because the integrated system is able to deliver on demand during peak hours and during the night time when the wind is NOT blowing, this system would qualify for long-term power production contracts on a par with coal and gas-fired systems. The installed cost is reduced by more than 60%, and the maintenance costs are reduced by as much as 90%.

Plasma Biomass Gasification – Plasma biomass gasification systems produce a variety of combustible gases from a wide variety of municipal waste, biomass waste, sewage and other materials containing high concentrations of hydrocarbons with an over-unity energy efficiency of between 125%-150%. South Africa produces 100% of its diesel fuel and gasoline with two plants which operate on these principles.

SMALL GENERATORS

Casimer-Layered Electrodynamic Generator – A Casimir array consisting of stacked CD-ROM type disks is coated with alpha-emitter isotopic thin film, which have been super-compressed to provide room temperature super-conductivity. Controlled oscillation of the stack will produce ion flow which can be rectified and used.

Thin Film Power Generating Disks – An alpha-emitter isotope is combined with a proprietary thin film applied to a disk superficially similar to a CD which has been treated to produce a substrate with room-temperature super-conductive properties. The electrical function would be that of a self-recharging capacitor producing 2.25 volts DC at amperage that depends only on surface area. This generator would consume no fuel.

Hybrid Cold Fusion Hydrogen Reactor – The hybrid cold fusion hydrogen reactor is intended to be an economical super-efficient heater for buildings and greenhouses and as a hot water heater.

Energy Catalyzer – The Energy Catalyzer is a nickel-hydrogen fusion reactor which produces a few kilowatts of thermal energy with only at most a few hundred watts of electrical energy.

Self-Recharging Energy Generating Gel Cells – Nano-particulated alpha-emitter isotope materials are intercalated with conventional electrolytic materials in the presence of advanced anodic materials in a gel cell environment to produce self-recharging energy generating cells. The alpha-emitter thorium-232 increases the cell's energy density to more than 1500 watt-hours/kilogram – more than double the energy density of gasoline.

Electronically Shaded Photo-Voltaic Glass – A special layer of material between clear glass panes allows electronically controlled darkening, fully blocks infrared transmission, and generates electricity in daylight.

Multask Dome Multiple Output Omni-Directional Solar Power Generator – A simple cheap hemispherical lens made from proprietary special high impact-resistant glass, the sun's rays from any direction can be collected with minimal heat loss. Temperatures up to 1600 F. can be used to heat air and liquids. Sunlight is focused on centrally placed photovoltaic cells which do not need tracking systems and that generate electricity with more efficiency than flat panels or parabolic arrays. The MulTask Dome can also generate electricity from thermo-ionic "Power Chip" modules, magneto-hydro-dynamic devices, and Stirling heat engines.

High Expansion Magnetohydrodynamic Liquid Metal Generator of Electricity With a thermal-to-electrical energy conversion efficiency that exceeds 70%, two-phase LMMHD energy conversion systems have potentially significant advantages over conventional systems such as higher thermal efficiency and substantial simplicity with lower capital and maintenance costs. Electrical power outputs are in the 20 kilowatts range. Generator efficiency exceeds 71 percent.

Power Chip Thermo-Ionic Generator – A solid-state device that uses the physical mechanism of thermionics and quantum thermo-tunneling, Power Chips could generate electrical power directly from heat more efficiently than any current technology. Power Chips could capture heat that is now wasted and thus enable power plants to produce at least 20% more power with no increase in fuel consumption or emissions. In automobiles and other vehicles, Power Chips could replace the alternator, using waste heat from the radiator and exhaust and greatly increasing the efficiency of the internal combustion engine. Power Chips will make possible safe, efficient distributed power, enabling buildings or factories to generate their own electricity.

Protium H+ Stoichiometric Hydrogen Gas Generator – The Protium H+ stoichiometric hydrogen gas generator was optimized to generate H+ @ 25 liters per minute continuous without electrolytic chemicals.

Closed-Loop Phase-Change Gas System – Produces 25 KW continuous output based on Langmuir reactor core thermal source, rotary compression engine, and Protium H+ input apparatus without consuming fuel.

Self-Recharging Capacitive Discharge Thermal Generator – Optimized ceramet devices are integrated with other highly capacitive elements in the presence of deuterium oxide to produce self-recharging high-density charge cluster emissions as a means to thermally charge high-density anodic targets. The heat is used to support several types of thermal exchange-based apparatus.

Ceramic Electrodynamic Wafer – An alpha-emitter isotope is combined with a proprietary thin film to produce a homogeneous crystalline material on an inert substrate. When subjected to a continuous magnetic field flux, the ions emitted by the isotopic material can be collected and rectified to perform work functions. Its output is 2.25 volts DC @ 10 - 20 micro-amperes/cm^2.

Method and Apparatus for Splitting Water Molecules – U.S. Patent No. 4,394,230 for method which would split water molecules into hydrogen and oxygen with a net energy gain,

Hawkings' Generator of Cold Electricity – The Hawkings' generator produces a 6 to 8-inch white spark of cold electricity (no electrons) 4 inches in diameter with very little power. Cold electricity can still power lamps, etc. Materials inserted in a spark of cold electricity sometimes transmute to elements of higher density.

Trombly-Kahn Closed-Path Homopolar Generator – The Trombly-Khan closed-path homopolar generator's output power exceeds its power input by a factor of 4.92. Coal-fueled power generators can be retrofitted to run without fuel.

Trombly-Farnsworth Solid-State Oscillating Electromagnetic System – This solid-state resonant device produces over fifty times greater electrical output than input power.

High-Voltage Injection of Rain Water into Cold Fog – This system converts chemical bond energy into kinetic energy by injecting rain water with a high voltage discharge of 39.8 joules. http://us.f422.mail.yahoo.com/ym/ShowLetter?MsgId=5879_0_10046_1657_18493_0_6353_62846_1210735957_oSObkYn4Ur5HQVbr2mDutFQCxx.PM1zmIfc0gsISbAkgZVonU9BIIHMvApzdRCMs0ZblDQbx8hbgPneBheOtRWlOjDFh2M1mM8Jwp.TT.YPCS0F1hxYuRsVMDaSXf9wIiD3hl4SBEHcSQPYXkS%20The output energy doubles that of the input energy. The energy output can be captured to drive a motorized conversion system.

MISCELLANEOUS

Sola-Q Self-Focusing Omni-Directional Solar Cooker – The Sola-Q self-focusing omni-directional solar cooker, with its unique, bubble-shaped lens, collects solar rays from all angles to quickly and cleanly cook food with less hassle than with a solar box oven.

Aaftaab Furnace – The Aaftaab Furnace™ is a segmented solar collector-concentrator for melting and processing materials. Parts can be made from melting local sand (mixed with other components) and assembled together to make hemispherical lens. The Aaftaab Furnace™ could be used to make more of the same parts to be utilized for energy production, manufacturing, steam generation etc.

Capacitive step-down Transformer – The Capacitive step-down transformer is a simpler, cheaper, lighter, smaller, nearly 100% efficient alternative to inductive transformers. Capacitive step-down transformers do not have inductive, noise, heat and sound losses of inductive transformers. Short circuits do not damage them.

Super Steam Technology – The "super steam" machine combines compressed air, untreated or even polluted water, and almost any combustible fuel to produce steam at any pressure or temperature. The response is instant compared with a conventional boiler taking hours to reach operating pressure and temperature. The efficiency is over 90%, which compares favorably with a conventional boiler's efficiency of 40%. Maintenance costs, fuel consumption, and air pollution all go way down. 3500 applications have been found for super steam technology.

ADVANCED SELF-POWERED ELECTRIC TRANSPORTATION VEHICLES – The fundamentally key difference from conventional electric vehicles is having an on-board battery charger or other energy source which eliminates the necessity for a half ton of batteries and for charging stations spaced along roadways.

Daniel Dingel Converted more than 100 Cars to Run on Water – Filipino Daniel Dingel since 1969 has converted more than 100 gasoline cars to be powered by hydrogen derived on demand from plain water.

Brown's Gas Carburetor – Brown's gas carburetor uses monatomic hydrogen and oxygen (Brown's gas) from water split using proper frequencies. Energy output is four times that of diatomic hydrogen and oxygen.

Water-to-Energy Electrolysis Process – Water-to-energy electrolysis processes use a pulsed electrical signal.

Noble Gas Plasma Engine – A mixture of recycled inert gases (helium, neon, argon, krypton, and xenon) is exposed to a high-voltage discharge in a sealed cylinder with a piston. The spark causes the gases to expand violently though no combustion occurs. Mechanical energy is delivered by the piston's displacement. The gases immediately collapse to their original density, and the cycle is repeated. Vehicles would not need any fuel.

Multi-Chambered Rotary Compression Engine – The prototype was designed to produce 25 kilowatts continuous output based on input from (a) air, (b) phase change gases, (c) saturated steam, and (d) other fluids.

Conical Vortex Heat Exchange Engine – The prototype was designed to produce 25 kilowatts continuous output based on truncated conical vortex engine design concepts without consumption of extrinsic fuel.

Environmental Heat Engines – Four types of environmental heat engines use ambient heat to expand a working fluid such as Freon or ammonia and move pistons through sealed chambers.

Walden Amplified Magnetic Motor – Michael Walden's Amplified Magnetic Motor runs on minimally small input power for its control electronics, but all torque and rotational motion is provided by the permanent magnets on the rotor and stator. The Walden amplified magnetic motor meets the basic requirements for electric vehicles.

Scott Machuta's Gasoline Mileage Doubler – About the size of a fist, it doubles the mileage of gasoline-fueled trucks and cars. It uses no water so can be used in cold climates. The device is already being sold and installed for $500. Device is consumer friendly because once installed in a vehicle, its owner can forget about it for the life of the vehicle.

Seanic View, Inc.'s Electric Motor Invention – Electric motor efficiency is drastically improved. See details in www.seanicviewinc.com.

BATTERIES/ENERGY ACCUMULATORS

Casimer Effect Self-Charging Energy Cell – As electromagnetic energy is drawn out of the Casimer effect self-charging energy cell. When inserted in an electrical circuit, energy is drawn in from the surrounding ether.

Bedini Battery Charger – Bedini's rotary magnetic device recharges batteries, and even sometimes "dead" batteries. A Bedini battery charger was demonstrated by electrically powering a boat on a lake.

