

THE COMING ENERGY REVOLUTION

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SELECTED EXCERPTS FROM HER BOOK, PUBLISHED BY
AVERY PRESS

Society and a New-Energy Economy

Innovators are moving toward extremely low-cost clean energy technologies much faster than political leaders in North America are preparing society for the resulting economic shock. In Road to 2012, a report for the United States Coast Guard, futurist John L. Peterson warns about possible human suffering that could result from a changeover in world energy economics. Peterson says that our current system of fossil-fuel energy will be rendered obsolete, replaced by a system in which the new-energy sources examined in this book will become society's main power supply. He says:

"On the one hand, great hope would attend this new way of solving huge global problems. A new era would loom on the horizon. On the other hand, shifting to the new mode would not be easy for those who cannot change easily and quickly. This would produce great despair for many."

What might the future hold? We will first look at the pitfalls and possibilities of a changeover to a new-energy economy. We will then look at the forces of opposition, and how they may be overcome. We will see whether or not the changeover will occur, and what a transition period might look like. Finally, we'll see what will be required for us to move toward a life after oil.

New-Energy Pitfalls and Possibilities

Peter Lindemann of New Mexico - author, inventor, and long-time researcher of energy alternatives says that people must discuss how a new-energy revolution would affect society. He sees the technical know-how as being at a point where such a revolution could happen rapidly - probably within a decade. But, he says, "unless something really changes on the social or political or economic level, the technology is irrelevant; it will not be allowed to happen."

What are the roadblocks between our old-energy present and our new-energy future? Many of these roadblocks are built in the offices and boardrooms of big players in the current economy. People familiar with the ways of government say that a highly placed employee in a federal energy or invention-related agency will receive an offer of a well-paid future job from someone in industry, based on the employee's

performance in blocking developments that would mean less profits for the industry and in generally maintaining the status quo.

Another roadblock is the push for corporate profits. This gets in the way of decisions that would help bring new-energy technologies to the marketplace. For example, the automobile industry continues to fight laws in California that call for a certain percentage of new vehicles to produce zero emissions, since it would be difficult to recoup the companies' increased production costs on something like an electric vehicle because of the need to retool their assembly lines.

One of the most important roadblocks to progress is the lack of public awareness about possible new-energy sources. Unless the public knows about these sources, there will be no public pressure exerted on institutions both public and private to welcome them. Lack of knowledge about this subject is widespread; even government officials who shun corporate temptation are unaware of new-energy possibilities. And until now, peer pressure toward conformity among scientists and journalists has worked against education on this topic. Resistance to change is the underlying factor.

Other roadblocks are less visible. Wall Street provides the start-up money for oil and nuclear energy mega-projects, and depends on the continued flow of interest payments from such investments. The power of the financiers should not be underestimated. If they decided to stop loaning money for oil tankers, dams, and nuclear plants, such projects would not be built.

Another roadblock is the way the government itself is partially financed by energy. A portion of government revenue in the United States and in other countries comes from energy taxes. For example, in 1992, taxes on motor fuel brought in \$22.25 billion to state governments. If the public suddenly used 20 percent less fuel, there would be less money flowing into government coffers. A rapid changeover to a new-energy economy could also derail large numbers of jobs. For example, a large utility has an immense amount of money invested in capital equipment - hardware that is used to either make other goods or otherwise bring in income and in bonds to cover debts, such as those incurred in building a nuclear power plant. If an invention suddenly made such a plant obsolete, the company could not decommission the plant and write off, or eliminate from their bookkeeping accounts, the dollars that have been committed to the nuclear path. This would bankrupt the whole utility, putting many people out of work. There is a lot of money - and a lot of jobs - tied into the fossil fuel economy.

In 1991, the cost of energy in the United States was \$891.1 billion, or 15.6 percent of the gross national product. When you add to this the number of jobs related to fossil fuel in the rest of the world, it becomes obvious why a fast changeover to new sources of energy could wreak havoc in the job market. At the same time, the dark cloud of job loss has a silver lining of job creation. Lindemann says, "We have to take everything we have now, dismantle it, and replace it with something that's going to work for a future that's sustainable and that won't poison us. There's tons of work to be done; the idea that it's going to

put everyone out of a job [in the long run] is totally ridiculous." Humanity faces a test when new-energy technologies are accepted as a reality. The test will be in using them to enhance the quality of life and to clean up the earth, instead of using them to create weapons of destruction or more landfill mountains of consumer junk.

