

SYNOPSIS: Energize America Now, Inc. (Draft 3: Revised 7/18/86)

Statement of Mission

Energize America Now Inc. — a partnership formed by Jack Eckerd Corporation, Florida Progress and Pinellas County (its communities and residents) — would be formed for the purpose of: 1. facilitating world harmony by maximizing the availability of all of the world's resources (particularly its energy resources) among all of the world's peoples; and 2. harness these newly-available resources to re-vitalize Pinellas County and provide an international showcase of how this new availability of resources can improve quality of life.

Project Rationale

1. Energy's Enormous Influence

There is an anonymous statement which goes: "We are not sure who discovered water, but we're pretty sure it wasn't a fish." It's a concise summary of how we humans have an inherent weakness when it comes to perceivig the world outside of ourselves: the most obvious elements often appear to be the most obscure — simply because they are so obvious.

This is particularly true of energy, an invisible force which so pervades our very existence that we almost never appreciate the fundamental influence it has on the quality of that existence. All living creatures require energy to stay alive, of course; but humans, in particular, require a relatively large amount of it. This is due, in part, to our unique ability to invent and then depend on "tools" — from automobiles to digital computers to spacecraft. These tools are essentially extensions of ourselves and like us, cannot operate without energy. But because they are man-made, our tools also require energy to be produced and distributed. "We shape our tools and thereafter, our tools shape us," goes the saying and all of it — us, our tools, the shaping of them, the trading of them . . . in short, our human culture — are all intimately dependent on energy.

2. Energy and World Trade

It is clear that any successful world economic system must take this fact of nature into account. Supply (or availability) of resources — or conversely, demand (or need) for resources together set the relative values of those resources and in so doing, set the stage for all types of trade — between neighbors or among countries. What is *not* relative but rather, absolute in value is the energy required to produce, distribute or use the resources being traded.

Increasingly, so-called "advanced" nations find themselves in the business of offering services in the marketplace, rather than products. It is clear that the trading value of services, too, is energy-based, since only humans can create and provide these services . . . and humans clearly require energy.

3. Energy and the Quality of Life

In this way, the availability (and price) of energy determines, in a very real sense, the availability (and price) of everything else around us. It should be immediately clear how, in turn, this availability of "everything" — products, services, resources — largely determines the quality of our lives.

Of course, having plenty of "things" is not at all equivalent to having a high quality life. Resources, by themselves, only serve to sustain life and by so doing, help humanity — and each human — to accomplish his or her own reason for living . . . to give meaning to life. However, without adequate resources (food, shelter, clothing and so on), only a philosophical or religious "leap of faith" can so motivate a human being that he transcends his necessarily selfish nature, ignoring his own resource needs to concentrate instead on the needs of others.

This is the thrust of Maslow's "Hierarchy of Needs," which The Naisbitt Group uses to define "quality of life" in its Community assessment of Pinellas County. The individual's *physiological* needs tend to have a higher priority than his *belongingness* needs; both tend to be more important to him than his need for *self-actualization, self-mastery and the need to help others*.

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In short, satisfaction of physical needs is not a prerequisite for spiritual satisfaction . . . but it certainly makes spirituality much more attainable. It also obviates the postponement of a meaningful life until “the hereafter,” by making a spiritually and physically satisfying life possible “here and now” . . . as well as “hereafter.”

4. The Economics of Energy

Energy in its various forms has much in common with other types of commodities, following all the usual rules with regards to production and distribution costs, prices based on supply and demand, and so on. *Electrical energy*, however, has a unique characteristic which most other commodities lack: as long as transmission lines are in place between buyer and seller, electrical energy can be “sold” and “delivered” to the end user *at the speed of light*. The only other commodities that can be bought, sold and delivered *in usable form* this quickly are money and information — and it has been argued that these two are simply alternative forms of “stored” energy which can also be harnessed to do work, but not nearly so easily as electrical energy can.

It is this unique characteristic of electrical energy that will permit us, eventually, to realize *global* economies of scale, thus significantly reducing the cost of energy, while dramatically increasing its availability — and, consequently, significantly improving the quality of life . . . also on a global scale. Our only requirement for achieving this is an adequate network of transmission lines (or “grid”), linked together on a sufficiently large scale (into a *global* “grid”). To a great extent, most of these transmission lines already exist; only a few crucial links in the network are still missing.

