Project #5:

Developing a True Green Economy

A Green Economy is an economy that remains in permanent balance with the environment. The rules are simple. We do not use up non-renewable resources, and we recycle all used items back into the ecosystem or into new items. Abuse of resources deprives future generations of the possibility of using them. Any non-renewable resources that we use must be scrupulously recycled or simply not used or replaced from other sources. As far as we know nonhuman organisms living on the planet and prehistoric humans did not use non-renewable resources, simply because they did not know about them. In an advanced civilization the status of a non-renewable resource can change when a way of renewing the resource is discovered.

For example, we have learned to manufacture diamonds and certain other precious stones at a level of quality that is good enough that diamonds, at least of a certain quality, may be reclassified as renewable resources. We can make them instead of mine them. It turns out that diamonds are NOT forever. They are hardy, but you can make them and break them.

In general, we must learn to design and manufacture products in such a way that all components of a product will either manually recycle under human intervention or will naturally recycle in the environment within a reasonable time frame without any hazardous consequences to humans or other life forms. We must learn to tread lightly on the planet if we expect to stay here much longer than a few more years.

The primary thrust of the **Green Economy** project is to develop materials and products that are totally eco-friendly. For example, this means that our buildings, vehicles, and the infrastructure that supports them, must be made of materials that are safe for humans and the rest of the ecosystem and will recycle or naturally degrade on command within a reasonably short time that we define. The best technique is to build a chemical or biological process that can be triggered to biodegrade the product. For example, many waste materials can be incinerated safely. However, if incinerated materials release toxic gases, smoke, or dust, then we have a problem.

Houses, cars, and consumer items – even computers and high technology devices of the future must become like “biological” entities that can be treated so as to

biodegrade for recycling when they become trash.

The secondary thrust of this project is to clean up the mess we have made in the past, a process that is already partially underway with the help of the EPA superfund and other programs. This means cleanup of community and industrial dumps, hazardous waste sites, and the various polluted rivers and streams. Unfortunately the oceans and aquifers that have been polluted with chemicals and plastic trash will take a long time to purify themselves, and there may be little we can do except wait patiently for thousands of years. In many parts of the world the cleanup not only has yet to begin, the trashing of the ecosystem continues at an accelerating pace.

Desalination and detoxification of soil is an important part of this aspect of the project. Soil recovery can also derive from the ending of deforestation and the widespread implementation of reforestation. Implementation of clean energy systems from Project 4 will eliminate the need to generate bio-fuels. Biomass is not to be a fuel except as food. The development and use of organic farming methods will eliminate the deleterious effects of fertilizers and pesticides on the soil and in the water. It makes no sense for Midwestern farmers to use chemical fertilizers to increase yields while burning their own soil with the chemicals, and at the same time creating a dead zone in the Caribbean that puts fishermen out of business.

A drastic reduction of dependency on meat, poultry, and seafood in diets can be achieved through development of highly nutritional and tasty alternatives. Industrial farming of livestock is a major polluting factor in the world today and does not lead to compassionate treatment of livestock. Over-harvesting of undomesticated plant and animal resources for commercial purposes puts tremendous pressure on these wild resources for their survival and is not in our own best interests. So also does the excessive conversion of wild lands to agriculture and livestock.

A final, and very delicate, aspect of this project is population management. Currently population densities in many parts of the world exceed the sustainable levels for their respective ecosystems and put extreme stress on the environment beyond what it can manage from a resource and recycling perspective. My viewpoint on this problem is that by implementing the first three projects of this **Plan for a Planet**, people will naturally sort out their own preferences for environmental comfort and this problem will resolve of its own accord without any interference from “authorities”.

Some Benefits to be Derived from a Green Economy

Design of products using fully biodegradable or recyclable materials,
Efficient recycling of waste materials,
Management of renewable resources to prevent over-harvesting,
Reduction or total elimination of non-renewable resources from the economy,
Elimination of hazardous materials from products,
Development of methods for green production and recycling of materials,
Wide scale implementation of efficient organic farming technologies,
Massive reduction of pollution (in air, water, soil),
Cleanup of old waste sites and hazardous material dumps,
Reversal of salination and desertification trends,
Intelligent population management for stable land occupation and use,
Provision of abundant clean water resources.