Some people believe that such jobs could give people more than just a means of support. H D Froning, Jr, of McDonnell Douglas Space Systems in California, is working on ways to use new-energy technologies in space exploration, believing such work will require the same sorts of technical breakthroughs that will be needed in energy production. He speculates that such technological advances would go far beyond meeting the bare essentials of life. People also need a sense of worth, and he envisions the creation of new occupations that would give useful work to expanding populations.

Forces of Opposition

Opposition to new energy has come from several sources, as we've seen throughout this book. They include the oil companies and other large businesses, and surprisingly, a part of the environmental movement.

But what about the oil company executives? Lindemann notes that they realize their product supply is limited, and as a result, their companies have diversified. Today, they own coal and uranium mines, and produce plastics, fertilizers, and chemicals. The gigantic companies want to be in business, he says. They do not really care what they produce. This echoes the findings of distinguished physicist and energy researcher Harold Puthoff, who says he was told by oil executives that they would welcome a new source of energy, because they would make more profits by turning oil into plastics and pills than by selling oil as a fuel. "I don't think the oil companies or the energy distribution companies are the problem," Lindemann says. "They just don't want to see things happen rapidly so that suddenly everybody is running on a heat pump in their backyard; that would only cause world depression."

In that case, what sector does he see as a major problem? In Lindemann's view, it is the media and a power elite that owns large magazines, newspapers, radio stations, and television channels, and has been known to manipulate public opinion on a new-energy discovery in order to maintain social stability. I believe that this elite thinks the populace might become angry and rebellious if average people realized that the problems of the fossil-fuel economy - high heating, electricity, and transportation costs, as well as pollution-are unnecessary. Lindemann says:

"An inventor gets suppressed. Sacrifices had to be made for the preservation of order. . . . I don't agree with their means of bringing this about, but I do agree with the end result [of social stability]. I don't know if they can accomplish it with their low level of integrity, though. I think that if the entire project of social order was put out to the public, you'd get a lot more cooperation."

Who are “they”? Lindemann says that gigantic financial forces - the worldwide banking system and financial markets - work behind the scenes to mold the economy. “That’s where change has to come from. In spite of the fact that I don’t like the way they exploited us and don’t like the fact that they made sure that power continued to concentrate in their hands.” However, Lindemann’s views differ from those of other new-energy advocates, who are impatient to get energy out of the hands of the big companies and into the hands of the people.

One trend that could affect the future of energy-technology changes is widespread disillusionment with corporate greed, greed that has resulted in destroyed ecosystems as well as corrupt political systems. “If the idealists who want a healthier world all pull out of the whole trend of where the power is moving us,” Lindemann warns, “we’re going to get the worst possible future.” These people, many of whom look with fear and distrust at the economic trend away from national sovereignty and toward multinational-ism, must stand up against the abuse of power and take part in shaping our future.

Where does the environmental movement fit into the new-energy scenario? One author, P J. O’Rourke, ridicules environmentalists, making the case that some people actually want to live in apocalyptic times and would be uncomfortable with abundance. O’Rourke may not realize it, but he helps us understand why the new-energy movement gets little help from the environmental movement. He quotes long-time environmentalists Jeremy Rifkin, Amory Lovins, and Paul Ehrlich as stating that giving society abundant, bargain-priced, harmless energy would be the worst thing that could happen to the planet because of what people might do with it. They apparently would rather try to get a significant number of people - especially energy users in developed countries - to be energy-efficient, to tighten their belts, and to live with less energy for electricity and transportation. Most of the environmentalists whom I’ve worked with feel this way. To be realistic, however, society will probably be getting low-cost, abundant energy whether the belt-tighteners like it or not. If Western environmental groups do not welcome new-energy technologies, the devices will be imported from the East. Would it not be wiser for environmentalists to relearn flexibility of thinking and help shape the direction of the coming energy revolution?

Will We Or Won’t We?