Realizing economies of scale through high-voltage electrical energy grids is hardly a new or untried idea. As Buckminster Fuller describes in his 1981 classic *Critical Path*:

The public utilities must always generate enough electricity to ensure their customers’ (mostly industry) never having a shortage and that electricity be cheap; otherwise the industrial customers would install their own generating equipment. What the customers don’t use of the surplus generated power is *pure loss* to the ‘public’ utilities. To cope with the foregoing variables, each utility has plotted the peak and valley patterns for each second of each day of all the years since the public utilities entered the business. The utilities have many stand-by generators, most of which are in operation for only a small fraction of the time. All of each company’s past peak-and-valley history is combined with probability mathematics to determine how many generators to have in operation at any given time of any given day of each newly evolving year.

In the 1930s Wendell Willkie was first to discover that with integration of the electrical-generating networks of neighboring localities, whose peaks and valleys differ to some degree, the excess of any of the network’s member utilities at any one moment is frequently used by other grid members’ peaks. When this happens, it brings *pure profit* to the excess-power-generating seller.

The practical limit on the distance of electrical power delivery from the time of World War I until twenty years ago was 350 miles. However, 350 miles could not span the distances between any two of the continent’s four national time zones. Twenty years ago . . . technical developments occurred that made 1500-mile delivery of electricity possible, practical and economical. This reach provided the ability to span continental time zones, whose peaks and valleys obviously differed greatly from one another . . .

When the 1500-mile-reach capability was technically established twenty years ago, it was immediately evident to me that we could carry our American electrical energy grid across the Bering Straits from our Alaska grid to reach the extreme northeastern Russian grid, where the USSR had completed a program of installing dams and hydroelectric power stations. . . . About 1500 miles could interconnect the Russians’ Asiatic continent electric power grid with the Alaskan grid of industrial North America.

In the early years of Trudeau’s premiership of Canada, when he was about to make his first visit to Russia, I gave him my world energy network grid plan, which he presented to Brezhnev, who turned it over to his experts. On his return to Canada, Trudeau reported to me that the experts had come back to Brezhnev with: “feasible . . . desirable.”

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Unfortunately, little additional progress was made on the global energy initiative — at least, until only recently. There are many simple reasons for this, including: student unrest on campuses, university R&D funding cuts, program abandonment, other national priorities on energy, etc. The value of the energy initiative itself, however, was never questioned; in part because it never actually reached the public forum. Ironically, the issue is now being most actively pursued by Fuller's former students and colleagues and by early participants in his "World Game" conferences of the early 1970's, at which the issue was widely discussed.

5. The Global Energy Grid: Potential Benefits for Mankind

Reducing the cost of energy, making it more plentiful and raising worldwide standards of living are only the minimal benefits to be realized by a truly global electrical energy grid. It would also provide:

