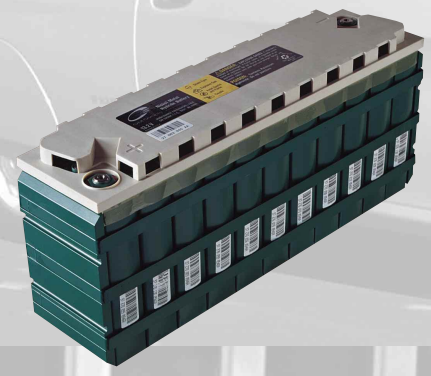


Commercializing

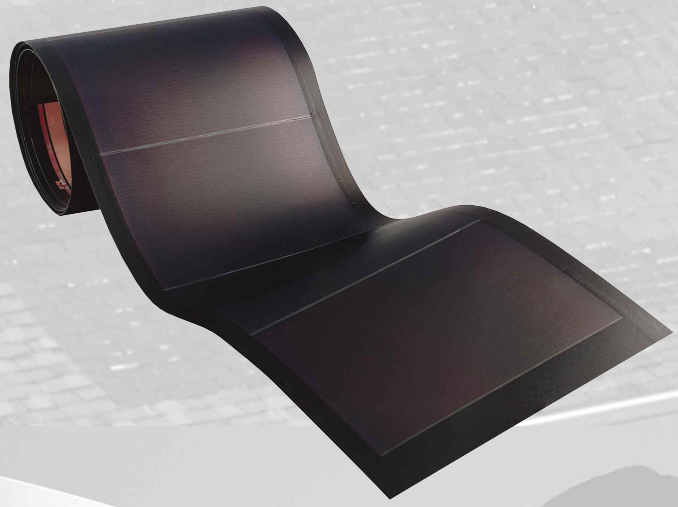
technologies

that enable the

energy and

information

industries



ECD

This is what happens

Ovonic NiMH battery for electric vehicles. **Available now.**
High energy for extended driving range.

when a bunch of socially responsible dreamers

Photovoltaic roof panels. **Available now.**
Flexible, thin-film solar cells for clean electric power from rooftops.

decide they really don't care

Rewritable optical memory disks. **Available now.**
ECD's phase-change technology has 650 Mbyte removable capacity.
And soon, rewritable DVD.

to be called dreamers.

Ovonic battery-powered car. Photovoltaic roof panels. Rewritable optical memory disks. **Available now.**

For more on how Energy Conversion Devices, Inc., is helping to change the way the world stores and generates energy and information, call 1-248-280-1900. Write to us at Energy Conversion Devices, Inc., 1675 West Maple Road, Troy, Michigan 48084. Or visit our Web site: www.ovonic.com

The world won't be the same with us.

Dear Stockholders,

Energy Conversion Devices, Inc. (ECD), originated and holds the basic dominating patents for nickel metal-hydride batteries; thin-film, roll-to-roll photovoltaic cells; and information products based on electronic switching and phase-change memory in amorphous and disordered materials.

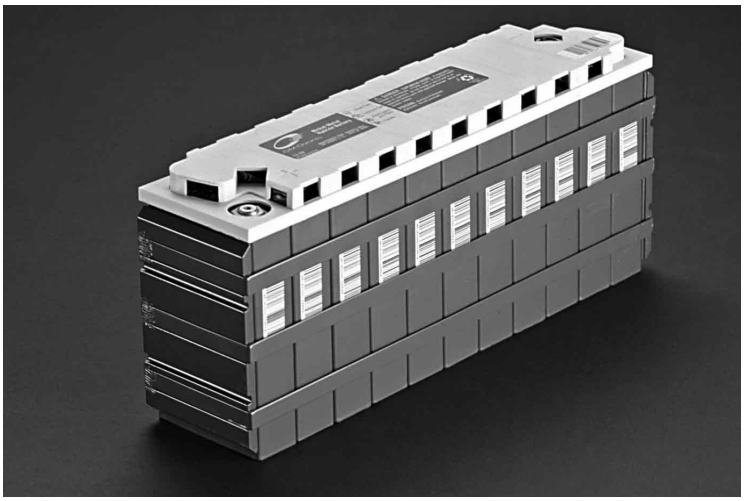
The message of the advertisement on the facing page is **Ovonic Products Are Available Now.** *ECD has invented the materials, the products and the production processes that make these technologies the leaders in energy and information fields using amorphous and disordered materials. Products that are manufactured by ECD, or by partnerships and joint ventures, or by licensees, have gained worldwide commercial acceptance and recognition.*