Comments

The first three projects in this **Plan for a Planet (Deep Meditation, Belief Management,** and **Spiritual Sexuality)** are easily accomplished, even within a few years, because the technologies for them exist and cost very little to implement. All it really takes to accomplish them is to let go of skepticism and prejudice and make the decision to implement them. In fact, I have provided enough information for the first two projects that people of the world can implement them on their own for free or with only a little coaching here and there. Project Three is a little more complex to implement, but the technology is available and inexpensive. Project Four (**Clean Energy**) may take a little longer, but I believe that with proper focus it can be achieved to a high enough degree within a decade or two of focus on implementation that energy use no longer will noticeably affect the ecosystem. The essential technologies are known and simply need refinement and **implementation**.

Project Five, on the other hand, is complex, will take a good deal longer in principle than the other four projects, and requires a number of technological advances and breakthroughs. Nevertheless, I strongly believe that we can be well on our way to complete achievement of that goal by the end of this century, if humanity has the will.

When I read about the hundreds of billions of dollars recently being forked out for "bailouts" to financial institutions and corporations that have behaved irresponsibly, I can not understand why that same money is not used to accomplish doable and beneficial goals such as these projects that will create a safe, secure, and comfortable

world not only for this generation but for countless generations to come. Why are we throwing good money after bad when we can invest in our future, create as many new jobs as we may need, and stimulate the economy all at the same time?

Mankind has proliferated on this planet to the point where the human footprint is having a major impact on every aspect of the environment. If we continue to live according to a philosophy of using up the nonrenewable resources to make consumer products, continue to make products with no thought for their recycling in the environment, and build with no serious thought for the environmental impact, we will soon find ourselves on an uninhabitable planet. We will have to summon the Junkions and Wall-e to sort out the mess while we take a vacation for a few million years. Since our space technology is hardly out of the toddler stage, we probably will have to take any such vacation via transmigration rather than via George Bush's visionary space program.

Learning to Look at the Big Picture

"Soon" may not be tomorrow or in a hundred years, but it will be sooner than you expect. This planet has evolved as a viable ecosystem for over three billion years. For most of the first billion years life was in the form of archaeans (primitive anaerobic bacteria-like organisms) and bacteria. For most of the second billion years it added unicellular eukaryotic life forms, one-celled protozoa. For the last billion years it has been evolving multi-cellular life forms, ranging from cellular colonies to complex organisms with many specialized cell structures in the form of tissues and organs. It may yet have a billion or more years as a sustainable ecosystem and can lead to an unprecedented flourishing of enlightened life forms if we allow that to happen. At this point it is all up to us, because we are the dominant species of organism on the planet at present with the most significant rapidly evolving footprint on the environment. (Some organisms such as oceanic plankton may be more numerous and play a larger role in governing the ecosystem, but they are stable components of the system, not evolving and changing the environment like we are.)

Humanity has had a noticeable footprint on the planet for only a few thousand years. Yet at the current rate of human "development", we probably can not look forward beyond another thousand years, and maybe not even that long. Not only that, we are dragging the other organisms of the ecosystem along with us willy-nilly and subjecting many of them to extinction. If we allow the ecosystem of the planet to continue degrading at an ever faster pace, it may return to the unicellular or bacterial levels from which life first arose. That statement may be an exaggeration of the

"worst case scenario", but any movement in that direction would be a terrible shame for us as a species, because humanity now has the opportunity to create a wonderful planetary civilization that can last for millions of years and render our Planet a jewel in the universe.

This opportunity is only possible if we bring ourselves back into balance with the overall operation of the planetary ecosystem. The five projects outlined in this plan will be sufficient to achieve that goal in my estimation. These plans are doable and can be accomplished within this century.

For thousands of years humans lived organically. Whatever they used in the environment was part of the natural environment and naturally recycled back into the environment after human use. The population size was small enough that even brute-force techniques such as slash-and-burn clearing of forest had no appreciable effect on the ecosystem, because the area involved was so small compared to the overall environment that the system naturally healed itself and maintained its balance.