Endless Electric Field Generator – The solid-state "Endless Electric Field Generator" produces a permanent electric voltage (similar to a permanent magnet) that does not break down and is resistant to short circuits. Its permanent electric voltage can sustain a constant current through a load. A postage stamp-sized device could endlessly output one watt of constant electrical power – enough to power a cell phone for twenty years or more. Appliances and electric cars could be constantly powered without fuel and pollution. Various manufacturing techniques will use only materials that are cheap, non-toxic and in abundance.

LARGE GENERATORS

Thorium Power Pack

Bob Dratch's thorium power pack would generate electricity at approximately one-tenth of the cost of current methods of producing electricity. Thorium is sufficiently abundant that the entire planet can be powered for millennia. After ten years of continuous operation, a trace amount of U-233 is produced. U-233 recovery to re-purify the thorium is easily accomplished. Thorium thus lasts a long time when recycled and consequently is a very efficient energy source. After extraction from ore, thorium does not require energy-intensive enrichment as is the case with uranium.

A thorium-powered reactor is inherently safe. It doesn't run the risk of "meltdown" or explosion nor can even a dirty bomb be created. Its nuclear reaction simply stops when its neutron exciter is turned off. The simplest and smallest "table top-sized" neutron exciter design is something close to the size of a 4-D cell flashlight, and starts at about 500-kilovolt neutron output. In fact this smallest most cost-effective system can run off 4 D cells for its power.

A thorium power pack's neutron exciter does not use radioactive flux components as conventionally done for portable systems. Instead it relies on Dratch's invention of a novel method of resonant phonon pair cleavage using specifically designed nuclear lattice holo-forms (holographic waveforms) to induce neutron imbalance in a host atom where the host atom then attempts to establish "balance" through the liberation of neutrons. Dratch demonstrated the first model of this novel design back in 1966.

Commercial thorium power packs can be developed with 50 or 100 kilowatts of output for home use, and up to 1 megawatt for industrial use. They actually are "power amplifiers" with estimated power outputs of 60 times over input power. Maintenance would be minimal.

Inventor: Robert J. Dratch, USA www.bob-dratch.org
padrak.com/vesperman "Locomotive Power Sources"

Micro-Fusion Reactor Employing Stable High-Density Plasma Electron Spiral Toroids In Neutron Tube

Electron Power Systems, Inc., (EPS) has discovered the explanation for ball lightning and from that has invented and protected with five patents an electron spiral toroid Spheromak micro-fusion reactor. Safe, pollution-free micro-fusion reactor-powered generators could reliably generate electricity with capacities ranging from 10 kilowatts through 1000 megawatts at the cost of 10% of today's electricity. All transportation vehicles could be reliably and safely powered with micro-fusion reactors with substantially lower production, operating and maintenance costs and without poisonous emissions. EPS expects to reduce the mass and cost of aircraft by 70% and space launch costs by more than 95%.

Each year 15 million cars and trucks are sold in the USA, and 48 million are sold worldwide. EPS expects to eventually replace all of them with silent, reliable, safe, emissions-free micro-fusion reactor powered electric vehicles with substantially lower production, operating, and maintenance costs.

In addition, EPS has designed a 10kW generator that will operate on clean, non-polluting fuel, and can operate locally. This innovation will potentially improve the lives of most of humanity by making available low cost electricity that anyone can produce in their own homes. It will help literally billions of people. The paper design shows that the EPS generator will be the approximate size and cost of a 10 kW generator available today in any hardware store, with the advantage that it will not use fossil fuels, but will use clean energy instead.

An article in the Institute of Electrical and Electronic Engineers, Inc., Spectrum magazine over ten years ago stated that world demand for electricity increases approximately 500 megawatts every day. To put this in perspective, the equivalent of another Hoover Dam would have to be built every four days to keep up with world electricity increase demands. The EPS innovation will make local generation possible without the need for more power plants or more power lines.

Major contributors to air and water pollution are the fossil-fueled engines of aircraft, farm harvesters and tractors, ships, boats, snowmobiles, trains, military vehicles, and all-terrain vehicles. Their engines could be replaced with cheaper electric motors and batteries charged by safe, non-polluting onboard micro-fusion reactor powered generators.

Electron Power Systems, Inc., (EPS) is an early stage company working to develop the Electron Spiral Toroid Spheromak micro-fusion reactor. From EPS will come new applications, including a practical micro-fusion electricity generator, a low-cost space launch vehicle, a high-kinetic energy anti-missile beam, and practical zero-emission cars, trucks, buses, farm equipment, construction equipment, military vehicles, and jet aircraft.

EPS is moving to commercialize these concepts. EPS has assembled a team of engineers, and plasma physicists, all as contractors. EPS is working on proof of concept demonstrations for the applications.

EPS plans to build a laboratory demonstration unit in two to three years with present funding levels, and then the first commercial prototype. Recent breakthroughs in the EPS lab give confidence this will happen within this timeframe. More funding will make this happen sooner.

EPS is seeking $2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of $8 million will be needed to complete a prototype unit in eighteen months after the demonstration unit.
Up until now EPS has had no sales and operates with funding from angel investors, each of whom is retired and has accumulated a substantial personal fortune, allowing these types of investments of high risk, high reward. EPS also operates with funding from the founder.

EPS operates on a low budget, spends only what it has, and has incurred no debt or obligations. In this manner it is able to operate indefinitely, while continuing to make progress each year. Additional small amounts of funding will speed developments.

EPS has made a new discovery in physics with the potential to locally produce low-cost, clean energy for homes and buildings, independent of power plants. EPS owns the new technology and plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases.

A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

EPS's new discovery would allow anyone worldwide to buy a small home generator, about the size but less than the cost of a Sears 10-kilowatt portable generator. It would power their home plus several nearby homes even where there are no power grids or power plants. This will be a step towards providing low-cost, local electricity to help eliminate poverty worldwide.

EPS plans to build 10-kilowatt generators by applying its newly discovered technology to improve work done by others to create energy. The basic work was shown successfully in the 1980s at the University of Miami. But that technology had limitations at that time. EPS's new technology will overcome those limitations.

From a modest start with producing 10-kilowatt micro-fusion reactor powered generators, EPS expects to branch out to other applications of its technology as well as producing larger and larger generators.

Mankind's practically insatiable demand for energy implies a simply humongous market potential for EPS which would encompass all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, construction equipment, trains, satellites, aircraft, snowmobiles, and military vehicles.

Several thousand neutron tubes are in use in the USA today that safely collide hydrogen ions to produce neutrons, which in turn are used for medical testing, industrial process control, and homeland security. An ion source produces hydrogen ions (deuterium), which are accelerated to 110 kilovolts, then directed to hit a hydrogen target (also deuterium), which produces neutrons, and also heat as a waste product. Neutron tubes today produce neutrons and a low level of heat energy. The low density of the hydrogen ions limits the amount of energy produced.

In the 1970's, Dr. Wells at the University of Miami collided two plasma toroids to produce low-level fusion energy in the TRISOPS system. The amount of energy produced was limited by the short duration time of the plasma toroids used, as well as their low density and their low level of energy.

Electron Power Systems, Inc., (www.electronpowersystems.com) has discovered a plasma electron spiral toroid that remains stable without magnetic confinement, by using background gas pressure for confinement instead. These new plasma toroids are observed to remain stable for thousands of times longer than classical plasma toroids, which opens the way for new clean energy applications.

EPS's new stable plasma electron spiral toroids overcomes each of the neutron tubes limitations, and will potentially result in fusion with no magnetic containment required – thus producing a practical micro-fusion reactor. EPS's challenge is to adapt the new stable plasma toroid to the TRISOPS method.

The micro-fusion reactor adapts the Electron Spiral Toroid (EST) Spheromak to the neutron tube design. The EST Spheromak is patented jointly with MIT scientists who also have published papers confirming the EST Spheromak physics and data. The EST Spheromak will overcome the neutron tube limitations by increasing ion density by 2500 times. A metal containment can be used for efficient heat energy collection and conversion.

The EST Spheromak micro-fusion reactor will be less than three feet in length, the same as for present neutron tubes, and small enough to fit in an electric car. Elimination of the need for magnetic containment allows this power supply to be small and compact. A micro-fusion reactor will use hydrogen/boron to produce clean energy without neutrons. The energy in one pound of hydrogen/boron fuel equals the energy of 250,000 pounds of gasoline. Hydrogen and boron are plentiful and will not run out, as oil is projected to do in the 21st century.

The Electron Spiral Toroid Spheromak (ESTS) is a plasma toroid that is self-organized and self-stable with no magnetic fields needed to contain it. Inventor Clint Seward has not seen any published descriptions of any devices nor phenomena similar to the ESTS. The US Patent Office agrees and has issued five patents.

The micro-fusion reactor was recently selected by the New Energy Congress as one of the few technologies now known to have a genuine potential to replace fossil fuels. See the lengthy analysis of the micro-fusion reactor in http://pesn.com/2006/03/08/9600242_Spheromak_Plasma_Toroid/.

"Locomotive Power Sources" for high-speed rail in www.padrak.com/vesperman includes the micro-fusion reactor with BlackLight Power's hydrino generator, focus fusion, Robert Dratch's thorium power pack, Kiev,

Ukraine's I.N. Frantsevich Institute of Problems of Materials Sciences (IPMS) thorium-232 electricity generator, Clem over-unity vegetable oil engine, thin-film electrolytic cells, noble gas plasma engine, Searl effect generator, Magnatron – light-activated cold fusion magnetic motor, Oleg Gritskevich's hydro-magnetic dynamo, IPMS energy storage/battery device, Gordon Ziegler's electrino fusion power reactor, and environmental heat engines.

Some of these new energy inventions appear to have at least one limitation that is not shared with the ESTS micro-fusion reactor.

The Electron Spiral Toroid Spheromak (ESTS) micro-fusion reactor has five patents and is documented in published papers confirming the physics and data. (1), (2), (3), (4)

Clint Seward discovered the ESTS (5) while studying ball lightning. Seward has developed a secret formula to produce the ESTS that is not reported in any other reference to date that he has seen.

Why this is important is that all spheromaks reported to date dissipate in microseconds, while the ESTS has been observed to endure with no confining magnetic field for hundreds of milliseconds, and theoretically will remain stable for many seconds.

1. Seward, C., Chen, C., Ware, K., Ball Lightning Explained as a Stable Plasma Toroid. PPPS- 2001 Pulsed Power Plasma Science Conference, June 2001.