As part of our expanded marketing effort, this advertisement ran in the October and November 1997 issues of Scientific American *on four half pages that successively highlighted batteries, photovoltaic panels, optical memory disks and then all three products together. A very favorable article about hybrid electric vehicles on page 73 of the October issue said that, "One of the few real success stories has been the use of nickel metal-hydride batteries, produced by GM Ovonic and Energy Conversion Devices in Troy, Michigan ..." This has been a year when ECD's products have received worldwide acclaim at the same time that the marketplace is searching for affordable, environmentally-friendly ways to store and generate energy and to rapidly and compactly store and retrieve data.*

ECD has three core product areas:

- **Energy Storage** *(nickel metal-hydride batteries)*
- **Energy Generation** *(flexible, thin-film photovoltaic products)*
- **Information and Data Storage** *(phase-change optical and electrical memories)*

All of these products are based on the company's proprietary amorphous and disordered materials. An important complementary business is our Production Technology and Machine Building Division, which designs and builds many of the special machines used by ECD and its joint ventures and licensees to manufacture the core products. Let's look at each of the core products in more detail.



On November 12, 1997, the first electric vehicle (EV) powered by a production GM Ovonic nickel metal-hydride (NiMH) battery pack was delivered by the Chevrolet Division of General Motors to Southern California Edison. The following day, two more Chevrolet S-10 EV pick-up trucks with GM Ovonic NiMH battery packs were delivered to Detroit Edison and Georgia Power. A total of 30 S-10 EVs and EV-1s equipped with GM Ovonic NiMH batteries were placed in service in late 1997, and additional vehicles will become available in the first half of 1998. During 1998, GM Ovonic L.L.C., our joint manufacturing venture with General Motors, will be increasing production of NiMH batteries for both electric cars and trucks and preparing for hybrid electric vehicle (HEV) battery production.

In 1998, GM Ovonic will be increasing production of NiMH batteries for both electric cars and trucks.

Ovonic NiMH batteries have moved from concept to commercial production in a relatively short time:

- Ovonic Battery Company Inc., a subsidiary of ECD, was founded in **1982** to develop and commercialize patented and proprietary NiMH rechargeable battery technology.
- Beginning in the **late 1980s,** the first Ovonic NiMH batteries were commercialized under license from Ovonic Battery to all significant manufacturers of small batteries and introduced into the marketplace for portable electronics applications.
- In **1993,** Ovonic Battery delivered its first EV battery packs for test and evaluation by vehicle manufacturers.
- In **1994,** General Motors Corporation and Ovonic Battery formed a manufacturing joint venture, GM Ovonic, to commercialize NiMH batteries for EVs.
- In **1996,** GM Ovonic began production of its first generation of NiMH EV batteries using initial manufacturing equipment and began developing high-volume processes for battery production.
- In **1997,** Ovonic Battery developed a "Family of Batteries" to power the full range of EVs and HEVs.
- In **1997,** the first NiMH production batteries are in daily customer use and are becoming the battery of choice in the EV industry.