To answer the question of whether or not a new-energy changeover will come, we should look at two views of change, and at what the transition period to a new-energy economy will involve.

Two Views of Change

I believe that a changeover to a new-energy economy is inevitable, but some people are not so sure. Let’s look at both sides of the argument.

On the skeptical side, a retired magnetics-research technician in Cincinnati, Erwin Krieger, doubts that a “free energy” device would enter the consumer market in North America in the near future or “as far

down the road as you care to look. It is quite probable that the military would snaffle it up first. And . . . probably with prohibitions against unauthorized construction and use.”

He adds:

“Then there’s the economic impact. It’s all very well blithely to prattle about buggy-whip makers trading their craft in for automobile accessories production; that parallel is far from realistic. What of workers at shipyards that make the huge supertankers that bring millions of tons of oil from here to there? What of the workers, technology and research world-wide, in the oil-production industry? What happens to the scientists and their research on solar energy, atomic energy? With the mining and vast infrastructure of coal production? Or oil, gas, and coal powered) plants?”

“Although the numerous aspects of the energy business look disparate, they are, in fact the interconnected building blocks of one monolithic structure in which a crack anywhere would eventually collapse the whole.”

“Had I a free-energy machine in my closet laboratory I would pack it up and hie me to some power-poor Andean or African country...Of course, greed and politics being what they are, sooner or later the country in question would consider exporting cheap power to neighbors and... need I continue? The introduction of a free-energy device - that would be an energy crisis!”

On the side of the optimists is Bill Lawry of California, a successful entrepreneur who has helped to fund new-energy experiments. He says that if one of the inventors were to develop a reliable device, “it would be the most revolutionary event-magnificent and catastrophic all at once. In the long run the change [to new-energy technology] would be for the betterment, but in between there would be dislocation of a magnitude the world hasn’t seen.” Lawry can see why someone would want to suppress the development of new-energy hardware, but says it would be an impossible job because there are too many gifted people who are determined to make it happen. He has wrestled with the question of what should be done if an energy device was perfected to the point where it was ready for mass manufacturing. Saying to the world, “Here it is!” at a big press conference is not his choice:

“I’m an entrepreneur, so my approach would be to go to four or five of the major companies - let them compete against each other-and say, ‘This is what we can do with this invention, and this is what it is going to do to your company. You’ve already got a large staff of engineers who can design the products and you have the facilities for manufacturing. Go to it.’ ”

Paying for a New-Energy Changeover

Of course, new-energy technology will not be free of cost. Physicist Hal Puthoff points out that engineering, materials, and other expenses have to be figured into projections for possible mass-produced new-energy technologies. His most optimistic prediction is that consumers could have clean power at costs at between one-tenth and one-third of

current costs - about \$1,200 a year for the average household in the United States.

How will the transition period be paid for, without causing large-scale hardship? I suggest to Peter Lindemann that the transition time could be compared to starting a new business, with everyone having to make some sacrifices until profits begin flowing.

"Your analogy is good," he says. "But it's easy to imagine what it looks like at the individual level. What's going to happen when an entire society has to do this, as well as a government whose entire tax structure is running on the energy used now? What laws have to be changed? As energy starts being used in different ways, how are the taxes shifted?"

What might a transition period look like? To kick-start it, taxes on old-energy technologies would have to be raised in order to fund research and development of new-energy technologies. Then, the fossil-fuel transportation, heating, and electrical generation hardware, as well as the nuclear power plants, could be phased out as new-energy hardware comes out of the factories.

Since this hardware would be fuel-less and durable, the old fuel-tax system would no longer work. But, rather than looking for another product or service that could be taxed, governments could make up the lost revenue by cutting back on spending on the defense-oriented parts of their economies, much of which has been rendered obsolete by the end of the Cold War. The United States Department of Defense alone spends billions of deficit-financed dollars annually. And since the United States government itself is a large consumer of energy - new-energy hardware could reduce its costs directly.

Private businesses can develop this new-energy hardware if the roadblocks we discussed earlier are removed. But they need the cooperation of federal and state governments, which must formulate a new energy policy that is wholeheartedly in support of the transition to clean, low-cost energy.