2. D. C. Seward, C. Chen, R. Temkin, Energy Storage Device, US Patent 6,140,752, Oct. 31, 2000.

3. C. Chen, R. Pakter, and D.C. Seward, Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids, Physics of Plasmas. Vol. 8, No. 10. Oct. 2001.

4. W. J. Guss, Chen, C., Equilibrium of Self-Organized Electron Spiral Toroids. Physics of Plasmas. August 2002.

5. Seward, C., Ball Lightning Explanation, Leading to Clean Energy. Acton, MA 01720. Seward Publishing Co., 2011.

EPS plans to initially produce a safe, clean, 10-kilowatt electricity generator that needs no nuclear fuels nor fossil fuels and will produce no green house gases. A home owner would need a one-liter sized container of environmentally benign hydrogen/boron fuel per year at a 20:1 fuel cost savings compared to commercially produced electricity or fossil fuels.

But first EPS needs to obtain $2 million as a first round of investment to complete the development of a demonstration unit in eighteen months. A second investment of $8 million will then be needed to complete a prototype unit in eighteen months after the demonstration unit.

EPS's new discovery would allow anyone worldwide to buy a small home generator, about the size but less than the cost of a Sears 10-kilowatt portable generator. It would power their home plus several nearby homes even where there are no power grids or power plants. This will be a step towards providing low-cost, local electricity to help eliminate poverty worldwide.

From a modest start producing clean, reliable, safe 10-kilowatt micro-fusion reactor powered generators, EPS plans to methodically produce larger and larger generators. EPS even has a preliminary design with supporting calculations for massive 1000-megawatt base load generators.

Mankind's demand for energy implies an enormous market for micro-fusion reactors encompassing all of the world's producers of oil, coal, uranium and electricity plus all manufacturers of transportation vehicles including cars, trucks, buses, farm equipment, ships, boats, trains, satellites, aircraft, mining equipment, snowmobiles, construction equipment, and military vehicles.

Countries which export oil will benefit from not having to quickly burn up their finite oil reserves on cheap gasoline and diesel fuel. Instead they will be able to draw down their reserves more slowly by making products of higher value such as plastics, medicines, fertilizers and synthetic textiles.

Some years ago a Forbes article stated that PECO (formerly Philadelphia Electric Company), with an income stream to back it up, was able to sell on Wall Street $4 billion worth of bonds paying 5.8 per cent. A micro-fusion reactor powered generator manufacturer could simply sell bonds to build and operate generators at a low interest rate. Generator loan payback times may be in the ball park of a half-year to a year, depending on the local electricity market price.

As soon as a micro-fusion powered generator is paid for, the revenue from that time on would be almost pure profit. Once a track record is established by successfully installing a few micro-fusion reactor powered generators, Electron Power Systems, Inc., could raise money to build and install more generators by simply selling billions of dollars of bonds instead of stock. So therefore, there wouldn't be any dilution of ownership.

EPS plans to partner with major electricity producers and suppliers. EPS will license them to produce electricity as they do now. EPS plans to partner with automobile manufacturers to license the technology. EPS plans to partner with defense and aerospace contractors to license the technology.

MANAGEMENT

Clint Seward is the discoverer of the Electron Spiral Toroid Spheromak and received the initial patents. He has been working ever since to scale up the results, which he has been able to do recently. He has been a project design engineer and program manager for many years, working initially with the US Air Force B-58 Hustler program, and as a project manager and engineering manager in several major corporations. His work was defense initially, moving to security and process control, then energy related.

Clint was an Engineering Manager for Mosler, an American Standard Division 1970 thru 1978, and an Engineering Manager and VP of Marketing for Bristol-Babcock 1978-1985 – an ACCO fortune 500 Company. He was General Manager of Iontrack, a Division of a large international company 1985-1989 (now a Division of GE). He has been President of his own company Electron Power Systems, Inc. from 1989 to present.

Education: MSEE; University of Michigan 1965; BS at US Military Academy at West Point 1963.

D C Seward is the VP Engineering of Electron Power Systems, Inc. He has worked on the micro-fusion reactor technology since its inception in 1986. He has the responsibility for organizing the experiments and bringing qualified people in to help with the work.

DC has worked as the VP Engineering of EPS on a contract basis from 1998-Present as funding allows. He is employed full time as a Field Sales engineer for Ember Systems, a wireless technology company, 2005-Present. Previously he was a Product Design Engineer, Trimble Navigation: 1994-1998

Education: MSEE Massachusetts Institute of Technology, 1994.

Jim Becker is acting CEO and Marketing VP. Jim has experience as a senior executive in the high tech sector with extensive experience managing rapid growth organizations. He has a broad technology background with proven skills in computer systems, avionics industries, and health care information technology along with direct functional experience in finance, sales, marketing, engineering and corporate management in both domestic and international settings.

Education: Thayer School of Engineering, Dartmouth College; Master of Engineering 1976; Master of Business Administration 1975; Bachelor of Engineering 1970.

PAPERS AND PATENTS for Clint Seward:

Chen, C., Pakter, R., Seward, D. C. "Equilibrium and Stability Properties of Self-Organized Electron Spiral Toroids." Physics of Plasmas. Vol. 8, No. 10. October 2001.

Seward, C., Chen, C., Ware, K. "Ball Lightning Explained as a Stable Plasma Toroid." PPPS-2001 Pulsed Power Plasma Science Conference. June 2001.

Seward, C. "Propulsion Using a Stable Plasma Thruster." STAIF 2001, (Space Technology and Applications International Forum-2001). American Institute of Physics , www.aip.org/catalog/conforder.html. February 15, 2001.

Seward, C.; Chen, C., Temkin, R. ENERGY STORAGE DEVICE , US Patent 6,140,752, October 31, 2000.

Seward, D. C. Electron Spiral Toroid; US Patent 5,773,919; June 30, 1998.

Seward, D. C. Energy Storage System, US Patent No. 5,589,727. December 31, 1996.

Seward, D. C., Chen, C., Temkin, R. (1996b). International Patent Application WO 96/38848, Energy Storage Device, Published December 5, 1996.

Seward, D. C. Fixed Geometry Plasma and Generator, US Patent 5,175,466. Dec. 29, 1992.

ESP's President Clint Seward collaborated with the Author in writing a description of Seward's invention in www.padrak.com/vesperman. See "Locomotive Power Sources". (Revised for this compilation of “130 Electrical Energy Innovations”)

The Products page of www.electronpowersystems.com sells a book "Ball Lightning: Leading to Clean Energy" and a paper "Spheromaks Observed Forming in Atmosphere". Paper's abstract:

Plasma toroids, called spheromaks, are reported here as observed forming in partial atmosphere from high power electric arc events similar in power to lightning ground strokes. The spheromaks are observed to be stable in partial atmosphere with no confining magnetic fields and are observed to last for more than 200 milliseconds in partial atmosphere. This paper describes the observations and presents a model that explains the properties of these spheromaks, which we call Electron Spiral Toroid Spheromaks (ESTS's) due to the spiraling motion of the charged particles. It includes four TV images.

The model presented is a hollow toroid with a thin outer shell of electrons that all travel in parallel paths orthogonal to the toroid circumference, in effect spiraling around the toroid. A comparable inner surface of ions acts to neutralize the space charge. The paper provides formulas describing the ESTS. Potential ESTS applications include X-ray production, air defense, and energy production.

The cost to produce a 10-kilowatt EST Spheromak electricity generator would be about $1100 in production quantities. The EST Spheromak generator would have fewer parts than a comparable Sears generator.

Electron Power Systems, Inc., does not have a working prototype. The company has identified the instrumentation and needs another $100,000 for laboratory work. With $2,000,000, the company expects to have in two years a demonstrable prototype. In an additional year for $8,000,000 a production prototype is expected to be built. Remember, each piece of the project uses technology others have demonstrated.

Inventor: Clint Seward, Acton, Massachusetts, USA www.electronpowersystems.com
US Patents 5,175,466, 5,589,727, 5,773,919, and 6,140,752
www.padrak.com/vesperman "Locomotive Power Sources"

Induction Coil Coating Increases Generator Output by One-Third

This invention significantly improves generator performance – copied below from inventor David Yurth's email with the proprietary details omitted:

... this means that if you have (deleted) present in any DC interaction, you can reduce e- transport by as much as 65% - 80%, depending on architecture and other variables. (deleted) is not able by itself to constitute a self-sustaining electron source capable of performing significant work until the surface area geometries are reduced below the nano-scale. Nevertheless, we have demonstrated in our lab that when the induction coil of a common automobile alternator is coated with (deleted) impregnated in an epoxy resin the amount of watts output at the generator is increased by 35%-38%.

The practical implications of this finding are profound – it means, for example, that if all generators used to produce power were (deleted) impregnated using this simple application, the amount of fuel required to generate electrical power to the grid could be reduced by 1/3.

One application is to increase the output of wind turbine generators by about a third.

Wind Turbine Conversion

This invention radically changes, for the better, wind turbine design – copied below from inventor David Yurth's email with the proprietary details omitted:

When a single 1.5-megawatts wind turbine is converted to our design, the gearbox is deleted and so is the brake mechanism. The propeller blades are redesigned to operate at wind speeds in excess of 60 mph, which is four times faster than the average horizontal axis wind turbine is designed for. We used an adaptation of our (deleted) tied to 10 such turbines that will provide 5 megawatts of continuous output power when the wind is not blowing and during the night time. The entire system will deliver up to 15 megawatts in optimum wind conditions. So by being able to deliver on demand during peak hours, when the wind is NOT blowing, this integrated system would qualify for long-term power production contracts on a par with coal and gas fired systems. The installed cost for such a system is estimated at about $1,100 per kilowatt of installed capacity.

The elimination of the gear box and brake, coupled with the modification in the drive line system would reduce not only installed cost by more than 60% but would also reduce maintenance costs by as much as 90%. When no offset reserve has to be created to support the five-year replacement cost of the gearbox and brake system, the numbers related to power output vs. cost input become extremely attractive. Perhaps more importantly, the

real efficiency of the system is much higher than a conventional system because it becomes in effect a highly efficient heat exchange engine rather than simply a wind energy conversion unit.

We know how to do this and could do it immediately if the resources were made available. Scaled down prototyping based on the incremental R&D model we described to (deleted) in earlier emails would make this a manageable and cost effective undertaking with world-wide applications. For your consideration...