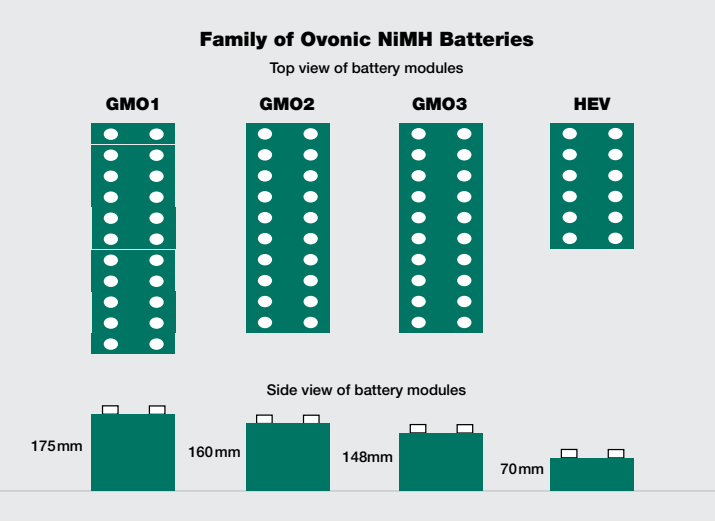
Most of our stockholders are aware of the numerous range records that have been set by Ovonic battery-powered EVs and the many EV races our batteries have helped to win. Some of the results appear on our website at http://ovonic.com. On October 23, 1997, a Solectria Sunrise mid-size four-passenger prototype EV, powered by Ovonic NiMH batteries, traveled from Boston to New York City (216 miles) on a single charge at normal highway speeds using about 85 percent of the available energy. The event was covered by Boston and New York-area radio and TV stations and *The New York Times.* After a few hours of re-charging in the evening, the Solectria Sunrise was driven back to Boston the following day. To illustrate how efficient electric vehicles are, the Sunrise battery pack contained slightly less heat energy (equivalent BTU) than one gallon of gasoline.

The New York Academy of Sciences coordinated the event, which was sponsored by the Metropolitan Section of the Society of Automotive Engineers and the *Spectrum* magazine of the Institute of Electrical and Electronic Engineers. Its purpose was to demonstrate that efficient EVs with advanced battery systems—exemplified by the Ovonic NiMH batteries—can make EVs a practical choice for many U.S. motorists.

With the low operating costs, smooth, fast, and quiet driving characteristics, and long, trouble-free life of today's EVs, many drivers find that these vehicles will meet their driving requirements with ample energy reserve.

1998 Solectria Sunrise sedan with aerodynamic composite-fiber body powered by 30 kWh Ovonic NiMH batteries

Photo courtesy Solectria Corporation/Photo by Sam Ogden



Advanced energy storage solutions for electric and hybrid electric vehicles

More than a year ago, it became apparent that automotive manufacturers were also looking at another type of energy-efficient vehicle—the hybrid EV (HEV). The HEV uses a small-displacement internal combustion engine in conjunction with a battery-powered electric drive. The series HEV uses its engine to drive a generator to charge the batteries, which are connected to an electric drive motor. The parallel HEV uses both its engine and an electric motor to drive the vehicle. In both parallel and series HEVs, fuel economy is improved and exhaust emissions are reduced in comparison with similar-size conventional internal combustion engine vehicles. However, only the all-electric vehicle is classified as a ZEV, or zero-emission vehicle, by the U.S. Environmental Protection Agency.

At ECD and Ovonic Battery, we began our own development program to be certain that we could meet battery requirements of the manufacturers of both EVs and HEVs. The result is our family of Ovonic batteries that exhibit a wide range of power and energy characteristics suitable for any type of EV or HEV. While ECD's investment in developing this range of batteries has been significant, it was necessary to be able to successfully demonstrate the capabilities of the batteries. One outgrowth of our program is a multi-year, double-digit million dollar program with General Motors to turn the battery family into a fully commercial product line.

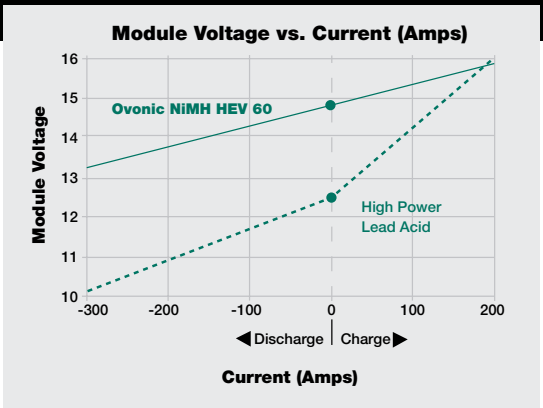
Ovonic Battery also recently was awarded a multi-year, double-digit million dollar cost-shared contract to support development of the next generation of high energy density NiMH batteries using low-cost, magnesium-based hydrogen storage materials. The contract was awarded by the U.S. Department of Commerce under its Advanced Technology Program.

