Rapid and Decisive Solution of the World Energy Crisis and Global Warming  
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Foreword

The Problem:
The present energy paradigm—that one must almost always consume fuel [7] and
dirly provide EM energy and power—has failed.

Applying fuel directly—to this cannot occur—(a) the escalating world fuel crisis
(b) hence the escalating energy crisis, and (c) an accompanying and escalating global
climate change, and biophysical pollution crisis.

Catastrophic national economic collapses and more intensive global changes [4]
are looming—with additional severe drought and water shortages, and increasing changes
and violence in climate and weather. Yet the worldwide demand for energy rapidly
escalates while the world’s fuel shortage is also rapidly increasing.

Worldwide there is a century of investment in the present totally inadequate electric
power structures, grids, and systems. These must somehow be “altered” so as to be clean,
but then can still be used, since their financial replacement costs are just not possible.

Most energy is presently obtained by “dirty” methods [5]. Hence energy production
increases, so do harmful combustion byproducts, nuclear wastes, and biophysical
combination processes—also as global warming is feeding the present obsolete energy paradigm
and (b) the abject failure of our scientific community to change it.

Climate changes are already starting [14] [15] [16], and moving much slower than
expected [17]. By 2030, the combination of these factors will increasingly spell worldwide
economic and biophysical chaos if the present “dirty energy” paradigm continues to be
defeated. Eventually the collapse of Western Civilization itself may loom as a possibility.

Summary of the Problem
(1) Most of our EM energy production also produces lots of “dirt” in the process of
obtaining the energy.
(2) The solution has to be to produce our EM energy without producing dirt at all.
(3) Other than small contributions by wind, hydro, geothermal, and solar power,
presently there is no really “clean energy” process in widespread usage [18].
(4) Science has no truly effective way to “clean” the dirt (or dispose of it) that is
produced to get the energy, even if we “catch” the dirt and hold it. Catching
combustion byproducts from the combustion of coal, oil, and wood, then calling for
“sequestration” does not get rid of the dirt. Putting the carbon dirt in the
ocean merely acidifies the ocean (its acidity is already beginning to eat plants and
kill ocean life forms) and eventually puts it right back into the atmosphere again [19].
(5) The central problem is: People generally produce most of our EM energy by
immediately producing trash which is then usually produced to destroy.

The only real solution is: We must produce all the EM energy we need, cleanly,
and, essentially, recreate the primeval energy cycle of all.

(7) Ironically, all EM energy is already produced cleanly from the vacuum via the
source dipolarity of the generating system itself. It is not produced by consuming
fuel to crank the shaft of the generating unit into a hundred years of electrical
engineers and professors have taught and been falsely taught that it is [19]. So
burning the hydrocarbon fuel or consuming nuclear fuel rods has nothing to do with
the direct production of EM energy [14].

(8) Hence the specific problem is to catch and use the free EM energy from free
vacuum energy and generate usable electricity without emitting any polluting
“dirt” of the generator—and without depending on the wind, sun, or water. Any
duplex already does exactly this—by, because of its proven broken symmetry known
since 1937 and the award of the Nobel Prize to Lee and Yang [20].

This now solves the real problem: The electrical engineering process has to be doing
something other than burning, or else the machine cannot have the ability to
generate to destroy its source dipolarity faster than it powers its load. Otherwise,
no further physical impact of mechanical shaft energy to the generator is
necessary, once we had initially forced the generator to form its own internal
source dipole [19]. Instead, the EM energy would flow freely and forever from the
sustained dipole, without ever another “cranking” of the generator shaft.

Facts Bearing on the Problem
(1) One does not have to consume fuel in order to obtain energy! Space/time/vacuum
itself is the greatest energy source in the universe, with more energy in a cubic
centerimeter of space in the earth than in a million cubic centerimeters of space in the
universe—(2) Modern physics proves that the energetic vacuum indeed has this high
energy activity, and that it (the active vacuum) continuously interacts with every charge
(magnetic or electric) in the universe, freely and continuously providing the normal EM fields and all their EM energy.

(3) Yet our energy models—such as the more than a century-old and crippled
electrical engineering (EE) model—still falsely assume an inert space/vacuum environment.

(4) The archaic, seriously flawed 1880s/1890s electrical engineering model [14] is
thus—a and perhaps the—major cause of the escalating world energy problem,
although this fact is completely ignored.

(5) Every observable flaw of observable EM energy in the universe—including in
every EM system and circuit—is (a) a function of vacuum (b) has always been directly extracted from the
seething virtual space vacuum via the broken symmetry of the system’s internal
source dipolarity [21].

(6) Every simple piece of copper wire, lying on the shelf alone, with no
“current running” in it, involves enormous ongoing energy and power
discharge to the major nation if were tapped.

(7) Since the archaic old EE model was formed in the 1880s and 1890s, modern
physics—including special and general relativity, quantum mechanics, quantum
electrodynamics, gauge field theory, quantum field theory, and particle physics—
has been born and developed. Physics has made a century of progress since the old
EE model was “frozen” in 1892. Modern physics assures us that the vacuum/paceitme has enormous energy, and that it continually interacts with

out of the impedance and along the flow path, than the negative energy
the operator inputs into it from the input side.

(9) A set of such “amplifying impedances” in series along a negative energy flow
path can provide as much negative energy flow from the active vacuum as one
wishes or is able to control by the state of the technology at the time—starting
from a single flashlight battery providing a very small negative energy source [22].

(10) Bedini has been using this effect in his battery chargers for 20 years, with
excellent results and proof of COP=1.0. With negative energy flow, an impedance
produces a “scattering” of energy from the flow into the external environment—
hence is a system loss and the energy is “disrupted” (from the circuit path out into
the environment) from the system. With negative energy flow, an impedance
produces/receives a “free gathering” of additional input negative energy from the
active vacuum, and so negative energy flow is freely “gained” by the circuit
and system due to the free input from the external environment. In short, the
“disruption” is then from the external vacuum environment into the impedance
and therefore into the system as a gain, whereas with normal positive energy
the “disipation” is out of the system and back into the external
environment as a system loss.

(11) Indeed, working, experimentally tested, independently replicated, and proven,
Bedini free energy systems are available now and are already in limited
production and marketing [23] [24]. At least a dozen other systems such as self-
poworming permanent magnet motors are also available from Bedini, requiring only
the funding for a little further production engineering and then dramatic
production and marketing.

(12) From other research and research groups worldwide, other systems still in the
“bench demonstrator” category are also available for more extensive R&D
completion and then for production and deployment [23].

Solution Required:
(1) We need a prompt and massive shift to a new energy paradigm that provides the
necessary energy without consumption of fuel, taking the energy freely from the
energetic vacuum/paceitme and thus producing no “dirt”.
(2) We must have and implement it as rapidly as is humanly possible.
(3) Electrical engineering already deliberately excludes the new paradigm [21].
(4) It is not an “electrical engineering” problem, but a physics problem [21] [22].
(5) The new paradigm shift must also be economically feasible and can be [22].
(6) Bits and pieces of the suitable new paradigm are available in the various
compartments of physics, primarily needing “combining and finishing” [22].
(7) We urgently need a “Manhattan Project” to fund, produce and
implement the new energy paradigm area. We need it now.

Advantages That Accrue:
(1) There are known but ignored legitimate prototype COP>1.0 solutions already
available worldwide, but rather ignorantly suppressed [21] [22]. These can be
substantially funded for their more rapid completion.

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some of the free EM wind energy from our ‘silly gadget’ and then generate—

dissipate the collected free EM potential energy to power loads—“for free”.11

(11) It is also possible to input a certain amount of energy to a subsystem of a bigger system of multiple such subsystems, and have that energy do more work in Joules than the energy input by the operator. Electrical power engineers do not seem to understand this at all, and even many thermodynamicists do not understand it. But it is true. There is a conservation of energy law, but there is not a conservation of work law [7].

(12) It is not necessary to burn a single gallon of oil, a liter of coal, or consume any nuclear fuel rods in order to obtain all the usable EM energy one wishes—cheaply, cleanly, anytime, anywhere [7]. The result is a dramatic reversal of the present contaminating and global-warming electrical power technology to self-powering, clean, economical systems that are fuel-free or almost entirely fuel-free.