Plasma Biomass Gasification

Examples of plasma biomass gasification systems can be found in the processes developed by Dr. David Wallmanhttp://us.f422.mail.yahoo.com/ym/ShowLetter?MsgId=5879_0_10046_1657_18493_0_6353_62846_1210735957_oSObkYn4Ur5HQVbr2mDutFQCxx.PM1zmIfc0gsISbAkgZVonU9BIIHMvApzdRCMs0ZblDQbx8hbgPneBheOtRWlOjDFh2M1mM8Jwp.TT.YPCS0F1hxYuRsVMDaSXf9wIiD3hl4SBEHcSQPYXkS%20 [US 5,417,817], Dr. Ruggero Santillihttp://us.f422.mail.yahoo.com/ym/ShowLetter?MsgId=5879_0_10046_1657_18493_0_6353_62846_1210735957_oSObkYn4Ur5HQVbr2mDutFQCxx.PM1zmIfc0gsISbAkgZVonU9BIIHMvApzdRCMs0ZblDQbx8hbgPneBheOtRWlOjDFh2M1mM8Jwp.TT.YPCS0F1hxYuRsVMDaSXf9wIiD3hl4SBEHcSQPYXkS%20, Dr. Randall Mills [US 6,024,935], and others. What these technologies have in common is that they operate by producing a variety of combustible gases from a wide variety of municipal waste, biomass waste, sewage and other materials containing high concentrations of hydrocarbons. Each of these systems produces substantially more energy content in the collected gases than is required to drive the carbon-arc filaments which operationalize them. The amount of carbon dioxide generated by the combustion of the gases derived from these processes is precisely the same as they absorbed while the materials were originally being formed.

Contrast this with burning fossil fuels (diesel, gasoline, oil, natural gas) which resurrect old buried carbon and add it to the atmosphere. The combustion of gases produced by biomass processing is usually characterized as follows: It requires 3300 BTU to produce 250 liters per hour of COH_2 (8.5 cubic feet/hour). With a heating value of over 500 BTU per cubic feet, the COH_2 output energy exceeds 4,000 BTU, often approaching 5,000 BTU in high efficiency designs. Accordingly, the biomass gasification process operates at an over-unity efficiency of between 125%-150%. This process is a largely untapped resource. Millions of gallons of farm-produced liquid biomass is going to waste, as is the energy potential represented by the COH_2 which could be produced from municipal sewage and waste water systems.

When looking at solutions for generating energy from waste, organizations must ensure that they are utilizing technology that delivers the most efficient use of the waste feedstock. Advanced Plasma Power is a leading technology provider for advanced waste to energy/fuel plants employing its globally patented Gasplasma® technology. After the removal of valuable recyclables, the Gasplasma® process treats a wide range of feed stocks including residual municipal solid waste and commercial/industrial waste – converting it all into two high-value outputs: a clean, high quality, energy-rich synthesis gas, and a solid, vitrified product – each with multiple applications.

Advanced Plasma Power's advanced Gasplasma® technology today delivers 50% electrical conversion efficiency – twice that of conventional steam cycle technologies. Looking ahead a few years, the efficiency may be further improved by half as much again with the establishment of commercial scale fuel cell technology. How does Gasplasma® achieves this? The key distinguishing factor is the ability for Gasplasma® to produce an energy-rich synthetic gas capable of use directly in a gas engine and/or gas turbines or in fuel cells.

The synthetic gas can be used to generate electricity directly in gas engines, gas turbines and/or fuel cells. Or, it can be converted to synthetic natural gas, hydrogen or liquid fuels. The solid product, Plasmarok®, is strong, inert and non–leaching and has a variety of valuable end uses such as a building material. The process is clean,

modular and scalable, delivering high efficiencies and maximizing landfill diversion whilst minimizing visual and environmental impact. See http://www.advancedplasmapower.com/offering-gasplasma.aspx.

Plasma biomass gasification is not a trivial energy source. The Republic of South Africa does not import a single drop of petroleum to support its transportation requirements. Instead, 100% of its diesel fuel and gasoline is produced by two plants which operate on these principles.

SMALL GENERATORS

Casimir-Layered Electrodynamic Generator

A Casimir array consisting of stacked CD-ROM type disks coated with alpha-emitter isotopic thin film, which have been super-compressed to provide room temperature super-conductivity, is proposed. Controlled oscillation of the stack will produce ion flow which can be rectified and used.

The electrical function is the same as the aforementioned thin-film power generating disks with the added concept that when plates comprised of materials with highly divergent dielectric coefficients are finely polished and placed in immediate juxtaposition to each other, after having been coated on one side with the appropriate alpha-emitter materials, the stack of such panels can then be oscillated in the X axis at a rate and magnitude that will alter the Lagrangian address transitional electrons are positioned in.
With the alteration of the address the electron is forced to find a path to match up with other quantum ensembles possessing spin, charge, and polarity vectors that will give the electron a zero sum balance. As soon as the electron's transitional trajectory is altered in a way that allows it to come into contact with the Meissner Field of an adjoining superconductive layer, the electron will be captured, rectified and converted to a set of attributes that enable it to be harnessed to perform work functions.

The physics is based on the model of fine scale interactions described in the Y-bias and angularity model. See David G. Yurth's summary "Y-Bias and Angularity: The Dynamics of Self-Organizing Criticality from the Zero Point to Infinity" in www.padrak.com/vesperman. Inventor is David Yurth.

Thin-Film Power Generating Disks

An alpha-emitter isotope is combined with a proprietary thin film applied to a disk [same form factor and size as a conventional CD-ROM disk] which has been treated to produce a substrate with room-temperature super-conductive properties. This technology would make it possible for the system to pick up 10^{17} electrons per square cm that are emitted by the alpha emitter materials. The super-conductive surface features of the substrate materials would amplify rather than attenuate the amperage, providing the ability on a scalable basis to drive 2.25 volts DC at amperage that is totally dependent on the amount of surface area provided by the plates.

This is tantamount to a self-recharging capacitor device with a half-life of more than 1 billion years that emits no waste materials and consumes no fuel.

The physics is based on the model of fine scale interactions described in the Y-bias and angularity model. See David G. Yurth's summary "Y-Bias and Angularity: The Dynamics of Self-Organizing Criticality from the Zero Point to Infinity" in www.padrak.com/vesperman. Inventor is David Yurth.

Hybrid Cold-Fusion Hydrogen Reactor

The hybrid cold-fusion hydrogen reactor is intended to be an economical super-efficient heater for homes and as a hot water heater. The device is so new that its potential ultimate electrical input-to-thermal output conversion gain is yet to be experimentally determined. Applications could include heating homes and other buildings, greenhouses, and fish tanks. The electrodes are made of nickel. Inventor is Hans Becker.

Self-Recharging Energy Generating Gel Cells

Nano-particulated alpha-emitter isotope materials are intercalated with conventional electrolytic materials in the presence of advanced anodic materials in a gel cell environment to produce self-recharging energy generating cells. The true measure of potential versus actual performance is measured in watt-hours/kilogram.

In tests conducted with the I.N. Frantsevich Institute for Problems of Materials Science (IPMS), Kiev, Ukraine, we measured energy densities in excess of 1140 watt-hours/kilogram using conventional materials and the proprietary IPMS mono-molecular carbon crystalline lattice. These measurements were corroborated by the Idaho National Engineering and Environmental Laboratory and the Advanced Materials and Technologies Laboratory of the Department of Defense in 1993.

When an alpha-emitter such as thorium-232 is used to replace cobalt-lithium in a polymer base, the addition of 10^{17} electrons per square centimeter increases energy densities to more than 1500 watt-hours/kilogram, which is more than double the energy density of gasoline.

The physics is based on the model of fine scale interactions described in the Y-bias and angularity model. See David G. Yurth's summary "Y-Bias and Angularity: The Dynamics of Self-Organizing Criticality from the Zero Point to Infinity" in www.padrak.com/vesperman. Inventor is David Yurth.

Electronically Shaded Photo-Voltaic Glass

By laminating a specially designed layer of liquid crystal material between panes of either clear glass or clear polycarbonate materials, which have been coated with either an indium-tin oxide or transparent metallic conductive film, a window transparency control system has been created which enables the viewer to darken the window pane [or other application] electronically, without the aid of shutters, blinds or curtains.

Indium-tin oxide is a transparent electrically conductive thin film that is used to carry voltage to the light-emitting diodes of every display panel in the world. The indium-tin oxide thin film is deposited on the surfaces of two panes of glass. A second film, a gel comprised of liquid crystal material, is inserted between the two panels. Electrical current is passed through the gel, with the indium-tin oxide serving as the electrodes.

The panel also rotates polarity up to 90 degrees from the vertical and substantially reduces infrared transmissivity. Buildings with windows made of electronically shaded photo-voltaic glass should have significantly lower air conditioning loads because they offer full blockage of infrared radiation. Buildings should additionally have lower net electrical power consumption because windows facing the sun will be able to generate usable photo-voltaic electricity.

CRL Opto has built and is testing the initial proof-of-concept prototypes equipped with gradient controls for transmissivity using photo-spectrographic protocols. This application is ready for production and is patent protected (US Patent No. 7,356,969 B1, April 15, 2008). Inventor is David Yurth.

MulTask Dome Multiple-Output Omni-Directional Solar Power Generator

The MulTask Dome multiple output omni-directional solar power generator concentrates the sun's rays from any direction without the need of tracking systems, creating temperatures as high as 1600 F. It can be used singly or arranged in a battery, to heat air and liquids and to concentrate sunlight on solar cells. It uses a simple kind of hemispherical lens to concentrate sunlight at the center of the area covered by the lens. Cool air flows from the outside toward the center, where it flows up within the solar collector and is heated, then exhausted at the perimeter. Similarly, a cool liquid flows to the center, is heated, and drawn out. A photovoltaic cell at the center is activated by concentrated sunlight to produce electricity, which is transmitted out along a wire running though the cool air inlet.

The MulTask Dome delivers practical and efficient energy in all locations. Self-focusing with no moving parts, its transparent, high-impact glass hemispheres collect sun rays from any direction (new protected technology). It has no need for expensive sun trackers and high maintenance assembly. It offers very low heat and energy loss (captures most energy collected in enclosed bubble and piped away). It can be mounted on any roof or wall without special towers or expensive super structure. As a scalable solar collector for any residential, commercial and industrial application, the MulTask Dome is cheaper than traditional flat solar collectors and parabolic (Heliostat) array solar plants. The proprietary special glass bubble is resistant to impacts, scratches, hail, and high winds.

