Future Energy

A Research Initiative into New and Emerging Energy

Thomas Valone, PhD, PE

Integrity Research Institute
Earth’s Most Recent 400,000 Year Climate History

credit: Dr. Jim Hansen, NASA Goddard Inst. for Space Studies

CO₂ and the “Ornery Climate Beast”

How might today’s human-caused increases in atmospheric concentrations of carbon dioxide affect the distribution of sunlight, hardly affecting the total amount reaching Earth? Yet scientists believe this has been enough to set in motion chain of events that raise and lower temperatures, launch and end ice ages, and trigger vast changes in sea level.

What’s coming next? Carbon dioxide—the number one greenhouse gas—has much more power to affect Earth’s temperature than the orbital changes do. And in just the past 150 years, humanity has boosted carbon dioxide concentrations by 32 percent. NASA planetary scientist Jim Hansen says that if we continue to increase greenhouse gas emissions, temperatures will rise between 2 and 3 °C this century, making Earth as warm as it was three million years ago, when seas were between 15 and 35 meters higher than they are today. His predictions bear weight partly because he can verify his methods using geological records; he has calculated past temperatures and his results closely match the measured temperatures shown here.

MIT’s Technology Review, July/August, 2006
Global CO₂ level is now 400 ppm →

This forces a 4°C (7°F) temperature spike and sea level upsurge

Baseline:
0 m Sea Level = 290 ppm CO₂ = 15°C World Temp

Projected Sea Level Rise is 80 meters

KEY to graph: 10 ppm = 0.5°C = 10 meters

--- Graph enhancements by Thomas Valone, PhD, PE Integrity Research Institute, updated 2013
2006 Meeting with V. P. Al Gore
– We discussed climate effects on trees
Then in 2009, two different climate groups: same prediction

The Nation

New Analysis Brings Dire Forecast Of 6.3-Degree Temperature Increase

By Juliet Eilperin
Washington Post Staff Writer

Climate researchers now predict the planet will warm by 6.3 degrees Fahrenheit by the end of the century even if the world's leaders fulfill their most ambitious climate pledges, a much faster and broader scale of change than forecast just two years ago, according to a report released Thursday by the United Nations Environment Program.

The new overview of global warming research, aimed at marshaling political support for a new international climate pact by the end of the year, highlights the extent to which recent scientific assessments have outstripped the predictions issued by the Nobel Prize-winning U.N. Intergovernmental Panel on Climate Change in 2007.

Robert Corell, who chairs the Climate Action Initiative and reviewed the UNEP report's scientific findings, said the significant global temperature rise is likely to occur even if industrialized and developing nations fulfill their pledges. Farmers are overshadowed by a smoke-belching cement factory outside Hanoi. Even with sharp emissions curbs, temperatures may rise disastrously.
1999 Conference on Future Energy

CD-Proceedings
CONFERENCE ON FUTURE ENERGY
CIFE
29 April - 1 May 1999

20 Speakers, 9 of whom are PhDs
15 Audios (All Plenary Sessions)
14 Audios (All Workshop Sessions)
23 Papers Published
ADOBE ACROBAT

The First International Conference on Future Energy
Integrity Research Institute
WORKSHOPS
Holiday Inn Bethesda
Bethesda, Maryland

Saturday, May 1, 1999

Science & Government Report

-- End --

1999 Conference on Future Energy
First Ever Zero-Point Energy Panel of Experts
Future Energy Goals

Why “future energy” rather than just more renewables?

- Expand new energy discoveries including wireless energy
- Develop the newly discovered modes of propulsion
- Create optimum health with electromedicine

No Carbon Emissions

Integrity Research Institute (IRI)
Programs Fulfilling IRI’s Non-Profit Mission

www.IntegrityResearchInstitute.org
ENERGY PROGRAM

June 25, 2002

CNN Moneyline
2/3 of US Electricity is Wasted

Ref: DOE & U.S. Energy Association, 2002

Consumed: 39 Quads

Wasted: 27 Quads 8 trillion kWh

Delivered: 12 Quads 3.7 trillion kWh

Adaptation by Integrity Research Institute
Projected World Energy Demand

World Energy Demand—Long-Term Energy Sources

Reinventing Fire provides a credible path to a U.S. economy free of oil and coal by 2050

Energy Use in the U.S. Economy, 2010–2050

Unlock $5 trillion
Support a 158% bigger
Use 0 energy from oil.