(13) Seven typical programs are listed which should be part of the intense Manhattan project to be launched. Others such as solid state self-powering “batteries” [46] may be added readily, but the seven listed will suffice to do the job—quickly, cleanly, and inexpensively.

(14) With the proper crash program we will quickly get clean, cheap, economical solutions to the world energy crisis at all levels [7].

(15) We will get prompt, dramatic reduction in (a) global warming emissions, (b) nuclear waste production and storage, and (c) present harmful pollution and deposing of the biosphere [48].

(16) We will get prompt, dramatic reduction in (a) burning of fossil fuels, (b) consumption of nuclear fuel rods, and (c) production of harmful wastes (nuclear and other contaminants) by replacing adapting most power plants already on site, including nuclear power plants [48].

(17) We will also get dramatic reductions for curing and reversing most present medical diseases as well, including those now considered inurable—and also including the major debilitation effects of aging. This will follow from the development of precursor engineering and production of the proven Fogal semiconductor, in the latter program of the Manhattan-type Project.

(18) Practical antigravity systems and space propulsion systems will be made possible very quickly [9]. This follows from developing systems—as Bedini has done—that use quantum energy (which Tesla discovered and called “radiant energy”).

(19) Instant home-free communications will be available almost immediately [9] using the Fogal chip [9] and the beginning of the very novel precursor engineering that accomplishes. A description of the functioning of the Fogal chip is given in the seventh program of this Solutions paper.

(20) With the final program (precursor engineering) we also get the ability to engineer mind and life [7], and indeed we engineer quantum/vacuum and its structuring and dynamics [7], [7].

(21) With precursor engineering, we gain the ability to directly engineer quality itself, dramatically extending the present standard scientific method which uses models fitted to experimental observation only and is limited [7].

(22) Under rigorous independent laboratory tests, when “sold” at light loading, the Fogal semiconductor [51] has already demonstrated its ability to settle into precursor engineering and engineer the energetic vacuum/quasitree directly [9]. Nonetheless, Fogal and his chip have been resoundingly suppressed for nearly two decades.

RECOMMENDED MANHATTAN PROJECT: EXEMPLAR PROGRAMS

Introduction

We note that others such as Nobelist Gore [25] are calling for a Manhattan Project to solve the global climate warming, pollution, and escalating energy problem. However, most of our political leaders—led by our scientific community which has its head firmly buried in the sand in the ostrich position—still are thinking only in terms of the “standard paradigms”—the way the structures in our society are already fixed and failed to mirror reality. As an example, see the 2006 report [7] that the President’s Council of Advisors on Science and Technology (PCAST) provided to President Bush—and observe its severe limitations and total omission of energy from the EP/E field systems, even though every tidy of observable EM energy in every EM field and circuit and system in the universe is and has been extracted directly from the vacuum via the boundary of the universe’s indeterminacy. The blunt truth is that PCAST itself has no inkling of what EM power powers an electrical circuit! It is not cranking the shaft of the generator, because that only restores the source dipole and its symmetry (that the symmetrical systems built by our EEIs destroy faster than the systems power their loads). To prove it, one of the seven recommended programs we reveal how to extract and use all the real EM energy one wishes, from any very cheap static voltage source which is never depleted.

To show the nature of what has to be done to tackle and solve the energy and climate problems, and to develop a new technology of “energy from the vacuum” systems, here is an elementary example of the several parts of any fundamental requirement:

(1) There has to be developed a major math model. It must be fitted to a very large number of phenomenology experiments in everything from quantum field theory, gauge field theory, particle physics, higher group symmetry electrodynamics, etc. that encompasses the vacuum energy interaction phenomenology met with when the EFTV system is asymmetric. There is no such model today, and producing one is a truly major scientific task in multiple physics disciplines (quantum mechanics, quantum electrodynamics, gauge field theory, quantum field theory, etc.) We would estimate this task as an initial 50 million task to yield a minimally satisfactory initial model as a “starter.” Obviously, however, the task should continue and be further funded as the rest of the Manhattan Project programs continue, since it supports them all and since its refinement is necessary if we are to develop a fitted technology.

(2) The new model has to encompass the differences encountered in different locations (due to differences in arrangement of the charged matter, its atoms, nuclei etc.)—and thus to the differences in the local vacuum interactions from place to place.

(3) With the proper crash program we will quickly get clean, cheap, economical solutions to the world energy crisis at all levels [7].

(4) We will get prompt, dramatic reduction in (a) global warming emissions, (b) nuclear waste production and storage, and (c) present harmful pollution and deposing of the biosphere [48].

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(13) Seven typical programs are listed which should be part of the intense Manhattan project to be launched. Others such as solid state self-powering “batteries” [46] may be added readily, but the seven listed will suffice to do the job—quickly, cleanly, and inexpensively.

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we are subject to the vacuum’s indeterminacy. There is no such model today, and producing one is a truly major scientific task in multiple physics disciplines (quantum mechanics, quantum electrodynamics, gauge field theory, quantum field theory, etc.) We would estimate this task as an initial 50 million task to yield a minimally satisfactory initial model as a “starter.” Obviously, however, the task should continue and be further funded as the rest of the Manhattan Project programs continue, since it supports them all and since its refinement is necessary if we are to develop a fitted technology.

(2) The new model has to encompass the differences encountered in different locations (due to differences in arrangement of the charged matter, its atoms, nuclei etc.)—and thus to the differences in the local vacuum interactions from place to place.
Once the separated external circuit is reconnected, its charges are allowed to come unipolar and current will flow in, powering the load while the freely-potentialized circuit dissipates its potential energy. Then the process is iterated; the gap is re-opened and the static source is re-connected with the charges again pushed across the gap to freely-potentiallyize the external circuit.

So one potentializes freely and statically with original source connected, and then dissipates the collected excess potential energy dynamically and separately from the original source.

In this manner the static source voltage will iteratively furnish all the electrical power in a specific circuit that one wishes, literally without limit, and without having to do work just to continue having the source. If one uses only voltage input from the static source voltage to one’s external circuit, then no change in the source’s static voltage occurs, because no current flows from or through it, and hence no electrical power is drawn from it or used to destroy it.

Use of a static source voltage in this current-free fashion is beyond simply repeating the WW II use of the known difference of potential (between a jungle treetop and the earth’s surface) to draw sufficient power (both current and voltage) to power a small radio in the South Pacific. There the troops used only the standard symmetric EM circuit, which has to draw power (both voltage and current) from the earth-electrostatic voltage difference source utilized and that contributed to the radio powered.

The overall power that can be drawn directly from a segment of the static earth-electrostatic capacitor’s voltage and charge is very small, but if one draws only voltage (with dQ/dt = 0) and uses the proper asymmetric circuitry to collect and flow (charge) that voltage onto pinned charges q in a collecting circuit, then one can take and use just the voltage. Using this free static voltage to power a static circuit will produce the desired amount of free potential energy W in the asymmetric collecting system (on those pinned charges q) that one requires, by the simple equation W = Vq. If we do not allow any current from the external circuit and load to flow back through the dipolar voltage source, then all we continually need from the source is the voltage V itself. That can and will be sustained indefinitely by the source. Freely! Forever!

“Static voltage” is actually a dynamic set of opposing EM energy flows (longitudinal waves), as rigorously shown by Whithaker in 1903 [51]. Hence so-called “static” voltage will indeed flow (without doing work) onto a “statically connected” collection circuit containing pinned charges q, “potentializing” that receiving circuit so that stored potential energy W = Vq appears in it.

This “statically potentialized” (exacted) collection circuit is then separated from the static voltage source. The gap left by the disconnected primary static source is reconnected (say, by a resistor and diode in series across the gap) as a separate external circuit and system, and then this separated circuit’s freely-potentialized stored potential energy is dissipated in its loads to power them. This results in delivering a fixed amount of free power to the loads to power them—completely independent of the primary static source (the electrostatics, in this example). The power "source" can be substituted.

This type of asymmetric system and circuit is a part of the Heaviside model equations that Lorentz [59] deliberately discarded in 1892 by arbitrarily symmetrizing the equations for the specific purpose of eliminating all such systems, ensuring that electrical engineers build only COP=1.0 power systems insofar as taking the energy from the local vacuum potential is concerned. Since then, EEs have always built and used only symmetrized power systems, thus directly generating the world’s present energy crisis.