- A uniform standard for worldwide trade of any commodity, based upon its equivalent energy value (e.g., 1¢ per kilowatt/hour). This uniform value is seen by many as the key to developing a worldwide market mechanism. A midwest group — the St. Louis Institute for Systems Studies — is currently working on this aspect of the problem.
- A "pro-active" strategy for the United States to trade its way out of an alarming balance of trade deficit . . . and its rapidly-escalating annual budget deficit.
- The missing incentive for using "alternative" energy sources, such as solar, wind and hydroelectric power; many of these (especially when produced at the consumer level) have so far suffered from the problem of creating an excess local supply of energy, due to the lack of new or expanding energy markets (which a global grid would provide).
- Conversely, a way to reduce dependence on nuclear and fossil fuels, with their inherent ecological and political disadvantages, whose long-term significance is only now becoming apparent.
- A compelling "bargaining chip" for re-starting bilateral nuclear disarmament talks. In a speech delivered in the spring of 1985, former president Nixon pointed out that "the Soviet Union needs a deal. And we should give them one — but for a price." Noting that the West has a 5-to-1 edge in economic power over the Soviets, Nixon said that this advantage should be used as an "economic lever," because "simply having a program that would lead to a balance of nuclear terror is not enough. We must try to add to that a new dimension of the use of America's and the free world's economic power as both a carrot and a stick."
- A solution to the world's long-range problem of controlling population growth. Numerous studies have shown time and again that a nation's birthrate is inversely proportionate to its energy usage; that is, as energy usage goes up, birthrate goes down.
- Increased social intercourse and a new understanding of international cultures. Just as rural electrification brought rural counties into the American mainstream, a global energy grid would help move developing Third and Fourth World countries into the global mainstream. And just as our interstate highway system opened new regional cultures to Americans travelling by car, a global energy grid would do the same for a whole new class of international air travellers.
- Perhaps most significant of all, the concentration of sufficient resources and electricity (in the extremely high voltages needed) to complete the most significant scientific research of modern times: the completion and application of a true Grand Unified Field Theory (GUT), linking the force of gravity with the other three fundamental (and already linked) forces. Among other things, this theory holds the promise of helping mankind understand the workings of the mind, as well as developing: forms of transportation based on "anti-gravity"; invisible protective "force fields"; instantaneous travel (and bulk commodity shipment) throughout the globe and across the vast regions of outer space; and, finally, the delivery of energy itself — to anywhere in the world that it is needed — in the form of (and at the speed of) pure light. Clearly, this theory holds much promise and would open entirely new worlds to us . . . as well as revealing many new ways to improve our very familiar world, where we have lived together in disharmony — but with much hope — for so very many years.

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6. Toward a New World of Plenty

In this brief listing of a few specific benefits, we begin to see the ultimate, long-range potential to be realized in the creation of a global energy grid and in the new global availability of inexpensive electrical energy which would result from such a grid.

With the possible exception of non-preventable natural disasters, it can be argued that many of mankind's most pressing problems — war, poverty, crime, malnutrition, disease, illiteracy and a fundamental disrespect for human rights — stem not from a human nature that is inherently evil (as some believe), but from a worldwide scarcity of resources. Or, just as bad, from a worldwide acceptance of the notion that scarce global resources — and the problems that result — are the *norm*.

In fact, two of the world's most popular economic systems — capitalism in the U.S. and communism in the U.S.S.R. — are both based on this notion: that there simply isn't enough resources to go around — and never will be. The two systems only address the problem of how best to allocate what few resources there are. And both are now showing the strain of trying to provide too much, for too many of their peoples, with too few resources.

The problem is analogous to that of a family trying to budget its subsistence-level income. The problem isn't how best to spend the money; the problem is not enough money to spend.

But as Fuller and others have argued, Malthus was wrong. Population *does* tend to grow exponentially — but a high standard of living can minimize the size of the exponent. Resources *do* tend to grow arithmetically — unless the annual new growth can be channeled (fed back) into providing twice as much growth each year; then, they grow exponentially, too.

“There are two ways to deal with a problem,” someone once said. “Either pass it to someone else, so that it is no longer *your* problem — or *solve* it.” High-speed communications technology and semi-integrated, international financial markets have made our world's nations extremely interdependent: we have become our brother's keepers, whether we chose to or not. As a result, we can no longer pass problems on to someone else. They will always be our own.

But, it appears, they can also be solved. And cheap, plentiful, global energy is the key to the necessary solutions.

7. Strategies for the Current Environment

As The Naisbitt Group has pointed out (in its Community Assessment of Pinellas County and elsewhere), “The economic environment has changed. The present economic reality has not been a part of the economic experience of our recent past. We would have to go back 150 years to find a comparable time. It was then, during the dramatic shift from agriculture to industry, that our nation experienced a time of similar economic opportunities. We now live in another time of radically shifting economies,” (i.e., from an industrial economy to an information economy).

It is equally clear that the inherent efficiencies of networking have been amply exploited in the delivery architecture of recently-developed technologies, most notably AT&T's national telephone network. Even our interstate highway system mirrors the network strategy. As a rule, however, electrical energy utilities were developed earlier, were heavily regulated by local interests throughout their history, were expanded or intertwined in the absence of any long-range plan and therefore, have generally not taken advantage of modern network architecture.

The enormous financial incentives for creating a true energy network *now*, however, are so enormous — both for heavy users of electricity and for the utilities that supply them — that even the small, regional efforts made in this direction recently are already gathering significant momentum.