The MulTask Dome's multiple outputs include electricity (from photovoltaic cells, thermo-ionic "Power Chip" modules, magneto-hydro-dynamic devices, and the Stirling heat engine) plus heated liquid/air. A circular prism around the central photovoltaic cell converts low-angle light rays to useable angles over the center. Its efficiency is 36-45% – more efficient than traditional photovoltaic or other concentrators. Its proprietary, non-electrical Solar Safe Umbrella reflects sun's rays if its temperature reaches an unsafe level.

Some of the focused heat in traditional concentrators is lost by either convection or radiation. The Multask-Dome's enclosed bubble captures most of the heat and pipes them to hybrids of generators below to be utilized. A high-efficiency photovoltaic cell in the center collects incoming light and converts the light to electricity. Heat generated in this area is captured in two different ways: First, chilled or cold air is piped around the jacket of photovoltaic cell wires and directly blown over the surface of the photovoltaic cell. This cold air will increase efficiency of the solar cell. Second, heated air will be carried away in the exhaust pipe for heating, cooking or storage.

Solar energy concentrated by the Multask-Dome can be utilized and converted by hybrids of several technologies: Radiated heat can be utilized for domestic uses including heating, air conditioning, cooking and drying.

The "High Expansion Magnetohydrodynamic Liquid Metal Generator of Electricity" (U.S. Patent No. 5,637,934 Gracio Fabris) has a thermal-to-electricity conversion efficiency that exceeds 70%. See patent at http://www.google.com/patents?id=tOUhAAAAEBAJ&printsec=abstract&zoom=4#v=onepage&q&f=false.

Power Chips™ are thermo-ionic generators that offer an efficiency of up to 70-80% of Carnot for the conversion of heat to electricity. The Borealis Power Technology™ uses advanced physics, engineering, and manufacturing techniques to produce conversion from heat to electricity on a scale and at a cost that challenges conventional power generation. See www.powerchips.gi.

A Stirling engine is a heat engine operating by cyclic compression and expansion of air or other gas, the working fluid, at different temperature levels such that there is a net conversion of heat energy to mechanical work. Paired with a MulTask-Dome, a Stirling engine utilizes super-heated liquid to efficiently power an electric generator.

The inventor of the MulTask-Dome is Abby Charden Mobasher.

High Expansion Magnetohydrodynamic Liquid Metal Generator

The "High Expansion Magnetohydrodynamic Liquid Metal Generator of Electricity" (U.S. Patent No. 5,637,934 Gracio Fabris) has a thermal-to-electricity conversion efficiency that exceeds 70%. See patent at http://www.google.com/patents?id=tOUhAAAAEBAJ&printsec=abstract&zoom=4#v=onepage&q&f=false. The patent's Abstract is copied as follows:

Two-phase LMMHD energy conversion systems have potentially significant advantages over conventional systems such as higher thermal efficiency and substantial simplicity with lower capital and maintenance costs. Maintenance of low velocity slip is of importance for achieving high generator efficiency. A bubbly flow pattern ensures very low velocity slip. The full governing equations have been written out, and a computer prediction code has been developed to analyze performance of a two-phase flow LMMHD generator and nozzle under conditions of no slip. Three different shapes of an LMMHD generator have been investigated. Electrical power outputs are in the 20 kW range. Generator efficiency exceeds 71 percent at an average void fraction of about 70 percent. This is an appreciable performance for a short generator without insulating vanes for minimizing electrical losses in the end regions.

Power Chip Thermo-Ionic Generator

The Power Chip™ thermo-ionic generator is a new technology that uses the physical mechanism of thermionics and quantum thermotunnelling to generate electrical power directly from heat, with no moving parts, and with a higher projected efficiency than any current technology.

Power Chips should revolutionize electrical power generation across virtually all applications. In present large generating stations, adding Power Chips to capture heat that is now wasted will enable power plants to produce at least 20% more power with no increase in fuel consumption or emissions. Eventually, more efficient power plants, using only Power Chips to produce power, will become common.

In automobiles and other vehicles, Power Chips initially are likely to replace the alternator, using waste heat from the radiator and exhaust and greatly increasing the efficiency of the internal combustion engine. Within a few years, electrically-driven vehicles will become possible, with power generated by Power Chips – burning gasoline, natural gas, or hydrogen as fuel to produce heat – and driving a super-efficient Chorus® Motor. Such an automobile would achieve dramatic improvements in fuel efficiency, and produce a fraction of the emissions.

Power Chips will make possible safe, efficient distributed power, enabling buildings or factories to generate their own electricity. They will make it possible to bring plentiful electric power to regions of the world whose peoples and economies now suffer from inadequate electric power, at a fraction of the cost to do so using current generating technologies. The inventor is Jonathan Edelson. For details, see http://www.powerchips.gi/.

Protium H+ Stoichiometric Hydrogen Gas Generator

The pre-production prototype Protium H+ stoichiometric hydrogen gas generator (patent pending) was optimized to generate H+ @ 25 liters per minute continuous without electrolytic chemicals. Inventor is David Yurth.

Closed-Loop Phase-Change Gas System

The proof-of-concept prototype was designed to produce 25 KW continuous output based on Langmuir reactor core thermal source, rotary compression engine, and Protium H+ input apparatus without extrinsic fuel consumption. Inventor is David Yurth.

Self-Recharging Capacitive Discharge Thermal Generator

Optimized ceramet devices are integrated with other highly capacitive elements in the presence of D_2O to produce self-recharging high-density charge cluster emissions as a means to thermally charge high-density anodic targets. The heat is used to support several types of thermal exchange-based apparatus.

The physics is based on the model of fine scale interactions described in the Y-bias and angularity model. See David G. Yurth's summary "Y-Bias and Angularity: The Dynamics of Self-Organizing Criticality from the Zero Point to Infinity" in www.padrak.com/vesperman. Inventor is David Yurth.

Ceramic Electrodynamic Wafer

An alpha-emitter isotope is combined with a proprietary thin film to produce a homogeneous crystalline material on an inert substrate. When subjected to a continuous magnetic field flux, the ions emitted by the isotopic material can be collected and rectified to perform work functions. Its output is 2.25 volts DC @ 10 - 20 micro-amperes/cm^2. This concept has already been in testing and demonstration for five years. Optimization of this technique is the objective of this project.

The physics of this device is based on the model of fine scale interactions described in the Y-bias and angularity model. See David G. Yurth's summary "Y-Bias and Angularity: The Dynamics of Self-Organizing Criticality from the Zero Point to Infinity" in www.padrak.com/vesperman. Inventor is David Yurth.

Hawkings' Generator of Cold Electricity

Kenneth Hawkings' generator results from feeding high voltages oscillating at optimally 150,000 hertz to two 4-inch fluorescent lights. Each fluorescent tube has a strong permanent magnet attached to its center – north pole on one side, and south pole on the other side. The magnetic field between the two poles deflects the electrons in the tube off to one side. The tube is now no longer capable of generating hot electricity. Instead only *cold* electricity is extracted from the zero point energy field by the tube. The cold electricity comes out the other end of the tubes which are each wired to a brass electrode. A 6 to 8-inch white spark of cold electricity 4 inches in diameter is produced between the two brass balls.

Apparently very little power is being drawn from two car batteries. An equivalent-sized spark generated by an arc welder would require thousands of amperes and volts.

Cold electricity is not measurable with ordinary voltmeters and ammeters since it strangely has no electrons. However, cold electricity can power lamps, etc. Totally different applications could result from the observation that materials inserted in a spark of cold electricity sometimes transmute to elements of higher density.

The Author has a video of an earlier version of the Hawkings' generator where the dazzling white spark of cold electricity is only about the size of a peanut due to a much lower frequency being used. A weird "singing" noise heard in the video indicates that energy is being extracted from the omnipresent zero point energy field. Even Nicola Tesla himself long ago observed the same connection of singing noise to energy extraction.

The Hawkings' generator, although fairly simple and can completely be made with commonly available components, is still in its earliest stages of development. The Author's friend Henry Curtis was the person who brought the Hawkings' generator to the Author's attention and provided him with a video. Curtis has been investigating and attending conferences on new energy technologies for over 15 years. Curtis thinks the Hawkings' generator is the most exciting fuel-less energy source he has ever seen. The Author has talked with some Las Vegas engineers about building their own prototype for testing.

Frankly, "cold electricity" is still very much a huge mystery. The Author has a B.S. Electrical Engineering degree from University of Wisconsin-Madison and has become familiar with all sorts of weird devices. Even he has no idea as to how mathematical formulas could be written describing the most fascinating phenomenon of cold electricity. Hot fusion has received billions of research dollars with no hope of a practical electricity generator for decades to come. Surely studies and development of cold electricity and new energy devices such as the Hawkings' generator are equally deserving of massive funding by the US government, if not more so, than hot fusion.

High-Voltage Injection of Rain Water into Cold Fog

Many prototype systems exist today which efficiently convert potential energy into useful work. An example of such a system is the "Cold Fog" discovery of Dr. Peter Graneau of Northwestern University. Dr. Graneau's system converts chemical bond energy into kinetic energy by injecting rain water with a high voltage discharge of 39.8 joules. Normal rain water subjected to this treatment becomes a cold fog which loses approximately 31.2 joules of low-grade heat and a comparable amount (29.2 joules) in the form of kinetic fog energy output. As reported in the prestigious ***Journal of Plasma Physics***http://us.f422.mail.yahoo.com/ym/ShowLetter?MsgId=5879_0_10046_1657_18493_0_6353_62846_1210735957_oSObkYn4Ur5HQVbr2mDutFQCxx.PM1zmIfc0gsISbAkgZVonU9BIIHMvApzdRCMs0ZblDQbx8hbgPneBheOtRWlOjDFh2M1mM8Jwp.TT.YPCS0F1hxYuRsVMDaSXf9wIiD3hl4SBEHcSQPYXkS%20 the output energy exceeds the input energy by about 100%, creating a 2:1 over-unity condition. The energy output produced by this system can be captured and harnessed to drive a motorized conversion system.

MISCELLANEOUS

Super-conductive Manganite Substrates

A substrate comprised of an alpha-emitter isotope intercalated with manganite crystalline materials is super-compressed to create room temperature super-conductive substrate materials. This concept has already been demonstrated in proof-of-concept prototypes by MIT and others.

The physics is based on the model of fine scale interactions described in the Y-bias and angularity model. See David G. Yurth's summary "Y-Bias and Angularity: The Dynamics of Self-Organizing Criticality from the Zero Point to Infinity" in www.padrak.com/vesperman. Inventor is David Yurth.