**PROGRAM II**

**Easily Build and Use Self-Powering Permanent Magnet Motors**

Program II is developing the “easy” self-powering permanent magnet motor, built by using specially-produced permanent magnets each having an asymmetric field laterally (deliberately produced by applying nanocrystalline technology to the magnets).

The broken symmetry of the source dipole is what actually powers (furnishes the EM energy for) an EM circuit or system, i.e., it is the crumbling of the shaft of a generator. We have explained how a circuit or system can only be powered by energy extracted from the seething virtual state vacuum by the circuit’s system’s broken symmetry. As Nobelist Lee points out, when we have a broken symmetry then something previously virtual, becomes ohmically active [90].

To achieve the broken symmetry in a normal permanent magnet motor, electrical engineers normally place a coil strategically, so that in the back stub region between rotor and stator magnets they introduce a timed current and additional magnetic field that overpowers the back field and renders the net field in that region temporarily. But this costs the operator heavily for the power (voltage x current) produced in the coil, so that we pay more to break the symmetry than we will obtain from the resulting rotation of the magnets.

However, if the field symmetry inside the permanent magnet motor is broken by the composite asymmetric field magnets themselves, in the proper geometric regions, then we freely obtain the broken symmetry for “powering the system by converted vacuum energy.” Such asymmetric-field permanent magnets can be produced by nanocrystalline engineering techniques. Then they can be arranged in a system to furnish its self-powering, using the freely introduced power from the converted virtual state vacuum energy. Thus the energy to power the motor is continually extracted freely from the vacuum, via the proven broken symmetry of a magnetic dipole (separation of opposite poles) and therefore separate, and the opposite magnetic charges, knowing that in 1957 the award of the Nobel Prize to Lee and Yang for predicting such broken symmetry. Instead, the current is essentially zero for the system’s symmetry’s effect, the charge motor will do its work.

Again, by Lorentz’s arbitrary symmetrizing of the Heaviside equations in 1902 [52], all such asymmetrically powered magnets were discarded from the theory and from the electrical engineering textbooks—as well as from the resulting electrical engineering acolytes and so on. Consequently any and all our permanent bar magnets have been produced with symmetric field to left and right.

The prohibition of self-powering permanent magnet systems has thus been a direct decree of our electrical engineers, rigorously practicing the programs as dogmatically ordained, in their highly restricted theoretical model, by Lorentz and I. P. Morgan more than a century ago.
PROGRAM III
Adapt NRAM to Produce and Use Self-Powering Steam Boilers
Program III is the adaptation of the NRAM (negative resonance absorption of the medium) technique from optical physics [31] [32] [33], to produce self-powering heat assisted steam boilers to provide steam to power self-powering generators. The heat absorption at a medium of CO₂ gas and 4% of CO₂ will be 4.0°C or so. A self-powering (vacuum energy powered) heat exchanger is then added to our present electric power plant steam boilers worldwide. Once the self-powering heat exchanger is operational, then with clamped positive feedback the boiler itself becomes self-powering and needs no further consumption of fuel or nuclear fuel rods to continue to heat the water in the existing water power stations, to generate electric power, to generate "self- powering" (actually, total powering from the active vacuum which is furnishing the necessary heat energy input to the heat system). Once done, this is no more "mystical" than a windmill-powered generating system. We are just using the active vacuum to furnish our necessary "free" EM energy wind flow" for our use to produce the necessary initial "heating" of the boilers.

In our new assembly of paralleled NRAM "heat amps" to cover the desired heat spectrum.

By adding clamped positive feedback of one part (to replace the normal input by the operator), the entire heat amplifier process becomes "self-powering", taking all its input energy directly from the heating vacuum.

At any rate, a self-powering "heat amplifier" is practicable for developing and incorporating in the input heating section of existing steam boilers. See the below illustration.

Since most of our present on-site electric power plants (including nuclear power plants) actually just heat steam across most of the heat bandwidth. The heat amplifiers are switched in—along with clamped positive feedback of enough of the heat output of the boiler system—power to the steam to power the steam turbine driven generators. The self-powering steam boilering process allows one to use almost "self- powering" (actually, total powering from the active vacuum which is furnishing the necessary heat energy input to the heat system). Once done, this is no more "mystical" than a windmill-powered generating system. We are just using the active vacuum to furnish our necessary "free" EM energy wind flow" for our use to produce the necessary initial "heating" of the boilers.

Self-powering steam boilers are a lot less expensive than the windmill or steam turbine driven systems, and are already in mass manufacture and widely available.

The fuel-consuming giant electric power plant (or other initial power source) can shut down as soon as the first self-powering boiler is up and running. This heat immediate, and profound applications:

E.g., take a large and very expensive and cantankerous windmill farm, and replace the entire ensemble with a single smaller and much cheaper windmill driven generator which furnishes electric power to heat the input of a modified heat-amplifying (self-powering) steam boiler. Once this steam boiler is up and running and switched into self-powering (clamped positive feedback) operation, the windmill can be shut down. Everything from then on is just a matter of adding more jump-starting self-powering steam generators and their steam turbine driven generators, and it matters not whether the wind is blowing or not.

In this fashion, very expensive and cantankerous windmill farms are replaced by a simple much smaller windmill "jump-starting" component. And yet as much power as desired can be produced, just by adding additional jump-starting self-powering steam boilers and their generating systems.

A similar thing can be done with presently very expensive solar cell array electrical power systems. Simply use a single small much smaller and much cheaper solar cell array for "jump-starting", and the operator which furnishes electric power which furnishes the power input directly from the active vacuum. Once self-powering is achieved in the first steam boiler, it does not matter then whether the sun shines or not. Thus the net cost (and pollution) of the entire ensemble is offered for use.

We are presently developing self-powering steam boilers for electric power generation. This steam boiler with input energy from the active vacuum is furnishing the necessary heat energy input to the heat system. Once done, this is no more "mystical" than a windmill-powered generating system. We are just using the active vacuum to furnish our necessary "free" EM energy wind flow" for our use to produce the necessary initial "heating" of the boilers. Once self-powering is achieved in the first steam boiler, it does not matter then whether the sun shines or not. Thus the net cost (and pollution) of the entire ensemble is offered for use.

And today point out that energy conservation can be violated in a properly correlated general relativistic situation.

This means that the general relativistic local frame vacuum solution of the absorbing charges in the NRAM medium is perfect on its own and far less expensive—and with independence of drought, stream depletion, etc. It also allows the ready use of even very small streams to heat a single small hydro turbine and its generator for the "jump-starting" function, which is all that is externally needed to jump-start any many self-powering steam boilers as necessary. Changes in consumer demand requiring changes in the input power required to be furnished by the grid’s source generator, are also easily met by merely jump-starting more standby steam boilers to increase electric power, or cutting off some of the self-powering steam boilers to reduce electric power. This also allows adjusting to the necessary power production level needed as it fluctuates over time. When we have previously pointed out, accompanying every accounted Poynting energy flow in or from an electrical circuit or source, is also a mind-boggling curved Heaviside giant energy flow component that is millions of times greater than the account for the diverging Poynting energy flow. This is because the Maxwell equations express the electro magnetic energy field in Maxwell's equations to eliminate all energy flows and "self-powering" systems freely taking their energy from the active medium [59], Lorentz in 1900 also added a great many integrated trick [57] to get rid of that bothersome giant Heaviside curved energy flow component [57] (again at the impetus of J. Morgan). In this way, we showed engineers would never observe sources already contain trillions of times more EM energy flow than is in their textbooks in the accounted meager Poynting energy flow component that its systems normally divert and utilize.

In any special relativistic situation (the norm in EE), the giant Heaviside curved energy flow component is totally wasted because then vector analysis applies and the divergence of the curl is zero. This led to Lorentz’s signature statement that the curl flow component “had no physical significance” because it did nothing. But that sly statement is true only in a special relativistic situation. Nonetheless, it is erroneously repeated today by leading classical electromagnetics, even by Jackson [57].. However, in a general relativistic situation, vector analysis no longer applies, and the divergence of the curl is not necessarily zero. So in that relativistic situation that ubiquitous and enormous curved energy flow can also be diverted into the circuit to help power it after all, resulting in “energy from the active vacuum/space/time medium” and achieves input of CO₂ 1.0 to a generating system which has an energy efficiency 100% lower than 100%. With a CO₂ 1.0 heat amplifier, self-powering is nearly in the same direction as the SR frame rotations when they are being generally used by the system and the operator.