In an effort to enhance this momentum through education and increased awareness, a San Diego-based group — Global Energy Network International — was chartered earlier this year and is currently stating the case for a global grid to key professional organizations of scientists and engineers (e.g., IEEE (continued, next page)

and AAAS). Its next target audience will be the energy users and utilities themselves and finally, when sufficient credibility and momentum has been attained, the international dialogue will be expanded to include government and the general public. GENI's efforts are currently being directed by Peter Meisen, who has maintained close contact with the Buckminster Fuller Institute in Los Angeles (and its Executive Director, Jamie Snyder).

Working in close conjunction with GENI's efforts is Thomas B. Turner, Director of Operations of the St. Louis Institute for Systems Studies. SLISS is working to develop and operate a World Resources Simulation Center, a computer-modeling and simulation facility which, it is hoped, will help give birth to a worldwide market mechanism. SLISS's strategies are based on the notion that, having saturated markets in their home nations, the world's corporations are increasingly reliant upon trade arrangements that help them locate new international trading partners and expand their markets overseas; SLISS's World Resource Simulation Center will not only keep track of the world's resources, it will attempt to match up non-trading parties whose resource strengths and weaknesses would otherwise make them natural trading partners. Earlier progress on the WRSC, like that of the global energy grid, was dashed on the rocks of funding cuts in the turmoil of the late 60's — it was originally to be the centerpiece of the American pavilion at Montreal's EXPO-67 — only to emerge once again in the current crises environment.

A third key group working in a related area is the Washington-based advocacy group International Cogeneration Society, directed by Glenn Lovin. With the successful passage in 1978 of the Public Utility Regulatory Policies Act (PURPA), utilities were required to interconnect with cogenerators and purchase the power they produce. ICS defines cogeneration as, "the production, often from waste heat, of both heat and electrical (or mechanical) energy." Cogeneration, usually undertaken by municipalities and large industrial users, offers the advantage of 80% efficiency as compared to a conventional power plant's maximum efficiency of 32%. And because cogeneration plants are generally smaller, newer and pose less financial risk, they have an additional advantage: their ability to capitalize on the most current (and continuing) technological advances. ICS reports that in just four years, nationwide cogeneration capacity more than *doubled*, growing from 9,000 MW to 19,000 MW during the years 1980-84. In fact, Southern California Edison Co. expects to derive nearly one-third of its new generation requirements from non-conventional sources, much of it coming from industrial cogenerators and other facilities qualifying under PURPA.

All three of these groups and the initiatives they advocate seem destined to succeed eventually, given the appropriateness of their respective solutions and the strong, early momentum they have already generated. The more pertinent questions to ask are: 1) whether they will succeed *soon enough* to forestall other, more ominous developments; and 2) whether their respective strategies toward a generally common goal could be better orchestrated, producing the synergy to accelerate the realization of that common goal. Either way, it is clear that each group's chances for swift success are dependent on the amount of financial and human support they receive right now.

It is equally obvious (to this writer, at least) that Jack Eckerd Corporation and Florida Progress Corporation are in a unique position to provide this orchestrated support to all three groups and in so doing, give shape and substance to what would otherwise be only a distant, amorphous dream.

Both companies are also in a position to make their corporate "home," Pinellas County, the focal point of a significant international trend and a prototypical showcase community . . . one the world will not only watch in wonder, but will actually cheer on to success. The Naisbitt Group has called Pinellas County "a bellwether county in a bellwether state." For this reason, Pinellas County's rebirth — or its continued stagnation — could easily become prototypical, and a model for the rebirth of the world's communities on a global scale.

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8. Pinellas County's Unique Opportunity

Pinellas County is now in a unique position to not only support these energy initiatives, but at the same time, take advantage of their inevitable consequences. To do so, the county must take steps, in conjunction with one of its largest employers, Florida Progress Corporation (holding company of Florida's largest electrical utility, Florida Power) to assemble an appropriate mechanism for local, consumer co-generation of electrical power . . . for sale throughout the rest of the state, the nation and eventually, the developing countries of the world.