Amplified Ionization Filtration Technologies

Alpha-emitter isotopic materials are deposited on the surfaces of permanently magnetized metallic foam of proprietary design to amplify ionization energies exhibited by molecules of air and fuels as they are fed to power various kinds of combustion apparatus. Each apparatus type is accommodated and tested separately using the common ionization filtration technique in varying form factors.

The physics is based on the model of fine scale interactions described in the Y-bias and angularity model. See David G. Yurth's summary "Y-Bias and Angularity: The Dynamics of Self-Organizing Criticality from the Zero Point to Infinity" in www.padrak.com/vesperman. Inventor is David Yurth.

Sola-Q Self-Focusing Omni-Directional Solar Cooker

The Sola-Q self-focusing omni-directional solar cooker guarantees clean and hassle free cooking. In only 10 minutes, the Sola-Q boils a quart of water or cooks four hamburgers. Designed to resemble a traditional barbecue hibachi with a clear transparent bubble, the Sola-Q employs a breakthrough Multask Dome Lens™ technology to collect the sun's energy from any angle to cook outdoors or indoors, wherever sunlight is available. The Sola-Q is especially effective in third world rural areas where precious wood and shrubbery are burnt for cooking – causing expanding deserts, loss of vital topsoil (farmland), climate change, loss of oxygen-producing plants and natural wildlife habitats.
The Sola-Q's unique, bubble shaped lens works independently and without the need for focusing. It needs no manual adjustments or expensive mechanical trackers. Its closed spherical lens collects and retains most of the sun's energy with minimal heat loss. Clean cooking indoors (in any room!) is possible where it is sunny. The high-impact transparent bubbles are six times tougher than standard acrylic and are ultraviolet and scratch-resistant. The Sola-Q offers extremely low maintenance and operating costs.

The Sola-Q offers some advantages over solar box ovens. Solar box ovens need to be repositioned to directly face the sun every half-hour; the Sola-Q can simply be placed in the sun and left untended until the cooking is done. The Sola-Q starts up faster and cooks faster than solar box ovens. More food moisture is retained in the Sola-Q than the solar box oven. The Sola-Q is sturdier and more resistant to wind and hail than solar box ovens. https://www.elance.com/samples/mobasher-solar-cooker/26059207/ The Sola-Q's inventor is Abby Charden Mobasher.

Aaftaab Furnace

The Aaftaab Furnace™ is a segmented solar collector-concentrator for melting and processing materials. Parts can be made from melting local sand (mixed with other components) and assembled together to make hemispherical lens. The Aaftaab Furnace™ could be used to make more of the same parts to be utilized for energy production, manufacturing, steam generation etc. The inventor is Abby Charden Mobasher.

Capacitive step-down Transformer

The Capacitive step-down Transformer is a simpler, cheaper, lighter, smaller, nearly 100% efficient alternative to inductive transformers. Capacitive step-down Transformers do not have inductive, noise, heat and sound losses of inductive transformers.

Capacitive step-down Transformers can be used anywhere that is stepping down high voltages, low amperes into lower voltages, higher amperes – industry, commercial, residential and appliances. Not using Capacitive step-down Transformers has resulted in lower efficiency of transmission and distribution with enormous waste of electricity.

Capacitive Power Supplies are inherently capacitive amperage limiting. So therefore short circuits do not

damage them. A brownout or blackout in one area of the grid will not take down any generators that are protected with CPS technology. There is no need for electronic controls or a grid infrastructure upgrade – the amperage control is automatic and instantaneous. If a solar flare blows out many inductive transformers, Capacitive step-down Transformers can be fast, effective replacements.

Capacitive step-down Transformers can also be reconfigured quickly and easily onsite to handle more or less wattage or to change voltage and amperage ratios. All applications that use step-down transformers can be converted.

Inventor: George Wiseman, Oroville, Washington, USA
Author of "Capacitive Battery Charger" www.eagle-research.com

Super Steam Technology

The "super steam" machine combines compressed air, untreated or even polluted water, and almost any combustible fuel to produce steam at any pressure or temperature. The response is instant compared with a conventional boiler taking hours to reach operating pressure and temperature. The efficiency is over 90%, which compares favorably with a conventional boiler's efficiency of 40%. Maintenance costs, fuel consumption, and air pollution all go way down. 3500 applications have been found for super steam technology. Electricity can be generated for 1 cent per kilowatt-hour. Super steam technology can be scaled from the size of a one-pound coffee can to a house.

Super-steam technology could be combined with the aforementioned solar hydrogen producer and hydrogen tank for on-site renewable energy uses. Inventor is Leonard Dorsett.

Daniel Dingel Converted more than 100 Cars to Run on Water

Inventor Daniel Dingel, who lives in the Philippines, since 1969 has converted more than 100 gasoline cars to be powered by hydrogen derived *on demand* from plain water. Aluminum is used in the tank to suppress a possible explosion.

Today, 30 years later, Daniel Dingel is driving around in the only water-powered car in the world. His "concept car" is a red 16-valve Toyota Corolla with the small hydrogen reactor that he invented hooked up to its internal combustion engine. Dingel's hydrogen car has actually received media coverage since the late '80s or so, but to date his invention has not yet been patented and commercialized. How it works:

According to him, his reactor uses electricity from a 12-volt car battery to transform saltwater or ordinary tap water with salt into deuterium oxide or heavy water, which is chiefly used as a coolant for nuclear reactors. Deuterium is actually a hydrogen isotope with twice the mass of ordinary hydrogen, and heavy water is produced when the hydrogen atoms in H_2O are replaced with deuterium.
"The electricity from the battery splits the water into its hydrogen and oxygen components, and this hydrogen can then be used to power the car engine. Normally it takes temperatures of about 5,400 degrees Fahrenheit to generate hydrogen from water, but here I am just using an ordinary 12-volt battery," he claimed.

Just how this kind of chemical reaction is possible using an ordinary car battery is, of course, the secret behind Dingel's invention – and the kind of claim that leads people to dismiss him as a crackpot and charlatan. In fact, while hydrogen is being touted as a viable alternative fuel in the US and other countries, these prototypes do not make use of internal combustion engines but fuel cell engines. Nor do they run on ordinary water but on liquid hydrogen.

For example, DaimlerChrysler has unveiled in the US its hydrogen-powered NECAR 4 (New Electric Car), which is based on a Mercedes-Benz A-class compact car.

In these fuel cell cars, water is just a by-product of the reaction between hydrogen and oxygen ions, which produces the electricity to run the car's engine. In this sense, the fuel cell process is the reverse of Dingel's discovery. Also, Dingel claims that his reactor can work with any existing internal combustion engine-based car.

Dingel said some investors from Taiwan now plan to commercialize his car and help him get an international patent.

Update (*Electrifying Times* (www.electrifyingtimes.com), Vol. 10, No. 2, 2007, page 22):

Dingel did get some of his international patents and was given a sizeable sum of money from yet unknown sources to keep his invention quiet. The secret formula for Dingel's technology as well as the late Stanley Meyer's water cell car is a certain resonant frequency and voltage that allows much lower energy to produce hydrogen and oxygen from water than the standard electrolysis method requires. Stay tuned.

The Author included a possibly similar invention in his somewhat obsolete compilation of "Advanced Technologies for Foreign Resort Project" which is in website www.padrak.com/vesperman and also in http://www.icestuff.com/~energy21/advantech.htm. It is copied as follows:

Brown's Gas Carburetor

Bob Boyce built a carburetor using hydrogen and oxygen previously split using proper frequencies. See http://www.greaterthings.com/News/Tilley/testimonials/related/Bob_Boyce.htm.

Boyce had an electronics business down in south Florida where he owned and sponsored a small boat race team through his business starting in 1988. They had a machine shop out back of his business for doing engine work, and he worked on engines for other racers and a local mini-sub research outfit that was building surface running drone type boats for the U.S. Government's Drug Enforcement Administration (DEA).

Boyce delved into hydrogen research where he was building small electrolyzer type units that used distilled water mixed with an electrolyte. He would then resonate the plates for optimal conversion efficiency.

Boyce discovered that with the right frequencies, he was able to generate monatomic hydrogen and oxygen, which when recombined, produces about 4 times the energy output of normal diatomic hydrogen and oxygen molecules since the process of combustion does not have to break apart the molecules first before recombining into water vapor. Diatomic hydrogen requires about 4% to air to produce the same power as gasoline, while monatomic requires slightly less than 1% to air for the same power.

The only drawback was storage at pressure causes the mono-atoms to start joining into diatomic pairs, and the mixture weakens, so it must be produced on-demand and consumed right away. Boyce used modified LP carburetors on the boat engines to deal with using vapor fuel. He even converted an old Chrysler with a slant six engine to run on the hydrogen setup, and they tested it in the shop.

Boyce never published anything of what he was working on, and his team always stated that their boats were running on hydrogen fuel, which was allowed, to avoid any controversy at the races. It wasn't until many years later that Boyce found out what he had stumbled upon had already been discovered and was known as "Brown's

Gas", and that there were companies out there selling the equipment and plans to make it. For more on Brown's gas generators, see George Wiseman's website www.eagle-research.com.

Water-to-Energy Electrolysis Process

Ken Rasmussen and his team have been working on a water-to-energy electrolysis process that turns out to have similarities to that of Professor Kanarev. Both use a pulsed signal, and both were seeing similar performance rates. Kanarev holds multiple patents, and is widely published. Ken Rasmussen's website is www.commutefaster.com.

Noble Gas Plasma Engine

Joseph Papp was granted US Patent No. 3,670,494 for his "Noble Gas Plasma Engine". A mixture of recycled inert gases (helium, neon, argon, krypton, and xenon) is exposed to a high-voltage discharge in a sealed cylinder with a piston. The spark causes the gases to expand violently though no combustion occurs. Mechanical energy is delivered by the piston's displacement. The gases immediately collapse to their original density, and the cycle is repeated. After several thousand hours the gases lose their elasticity and are replaced. The operating cost is 15 cents an hour.

The first prototype was a simple 90-horsepower Volvo engine with upper end modifications. Attaching the Volvo pistons to pistons fitting the sealed cylinders, the engine worked perfectly with an output of three hundred horsepower. The inventor claimed it would cost about twenty five dollars to charge each cylinder every sixty thousand miles.

Papp had arranged for a demonstration of Volvo engine to representatives of the Stanford Research Institute. Unfortunately the day before the demonstration, the Volvo engine exploded. One person was killed, and another person was injured. Papp himself is believed to have died from apparent neutron radiation from his engine.