This is no longer the case. With every new incursion into the wild lands and wetlands we threaten the survival of our companion organisms on the planet. We have no right to feel that we can cause the extinction of many life forms and not expect our own extinction as a natural consequence. Why do we not have a goal to uplift life forms rather than bring them to extinction by eating them, using them to make magical elixirs for enlarging our penises, or simply destroying their habitats?

Let us dedicate our efforts during 2009 and for the rest of this century to the achievement of these 5 Projects in a **Plan for a Planet** – and beyond that for the accomplishment of much more. Once we stabilize our mode of life as a civilization in balance with the natural rhythms of our Planet, we will be able to explore to our heart's content the knowledge and technology, art and expression of our most amazing dreams.

Photolysis by Plants

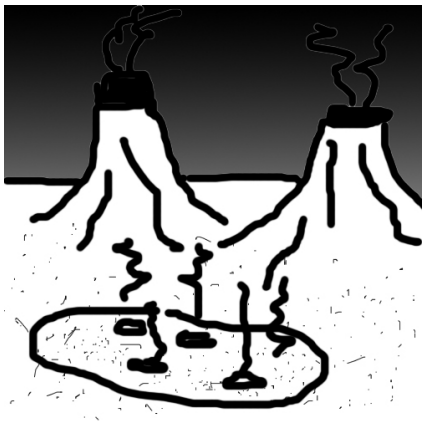
$$2\ H_2O + 2\ NADP^+ + 2\ ADP + 2\ P_i + \text{light} \rightarrow 2\ NADPH + 2\ H^+ + 2\ ATP + O_2$$

Photosynthesis by Plants

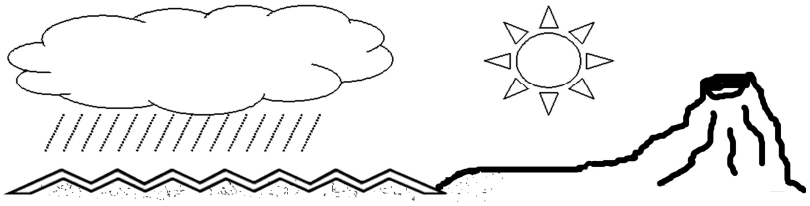
$$3\ CO_2 + 9\ ATP + 6\ NADPH + 6\ H^+ \rightarrow C_3H_6O_3\text{-phosphate} + 9\ ADP + 8\ P_i + 6\ NADP^+ + 3\ H_2O$$

The Beginnings

In the ecosystem of the planet the archaeans came first about 3.4 billion years ago. They lived in the hostile environment of a primordial planet that consisted of hot temperatures, lack of sunlight, and abundance of what we would consider toxic substances. At that time there was CO_2 and H_2O in the atmosphere, as well as other gases, but not much oxygen.



The archaeans survived as minute organisms for over a billion years. (They are also still around in larger numbers than we imagine.) Gradually the volcanic activity decreased, temperatures on the planet lowered, the steam that clouded the planet's atmosphere precipitated to the surface to form oceans, the skies cleared, and the earth's surface with its new oceans was exposed to the sun.



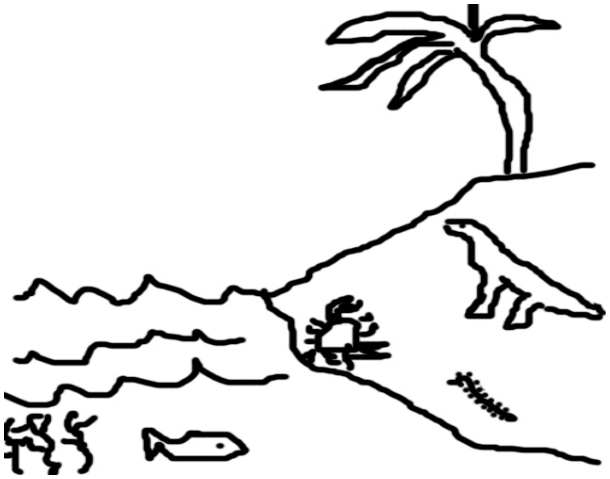
For another billion years (starting around 2 billion years ago) these bacteria fermented and transformed the chemical composition of the planetary surface and evolved into single-celled plants called eukaryotes that floated about on the surface of the ocean waters using the technology of photolysis and photosynthesis to capture the sun's energy and build more complex cells that held nuclei with DNA. Gradually they captured carbon dioxide from the atmosphere and introduced oxygen into the air.