If Pinellas County's thousands of electrical energy *consumers* could be given the opportunity — through sufficient financial incentives — to become electrical energy *producers* and true “partners in Florida's growth,” perhaps Pinellas County would at last have its “strategic vision,” which is so crucial for meeting the objectives of Naisbitt's Community Assessment Project. As Naisbitt says, “No future challenge can be met or opportunity exploited apart from a *shared strategic vision*. Such a vision turns dreams into action.”

In fact, the highest priority recommendation made in the project's report is: “Promoting community pride through specific activities and projects, but in ways that do not further fragment the county.” Can we conceive of a project that would promote more community pride than this . . . to serve as a prototypical community of the future for the entire world?

9. From Energy to Synergy . . . From Scarcity to Plenty

“Synergy” is the bonus energy that results when two ordinarily disconnected systems are finally joined and begin to operate in a synchronized, coordinated way. Physicist John Platt describes synergy this way:

Whenever *even two people* start giving to each other and working for each other, these qualities and rewards immediately appear: greater mutual benefit, greater ease, and greater individual development at the same time. They appear as soon as a couple begins to work together, or a family, or a neighborhood, or a nation. The great creative teams of American scientists exhibit them. The European Common Market exhibits them. By mutual giving with those around us, we begin to make a kind of utopia where the mutual benefits are so obvious.

Synergism — a “win/win” situation — is perhaps the very opposite of competition — a “win/lose” system, in which one party's victory is, by definition, the other's defeat. Competition certainly has its benefits, but only to a point; the dynamics of evolution illustrate this vividly. Competition may make a given species stronger, but only cooperation can help a species survive a threat from outside the species.

The distinction is significant and germane to our discussion, for the human species seems to be nearing the time when it must choose one alternative or the other . . . continued competition or a new level of cooperation. Either way, the choice must be made globally or not at all.

As Naisbitt pointed out, “States, counties and cities are (now) faced with positioning themselves in the global economy . . . Companies and communities either will compete globally or they will not compete locally. Local corporate (or community) survival is dependent on global corporate (or community) skill.” The significant idea here is one of globalism; the statement would be just as accurate with the word “cooperate” in place of “compete.” In fact, it would be *more* accurate.

The point is that actions taken at the local level may now take on global significance. In the case of Pinellas County's energy initiative, this is certainly true, especially since sufficient incentives *do* exist to foster cooperation at each level, from local to global, and because a natural potential for synergism is already in place.

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10. An Action Plan for Pinellas County

Given all of the foregoing assumptions, Pinellas County's best course of action, quickly summarized, is as follows:

1. Pinellas County enters the energy production business, utilizing the efficiencies of cogeneration.
2. Florida Progress promotes cogeneration and begins to shift its emphasis away from energy production to energy *transmission*.
3. The fruits of this new synergy are fed back into Pinellas County and its residents, increasing energy production (and transmission) and raising the standard of living in Pinellas County to an unparalleled level, making it a "showcase" for the potential of this new energy initiative.
4. The obvious benefits revealed through this showcase provide the incentive for: 1. other communities in Florida to replicate the Pinellas model; and 2. utilities to receive the regulatory relief they need to expand transmission capacity and to adjust transmission ("wheeling") rates.
5. The showcase also provides the international incentive (and consequently, the needed capital) for an international initiative: completion of the global energy grid.
6. As more and more local energy grids are connected, the cost of electrical energy is driven down (while volume increases). By means of well-understood economic mechanisms — which drove all costs up following the energy crisis of 1973 — the cost of everything is driven down.
7. Linkage of the Eastern and Western hemispheres' energy grids (across the Bering Straits) creates a truly global grid . . . and provides the basis for a new, worldwide trading mechanism (i.e., commodity value based on global energy costs).
8. As energy costs continue downward, funds become available to extend transmission lines southward, providing plentiful, inexpensive energy to developing Third World nations . . . and creating new markets for commodities of all kinds (including energy itself).
9. Technological advances (made possible by lower costs for research and development) soon make transmission lines obsolete; energy is now transmitted by beams of light: high-energy microwave lasers.
10. And, of course, the emerging world of plenty will in turn make possible all of the solutions to current problems which have been mentioned here — as well as some new opportunities for mankind not yet even considered.

But the time to act is now. Our whole world depends on it. And the whole world is waiting for us to act.