Book release in 2011

Rocky Mountain Institute, RMI.org, founded by Dr. Amory Lovins

Reinventing Fire video on YouTube
Innowattech – 500 kW per km

- Piezoelectric panels for *roadways* and *train* tracks
- Generates electricity from passing vehicles
- Game changing invention ready for installation
- Should be developed in this country as well
- Advocated by IRI in *Future Energy Annual 2012*

Piezo panels ready for insert
Tritium Betavoltaic Battery

- ECN magazine 7/2012
- Nanowatt power - AFRL
- 20 – 40 year lifespan
- IRI advocacy for 10 yrs.
- Paul Brown, COFE 1999, Patent # 4,835,433
- Ray Kurzweil “Ten Coolest Technologies” - PC magazine, 7/12/06

CityLabs.net Model P100
BetaBatt Inc. - SBIR grant from NSF
U of Wisconsin solved degradation with liquid electrodes
Polymer Generates Energy from a Wet Surface

MIT reports a polymer with a piezoelectric layer generates electricity only from a moisture gradient without any pressure!

30 second video shows movement as polymer dries and then flattens out to get wet again

10 January 2013 by Jacob Aron- New Scientist
**Magnetic Field Gradients**

**The Stern–Gerlach Experiment and Electron Spin**

*Modern Physics, Schaum’s Outline Series, Gautreau, McGraw Hill, 1978*

In the Stern–Gerlach experiment, performed in 1921, a beam of silver atoms having zero total orbital angular momentum passes through an *inhomogeneous* magnetic field and strikes a photographic plate, as shown in Fig. 21-1. Any deflection of the beam when the magnetic field is turned on is measured on the photographic plate.

**Their experimental setup:** The magnetic field $B$ is more intense near the pointed surface at the top than near the flat surface below, creating a slope in a graph of $B$ vs. $z$, which is the gradient $dB/dz$.

The net force created on the ball bearing = the magnetic field gradient multiplied by the induced magnetic moment, as with the Stern-Gerlach Experiment.

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**Hartman Patent #4,215,330**

**Top View**

**Side View**

10 degree incline

Steel ball bearing

*Fig. 3*
Proposed Permanent Magnet Spiral Motor for Magnetic Gradient Energy Utilization

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Abstract. The Spiral Magnetic Motor, which can accelerate a magnetic rotor through 90% of its cycle with only permanent magnets, was an energy initiative for the 20th century patents by Ken Yekikawa in the WWII. However, the Japanese company used old ferrous magnets which are relatively weak and an electrically-powered coil to jump start every cycle, which defeated the primary benefits of the permanent magnet motor design. The principle of applying an inhomogeneous, anisotropic magnetic field gradient force \( F = \mu_0 \mathbf{H} \cdot \mathbf{d} \) with permanent magnets is well known in physics, e.g., Stern-Gerlach experiment, which exploits the interaction of a magnetic moment with the aligned electron spin of magnetic domains. In this case, it is applied to drive in polar coordinates, where the force \( F \) depends

Spiral Wankel Motor design with a Weigand-GMM-PZT switch and no external electricity
Physicists Confirm Power of Nothing; Measuring Force of Quantum ‘Foam’

Fluctuations in the vacuum are the universal pulse of existence.

By MALCOLM W. BROWNE

For a half century, physicists have known that there is no such thing as absolute nothingness, and that the vacuum of empty space, devoid of even a single atom of matter, seethes with subtle activity. Now, with the help of a pair of metal plates and a fine wire, a scientist has directly measured the force exerted by fleeting fluctuations in the vacuum that pace the universal pulse of existence.