And thermodynamicists are still grappling with GR violation of energy conservation—and have not yet made truly significant process in digesting and understanding it.

License, Produce, and Use Proven Bedini Overunity and Self-Powering Systems
Program IV is a clarion call for the immediate worldwide licensing and use of the proven Bedini technology (by Energies). Another addition to a steam a power output of 1.0 million (or so) should immediately be pumped into his company, Energies, to provide a much larger development steam and quicker production of a wide range of Bedini’s overunity battery chargers.

Bedini’s first production systems are presently going into large warehouses to charge large materials handling equipment. The final prototype has previously been tested in this application, and they performed beautifully—saving the warehouse owner lots of money and lots of EM energy from the “wall plug” normally required to charge the large, expensive batteries. This technology is also put into limited production and marketing for other CO₂ 1.0 battery powered processes, including large battery-powered materials handling equipment, self-powered elevators, electric scooters for the handicapped, electric automobiles, etc. Simple Google the Energies website and examine the products being produced or to be produced shortly and marketed [7].

The battery chargers use negative energy (which Tesla discovered and called “radiant energy”). The unusual characteristics of charging a battery with negative energy is that (a) sillation is reversed, dramatically extending the lives of these expensive batteries, and
Precursor engineering is the direct engineering of speciation, vaccine, and reality itself, work-free. This forms a specific set of spacetime/vaccine dynamics to form specific “vacuum engines” (precursor force-free engines) for specific tasks. This is a dramatic extension of the concept of time.

Then the formally precursor engines are applied to charged matter in an ongoing interaction. That precursor engine, a region of charged matter, and their ongoing interaction (fractions) of a set of forces and their dynamics, now acting in that specific charged matter. So it produces force engines acting in and of that charged matter—since mass is a component of force, these can deal with the mechanical equation of force (96) or deal with the totally false imaging of electrical engineering. force does not exist in a free-space, as pointed out by Nobel Feynman [26] and many others, to no avail.

The force engine in that specific interacting mass then produces the physical functioning desired in that mass system. This allows a remarkable solution to another great and related problem: The problem of the increasing chemical pollution of our rivers, oceans, etc. from industrial processes, factories, etc. [17]. With precursor engineering, one will be able to change matter from one form to another, or in other words to conduct direct transmutation of elements. This allows cleanup of industrial wastes and pollutants, and also allows—at least last—an actual solution to the burgeoning problem of nuclear wastes, including all those spent fuel rods on nuclear power plant sites, in pools of water and otherwise radioactive for several hundred thousand years.

As a remarkable example: One great bonus of the precursor engineering approach is that one also obtains the ability to reverse all diseases? Any specific disease has a specific “disease precursor engine” that is continually interacting with the body mass and its charges, and that is generating and sustaining all physical faults (97). So, any specific disease in the body. So to directly “see” it, one simply makes a more powerful but exact specific precursor anti-engine for that disease and applies it to that strain body, forming a net force anti-engine acting in that strain body for that disease. The anti-engine is deliberately made more powerful than the disease engine. This directly reverses the disease physiology down to even the genetics and smallest biological considerations. Recovery of engine effects is also relatively favorable and immediate.

In theory, once precursor engineering is developed, then one can produce gold from quartzite sand (as did T. Henry Morse almost a century ago). Or eventually one can take the same quartzite sand and produce food, flour, meat, iron, or whatever.

The Fugal chip, when idled along at less than half-load, will gradually settle down from the normal preoccupation of manipulating force fields to kick electrons in the chip and its circuitry, and instead it will begin directly engineering the precursor engines for those force field engines—and hence to direct engineering of the spacetime itself, to produce other precursor engines. This precursor engineering part is freeforce, and therefore work-free.

As a result of this setting into the precursor engineering mode, the physical current and “power” in the transistor reduces significantly, the frequency width broadens significantly, etc. By dealing directly with the precursors, the chip now has access to any and all presently known “fitted” models to all their precursors—and to all other presently unknown but “future” models yet to be discovered! So to understand the very strange phenomenon that becomes capable using the Fugal chip, one must learn to...
1. Exceptions—for electrical power systems that utilize input energy freely received from the commonly known active environment—are known and accepted (and used). These electrical power systems include wind-powered systems, hydroelectric systems, solar cell powered systems, etc. But strangely, absolutely no consideration of the fact that every joule of EM energy in every harvested field and potential in the universe—and in every electrical circuit—already comes from the active vacuum/spacetime via the proven interaction of that active universal medium with every charge and dipole in the universe—is being considered at all.

So even when our engineers accept a free environmental energy input, the electrical parts of the system (generator and its extraction circuit) they build are deliberately and needlessly, as we shall see, symmetrized and therefore crippled.

The present hoary old electrical engineering (EE) model taught in all our universities was deliberately “fixed” by Lorentz in 1908. In the 1880s Heaviside and a few others had sharply curtailed Maxwell’s theory, converting it into the much more limited vector algebra. This was after Maxwell died in 1879. In 1892 Lorentz further curtailed the already-curtailed Heaviside vector equations, so that all remaining *geometric* Maxwellian systems (which include those systems that could accept and use excess EM energy directly from their active vacuum environment) were arbitrarily eliminated. Hence from the very beginning of electrical engineering itself, our universities have deliberately taught only a pale shadow and a tiny fraction of nature’s Maxwellian electrical power systems actually available to be designed and built. Specifically, our universities have only taught those systems that deliberately destroy their own free extraction of EM energy from their interactive vacuum/spacetime, and destroy the extraction process faster than they can use a bit of the freely extracted energy to power their loads. In short, the system self-enforces COP=1.0 electromagnetically.

Every EM system designed and built by our present EEIs is a deliberately “crippled” system that destroys its own true EM energy input source—faster than it uses the freely collected EM energy to power its own loads.

Such a deliberately “crippled” and “modern” EM system then requires that its generator be continually cracked so as to continually restore its source dipole that the system deliberately and continuously destroys. It is the internal broken symmetry “source” in the generator that freely, freely and automatically provides the moving vacuum—that is available and collected in the external circuit in the first place.

In our present electrical power systems, we are universally using and applying a horrifying flawed “present energy paradigm” that is totally insane and that has also been reared with fatihes with more than a century—since before the birth of most of modern physics.

2. E.g., see Seth Bernstein, “Ominous Arctic Melt Worries Experts,” A&T News, Dec. 7, 2007, also an AP release. Quoting Bernstein: “Last year, two top scientists surprised their colleagues by projecting that the Arctic ice sheet was melting so rapidly that it could disappear by the summer of 2040.” Bornstein then quotes top climate scientist Jay Swalley: “At this rate, the Arctic Ocean could be nearly ice-free at the end of summer by 2012, much faster than previous predictions.”

3. Such as coal and oil combustion, consumption of nuclear fuel rods, etc. Particularly “dirty” and polluting are the coal-burning processes. Nuclear power produces nuclear wastes of great threat and lifetimes of many hundreds of thousands of years. Contrary to popular notions, there is as yet no safe way to dispose of, or to store, nuclear wastes.

Another terrible pollution-generating set of combustion systems is provided by the ships of the world, which often are the dirtiest-burning systems on the planet. Ships often burn “bunker” fuel, a very dirty residue from refineries. Ships are responsible for almost 5% of global CO2 emissions, which is about equal to the CO2 emissions of the entire U.S. car fleet. Due to souring population and their increasing needs for goods, the world’s shipping— and its associated great pollution—is also increasing at an impressive rate and is expected to double by 2020.

(a) For a discussion of results of a study by the American Chemical Society, see “Report: Dirty shipping fuel contributes to thousands deaths each year, call for caps,” International Herald Tribune, AP release, Nov. 8, 2007.


(c) Another great problem is the apocalyptic assumption that we can continue to burn hydrocarbon fuels—even increasing their consumption—while using “carbon sequestration” to “render this process harmless to the biosphere.” That assumption is totally false: *there are no known real technical solutions to the problem of excess carbon pollutants and wastes that are assumed to be sequestered.* Simply put, sequester the carbons in the sea, increasing the acidity of the sea—and then watch the resulting massive destruction of sea life and huge changes in environment and climate that result. The seas are already acidic beyond safety, right now!