Life After Oil: Moving Toward A New-Energy Economy

Before we can consider a transition to a new world of energy, we must come to terms with our past behavior. Only then will we be able to see clearly into the future.

Acknowledging the Past

I believe that we cannot move forward in harmony without accepting responsibility for the past. These issues must be discussed, not to arouse negativity, but to instead hasten a collective acknowledgement of the problems we all face. This way, society can move on toward healing, in both attitudes and behavior. A healing of attitudes may lead to a healing of planetary ecosystems. We must face the fact that we have all abused the earth. For example, my pickup truck bums gasoline. Therefore, it consumes oxygen and trails poisons out of its exhaust pipe. All the corporate feel-good advertisements for clean-running fuels that we read in the papers and see on television do not change the fact that internal-combustion engines abuse the planet.

We cannot solve today's problems with the same level of thinking that created them.

ALBERT EINSTEIN

But individual acknowledgement is not enough; there must be collective acknowledgement as well. John Hughes, M.D., a physician-psychologist and former political candidate for the British Columbia Green Party, says that most thinking people today are, at a subconscious level, grieving for their planet. He says that at a deep level, we know the deadly effects of excess radioactivity, of deforestation, and of chemical pollution on both the earth and its inhabitants. These unacknowledged feelings - about our collective actions and their results - sap our ability to act effectively. He suggests that we turn to each other for mutual support as we admit to our deep fears, and that one goal of the process is to be able to respond to the coming economic challenges effectively and with clear thinking courage.

Facing the Future

Even though it will require an all-out effort by all of us, a change-over to a new-energy economy is desperately needed. Environmentalists thought that by now we would start turning off the energy industry's myriad spewing founts of pollution. Progress has been slow. One space-energy scientist voices his frustration: "I am becoming a revolutionary who feels angry about our short-sighted, suppressive, and ecologically destructive culture." Brian O'Leary, Ph.D., a co-founder of the International Association for New Science (IANS), adds, "I'm eager to help create those social structures that will facilitate a new worldview, one that will support a sustainable global future." For example, IANS has proposed the founding of an Academy for New Energy that would train scientists in new-energy theory and methods.

And what of the politics of energy, a politics that must change before the economics of energy can change? A number of writers in the energy field have addressed this subject.

Curtis Moore and Alan Miller, authors of *Green Gold*, make the point that the United States, with its creative edge and its resources, could win the energy race and get a large share of what O'Leary-a former presidential advisor estimates is the \$2.1 trillion market for major energy technology coming globally over the next several decades. However, they say that an advantage of American society - its open political system - works to its disadvantage when oil and other industry lobbyists manipulate that system and use it to shut the door on energy alternatives. Thus, the government reflects the needs of big business to a greater extent than those of other segments of society. Although Japan and Germany consider the needs of their industries, those governments "also maintain a clear vision of what their national interests require."

This is not a problem limited to the United States. Christopher Flavin and Nicholas Lenssen, authors of *Power Surge*, say that corporations and governments the world over "seem to be looking at the future through a rearview mirror." I think they're right.

But the switch to new energy will be like the switch from the horse to the car, or from the telegraph to the telephone, or from the radio to the television. It is unstoppable. Ultimately, the push of an ever-accumulating body of new-energy research will combine with the pull of

an ever-increasing need for abundant, nonpolluting energy sources to create an irresistible demand for new-energy technology. Systems engineer Paul Laviolette gives voice to a wide-spread view when he says, "The whole [new energy] thing is growing so fast that suppression is not going to work, because it's going to break through anyway. Like any revolution, it can't be stopped."

The Power Is in Our Hands

Do we want a new-energy future? I think if you ask most people, they would agree that we do. Are we willing to demand a new-energy future? That is the important question. If we do not demand a change for the better, then change - when it does eventually happen - may not tie the change that we want. For example, even if new-energy inventions are developed in Japan or Korea for mass production, they may not be sold here if powerful economic interests remain opposed. As new-energy writer Michael Schuster says, "The desired end product is not necessarily a free gas pump in every household, but more a sense of empowerment."