The sensitive experiment performed at the University of Washington in Seattle by Dr. Steve K. Lamoreaux, an atomic physicist who is now at Los Alamos National Laboratory, was described in a recent issue of the journal Physical Review Letters. Dr. Lamoreaux’s results almost perfectly matched theoretical predictions based on quantum electrodynamics, a theory that touches on many of the riddles of existence and on the origin and fate of the universe.

The theory has been wonderfully accurate in predicting the results of subatomic particle experiments, and it has also been the basis of speculations verging on science fiction. One of the wilder ones is the possibility that the universal vacuum — the ubiquitous empty space of the universe — might actually be a false vacuum.

If that were so, something might cause the present-day universal vacuum to collapse to a different vacuum of a lower energy. The effect, propagating at the speed of light, would be the annihilation of all matter in the universe. There would be no warning for humankind; the earth and its inhabitants would simply cease to exist at

Continued on Page C6
Quantum Energy Extraction

Haisch-Moddel patent 7,379,286

It is reasonable to expect that a 0.1 microns Casimir cavity would result in a release of 1 to 10 eV for each injection of a He, Ne, Ar, Kr or Xe atom into such a cavity.

This discovery has fueled interest in another noble gas invention: the Papp engine, explosive but completely enclosed. See Valone Papp Engine video from COFE6 on futurenergy.org
Rectifying Ambient Thermal and Nonthermal Electric Noise

- Prof. Dagenais amplifies ambient thermal energy harvested with nanoantennas at UMD
- Zero-bias diodes that need no minimum energy to conduct
- Backward tunnel diodes

- Example of a Diode Array
  24-hour electrical energy source
Tesla’s Design for Wireless Energy

- 1905 Earth is resonant LRC circuit
- Magnifying transmitter 200 ft tall
- Wardenclyffe sphere 68 foot diameter
- Resonates with earth-ionosphere natural 8 Hz frequency for 95% efficiency of transmission
- Longitudinal and transverse EM waves
- See *Harnessing the Wheelwork of Nature*

IRI celebrated the Wardenclyffe Tower Centennial in 2003 with a *Tesla Conference and Expo* as well as book release
Electrostatic Induction (capacitive coupling)

High-field Gradient or differential capacitance

Also known as the “Tesla Effect” can be described as electrical displacement or the passage of electrical energy through space other than the application of voltage potential

Ionized plasma “conductor”!!

Giant earth-ionosphere capacitor

Slide from Nick Simos, PhD, PE
PROPULSION PROGRAM

THOMAS VALONE, PH.D.
President, Integrity Research Institute

History Channel, “Ancient Aliens,” 2011
Engineer Mike Gamble discloses that Boeing has been using inertial propulsion (scissoring gyroscopes) on its satellites “for years” at COFE5 sponsored by IRI.
Flame jet generator

B-2 Bomber

Charge distribution

Credit: Paul LaViolette, PhD

ELECTRO GRAVITICS SYSTEMS
Volume I
Thomas Valone, PhD
Analysis of Electrogravitics and Electrokinetics for Aviation and Space Travel

Thomas Valone, PhD, PE

STAIF, Albuquerque, NM
www.unm.edu/~isnps/staif/2006
February 16, 2006

and

AIAA, Joint Propulsion Conference,
Hartford CT
July 23, 2008
Books that Contain Most of this Slideshow

“We have to move beyond fossil fuels anyhow. Why not now?” – Jim Hansen, NASA climatologist
IRI Future Energy Projects

- Electric Antioxidant Clothes
- PREMIER High Voltage Electrotherapy
- Pulsed Electromagnetics (EM Pulser)
- OsteoPad Electric Bone Hardener
- Tunneling Diode Array Energy Generator
- Spiral Permanent Magnet Motor
- Inertial Shield and Electrogravitics
- Public Education (books, conferences, Future Energy eNews, videos, audios)

Futureenergy.org and BioenergyDevice.org