(d) What may be the height of foolishness is the making of ethanol fuel from corn. It requires more “dirty” energy than the “cleaner” energy produced by combustion of ethanol. It also drives up corn and grain and feeds prices, removes land from food production to feed people, increases the cost of meats and other foods, and requires about 1500 gallons of water for each gallon of ethanol produced from the corn. Thus this “action to help reduce emissions” actually drives up the already-serious water problems and food costs in an increasingly wide number of areas of the world.

4. See Ross Gelbspan, “Beyond the point of no return,” Griffiths, 7 Dec. 2007. Quoting: “In Australia, a new, permanent state of drought in the country’s breadbasket has cut crop yields by over 30 percent. The 1-in-1,000-year drought exemplifies a little-noted impact of climate change.

As the atmosphere warms, it tightens the vortex of the winds that swirl around the poles. One result is that the water that traditionally evaporated from the Southern Ocean and rained down over New South Wales is now being pulled back into Antarctica—drying out the southeastern quadrant of Australia and contributing to the buildup of glaciers in the Antarctic—the only area on the planet where glaciers are increasing. Witness the 1-in-1,000-year drought in the southeastern U.S., which has been threatening drinking water supplies in Georgia and other states.”

The United Nations has also warned of serious food shortages already emerging worldwide.

5. “We are seeing impacts today that we did not expect to see until 2085.” [Dr. Paul Epstein, of the Center for Health and the Global Environment of Harvard Medical School, September, 2006, as quoted by Ross Gelbspan, “Beyond the point of no return,” Griffiths, 7 Dec. 2007.]

6. “Climate change won’t kill us all—but it will dramatically reduce the human population through the warming-driven spread of infectious disease, the collapse of agriculture in traditionally fertile areas, and the increasing scarcity of fresh drinking water.” [Ross Gelbspan, “Beyond the point of no return,” Griffiths, 7 Dec. 2007.]

7. See environmental scholar Bill McKibben, “Remember this: 350 parts per million,” Special to The Washington Post, Friday, December 28, 2007, p. A21. (It is also published in the China Post the next day, titled “This month may be tipping point for global warming,” and is published in many news media worldwide.

NASA scientist James Hansen, a leading environmental researcher, has proposed 350 parts per million of CO2 in the atmosphere as the “tipping point” for accelerating global warming and climatic change. We presently stand at 380, and “it’s knocking the planet off kilter.” Quoting Hansen: “The last time the Earth warmed two or three degrees Celsius—which is what 450 parts per million implies—sea levels rose by tens of meters, something that would shake the foundations of the human enterprise should it happen again.” And it may already be well on the way to doing just that.

Quoting McKibben: “Hansen called for an immediate ban on new coal-fired power plants that don’t capture carbon, the phase-out of old coal-fired generators, and a tax on carbon high enough to make sure that we leave tar sands and oil shale in the ground.”
8. For example, even some environmentalists have begun to tout nuclear power as "environmentally clean." Actually there are more than 50,000 tons of deadly nuclear wastes in the form of spent reactor fuel rods, highly radioactive and requiring hundreds of thousands of years to decay to a safe level, already stored at our U.S. power-nuclear plants in 31 states. They are stored in dry casks, even though they would certainly melt down if there were a flood, earthquake, or nuclear failure. It would result in a terrible catastrophe like the Chernobyl disaster but possibly made worse. One is not simply asked to accept and use true measures. A much simpler question is if our government and nuclear energy advocates are right about the notion of the "clean" nuclear power?

9. A more serious problem is the disposal of nuclear waste, which is highly toxic and long-lived. For example, at the Hanford nuclear weapons facility in Washington state, nearly 400,000 tons of toxic, high-level nuclear waste is stored in underground tanks. The tanks are in a state of decay and may leak at any time, contaminating water supplies and soil. This waste will require thousands of years to decay to a safe level, and even then it will remain a potential hazard to future generations.

10. The Chernobyl disaster in 1986, which was caused by a combination of human error and design flaws in the reactor, resulted in the release of large amounts of radioactive material into the environment. The accident contaminated large areas of Europe and caused significant health effects on people living in the affected regions. The disaster also had long-term environmental impacts, including the exclusion of agricultural areas from use for many years.

11. In a "normal" (symmetrical) EE system, the only reason we have to keep cranking the generator shaft to generate EM energy and power is that we usually waste half the energy freely collected in the external circuit to do nothing but destroy the source dipole. Again, we have known since 1957 and the award of the Nobel Prize to Leon and Yang, that the broken symmetry of the source dipole in the generation of EM energy is that it can absorb EM energy from the external source in a normal EM system and can be induced to form a dipole—field, absorbs virtual state energy from the generating virtual state vacuum and transduces it to real state EM energy that is continuously and finally emitted, pouring out of the generator terminals through space outside the external conductor. As Nobelist Leon stated, ". . . the violation of symmetry arises whenever we choose to consider the quantities to be observable out of an otherwise unobservable state." [Quoted from T. D. Lee, Particle Physics Theory, Harvard University Press, Chir, New York, and London, 1981, p. 181.]

12. The Nobel Prize in Physics was awarded in 1957 to Chen Ning Yang and Tsung-Dao Lee for "their penetrating investigations of the so-called parity laws which have led to important discoveries regarding the elementary particles." The "law of total induced electric dipole moments in vacuum" and 2007 Nobel laureates Shinya Suzuki and Koichi Tanaka showed that this simple rule of thumb can be modified for some fields, for a rigid, stationary source vacuum, or for they continually regenerated. Causing seems to require the latter."

13. Controls over the so-called "static" E and H fields of an electrostatically generating EM field, with E orthogonal to H, yields a steady EM energy flow (a free, steady outflow of real electromagnetic energy) in a semi-infinite region by thinking of a watertap. A frozen watertap is static, in the first sense, and a flowing watertap is static in the second sense. Both are essentially the same at every moment, yet the latter has moving parts capable of transporting water to anywhere in the world. The "law of total induced electric dipole moments in vacuum" is not static, and we have and life colleagues proved it experimentally, publishing the results in February 1957 in C. S. W. Wu, R. Haywood, D. H. Updike, and R. H. Park, "Experimental Test of Parity Conservation in Baryon Decay," Physical Review, Vol. 105, 1957, p. 141. This was so great a revolution in physics that the Nobel Committee awarded the Nobel Prize to Leon and Yang in the same year, in Dec. 1957.

14. See T. W. Barbee, "Electrostatic-Shuttle-Circuit (OSC) Networks for Conditioning Energy in Higher-Order Symmetry Algebraic Topological Forms and RF Phase Conjugation," U.S. Patent No. 5,489,101, Feb. 26, 1996, for example. This is being understood into networks for the type of electric charge balance that can be used to make quantum fields.

15. Questioning: "To retain causality, we must distinguish two distinct meanings of the term 'static'. One meaning is unchanging in the sense of no moving parts. The other meaning is synonymous with conservation of momentum when no moving parts. Since we can simulate statics that are non-Newtonian in practice, we can simulate this difference by thinking of a watertap. A frozen watertap is static, in the first sense, and a flowing watertap is static in the second sense. Both are essentially the same at every moment, yet the latter has moving parts capable of transporting water to anywhere in the world. The "law of total induced electric dipole moments in vacuum" is not static, and we have and life colleagues proved it experimentally, publishing the results in February 1957 in C. S. W. Wu, R. Haywood, D. H. Updike, and R. H. Park, "Experimental Test of Parity Conservation in Baryon Decay," Physical Review, Vol. 105, 1957, p. 141. This was so great a revolution in physics that the Nobel Committee awarded the Nobel Prize to Leon and Yang in the same year, in Dec. 1957.

16. For example, the presence of a 'static' EM field implies an average, time-independent electromagnetic field. This does not mean that there is no electromagnetic energy present, just that the average field is constant over time. However, a 'static' field can still be dynamic, with the average field remaining constant but with fluctuations or disturbances present.

17. Questioning: "To retain causality, we must distinguish two distinct meanings of the term 'static'. One meaning is unchanging in the sense of no moving parts. The other meaning is synonymous with conservation of momentum when no moving parts. Since we can simulate statics that are non-Newtonian in practice, we can simulate this difference by thinking of a watertap. A frozen watertap is static, in the first sense, and a flowing watertap is static in the second sense. Both are essentially the same at every moment, yet the latter has moving parts capable of transporting water to anywhere in the world. The "law of total induced electric dipole moments in vacuum" is not static, and we have and life colleagues proved it experimentally, publishing the results in February 1957 in C. S. W. Wu, R. Haywood, D. H. Updike, and R. H. Park, "Experimental Test of Parity Conservation in Baryon Decay," Physical Review, Vol. 105, 1957, p. 141. This was so great a revolution in physics that the Nobel Committee awarded the Nobel Prize to Leon and Yang in the same year, in Dec. 1957.

