NEW ENERGY PARTNERS
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New Energy Partners (NEP) invests in early stage companies that have developed revolutionary new energy technologies. Examples of technologies of interest include new hydrogen energy, cavitation devices, electromagnetic devices, radioactive remediation devices, and other technologies, such as fuel cells.

NEP was started up in December, 1997 and through March, 1998 had invested in two companies commercializing energy cells utilizing new hydrogen energy. It is currently investing and negotiating with other promising companies.

Generally speaking, NEP seeks companies that have working prototypes that demonstrate at least 50% over-unity and have prospects for being able to develop a product for commercial sale within the next two years. NEP will invest in an existing company for which management is in-place and a sound business plan exists, or alternatively, NEP will license the technology and establish a commercialization company that will develop commercial products. These commercialization companies may also be appropriate when the inventor of the technologies and products does not have the desire or experience to run a start-up company. In some cases, the inventor may also receive equity in the commercialization company as part of the technology-licensing arrangement.

NEP is in the process of raising an investment fund of approximately $15 million. It expects to invest in 7 to 10 companies, making an average investment of $1.0 to $1.5 million in each company. These companies should have good prospects of going public in 3 to 5 years. In addition, the products and business plan of the company should show potential for serving a large segment of the entire energy industry.

The following sections describe some of the markets of interest to NEP.

MARKET- ENERGY

The market for environmentally friendly, energy-efficient devices is growing rapidly. Industrial and commercial facilities in the United States are constantly looking for ways to reduce energy costs, and air pollution restrictions continue to put pressure on conventional energy production technologies. In developing countries the demand for energy efficiency is even greater due to more severe pollution problems and growing gaps between energy needs and production capacity.

The energy industry in the U. S. is over $500+ billion dollars with the biggest segments being electricity ($200 billion), motor gasoline ($130 billion), and gas ($90 billion). The successful commercialization of these new types of energy cells could potentially displace significant segments of that industry. Coupling the high energy gain with the extremely beneficial environmental impact may create government regulations or incentives that will speed the acceptance of this new technology even more by further burdening the current environmentally polluting technologies and driving up their costs. Because the cost of the fuel for these new technologies could be extremely low, the market that develops may primarily be that of equipment sales for these highly efficient energy cells, along with whatever maintenance and repair components would need to go along with them. Related

industries such as turbine electric generators and electric motors for automobiles will also benefit.

One initial application for this new technology is in the hot water heating market. Over $17 billion annually is spent in the U. S. heating hot water, with over half being spent for electric hot water heating. Manufacturers of hot water heaters are currently spending millions of dollars on R & D each year to try to gain efficiencies of 5 to 10 percent since this puts them at a competitive advantage in selling their products. Energy gains from these new energy technologies should be many times this.

Electrically driven new hydrogen energy cells would be a natural addition to electric hot water heaters. With full penetration, the U. S. could reduce electricity consumption by $5–$10 billion in this small segment alone.

Electricity production is another promising area. Currently, companies such as United Technologies and Allied Signal are selling onsite electric generating units that compete favorably with the utility charges in high-cost areas. One unit to serve a small business sells for $15,000. As volume increases, cost should come down and, in particular, the cost of the electrical generators. It would be a normal progression for the new energy technology cells to replace conventional fossil fuel combustion as the energy source for these units. Although deregulation is also expected to reduce the cost of electricity in the United States, deregulation is not expected to greatly impact the cost of electrical transmission and distribution, which typically comprises two-thirds of the cost of delivering electricity to a facility. Eventually, these distribution and transmission facilities would become obsolete when large centralized power generation facilities become uneconomical.

The automotive market could eventually become the largest opportunity. Currently, electrical cars are being sold primarily due to regulations (primarily in California) that require them. However, wide acceptance is currently limited by high purchase costs, driven by the huge battery content of such vehicles, and limited range. Lack of widespread recharging facilities currently limit electrical vehicles to commuting and other short-range applications. In contrast, these new energy cells could propel the growth of hybrid, extremely efficient electric vehicles with driving ranges measured in the thousands of miles. Toyota recently introduced a hybrid car using a gasoline engine. Substituting this gas engine with the new energy cells would be a normal progression with tremendous economic and environmental benefits.

The favorable air-quality impact of these new technologies will be phenomenal. As these energy cells increase their market penetration, demand for fossil fuels will drop precipitously. Given the availability of clean and efficient technologies, the time may come when governments may begin to ban fossil fuel burning applications. Given their short economic life, conventional automobile engines may be the first applications so banned. As the demand for electricity distributed by utilities through a grid decreases, the less efficient and more highly polluting power plants will be shut down further improving air quality. As a side benefit oil rich and oil poor countries will become more equal, and energy resources will cease to be a basis for waging war.

MARKET – NUCLEAR WASTE REMEDIATION

One offshoot of the "cold fusion" work has been the claims by a number of companies that this technology can be used to reduce or eliminate the radioactivity of spent nuclear materials by transmuting these materials into other non-radioactive materials. Verification of these claims is on going with some initial positive results. If this technology works and can be scaled up, it can produce a cost-effective method for solving the nuclear waste problem that has plagued many governments over the past decades.