One internationally connected American businessman speaks of a powerful factor in countering vested interests-the will of the people:

"When the Soviet people got their hands on computers, faxes, and videos, information spread faster than the state could control [it]. The people demanded changes. That's what happened to the power of the Communist Party in the USSR. In the West, the same thing will happen to the energy cartels. Here, it comes from [the] Internet, you name it; the people are finding out about free energy and it's too late for the cartels to control it."

We will first look at what a new-energy world would look like. We will then see how far we've come down the road toward our future, and how far we have to go. Last, and most important, we will look at what each of us as individuals can do to help bring about the coming energy revolution.

The Implications of New Energy

What would a new-energy world look like? Think of the possibilities:

Instead of fighting oil wars or financially supporting nuclear power plants, governments convert the plants to run on non-polluting energy technologies and carry out large-scale cleanup projects. But most power is generated by privately owned devices, varying in size from a backyard generator to a plant big enough to light a city.

- Oceans, rivers, and forests are freed from the threat of further contamination by radioactive waste, oil spills, or acid rain.
- On highways and city streets, traffic hums along quietly without the roar of internal combustion engines. Even downtown, the breeze smells fresh and pure. Alongside the freeway, joggers can breathe in lung-fulls of sparkling clean air.
- As fewer pollutants spew out of power-plant smokestacks, soils everywhere are cleansed and restored to health. This restoration

is helped by the lack of heavy-metal fallout from gas and diesel engine exhaust. As a result, fruits, nuts, and vegetables grow any-where, from greenbelts to inner-city backyards. Anyone with a rooftop can build a small greenhouse, heated in winter by fuel-less devices.

- Jet aircraft are converted to fly on water fuel with a technology that at the same time, breaks up the existing chemical oxides that now contaminate the air. Thus, aircraft renew ozone in the upper atmosphere¹ instead of devouring it. This, in turn, reduces a host of problems, ranging from skin cancer among people to die-off among plants.
- A great number of constructive jobs emerge from a combination of abundant, low-cost energy and a gradual changeover to technologies that are in harmony with nature.
- The increased vitality of people who breathe oxygen-rich air, drink unpolluted water, and eat healthy food can result in an upward-spiraling surge of hope, creativity, and determination to solve humanity's problems.

The Road To Free Energy

Like a traveler who has just started on a long journey, we have just started down the road from a system built on fossil fuels to one built on new-energy sources. Let's look at both the road behind us and the road before us.

The Steps We've Taken

For all the problems the new-energy movement has encountered, there has been some progress. We will look at how the world of science fiction has prepared us for a new-energy future, and how the Internet is helping to turn the future's promise into reality.

Fiction Foreshadowed the Future

Until new-energy conferences started to be held on a regular basis in the 1980s, the only place where new-energy concerns received a serious hearing was the world of science fiction. From such novels as 1981 underground classic *Ecotopia Emerging* to television shows such as *Star Trek*, science fiction writers treated space energy and other new-energy topics as realistic possibilities, instead of as wild fantasies.

Popular culture helps to prepare the public for a change in their lives-in this case, a new-energy future. Many people do not believe in the reality of something they have not seen on the evening news, or bought at a store, or otherwise brought into their familiar surroundings. Familiarity with new energy through popular culture may help foster a quicker acceptance of new energy as a believable, workable entity.

A New Factor: The Internet

Can today's clean-energy proponents succeed where yesterday's could not? Today's renegades do have an advantage-the global electronic brain known as the Internet, on which new-energy information is transmitted at an ever-accelerating rate. The information revolution is marching hand in hand with the new-energy revolution. Many inventors make statements such as, "If anything happens to me,

everything I know will be uploaded onto every computer network. I've made that provision."

The Internet is a global network of telephone wires, fiber-optic cables, and satellites through which a computer user can instantly connect with another user anywhere in the world. It allows lone researchers in various countries to exchange experiment results, research ideas, and-perhaps most important - encouragement and support. British author and new-energy researcher John Davidson says:

"This is a wave that many of us are jointly riding and which is simultaneously breaking, apparently independently, in all parts of the world...Through the networking efforts of many people... the work is being drawn together...with such visible evidence of its reality that it can never again be brushed under the carpet by prejudice and vested interests."