For the plants oxygen soon became a toxic catastrophe, so they adapted by evolving another species of eukaryotes that reversed the process of capturing carbon dioxide and releasing oxygen. These single-celled organisms used oxygen to burn carbon-based organisms and release carbon dioxide back into the atmosphere. These protozoans were the first primitive animals.

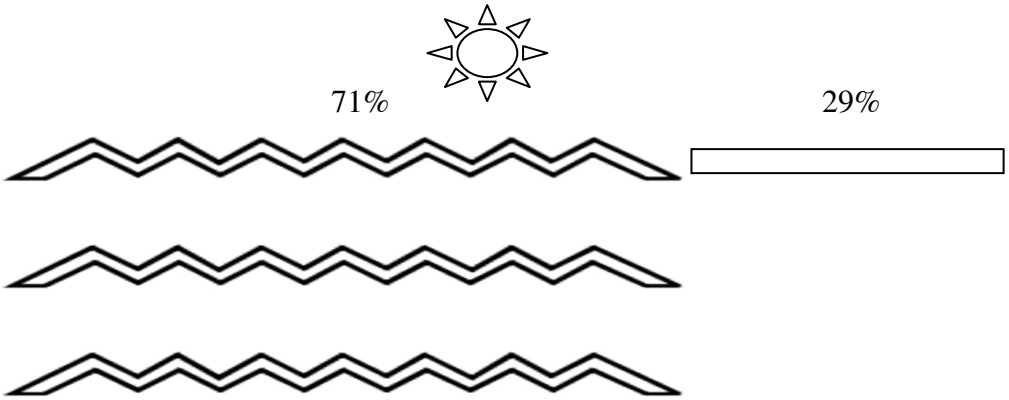
Over time the plants remained relatively sedentary or passively floating organisms because they relied basically on sunlight and water as their resources. They donated part of their physical systems, often in the form of specialized fruiting bodies, to the animal organisms that excreted carbon dioxide so as to maintain a balanced ecosystem. That way both plants and animals could constantly renew their bodies.

The animals became mobile because they could not survive simply by absorbing sunlight. In addition to water they needed to feed on the plant organisms, and had to browse in order to survive. The plants liked this because it led to a more evenly distributed burn that did not usually threaten any of their species. In the ocean we still find relatively passive animals, because so many organisms tend to simply float about in the water. On land, however, there was much more incentive for animals to move about.

The third stage of evolution over the last billion years has been the development of multi-cellular eukaryote organisms. These have ranged from simple colonies of cells to the giant dinosaurs and the whales and sequoias that we can still see on our planet.

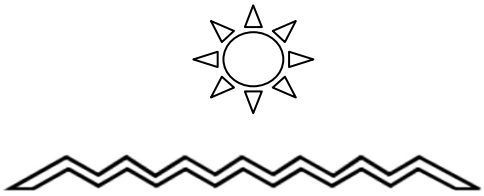


The fundamental ecosystem that has evolved on this planet is that the sun provides a steady source of energy in the form of sunlight. The earth provides a living space with a surface area occupied 71% by oceans and 29% by land masses. The ocean also includes a lot of depth, and is thus a three-dimensional living space as opposed to the land surface that generally lacks depth of viable living space.



The Planet's Surface: Water vs Land

Almost all organic living systems on our planet are based on water. They form cellular structures using carbon as their basic skeletal material for cell structures, supplementing it with calcium and other minerals. Phosphorus acts as a catalyst for the energy system. **Sunlight is the energy source, and water is the fuel.**



Yes, water is a fuel!! And water is the clean fuel of choice for most organisms. Carbon is only a building material.