Ovonic NiMH Battery Performance Characteristics

	GMO1	GMO2	GMO3**	HEV60	HEV20**
Capacity (Ah)	90	100	100	60	20
Specific Energy (Wh/kg)	75	80	95	70	65
Energy Density (Wh/L)	170	200	230	170	160
Specific Power (W/kg)*	225	300	350	630	650
Power Density (W/L)	600	750	850	1,700	1,600

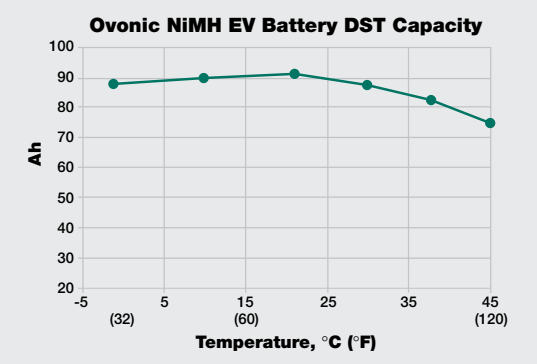
* 50 percent DOD
** Preliminary numbers for design under development

Several potential customers are interested in Ovonic NiMH HEV batteries because of their ability to accept a charge at very high rates and their unique high energy density that maximizes driving range. This is an especially important characteristic for HEVs because they need to capture as much of the energy generated during deceleration as possible. The more closely matched the charge (deceleration) and discharge (acceleration) rates of the battery, the better balanced the vehicle drive system will be. Compared to other types of batteries, including those with high power capability, the Ovonic NiMH HEV battery excels. In addition to the recently introduced Toyota HEV, General Motors has announced plans to introduce HEVs soon.



The chart above compares the voltage-current characteristics of the Ovonic NiMH HEV module to a high-power lead-acid battery module during an aggressive HEV driving cycle. In contrast to the lead-acid battery, the slope of the Ovonic NiMH data is constant and shows much lower resistance on charge. The Ovonic NiMH battery effectively has the same resistance on both charge and discharge, which means that it has greater acceptance for regenerative energy during deceleration or braking.

Another important characteristic of Ovonic NiMH batteries is their ability to perform over a wide range of operating temperatures, which permits thermal management to be achieved by simple air-cooling methods. The plot below shows the temperature dependence of battery performance taken as the dynamic stress test (DST) capacity under simulated driving conditions. Note that the wide operating range extends to very low temperatures where other batteries suffer substantial losses in capacity.



As we mentioned in last year's report, there is an emerging demand for electric-powered scooters and electric power-assisted bicycles. In Japan, Southeast Asia and Europe, several manufacturers are conducting fleet tests and beginning to offer products for sale. In Japan, our partner Sanoh Industrial Co. Ltd. (Sanoh) is making scooter and bicycle NiMH batteries that are being tested by leading Japanese manufacturers. In Europe, we have prepared and delivered the first fleet of electric-powered scooters for evaluation to Piaggio. The formation of Sanoh Ovonic Power Systems Corporation in the United States, with a manufacturing facility in Europe, will provide a base for battery production to supply European scooter manufacturers. It appears that the electric scooter market will grow quickly due to the vehicle's operating performance, low maintenance requirements and extremely low operating cost. Since the vast majority of scooters sold today are powered by two-cycle gasoline engines, the elimination of their exhaust emissions will significantly improve air quality.

www.ovonic.com

Piaggio scooters with Ovonic NiMH batteries ready for evaluation. Standing, from left to right, are Art Holland, Subhash Dhar, Robert Stempel, Iris Ovshinsky, Stan Ovshinsky, Phil Gow, Tony Osgood and Josh Payne.