The Steps We Must Take

Obviously, we still have a long way to go. The road before us will require that we learn to accept the idea of abundant energy, despite the fact that we have been conditioned to believe in scarcity. We will also look at how women can help change the current scientific worldview, a view that will have to include energy technology in a framework, that of the larger web of life.

Digesting the Concept of Abundance

We have seen by now, we do not live in a world of scarce resources when it comes to the potential power available to us. In that respect, we exist in a sea of plenty and the politics of scarcity are illusory. That thought takes a while to digest. Although leaders of the New Age movement-the philosophy that says we each create our own reality through the way we think-preach "think abundance and prosperity," society is conditioned to a worldview of scarcity and struggle.

It is no illusion that humans have devastated natural systems on his planet and have caused some resources to become scarce, and that we are running out of room for our garbage. But the main reason we can't reverse this situation is the belief that we cannot regain control. Vested interests-large corporations and government bureaucracies-are formidable forces indeed, but not as strong as millions of people who believe in the concept of abundance.

Women and New Energy

Changeover time challenges conventional wisdom, and the implications of changing to cheap-and-abundant energy are immense. How can such a world be sensibly run by the old monopoly-oriented rules? Some thinkers suggest that answers will evolve more readily if the base of decision-making is widened to include women.

Will parity between men and women make a difference? One researcher, a man, notes that "participation by women is a lack in this [emerging energy technologies] field...This may partly account for the over-emphasis on power [produced]...instead of [on] what technology

does to living organisms." One scientist says that girls outnumber boys in environmental clubs in the schools. When he wonders why, his wife points out that girls learn early on that "if you make a mess, you have to clean it up." And another scientist who was contemplating a speaking tour to promote a book on the hydrogen economy said he would target women's groups because he feels women are closer than men to their protective feelings toward future generations. Do women really have a subtle difference in their perspective of life, a difference that is needed now? Beverly Rubik, Ph.D., describes her experience as a woman studying college science in the late 1960s:

"Even the biological models were mechanical and lifeless. Where was the Nature that I knew and loved-the gentleness, the delicate balance, the complex and subtle relationships¹ the diverse beauty? Gradually I came to realize that these were not an important part of the conventional scientific worldview."

Rubik points out that the language and methods used in science are often brutal. Smashing atoms and killing organisms are the accepted route to learning. High-tech products, from bombs to medicine, are products of a mechanistic science, a way of seeing nature as a passive mechanical object separate from the world of human beings. Some people believe that there must be more of a balance between masculine and feminine worldviews in international decision-making. Although no cure-all, this balance could help turn public policy toward more life-oriented energy policies.

Energy Technology and the Web of Life

Debate over how to balance energy technology and the need to give individuals more power over their lives-how much electricity costs, whether or not it comes from a nonpolluting source-may come at a time when many people are reexamining the materialistic basis of science as currently taught. One long-time observer of the new-energy scene says an evolution in technology is not as important as an accompanying evolution in understanding, an evolution that will open our eyes to another dimension of our living universe. Perhaps, the wisdom to use technology responsibly will increase when enough people begin to comprehend the way that all life is interconnected. While scientists involved in this field study the physics of space energy -the measurable world of atoms and forces - some of them go beyond the formulas and equations to express an awe at the beauty of what they are working with.

We have a lot to learn about the web of life as we jump into the new-energy era. A study of the different ways in which new-energy and old-energy technologies affect living creatures may be a place to start. Viktor Schaubergger envisioned a "living technology," and today's inventors are working on it. When enough people agree to take responsibility for learning and applying new life-enhancing energy knowledge, deserts may turn green and fresh breezes may blow down city streets. Inventor Adam Trombly says, "Great technologies alone are not going to save this planet. Great humanity is."

Some are calling for biologists to help judge and make decisions on new-energy development. The science of biology is very relevant to the energy field because of the possibility that life forms respond to subtle energy fields produced by unconventional hardware. For example, a United States Navy project in northern Wisconsin involves a long antenna laid along the ground to communicate with submarines. This antenna may be sending out a strange form of electromagnetism, since trees in the area are growing abnormally fast. While some may see this as a benefit, others do not - one health researcher says, "I don't want my children to grow abnormally fast." These are the sort of effects that must be examined as we move into a new-energy age.