18. The so-called "static" EM field is not truly static, as it contains energy and momentum that are conserved. The 'static' field is a convenient approximation that is useful in many situations, but it is not an exact description of the actual electromagnetic field.

19. The notion of "static" fields is a useful simplification in many cases, as it enables us to ignore the time-dependent aspects of the electromagnetic field and focus on the spatial distribution. However, in reality, EM fields are always time-dependent, and any statement about "static" fields must be accompanied by a clarification that the statement is an approximation.

20. The so-called "static" EM field is not truly static, as it contains energy and momentum that are conserved. The 'static' field is a convenient approximation that is useful in many situations, but it is not an exact description of the actual electromagnetic field.

21. The so-called "static" EM field is not truly static, as it contains energy and momentum that are conserved. The 'static' field is a convenient approximation that is useful in many situations, but it is not an exact description of the actual electromagnetic field.

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consumes one-half the potential energy collected in the external circuit, and forcibly scatters the separated internal charges of the internal source dipole (separation of opposite charges). Hence the silly symmetrized system destroys own internal source dipole and its broken symmetry.

(c) In short, the silly symmetrical system uses half the free energy from the vacuum collected by its external circuit to do nothing but destroy its own source dipole and shift off its free output of Coulombic EM energy extracted from the vacuum.

(d) The other half of the collected free energy from the vacuum in the external circuit is dissipated in the loads and the losses in the external circuit. Thus half the collected free energy is used to kill the source dipole, while less than half a source dipole in the internal circuit has losses in addition to powering the load. This silly symmetrical circuit thus has the same free energy as the inductive leakage in Fig. 2.

(e) So in the completely symmetrized system we have to keep constraining the shaft of the generator to rotate the rotor, which in its rotation consumes electrical energy to rotating the magnetic field energy (courtesy of Nikola Tesla's invention of the rotating magnetic field). Since the rigorous definition of "work" is the change of form of energy, that change from mechanical energy to internal rotating magnetic field energy cannot be measured.

(f) In turn, the rotating magnetic field energy inside the generator is designed inside, managing to force the internal opposite charges apart in opposite directions, forming the internal source dipole (with its proven broken symmetry). And that is all that constraining the generator shaft (slightly less) does; it restores the dipole to its broken symmetry that is in fact freely extracting EM energy from the sea of virtual spatial vacuum interaction and pouring it out as real EM energy flow out of the terminals of the generator and through space outside the conductors of the external load.

Once formed, if left alone and intact, the source dipole would freely pour out its real, usable EM energy flow forever—absolutely without any further mechanical energy input by the operator.

(f) But then the inane "symmetrical" circuit deliberately built by our EinTs takes half the freely collected potentialization energy and disguises continuing to do its own free extraction of EM energy from the vacuum. It does this faster than it powers its loads alone. So to restore the dipole, even with 100% efficiency of conversion (of mechanical shaft power to internal rotating magnetic field power) we have to cancel half that to un-consumes what the deliberately destroyed source dipole in the generator, use to power the external loads! This system COP=0.5:SelfEnergyDemon is not a bit of energy. Liath! end of simulating.

(g) As an analogy: Suppose we have an "inside" windmill engine come in to build a great windmill-driven generator power system. This windmill engine runs on two equal-power generators, being driven simultaneously by the rotating shaft of the windmill. One of these generators he connects to the windmills, and the other he connects to motors on the windmill blades. So that whenever the windmill is rotating the second generator is powering those motors to rotate the blades back parallel to the wind, so that the windmill spins faster and causes power moving across the blades, to power the blade rotation in the opposite direction, away from the windmill, to restore windmill rotation again. And this cycle is repeated as this mechanism of motors, so that we can now pay the power line company for the energy continually required to keep rotating the blades back from cutoff, so the windmill will never cease.

In short, this stupid windmill engine requires us—even with nature's fine wind there for easy use asymmetrically—to deliberately pay for more dirty electrical power input to keep the vanes turned correctly, than the clean electrical power we get in our loads from the first generator as long as the windmill is rotating.

I think we would immediately fire that windmill engineer as the most inane windmill engineer we ever saw or heard of.

(b) Yet that is directly analogous to what every electrical power engineer has been trained to do with building his systems: to design his system so carefully to literally powerless systems exhibiting COP=0.5 and even "self-powering" systems (taking all their input energy from their active environment, with no need to pay for any of that energy). Just ask any usual electrical engineer or EE professor who were what the ramifications of Lorentz self-fractionalization would be on the economy of the world, and the self-power COP=0.5:Real observation and even at the National Science Foundation level, the engineers in charge care less about such a speculation.

21. I.e., a difference in the "charge energy's exchange reaction rate" with the vacuum—between that rate for charges at the high voltage side of the circuit and that rate for charges at the "ground" voltage side of the circuit—can be harnessed by the amount of current through the external circuit to "collect the potential of energy" in that potentialized circuit due to the potential difference. Its formula is simply $Y = V$. One can increase the "energy collected in a circuit" (dead work still merely by changing the voltage difference (potentialization) while momentarily forcing the interacting charges from moving as electrical current. Making for switching, a common source of "static voltage": free energy can be reduced or transformed into any electromagnetic form without requiring new magnetic field source(s) and without depletion of the static source voltage at all, which is the seventh principle of electromagnetic, or actually an example of work-less free engineer projecting—direct engineering (work-less) of the activity of the space-time/vacuum itself, with the changes in the electromagnetic field source(s) in the external circuit.

We then switch this "potentially potential energy" to the external circuit (from the primary "static voltage" source). The relativity activity of the vacuum with the top and bottom of the circuit has not changed. Hence the "potentialized potential energy" remains "collected". We quickly reclose the now-separated potentialized circuit (as with a resistor and a diode). Then when the panned electrons are allowed to flow freely and to pump the potential energy of the external circuit through the external (primary) static voltage source, destroying its dipolarity and thus its ability to furnish energy density flow quite freely and without requiring work.

This "switched potentiality and free energy collection" process can be repeated over and over without end, until the end of the universe, and the "switched in and out static voltage source" continue to provide all the usable EM energy required without requiring any free energy collection. (The disconnection and recompleting the potentialized external circuit as a separate circuit/system, then discharging that free-energy "battery" as EM current external will not destroy or diminish the primary static voltage source dipolarity or affect it at all.

But electrical engineers are taught never to do such a simple thing, and they falsely exulted that they must "maintain" dipolarity by the source—thereby disconnecting the system external with source dipolarity and in broken symmetry by forcibly pumping the depotentialized electrons from the ground side of the circuit back through the source dipole inside the generator, and breaking the dipolarity and in broken symmetry by the amount of current through the external circuit. Without the effective "external" dipolarity, then free potential energy can be dynamically disassembled to provide real, usable power in the loads.

In this case, none of the formerly "potential energy" can be pumped back, to give an increased value to the latter: the potential energy is equal to zero unless some physical body is present... One of the most important characteristics of force is that it...
two decades, in real circuits and real systems on the lab bench. Negative energy can easily power the world—but to date it has only been used for highly secret negative energy EMP (electromagnetic pulse) weapons by several nations, to destroy rather than to help.

Here are important additional references for Solomon:

- “Quantum and classical electrodynamics: a relativistic comparison.”

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52. Mind and mind dynamics probably do not have a space, but do have a space. In quantum field theory there are four photons, including the nonobservable time-polarized or "scalar" photon, and the nonobservable longitudinal photon in addition to the two observable transverse photons. The mind and its dynamics are totally electromagnetic, but just in terms of time-polarized photons it is time-polarized photon dynamics.

53. The scalar photon (in the time domain) and the longitudinal photon (in 3-space) are each individually nonobservable, but their combination is observable as a simple voltage spike. Hence any living system, which must couple its mind and mind dynamics (time-polarized photon dynamics) to its 3-space body and body dynamics (longitudinal photon dynamics), must include lots and lots of "voltage spines" to do so.