The Department of Energy estimates that it will cost over $100 billion dollars to clean up nuclear waste in the United States and the figure could be many times that in other countries where nuclear power plants are used more extensively. The only currently acceptable methodology for handling nuclear waste is to store it or bury it. Only one State, Nevada, has been judged to be acceptable to government with respect to storage of spent nuclear waste. The government is under increased pressure, because by law, they are obligated to deal with the nuclear waste from nuclear power plants. In addition, nuclear power plant operators have been required to contribute to a trust fund to handle this waste. This $10 billion trust fund has yet to be spent on appropriate waste-handling methodologies.

There is increasing political pressure to do something now. As may be expected, there is strong resistance by the State of Nevada, while there is strong pressure from Congress and the Presidency to solve the problem. Therefore, we expect to be seeing increased interest on the part of the government with respect to this new technology that is evolving. Because of the political pressure, companies developing this technology could see increased support in funding by the government or related agencies to commercialize the technology.

Commercialization will probably take the form of building a small chemical plant to process the waste. Handling costs could be significant due to the material being processed. However, the political benefits of totally eliminating the waste versus storing it or burying it could mandate this technology over other alternatives. Furthermore, it could turn out that this technology is much more cost-effective than the existing techniques, which would then provide a broader market in other countries of the world.

MANAGEMENT

Daniel J. Cavicchio, Jr., manages the General Partner of NEP. He devotes a majority of his time to NEP's operation and he makes all final investment decisions.

Mr. Cavicchio earned his B.A. degree in mathematics (minor in physics) at Rensselaer Polytechnic Institute in 1966, where he graduated first in his class. He received a full fellowship to pursue graduate studies at the University of Michigan, where he earned an M.S. degree in mathematics, an M.S. degree in Communication Sciences, and a Ph.D. in Computer and Communication Sciences.

In 1970, Mr. Cavicchio joined the technical staff of the Aerospace Corporation. In 1973, he joined the management-consulting firm of McKinsey and Company. At McKinsey he became an Engagement Manager and consulted for technology-based companies in such areas as new product and new business development, management of R & D, acquisitions, product/market strategies and profit improvement. In this capacity, he served a number of

Fortune 500 companies, including AT&T, Western Electric (now Lucent Technologies), General Electric, CBS, Corning Glass, and Hooker Chemicals and Plastics, a subsidiary of Occidental Petroleum.

In 1978, Mr. Cavicchio joined American Can Company as Director, Business Development. He was responsible for directing the efforts of internal business development and acquisition programs, initially in the Packaging Sector and later as head of the acquisitions department for the Distribution/Specialty Retailing Sector.

In 1984, Mr. Cavicchio co-founded Greenwich Venture Partners, Inc., a buyout firm specializing in turnarounds of technology-based companies. This firm was funded with the partners' own capital. As Chairman, he personally conducted all aspects of the acquisition process, including identification, negotiation, due diligence and closing. After closing, he personally operated each company through its transition to profitability. Major portfolio companies include the following:

Commonwealth Sprague, a power capacitor business was acquired in 1986 from Sprague Electric. In the year prior to the acquisition, the business lost $700,000. Over the past ten years, sales have been increased from $10 million to $20 million with pretax return on capital employed averaging 50%. Results were accomplished by accelerating commercialization of new technology, renegotiating union work rules, upgrading management and financial reporting, establishing joint ventures in Brazil and India, and introducing new products. One of the new products established market leadership in one year against major Fortune 500 competitors. With a current estimated valuation of $13 million, investors have achieved an unrealized internal rate of return (IRR) of 54% on their initial investment in Commonwealth Sprague.

Spectra Optics Incorporated, a defense electronics company, was acquired in 1993. Sales were increased from $1 million to $3.3 million and operating profit was increased from a $300,000 loss to a 13% pretax margin. Instrument costs were reduced dramatically and strategic alliances with other defense contractors were established. The company is now positioned for rapid growth in chemical warfare detection, environmental monitoring, and drug detection applications. With an estimated valuation of $2 million, investors have an unrealized IRR of 82%. Each of these companies is now being run by a new management team, with Mr. Cavicchio serving on the Board of Directors.

In addition, NEP is in the process of assembling an advisory board of scientific and engineering experts who will assist and evaluate in the technology and commercial prospects associated with each proposed new investment. The Chairman of this Advisory Board is Dr. Eugene Mallove, who has been associated with new energy technology for the past 9 years.

Dr. Mallove has a Master of Science Degree (SM, 1970) and Bachelor of Science Degree (SB, 1969) in Aeronautical and Astronautical Engineering from the Massachusetts Institute of Technology and a Science Doctorate in Environmental Health Sciences (Air Pollution Control Engineering) from Harvard University (1975).

With broad experience in high technology engineering at companies including Hughes Research laboratories, TASC (The Analytic Science Corporation), and MIT Lincoln Laboratory, Dr. Mallove has also had extensive hands-on experience in laboratory settings more recently in new hydrogen energy. He has taught science journalism at MIT and at

Boston University, and he was Chief Science Writer at the MIT News Office. Since 1991, he has worked as a consultant to U. S. corporations doing and planning R & D in new hydrogen energy. Since 1995, Dr. Mallove has been the Editor-in-Chief, Publisher and part owner of the bimonthly magazine Infinite Energy: Cold Fusion and New Energy Technology based in Concord, New Hampshire. He is the author of three science books for the general public, including the Pulitzer-nominated book on cold fusion Fire from Ice: Searching for the Truth Behind the Cold Fusion Furor (John Wiley & Sons, 1991).

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