There were indications that such an engine could provide its own electrical power and being a closed system, require no fuel. It is not by definition an electromagnetic engine, however. It is believed that at the heart of the Papp engine is the development of high-density electrical charge clusters which provide the energy to expand the gases.

Other US patents are 5319336, 4151431, 3670494, 4046167 - Mechanical Accumulator, 3680431 for Method and Means for Generating Explosive Forces, and 4,428,193 for Inert Gas Fuel, Fuel Preparation Apparatus and System for Extracting Useful Work from the Fuel.

Jim Kettner of the Space Energy Association stated in a letter to the Author that this is the best self-running device he knows of which can produce substantial amounts of power. A variation of the Papp engine was being built by Jim Sabori and, if sufficiently funded, was to have been ready by the end of 1998.

In a letter to the Author from Hal Fox of Trenergy, Inc., Fox states that he believes that the Papp engine works but hopes that much simpler ways of making energy can be developed. There are several groups working on versions of the Papp engine. The latest success is by Russ Gries, www.RWGresearch.com .

Multi-chambered Rotary Compression Engine

The proof-of-concept prototype was designed to produce 25 KW continuous output based on input from (a) air, (b) phase change gases, (c) saturated steam, and (d) other fluids. Inventor is David Yurth.

Conical Vortex Heat Exchange Engine

The proof-of-concept prototype was designed to produce 25 KW continuous output based on truncated conical vortex engine design concepts without consumption of extrinsic fuel. Inventor is David Yurth.

Environmental Heat Engines

Las Vegas inventor Robert Stewart developed his "Stewart Cycle" engine for transportation vehicles, electricity generators, and large-scale water lifters. His efficient and pollution-free engine uses ambient heat to expand a working fluid such as Freon or ammonia and move pistons through sealed chambers. His US patent is for Vapor Actuated Power Generating Device, No. 4,033,136.

A possibly more up-to-date version is Ralph J. Lagow's Method of Generating Power from a Vapor, US Patent No. 4,693,087. Ken Rauen's Rauen cycle and Superclassical cycle engines also expand working fluids with environmental heat to provide useful net mechanical power.

The Superclassical cycle engine has U.S. Patent No. 6,698,200 for “Efficiency thermodynamic engine”. Its abstract is copied as follows: A novel thermodynamic engines including a piston operating on a compressible fluid in a thermally insulated volume, which also includes a movable displacer which selectively divides the internal volume between a warm and a cold side, and a regenerator through which the fluid from the selectively divided volume passes and transfer its heat to or receives heat from, wherein the piston and displacer are each periodically moved in various complex motions according to the present invention to provide efficiency higher than Carnot efficiency. The resulting novel structures and methods, generally referred to as "Superclassical Cycle" engines, incorporate constant volume cooling and aspects of the "Proell Effect" (relative to cooling) to achieve improved efficiencies wherein the gas temperature on the cold side of a fluid displacer is below the lowest regenerator temperature due to "self-refrigeration." Thus according to the apparatus and methods according to the present invention, the traditional principals of the Second Law is further refined and higher operating efficiencies achieved.
(End of abstract)

The abstract of Ken Rauen’s videotaped lecture at www.scientificexploration.org/talks/29th_annual/29th_annual_rauen_proell_effect_maxwells_demon.html is as follows:

Maxwell’s Demon is a legitimate challenge to the universality of the Second Law of Thermodynamics when the “demon” is executed via the Proell effect. Thermal energy transfer according to the Kinetic Theory of Heat and Statistical Mechanics that takes place over distances greater than the mean free path of the gas circumvents the microscopic randomness that leads to macroscopic irreversibility. No information is required to “sort” the particles, as no sorting occurs.

The Proell effect achieves quasi-spontaneous thermal separation without sorting by the perturbation of a heterogeneous constant volume system with displacement and regeneration. The classical analysis of the constant volume process, such as found in the Stirling Cycle, is incomplete and therefore incorrect. There are extra energy flows that classical thermo does not recognize. When a working fluid is displaced across a temperature gradient through a regenerative heat exchanger, complimentary pressure-volume compression and expansion work takes place that transfers energy between the regenerator and the bulk gas volumes on the hot and cold sides of the constant volume system that is not recognized by classical thermo, but which completely conforms to classical thermo. Heat capacity at constant pressure applies instead of heat capacity at constant

volume. The increased energy flow represented by the heat capacity ratio, gamma, represents such a large increase in the heat that can be recycled in a regenerator that it can exceed the Carnot limit in certain cycles. Heat engines and heat pumps have been designed from this concept, and a US patent has been awarded.

(End of abstract)

In an interview, http://www.ongreen.com/deal-marketplace/environmentally-heated-engine, Ken Rauen states that a Superclassical cycle engine apparently could be prepared for production in two years with $1,500,000. The market seems to be larger than $50,000,000,000.

Mr. Stewart claimed that his fuel-less engine could lift Colorado River water from below Hoover Dam back up into Lake Mead, thereby doubling Hoover Dam's output of electricity. He also proposed lifting water from the Columbia River into the Colorado River via a canal, generating electricity as the water flowed back downhill.

Problem: Every century or two the sun aims towards the earth a huge coronal mass ejection causing an electromagnetic storm intense enough to blow out numerous inductive transformers. Power grids could go down for months. But nuclear reactor cooling pumps can only rely on diesel generators for at most a few days. Blackout-crippled refineries would not be able to supply diesel fuel for several months. Without cooling pumps, nuclear reactors and spent fuel storage pools would overheat – releasing catastrophic radiation ala Chernobyl and Fukushima.

Solution: Efficient and pollution-free environmental heat engines absorb ambient heat to expand a working fluid such as Freon or ammonia which pushes pistons through sealed chambers. An environmental heat engine can utilize a nuclear reactor's own natural low-grade heat to drive an auxiliary generator. The reactor's cooling pumps can be powered with the generator's electricity until the local power grid is eventually restored.

Washington, DC area magnetometer readings during the few weeks of 2012 have measured a weakening by a few percentage points of the Earth's magnetic field. Continued weakening extrapolates to a near zero magnetic field by summer of 2012. All of the planet's power grids would no longer be protected from electromagnetic surges induced by unusually strong coronal mass ejections.
Robert Stewart's "Stewart Cycle" engine, Vapor Actuated Power Generating Device, Patent No. 4,033,136; Ralph J. Lagow's Method of Generating Power from a Vapor, Patent No. 4,693,087; Ken Rauen's Rauen cycle and Superclassical cycle engines; and George Wiseman's Wise cycle.

The Author has a videotape and drawings of deceased Las Vegas inventor Robert Stewart's low-temperature phase-change engine which relies on the same basic principle but seems to be a different design.

Inventors: Robert Stewart, Ralph J. Lagow, Ken Rauen, and
George Wiseman, Oroville, Washington, USA eagle-research.com

Walden Amplified Magnetic Motor

Progress thus far on the Walden Amplified Magnetic Motor (WAMM) has been accomplished on a shoestring budget and with volunteer personnel.

The project has progressed from its basic concept, simulations and patent work to a demonstrable auto-rotating prototype which runs on input power for its control electronics, but where all torque and rotational motion is provided by the permanent magnets on the rotor and stator.

Having proved the concept, further phases of development of the WAMM will require phased project funding

to continue to a fully developed and marketable product.

PHASE ONE (Completed):

In the last year and a half, the WAMM concept by the Founder, Michael K. Walden, has completed a patent application and gone through a few iterations until the most easily produced model was selected. This model uses permanent magnets of the same type and model generating force *only* from the change in distance between the rotor magnets and the stator poles. There is no difference in magnetic force between the rows of the rotor magnets to increase torque on this model. The "Permanent Magnet Motion Amplified Motor and Control System" patent application can be accessed at

www.google.com/patents/about/12_478_550_Permanent_Magnet_Motion_Ampli.html?id=vl7lAAAAEBAJ.

Its abstract is copied as follows:

A permanent magnet motor operated by the magnetic interaction between two or more permanent magnets, and a control system therefore, is provided. The permanent magnet motor may be a piston motor having a magnetic piston assembly mounted on a crank shaft, and a rotatable cam shaft having a cam magnet corresponding to the piston assembly. When the cam shaft rotates about an axis, the poles of the cam magnet alternately face the adjacent magnetic pole of the corresponding piston magnet. The magnetic field interactions between the piston magnet and the cam magnet cause the piston to reciprocate within the cylinder. The permanent magnet motor may also be a rotary motor comprising a rotor having a plurality of rotor magnets, and a stator having a stator magnet. A stator motor drives the stator causing the rotor to rotate in response to alternating interactions between magnetic fields of the stator magnet and rotor magnets. A vehicle comprising a permanent magnet motor is also disclosed.

(End of abstract)

The current prototype uses two volts and eight milliamps for input to a basic stamp control board, activation light-emitting diode, and an actuator that moves the stator away from the rotor at the point at which it passes the "V-Gate".

This prototype is a single rotor/stator demonstrator and shows a complete version of the basic concept in operation. It does not yet have sufficient torque to run an electrical load equal to the input. It is however, an electrical motor with extreme efficiency, capable of running on much lower power input, between 2% and 5%, of a comparable standard electrical motor that uses input power to activate field coils or armature windings.

The next phases of development of the WAMM will increase torque and output power while still minimizing input to the control system.

PHASE TWO (Pending funding):

Mr. Walden and his team have developed several methods of increasing the output power of the demonstrator device.

The first is to multiply the number of rotor/stators on a single common shaft with the "V-Gates" offset so that only ONE gate stator actuator is activated at any time. The team has a number of rotors, but funding will be required to purchase additional control electronics and program them to work together as a common unit. Machining of mounting tabs for these additional control systems will also be required.

Another method is to increase the width of the rotors. This will increase the width of the magnetic "V", increasing the difference between the rows of the rotor magnets in relationship to the stator poles. This method would involve machining new rotors and mount base plates.

Another method would be to purchase new rotor magnets that "STEP" their power by a given amount per row around the rotor. For example, if the first row has two pounds of force then the second row would have three pounds of force at the same distance. The third row would have four pounds of force, etc., around the rotor. This will increase the magnetic force *between rows* and so, increase torque as both magnetic force and magnetic distance between the rotor and stator change with rotation.

The current plan is to first combine the existing auto rotating demonstrator with an additional rotor and control equipment. This would be the fastest method of developing additional output and would also demonstrate that no additional input power is required, only the frequency of activation would change.