54. This is why the brain and nervous system cells have so many dendrite endings, and thus so many "spyke"-jilfions and jilfions of the nerve cell's mind dynamics of a single mind (its scalar photon activity) can be coherently coupled to the 3-space dynamics of a physical body (and vice versa), to produce a "living system". This can be expanded into a direct relation of the mind's understanding of the mind to the brain, and the brain to the body, and the body to the mind, and all three to each other.

55. The scientific method arbitrarily discards time because experimental observation involves a 0-7 operator upon LLLT spacetime, producing a series of static 3-space LLL observations - and we must refer the time changes and dynamics, as well as anything that exists in or occupies time only. Since mind and mind dynamics exist in the time domain, there observation and description is a direct hint of it, and we must speculate or postulate mathematically as to what mind is, what mind dynamics are, and therefore what the "living" part of life is.

56. By contrast, precaution engineering directly engineers *precaution itself* without applying a 0-7 operator. Thus precaution engineering includes the structuring and changing of time as well as space. It thus constitutes a giant leap of at least 50 years into the future for science, and a dramatic extension of the present limited fundamental scientific method. Sadly, the former Soviet Union did the necessary work to go from present "scientific method" to precaution engineering, and called it "energetics" - but kept it hidden and used only for the production of superweapons to kill or control more people faster and easier. For an overview of what energetics entails and the superweapons actually produced and deployed, see T. E. Bearden, *Obvious: America at the Brink*. Chamer Press, 2005. We also include the psychogenetics branch, where mind and mind dynamics are deliberately engineered and used as a very special kind of superweapon.

57. As stated, at least already is a special semiconductor—the patented Fogel chip—that will perform early precaution engineering. From time to time there also appeared related chips by other inventors that may also accomplish at least some precaution engineering.

58. Kurt Gödel, "Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Systeme" ("On Formally Indecidable Propositions of the Principia Mathematica and Related Systems"), in *Monographie für Mathematik und Physik*, Vol. 38, 1951. This is the publication in which Gödel published his incompleteness theorems. Since then there are there propositions or questions that cannot be proved or disproved on the basis of the axioms within the system. Therefore, it is uncertain whether the use of arithmetic will be of help to contradictions, since they can. In short, no mathematical model is perfect and absolute. To really see how convoluted the question of a model is: We reason that Gödel used a model in an attempt to prove the "proof" of his theorem by applying formalism to his own model—and the end result is changes astonishingly but because now his proof is not absolute. Now we have to say that "no mathematical model is perfect and absolute—until one comes along that it!"

59. For a description of how the Fogel semiconductor works, see Program VII.

60. Nuclear wastes pose an insoluble problem, particularly with respect to spent nuclear fuel rod storage and vulnerability to terrorism. See *Rev. Mod. Phys.*, Vol. 80, 13 Dec. 2003, p. 4. Quoting from the article:

*Bob Alvarez, senior energy adviser to the Clinton administration, and colleagues argue that 99 large ponds full of highly radioactive spent fuel at 65 sites across the US are vulnerable to attack. To save space, the fuel has been densely stacked, and this means it could heat up and catch fire within hours if the ponds emptied, they said. The consequences could be significantly worse than Chernobyl, Alvarez told new Scientist." *The fuel ponds are the biggest terrorist risk in the US nuclear industry.*

61. In the later 1880s, Tesla had discovered that EM energy could be freely taken from the "active" atmosphere, and he was determined to do just that. He had destroyed Edison's and J. P. Morgan's dreams of a vast DC electric power plant empire, by installing much more practical AC systems at Niagara Falls. Accordingly, the ruthless Morgan recognized Tesla as his hidden enemy, to be destroyed. In 1889, Morgan Tesla, running back from a room in his hotel in room hotel off the charter of the hotel and a few friends. Morgan also ordered his scientific adviser to check the facts and this was to be used in the basis for the new electrical engineering just being formed—to insure the equations did not contain any of those contended Tesla "energy from the active medium" systems.

62. Since group theory and algebra were developed in 1876, the excellent advisors to Morgan simply did a group symmetry analysis of the Heaviside equations, which showed that the equations still contained none of the asymmetrical systems that were in Maxwell's original theory. Morgan ordered them to fix the problem, and they did (a great scientist but one who also had a habit of using other scientists' work and receiving credit for it), was done to fix the Theorem. Lorentz simply symmetrized the highly restricted Heaviside vector equations, thereby further curtailing them by 27% for all the remaining symmetrical systems. Since any system receiving and using excess EM energy from its "active medium" (the active vacuum/spacetime) is an asymptotic system, a priori, this "fixed" the new EE equations that also *did discriminated asymptotic systems*, and the development of the Heaviside equations, and this equation, although it has be misattributed to H. A. Lorentz (the "I" being first. This is an excellent coverage of the history of who did what and when, and who got or took credit for it.


61. Consider this question: What is the most work that an original input of 100 joules of EM energy into a multi-part cell system theoretically do?

The answer is 20. But let’s suppose that the “system” is made of two subsystems, A and B. And suppose that both subsystems A and B are 100% efficient, i.e., each simply converts energy form to form, i.e., the”system” does not use any energy of the form by altering the direction of the energy flow (it escapes from the system only). The converted energy is dissipated from the subsystem, but not from the entire system.

We also point out that the “information” or the functional work of change of form of energy is so we input 100 joules of EM energy into form 1 and get output in to the form of EM energy in 2. Since it’s 100% efficient by our thought-experiment, subsystem A takes the 100 joules of input form 1 and converts that energy (all of it) into form 2, so that it outputs 100 joules of EM energy in form 2. But let’s say it has just done 100 joules of work (conversion of form 100 joules of EM energy). It outputs 100 joules of EM energy in form 2, still (so its grandmotherknew) the energy completely out of the system. Instead. It only “lost” (it did output) 0 Joules (it subsystem B).

Now—clever devils that we are—we have deliberately designed subsystem B to receive energy in form 2, and convert it into form 1. And, it does convert all 100 Joules of energy, still it allow us to still aval 100 joules of EM energy from its input in Form 2 back into Form 1 again. And it still remains in the overall system. Subsystem B did 100 Joules of work also, and we still have all our original 100 joules of energy, now in subsystem B.

So we can now use the output of subsystem A to the input of subsystem B, and the output of subsystem B to the input of subsystem A. So we get 200 joules of energy in form 1, subsystem A and sit back and watch what happens.

That silly thing will sit there and cycle continually, doing 200 joules of work (energy form changing) in each cycle, and never losing that original 100 joules of energy—just changing it repeatedly from form 1 to form 2 back to form 1, etc.

There is no “conservation of law” there; there is a conservation of energy law! If we don’t “lose” any of the energy processed by each subsystem, we can use the same energy (in an alternating different form) over and over, continuing.

So how much work can our original 100 joules of EM energy that we input to that “big system?” Do any amount we wish, if we wait long enough in each “cycle”, and with our assumption of “no losses”—i.e., no dissipation of the energy by the keeping of its entire system—it will run forever.

This is the basis of a very large system made of a great number of subsystems. And energy dissipated from one subsystem is used again in to do work to other subsystems. The successes were this way all the time.

Now in our usual circuits, every time we do a work in a component or subsystem, we just automatically let the transformed energy out of the circuit (so we allow it to be “dissipated” and “lost” from the system). And we hold subsystems that are (often much)

loads occurs. The reason is that the circuitry transforms the “static precursor potential difference”, when it is interfering with charged masses, to force by interacting the precursor with charges q. And when—with the original source disconnected and the external circuit reconnected as a separate and “already-idealized” circuit—the electrons are unpinned and flow free, current, these forces move and produce work W by the equation W = I J.

So by potentiating stably from a static voltage sources, separating the source charges in such a field, and with our assumption of “no losses”—i.e., no dissipation of the energy by the keeping of its entire system—it runs forever.

This is a very large system made of a great number of subsystems. And energy dissipated from one subsystem is used again in to do work to other subsystems. The successes were this way all the time.

However, most of today’s science and technology, which practically select only a small component of the energy flow associated with a circuit—specifically, the small Poynting component being diverged into the circuit to power it—and then treat that tiny component as the “energy” flow of the system. Therefore Lorentz arbitrarily discarded all the extra Heaviside curled energy transport component which is usually not diverged into the circuit conductors at all, does not interact with anything locally, and is just lost. However, most of today’s science and technology, which practically select only a small component of the energy flow associated with a circuit—specifically, the small Poynting component being diverged into the circuit to power it—and then treat that tiny component as the “energy” flow of the system. Therefore Lorentz arbitrarily discarded all the extra Heaviside curled energy transport component which is usually not diverged into the circuit conductors at all, does not interact with anything locally, and is just lost.