Water is a deceptively simple molecule made of hydrogen and oxygen.

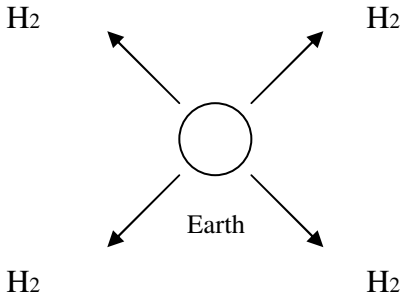
$$2\ H_2 + O_2 = 2\ H_2O + \text{ENERGY}$$

Hydrogen is the most chemically active atom in the universe. The easy availability of hydrogen in water is why organisms chose water as the fuel of choice. Thus it is the primary fuel for the majority of living organisms. When hydrogen gas combines with oxygen gas, it forms a molecule and releases energy. This energy can be used to build more complex molecules or to transport molecules. Put in simple language this means the energy derived from combining hydrogen and oxygen to make water enables organisms to GROW and to MOVE.

The organisms need energy to split the water, and they almost always get that directly

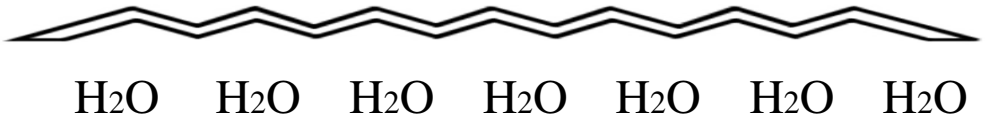
from the sun as radiation or indirectly through chemical processes by ingesting other organisms as fuel.

The problem is that hydrogen is also the lightest element in the universe. Hydrogen gas by itself will tend to float away from a planet as small as our Earth.

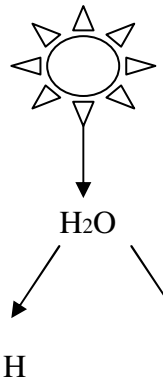


Only objects as big as stars like our sun have a strong enough gravitational mass to hold hydrogen gas in their atmospheres. Objects as big as stars not only can hold hydrogen gravitationally, they can fuse it into heavier elements. That fusion process is where the material that makes up our earth comes from.

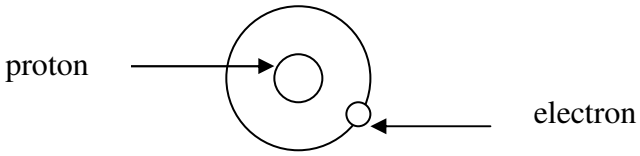
Therefore, almost all the hydrogen gas on our planet is bound up in molecules. One of the most abundant sources of hydrogen on our planet is the hydrogen that forms the water molecules that make up our oceans.



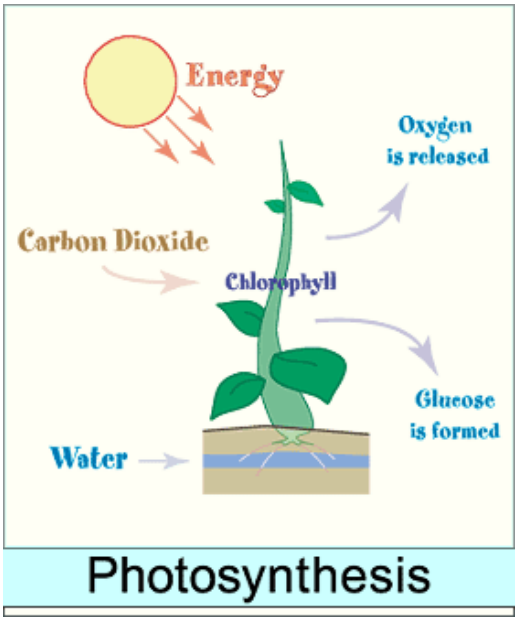
Because the hydrogen is bound into water molecules, its energy is already dissipated. Therefore, to use it as a fuel mechanism, energy must be first added so as to separate the hydrogen and the oxygen. The main source of that energy on our planet is the sun's light that shines on the ocean. Primitive organisms floating in the ocean learned a chemical procedure for harnessing the radiation from the sun to split water into hydrogen and oxygen. Scientists call this process photolysis – the use of light (photo) to separate (lysis) components of a molecule.