Free The Power

There are indeed signs that change is coming. This book contains only a sampling of the individuals who say they are on the verge of being able to provide revolutionary energy technologies. There are also risk-takers in the business sector who are willing to finance the development of these technologies, and whom some expect will advance the next wave of the energy revolution. But vigilance is needed even as energy science changes. Humanity has been lulled into blind faith in its scientists and engineers throughout the twentieth century, and the public is only now beginning to wake up and see what gigantic mistakes those experts have made in energy mega-projects and atomic experiments. Perhaps both women and men, and biologists as well as economists and engineers, will insist on having a voice in deciding humanity's new directions for the twenty-first century. Brian O'Leary offers a vision of how to achieve such teamwork, which would include "good government in concert with industry":

The challenge is to find the scale of funding that would ensure the orderly and rapid development of the best technologies, rather than stumble into the grips of secrecy and the control by the few. I believe the challenge can be successfully met through the power of positive visioning and goal-setting.

But what about the average person? What about people like us, people who will be profoundly affected by these massive changes? There are signs of public interest in energy issues, such as the renewed interest in energy pioneer Nikola Tesla. And there are ways for you to get involved, both in helping to decide public policy and in making energy decisions for yourself:

Learn more about new-energy possibilities. There are magazines and newsletters aimed at different levels of technical knowledge.

Get involved politically. When a local, state, or federal election comes up, find out what the candidates know about new energy, and what their commitment to promoting it is. You will want to know if they will steer money away from fossil-fuel and nuclear developments and toward new-energy research. Don't let your interest in new-energy politics end on Election Day. Write to your representatives - urging that less money be spent on secret military research and more on new-energy

research. Point out that this makes sense in an era of budget deficits and government cutbacks.

Write letters to the news editor of your local or regional newspaper, and to a local radio or television station, asking for fair coverage of new-energy developments.

If you are building or renovating a home - or if you know someone who is - explore new-energy options as they become available. You might find that even if the initial cost is greater than that of standard energy hardware, the energy savings will allow the device to pay for itself.

Free energy. Freedom from slavery to the narrow worldview of materialistic science. Freedom from the deeply grooved path of outmoded thinking. Freedom to find a way of tapping into that background energy out of which everything is created. Researcher Hal Puthoff compels us to realize our role in shaping reality:

“Only the future will reveal to what use humanity will eventually put this remaining fire of the gods.”

Will it happen? We decide.

Great book. I just want to comment on "The Dirt Cheap Energy Converter", page 67, which is capable of generating 6 watts of electricity overunity. It appears that he developed something similar to "Microtube Array" patent WO/2010/035035 in his energy converter. In effect, I believe that he doped his Barium Titanate to create Jahn-Teller distortion (see wiki) which results in a lower electrostatic repulsion within the atoms with manganese doping. I was expecting to find ways to create free energy, but all I remember getting was the search for future possibilities. Maybe you'll get more out of it. I'm very hands-on, get it down now, type person. The Coming Energy Revolution. Smart-grid technology will bring huge savings to companies as varied as Cisco, PG&E, and Cargill, and to consumers, too. But who will foot the bill? The tech sector's interest is fitting considering the similarities between the energy-grid upgrade and the computing revolution of the 1980s that saw hulking, centralized mainframes give way to PCs. The existing U.S. power grid dispenses electricity but is limited in its ability to gather intelligence from end users—hence the monthly visit from a meter reader. Now utilities are replacing outmoded meters with so-called smart meters that foster a back-and-forth between customer and utility. As the video notes, the poorest countries in the world are also the sunniest, which means that the entire planet will benefit from the coming energy revolution. Plummeting Solar Costs. Energy is a \$6 trillion per year industry, and it's ripe for disruption. And with the anticipated convergences of machine learning, quantum computing and materials science, exponential improvements in solar panel materials will only accelerate. It's like a digital shift in price, but in the most important physical infrastructure piece we have, which is energy, explained Naam. "So now we're hitting crossover, the point at which, in the sunniest parts of the world, solar is simply the cheapest energy you can buy, period, unsubsidized." The digitization of solar technology improvements is clear.