Once this is shown, then the "Magnetic Step" of the rotor magnets can be implemented to further increase the output torque and power of the demonstrator. This will require the selection, ordering and purchase of new rotor magnets and machining/dynamic balancing of the rotors to mount them.

PHASE THREE (Pending success and funding of phase two):

Once the maximum amount of output power and torque is developed per rotor in Phase Two, the number of rotors necessary to develop sufficient power to run the control electronics independently will be established. As shown in the concept drawing of a complete 36 rotor WAMM unit (not shown), it is estimated that such a unit can easily produce a continuous power output to run the pulsed input to the control equipment and actuators.

This unit will then be scaled per market requirement.
Funding is required to produce the needed number of rotor/stator/actuator and control modules and power system / case to complete the first few demonstrator units and do a complete testing program.

Super magnets developed by laboratories at Arzamas-16 in Khazakstan and the IPMS-Kiev (see above) have energy characteristics equal to or exceeding those of the best conventional iron-boron-neodymium types, but with the all-important feature that they operate with equal or greater efficiency at extremely high temperatures, up to 250 degrees centigrade. Super magnets ought to increase the WAMM's torque and power.

The Walden amplified magnetic motor offers all the motive power characteristics needed for electric vehicles such as reversibility, complete variable power control, complete variable speed control, braking, and stepping.

BATTERIES/ENERGY ACCUMULATORS

Casimer Effect Self-Charging Energy Cell

The force of gravity is sometimes described by physicists as the ether weakly pushing two objects such as a book and the earth into each other's shadow. Gravity can also be thought of as the long-range version of the Casimer effect. The Casimer effect predicts that two metal plates close together will attract each other.

Consider the plates set at a certain distance apart. In the space between the plates, only those ether (vacuum) field fluctuations for which a whole number of half-waves just spans the distance can exist, just like waves formed by shaking a rope tied at both ends. Outside the plates, the fluctuations can have many more values because there is space. The number of modes outside the plates, all of which carry energy and momentum, is greater than those inside. This imbalance pushes the plates together.

The proprietary Casimer effect self-charging energy cell contains many extremely thin layers of carbon, magnesium, chromium oxide, and a couple of other elements and compounds. The result is analogous to a boat that has some rather large leaks. More water pours into the boat as fast as water is bailed out. Likewise, as electromagnetic energy is drawn out of the Casimer effect self-charging energy cell when inserted in an electrical circuit, energy is drawn in from the surrounding ether. Physically and functionally, the Casimer effect energy cell is like a solid-state battery that recharges itself with some valuable features such as simplicity and compactness. Inventor is Mike Windell.

Inventor Matt Schadeck has developed a similar Casimer-effect energy cell.

Bedini Battery Charger

Audio engineer John Bedini has been experimenting with a rotary magnetic device that recharges batteries. Sometimes “dead” batteries can even be brought back to life and recharged. Specific details are proprietary. At the 2011 Renaissance Charge Free Energy Conference, a Bedini battery charger was demonstrated by electrically powering a boat on a lake with unusually high efficiency. See Jeane Manning’s report at http://www.jeanemanning.com/ (enter Bedini in the website’s Search box in its upper right) and conference organizer Rick Friedrich’s report at http://tech.groups.yahoo.com/group/Bedini_Monopole3/message/17005.

Endless Electric Field Generator

The "Endless Electric Field Generator" is being developed by a small company that does not want to be identified at this time. This company has developed a number of technologies, and has acquired a significant patent portfolio.

This technology works by producing a permanent electric field (the opposite of a permanent magnetic field in a permanent magnet) that does not break down. From this permanent electric field, a constant flow of electricity can be produced. Currently, the output of their prototypes is modest, only capable of powering small lights or other loads. However, they are working towards incorporating methods of increasing the surface area of the device, which will boost the current to a higher level (the voltage is already there).

The future potential of this technology is stunning. According to the company, once the technology is further developed, a device the size of a postage stamp could produce approximately one watt of constant electrical power – enough to power a cell phone. It would continue producing this power for a minimum of twenty years (perhaps much longer) while consuming no fuel of any kind. Additionally, these devices are produced from non-toxic materials, and would not be harmful even if swallowed.

Eventually, the technology could be scaled up to provide electricity for any application – mobile phones, computers, electric cars, homes, etc.

They are a small R&D company that has been in existence for around 20 years with several technologies already developed. The staff comprises of very qualified scientists and technicians, and they have some 22 patents and several published peer review papers.

They have developed two types of generators. The generators, once manufactured do not rely on any catalytic, chemical reaction or nuclear materials. They should continue to generate for at least 20 years; and testing of the material for the last three years has shown no change in structure or performance. At present, power outputs are low, however voltages are high. The current can be increased by increasing the surface area. It is obviously a major scientific breakthrough. No existing laws of physics are broken, but still some mysteries and questions

remain. However the proof-of-concept devices cannot be argued with.

The technologies here will be in the hands of everyone and will be used to power everyday appliances and technologies. Eventually as it is scaled up, it will be available to provide power for larger applications, but there may be engineering limitations.

These are both material technologies with no electronics or moving parts; so they are solid state.

The first device consists of three materials that are layered onto each other. The first layer is already a known material that generates electricity when stimulated. The second material stimulates the first material or layer to produce the electricity. However to stimulate the second material you need another or third material. The combination of the materials and their composition determine the voltage. The surface area and how well the materials contact each other determine the current. The materials can be multi layered to increase current output.

Voltages typically vary between 1 and 40 volts DC but have been measured up to 100 volts in extremely cold conditions. A hybrid with the solid-state Cool Chips™ thermo-ionic refrigerator (see above) may result in a net power increase. IPMS-developed thermal electric cooling devices (also see above) even have been tested to produce temperatures as low as -259 degrees Fahrenheit.

There are some critical processes that have to be undertaken to make this work. Once the material is assembled and initiated it will continue to produce electricity for at least 20 years and possibly up to 100 years.

The second generator has some advantages over the first as it does not need to be layered. It is a different process where the materials are mixed and put through a simple process with the end result being a material that puts out a permanent electrical field.
After extensive testing there is no breakdown of the materials or performance. Some samples have been around for as long as three years.

What are some of the applications that this technology could be used for? Initially, products that require low power like sensors and perhaps GPS devices. The technology really lends itself to charging capacitors and batteries. Once the basic building blocks are engineered, there is no reason why it cannot be scaled up to larger applications. There are many manufacturing techniques the technology lends itself to. It will be a matter of the application and economics. The materials used are cheap, non-toxic and in abundance.

There is actually no limit of how large these devices can be scaled. A lot of engineering needs to be done, and no doubt some hurdles will show up. Once the basic building block is engineered, it can then be reproduced many times over, increasing power output by layering the materials with first generator and just increasing the bulk of the second generator.

Once the power densities are known, when better samples can be produced, it ought to be easier to determine optimum sizes and scalability. When an optimum size is known the cells can simply be duplicated in modular fashion. For example, it may eventually be possible to commercially make a postage stamp-sized device that could endlessly power a cell phone, and smaller devices that could endlessly power heart pacemakers and more compact hearing aids that wouldn’t need batteries.

The science is solid, but the engineering of how to best produce these cells, and the manufacturing techniques used, have to be further investigated. The proposed techniques are no different to existing ones being used in the semiconductor industry today.

A handmade sample that had not been used or tested for at least two years was hooked up to an LCD desk clock. The clock powered up immediately. The sample was deliberately shorted out several times, and it bounced back in a couple of seconds every time. Resistance to short circuits is of nontrivial significance.

http://pesn.com/2012/01/21/9602018_Top_5_Free_Energy_Technologies_Unfolding_Now/
http://pesn.com/2011/07/23/9501875_Number-1_Breakthrough_Solid_State_Generator/

Thin-Film Electrolytic Cells

A number of seasoned technology integrators have developed thin-film energy storage technologies which hold considerable promise. Dr. George Miley http://us.f422.mail.yahoo.com/ym/ShowLetter?MsgId=5879_0_10046_1657_18493_0_6353_62846_1210735957_oSObkYn4Ur5HQVbr2mDutFQCxx.PM1zmIfc0gsISbAkgZVonU9BIIHMvApzdRCMs0ZblDQbx8hbgPneBheOtRWlOjDFh2M1mM8Jwp.TT.YPCS0F1hxYuRsVMDaSXf9wIiD3hl4SBEHcSQPYXkS%20, Dr. Robert Hockaday and others have developed thin film technologies with energy densities exceeding 250-400 watt hours per kilogram. Dr. Miley's invention is illustrative. Using a flowing pack-bed type electrolytic cell with 1-molar $LiSO_4$ in light water, 1mm plastic beads with a very thin [500-1,000 angstrom] film of metal [nickel, palladium, titanium] are employed. A special sputtering technique is used to spray the metals onto the surface of the beads. With 2-3 volts of electrical power and 1.5 milliamperes of current, the single film experiments have shown the material to produce more than 10 times as much output power as input. The input power is no more than 0.01 watts while .5 watt of heat is produced.

It is likely that the physics involved in this reaction involve the release of energy as a by-product of nuclear transmutation. Dr. Miley has written, "The key finding from these studies has been the observation of a large array of "new" elements (i.e., different from the original bead coating), many with significant deviations from natural isotopic compositions, after the run. Great care has been made to ensure that these elements are distinguished from isotopic impurities by use of a "clean cell" with high purity components and electrolytes, in addition to the pre-and post-run analyses. Even low-energy radiation was detected from the bead days after each experiment. Applications to space power, providing a 1-kilowatt cell with only 500 cubic centimeters of active electrode are predicted."

Note that this particular invention, with its large over-unity energy yield, was awarded an NERI grant by the US Department of Energy. At the insistent urging of the American Physical Society and representatives from MIT and other universities whose laboratories are currently engaged in high-temperature gas-cooled nuclear reactor research, Energy Secretary Richardson eventually withdrew the grant.

DISCLAIMER: Inclusion of any invention or technology described in this compilation of electrical energy innovations does not in any way imply its suitability for investment of any kind. All investors contemplating any investments in these devices and technologies should first consult with a licensed financial professional. Prospective investors should exhaustively perform their own investigation of pertinent facts and allegations of facts. Investors should also ensure thorough compliance with regulations of the federal Securities and Exchange Commission and appropriate state securities divisions. For more information, see http://www.zpenergy.com/modules.php?name=News&file=article&sid=1655.