This provides the organism with mono-atomic hydrogen (H) and mono-atomic oxygen (O). Atomic hydrogen is a single proton with a single electron.



This atom is very reactive and forms the ideal fuel. Primitive organisms learned how to allow the atomic hydrogen to combine back with oxygen to form water and to utilize the energy released by that reaction in specific ways to build complex molecules. For example, they learned to use some of the hydrogen to bind with carbon dioxide in the atmosphere and form hydrocarbon molecules such as sugar, starch, and cellulose.



$6\ CO_2 + 12\ H_2O + \text{photons} \rightarrow C_6H_{12}O_6 + 6\ O_2 + 6\ H_2O$

carbon dioxide + water + light energy → glucose + oxygen + water

It turns out that the 12 oxygen atoms that the plant gives off in the form of 6 oxygen molecules (as shown in the above formula) comes from the water molecules and not from the carbon dioxide. The CO_2 keeps its oxygen. As the above formula shows, the plant takes in carbon dioxide and a lot of water. Then it splits the water into hydrogen and oxygen. Then it uses half the hydrogen to make glucose and then gives off half the oxygen from hydrolysis as diatomic oxygen gas, and the other half goes back to form water again with the remaining hydrogen atoms. The re-combining of atoms into water provides more energy to drive the system's growth.

Plants use chlorophyll to absorb light energy for splitting water molecules into hydrogen and oxygen. The efficiency of a plant's conversion of light into chemical energy is about half or less that of solar panels converting light into electricity. Perhaps we are evolving, if we learn how to recycle the solar panels.

Some bacteria do not use water for photolysis. Some use hydrogen sulfide, producing sulfur as waste. Others oxidize ferrous iron to ferric iron, nitrite to nitrate, or arsenites to arsenates. We can do the same to a certain extent.

The Green Economy is so-named after the green color of the chlorophyll used by plants in their hydrolysis process. What we want to achieve in Project #5 is the ability to live dynamic lives as animals, have a gentle, life-supporting footprint on the planet like plants, and enjoy spiritual brilliance that is as bright or brighter than the sun.

References

Project #1: Deep Meditation

www.dpedtech.com (see "Ancient Civilizations" section for articles about ancient Egyptian meditation in the **Pyramid Texts**, the **Litany of Ra**, and other sources. These are the earliest literary descriptions of meditation I have found to date.)
www.tm.org (Maharishi Mahesh Yogi's simple Transcendental Meditation [TM] technique derives from traditional Indian yoga, which in turn derives from Egypt.)
www.meditationiseasy.com (This site contains lots of alternative meditation choices and general information about meditation, including Osho's translation and commentary on Shiva's compendium of 112 methods in the **Vigyan Bhairav Tantra**.)

Project #2: Belief Management

Below I mention two approaches, one developed by Byron Katie, and one developed by Harry Palmer.

Byron Katie (Byron Kathleen Mitchell), and Stephen Mitchell. **Loving What Is: Four Questions that Can Change Your Life.** New York: Three Rivers Press, 2002. The simple process of Inquiry that Byron Katie developed is called The Work. You identify an issue that causes you stress or suffering and write out a critique of how you feel about the person, issue, situation, etc. Then you ask the following four questions (1) Is it true? (2) Can you absolutely know that it is true? (3) How do you react, what happens, when you believe that thought? (4) Who would you be without the thought? After asking the four questions, then you "turn it around". This means that you basically substitute yourself for a person you have been judging or blaming. The process reveals that most people suffer from taking too seriously thoughts about how others ought to behave or how things ought to be rather than getting in touch with the reality that actually exists. The thoughts themselves are not a problem. Attachment to the thoughts can be a big problem. You can find out more about this method of Inquiry at www.thework.com.