Heaviside discovered the small diverged component that enters the circuit, but also discovered a much more powerful additional curled EM energy flow that could be diverged into the circuit conductors at all, does not interact with anything locally, and is just lost.

The current for discovering the flow of energy through space outside the conductor was given to Poynting because of his academic credentials.

(b) Poynting published prestigiously as J. H. Poynting, “On the transfer of energy in the electromagnetic field,” Phil. Trans. Roy. Soc. London, Vol. 175, Part B, 1885, pp. 343-361. Thus the major credit for discovering the flow of energy through space outside the conductor was given to Poynting because of his academic credentials.

(c) In Morgan’s ruthless suppression of Tesla’s “energy from the active medium” systems by Lorentz symmetrical regauging in 1892, the Heaviside equations had been modified to eliminate all remaining asymmetric Maxwell systems—the ones which could indeed extract excess energy from the “active medium”. When a vexed Morgan then heard of Heaviside’s discovery—that from the terminals of every generator there pours trillions of times as much energy as we mechanically crank into the shaft—he again had Lorentz “fix the problem” so that future students would not be taught that fact.

So in 1900 Lorentz simply integrated the entire energy flow vector (containing both the curled and uncurl energy flow components) around a closed surface surrounding any volume element of interest. That nearly retains the very feblie Poynting diverged energy flow component, while arbitrarily discarding Heaviside’s giant curled energy flow component. The reference where Lorentz introduced this choice is to all the electromodynamists—and rid all the emerging EM books of any mention of the giant Heaviside energy flow component—is given in the previous endnote, number (66).


71. Quoting Jackson: “...the Poynting vector is arbitrary to the extent that the curl of any vector field can be added to it. Such an added term can, however, have no physical consequences. It is customary to make the specific choice...” [J. D. Jackson, Classical Electrodynamics, Second Edition, Wiley, 1975, p. 237] Note that Jackson’s statement of “no physical consequences” is correct for special relativistic situations. It is false for general relativistic situations without the Killing symmetry arbitrarily applied.

72. E.g., quoting Sir Roger Penrose: “We seem to have lost these most crucial conservation laws of physics, the laws of conservation of energy and momentum. We used to believe that the conservation laws were absolutely certain. We can now get conservation again, when the Killing vector applies and gravity is separated.” “These conservation laws hold only in a spacetime for which there is the appropriate symmetry, given by the Killing vector... [These considerations] do not show what the fate of these laws will be when gravity itself becomes an active player. We still have not regained our missing conservation laws of energy and momentum, when gravity enters the picture... This awkward- sounding phrase: “Considering the neglected and unaccounted giant Heaviside energy flow always accompanying every Poynting EM energy flow, the gravity effect is always at least of importance, and this “solution” itself is in general nearly always untenable.

73. Quoting the great Hilbert, shortly after Einstein published his theory of general relativity: “...that for the general theory of relativity, i.e., in the case of general invariance of the Hamiltonian function, energy equations... corresponding to the energy equations in orthodoxally invariant theories do not exist at all. I could even take this circumstance as the characteristic feature of the general theory of relativity.” [D. Hilbert, Grinnern Nachschonen, Vol. 4, 1917, p. 21].
74. Quoting Logunov and Leskutov: "In formulating the equivalence principle, Einstein actually abandoned the idea of the gravitational field as a Faraday-Maxwell field, and this is reflected in the pseudo-Newtonian characterization of the gravitational field that he introduced. Hilbert was the first to draw attention to the consequences of this... Unfortunately... Hilbert was evidently not understood by his contemporaries, since neither Einstein himself nor other physicists recognized the fact that in general relativity conservation laws for energy, momentum, and angular momentum are in principle impossible." [A. A. Logunov and Yu. M. Leskutov, "Nonuniqueness of the predictions of the general theory of relativity," J. Math. Phys. 18(3), May-June 1987, p. 179]

75. Bedini's patent applications are:
(d) A fourth patent application has been made and is pending completion by the patent office, and several other patent applications are in preparation.

76. For a thorough explanation of how the MEG works, see T. E. Branden, "Engineering the Active Vacuum: On the Asymmetrical Aharonov-Bohm Effect and Magnetic Vacuum Potential A vs. Magnetic Field B" available at http://www.cherries.org/technical/07/2003/aharonov-\bohm/2003effect.pdf. This is a definitive write-up (with drawings) which clearly reveals the way the MEG operates, and what the free evolution of the Aharonov-Bohm effect actually does via its (a) exciting the local vacuum, and (b) triggering that existed vacuum outside the MEG core to produce E-field energy pulses directed back toward the MEG core.


78. See Michael Brand's very important website at http://www.ethz.id.ethz.ch/hs-berry-mc/index.html. Many of his important publications are available from the website. A list of his publications is also available.


80. Modern physics—no less the more than a century old and terribly obsolete CEM/E—already tells us that we can take energy from a charge forever and never run down, because we are already dealing with infinite charge and infinite energy. E.g., quoting Nobelist Weinberg: 

"[The total energy of the atom] depends on the bare mass and bare charge of the electron, the mass and charge that appear in the equations of the theory before we start worrying about photon emissions and reabsorptions. But electrons as well as electrons in atoms are always emitting and reabsorbing photons that affect the electron's mass and electric charge, and so the bare mass and charge are not the same as the measured electron mass and charge that are listed in tables of elementary particles. In fact, in order to account for the observed values (which of course are finite) of the mass and charge of the electron, the bare mass and charge must themselves be infinite. The total energy of the atom is thus the sum of two terms: both infinite: the bare energy that is infinite because it depends on the infinite bare mass and charge, and the energy shift that is infinite because it requires corrections from virtual photons of unlimited energy." [Steven Weinberg, *The Theory of Everything*, Vintage Books, Random House, 1993. pp. 109-110].

81. Note that this is not a flow of electron current, but a flow of pure photon current. Since this flow involves no flow of mass, there is force and thus no "translation of force" involved. Hence there is no "work" or "rate of work flow" (power) involved, so there is no self-destruction of the source dipole (the charge and its polarized vacuum).

82. D. J. Evans and Lamberto Rondoni, "Comments on the Entropy of Nonequilibrium Steady States," J. Stat. Phys., 109(3-4), Nov. 2002, pp. 893-920. This paper rigorously proves that in theory real physical systems can produce continuous negative entropy, in total violation to the flawed old second law of equilibrium thermodynamics. We have nominated the source charge and the source dipole as universal examples demonstrating that capability since the beginning of the universe.

83. (a) See T. E. Branden, "Levy's Hierarchies of Symmetry: Solution to the Major Asymmetry Problem of Thermodynamics," available at http://www.cherries.org/technical/Facts-Shirts/Fact_2.htm#102.htm?Levy's%20Symmetry%20Hierarchy%20-%203%20Shirt%20Gift.htm. This paper presents a formal correction to the old second law of equilibrium thermodynamics, and also discusses the necessary change from the very old 1872 Klein geometry to the much more modern Levoy geometry, which is necessary for explanation of the source charge's continuous emission of real observable EM energy without any observable energy input.

(b) See also Michael Levy, A Geometer's Theory of Shape. Springer-Verlag, Berlin, 2001. The significant aspect of Levy's special work is in the development of an object-oriented theory of geometry that overcomes most of the limitations of the old Klein geometry. Negative entropy is in fact "wired in" to the Levoy geometry.

84. See "A New Transistor Design," (1994) *Superconductivity News,* 6(43), 1994, pp. 12, 8-9. This is a somewhat tongue-in-check article on Bill Fulton's new charge-blocking transistor, which if real will—in the editor's opinion—mean that "normal" superconductivity is doomed, and will mean the end of energy-based economics and infrastructures.

85. See Megan Potter, "Study Claims Pollution Causes 40% of Deaths," *The Cornell Daily Sun*, August 30, 2007. A new Cornell University study conducted by Prof. David Pimentel, Ecology and Evolutionary Biology, shows that about 40% of present human deaths yearly are caused by pollution and polluting products in the water, air, and soil.