This past year, GM Ovonic production NiMH EV batteries were manufactured at its Troy, Michigan, plant. Although limited in physical size, this facility permitted us to install the first production manufacturing and assembly equipment for tryout, debugging and quality validation. As we prepare to increase production, GM Ovonic operations will move to a much larger facility that will permit the installation of additional production equipment. Currently, GM Ovonic is in the process of finalizing agreements for various industrial incentives and training grants available from state and local governments.

The move to larger facilities will not only permit us to increase production but also will make the Troy facility available for its original intended purpose, which is production process development and validation of cost- and weight-saving advanced designs that will help us meet very aggressive cost targets. We expect Ovonic NiMH batteries to be equivalent in cost (battery pack plus electricity to recharge) to the life-cycle fuel cost for an internal combustion engine powered vehicle, while maintaining and improving all of their superior performance characteristics.

Attention has been focused on climate change and global warming during the past year, culminating in the worldwide conference in Kyoto, Japan, in December. As a result, greater effort is being made to reduce greenhouse gases. The primary greenhouse gas is carbon dioxide, which is formed when fossil fuels such as oil and coal

are burned. While today's motor vehicles have very low exhaust emissions, increases in both the number of vehicles worldwide and the number of miles driven will require automakers to reduce emissions further or eliminate them altogether to reduce greenhouse gases. Hence the heightened interest in EVs and HEVs.

While automakers have been testing a variety of concepts to reduce emissions, some EVs and HEVs have been introduced for sale to the public, and this has initiated a competitive race. Cleaner, more efficient vehicles are attracting increasing public interest, and all of the automakers want to be seen as having environmentally-friendly offerings in their product lines. All of these new vehicles use some form of electric drive and batteries for energy storage. The Ovonic family of NiMH batteries is permitting us to meet a wide range of specifications submitted by a number of automakers, and we believe that our product line will lead to an increased volume of business in the months ahead. At the recent EVS-14 International Electric Vehicle Symposium in Orlando, Florida, virtually all of the world's automakers were using Ovonic NiMH battery technology to power their vehicles.

There are many other uses for nickel metal-hydride batteries, ranging from small cells that replace nickel cadmium batteries in cell phones, notebook computers and other electronic devices, to larger batteries for electric lawn mowers and other lawn and garden applications; superior starting batteries for conventional automobiles; and stand-by power for utilities, home use and emergency power. Ovonic Battery manufactures batteries for selected customers and electrodes for sale to its licensees. The Ovonic NiMH battery technology continues to gain commercial acceptance worldwide.

DETROIT, January 4, 1998—Ovonic NiMH batteries were featured in the General Motors corporate exhibit of advanced technology vehicles (pictured above) at the North American International Auto Show in Detroit, Michigan, January 1998. All advanced EV, HEV and fuel cell vehicles were shown with GM Ovonic battery packs installed. The display highlighted the Ovonic family of batteries featuring the current production EV battery and next generation EV batteries with higher energy and power at lower cost. Two types of HEV batteries also were displayed as part of the "Family of Batteries" to illustrate the versatility of the engineered Ovonic NiMH battery.

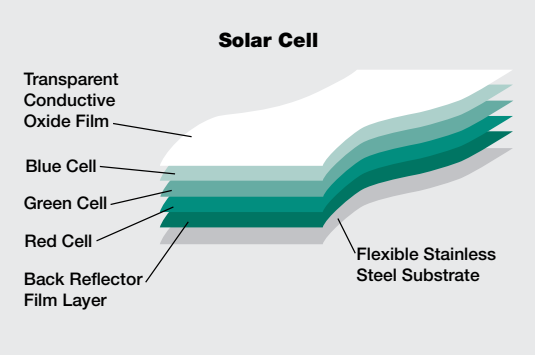
General Motors currently is offering the GM Ovonic NiMH battery in the Chevrolet S-10 electric pick-up truck available in all 48 states (see photo on back cover). GM announced that its electric car, EV-1, will be available with GM Ovonic NiMH batteries to provide more than two times the current EV-1 driving range on a single charge.