Palmer, Harry. **Living Deliberately.** Altamonte Springs, FL: Star's Edge International, 2005. In this little book Palmer briefly describes his own odyssey of personal development and then outlines his insights into the nature of beliefs and how we can learn to manage our lives through skill in belief management

Palmer, Harry. **ReSurfacing**. Altamonte Springs, FL: Star's Edge International, 2002. This is a workbook that contains 30 exercises for developing the will, and for managing attention and beliefs.

Palmer, Harry. **Seven Pillars of Enlightenment: the Avatar Mini-Courses**. Altamonte Springs, FL: Star's Edge International, 2006. This workbook is a greatly expanded version of the 30 exercises of ReSurfacing plus lots of additional illustrations, charts, and exercises. The material is organized into 7 Mini-Courses. (1) Awareness: Basic Attention Management, (2) Insight: Belief Management, (3) Determination: Basic Will, (4) Perspective: Creating Definition, (5) Compassion: The Forgiveness Option, (6) Integrity: Personal Integrity, and (7) Alignment: Basic Life Alignment. You can download the **Mini-Courses** and **Living Deliberately** as well as lots of articles free from the following website: www.avatarepc.com. Videos and

an audio talk are available at www.avatarepcmedia.com.

Project #3: Spiritual Sex

Sunyata Saraswati and Bodhi Avinasha. **Jewel in the Lotus: the Tantric Path to Higher Consciousness.** 3rd ed. Ipsalu Publishing: Valley, CA, 2004.

www.dpedtech.com (See the Pyramid Texts for ancient origins of this material.)

Project #4: Clean Energy

www.jnaudin.free.fr "MAHG" (experiments with an Atomic Hydrogen Furnace)

Feynman, Richard, Robert Leighton, and Matthew Sands. **The Feynman Lectures on Physics**, Vol. II, "Mainly Electromagnetism and Matter". Reading, MA: Addison-Wesley, 1964. (copyright by California Institute of Technology).

www.nrel.gov/otec/what.html (website about OTEC)

Wikipedia ("Ocean Thermal Energy Conversion", "Cosmic Ray", and other articles

www.greensteamengine.com (information about Robert Green's steam engines)

Votava, Ondrej. "Vibrationally mediated photodissociation of water and water containing complexes: state-to-state dynamics of intra- and inter-molecular collisions". Ph.D. dissertation, U. of Colorado, 1999.
(available online at jilawww.colorado.edu/pubs/thesis/votava/)

Gore, Al. Alliance for Climate Protection. http://www.climateprotect.org/, http://www.wecansolveit.org/.

There is a tremendous explosion of R&D in the direction of developing efficient electrolytic processes, Water Fuel Cells, and solar energy collection devices. Rather than try to summarize them or list them, I suggest watching developments as they are posted on the Internet. Professional journals will follow along, but are too slow and held back by conservative "scientists". What we need now are not scientists who know all the rules (although they are welcome to add their expertise). Above all we need creative inventors, developers, and businessmen with vision who can make

things work in practical environments. Products are beginning to emerge, and the market place will swiftly sort out the winners and the losers. Now is not the time for nay saying or suppression of information. Now is the time to support any promising projects and get prototypes and products out where the people can test them.

Project #5: Green Economy

Numerous articles, books, and e-books are available on Internet discussing various ideas about the evolution of the planet's ecosystem and the evolving idea of a green economy. My project description only sets general guidelines to evaluate proposals for a stable economic system that is in tune with the planet's ecosystem.

Brown, Lester R. **Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble.** Earth Policy Institute, 2003. Available online at http://www.earth-policy.org/Books/PlanB_contents.htm. Hardcopy version from W.W. Norton, New York. Brown details the scope of the problems we face with a handle on the data far beyond my resources, so read his book at the above web address if you want to overwhelm yourself with the reality of what is going on. He also lays out his vision for Plan B in directions that correspond closely to Projects 4 and 5 in the **Plan for a Planet**. He calls his Plan B a response to Plan A, which he calls "Business as Usual". I call the **Plan for a Planet** "Plan A" because it must become "Business as Usual" if we have any expectations of continuing with anything like civilized business on the planet.