Several other leading automakers also featured vehicles using Ovonic NiMH technology at this auto show.

Photovoltaics (PV)—the direct conversion of sunlight into electricity—holds the key to solving the world's energy problems. Energy from the sun is nondepletable and nonpolluting. Since the 1970s, ECD, through its Solar Energy Division, developed the materials and technology essential to allow a shift to solar energy, making PV viable for large-scale terrestrial applications.

In 1990, ECD and Canon, Inc., formed their joint venture, United Solar Systems Corp. (United Solar). With the worldwide acceptance of United Solar products, we are expanding to meet growing market demand.

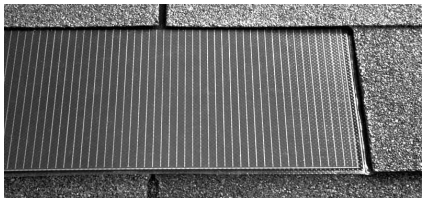
United Solar's Triple Junction technology provides unprecedented levels of efficiency for amorphous silicon alloy solar cells and modules. United Solar combines this advanced technology with a proprietary roll-to-roll production process pioneered by ECD in which solar cells are deposited onto a half-mile long roll of thin stainless steel. The manufacturing plant has an annual capacity of five megawatts and produces a variety of lightweight, rugged and flexible products. One of its unique products is a solar electric laminate for building-integrated photovoltaics.



The United Solar Triple Junction cell uses a stack of three thin-film sub-cells that separately convert the red, green and blue portions of the solar spectrum.

The solar cell, made of a multi-layer stack of amorphous silicon alloy films less than a micrometer thick, is deposited on a 5-mil-thick stainless steel substrate and encapsulated in Tefzel® elastomer and other weather-resistant polymers. The resulting solar electric laminate is bonded to conventional roofing panels or fabricated into roofing shingles.

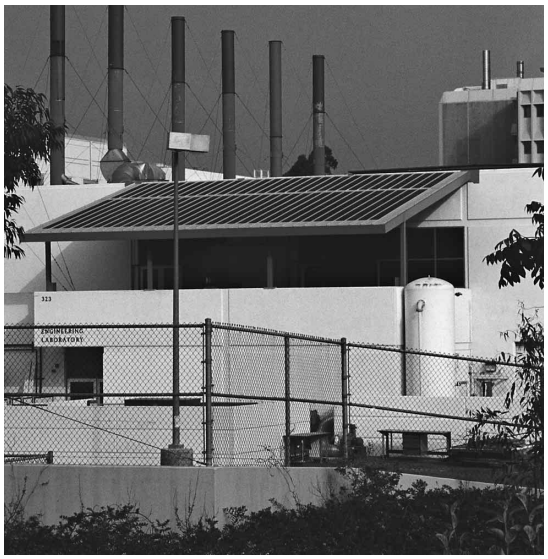
Uni-Solar™ structural standing seam panels



Uni-Solar roofing shingles

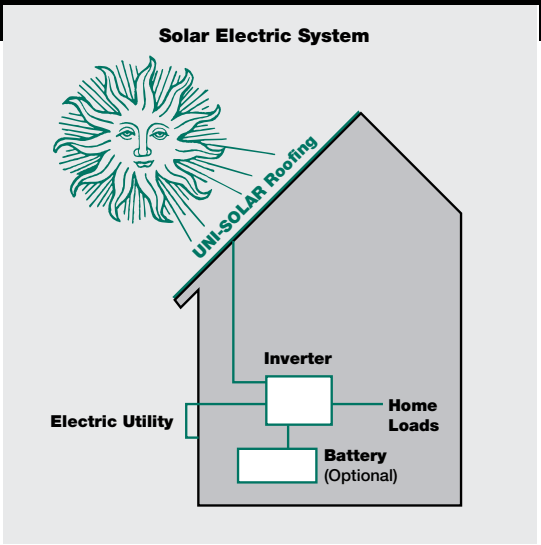
These products permit the roof of a building to provide more than simple protection from the weather. The roof now becomes a source of electric power. Uni-Solar™ PV shingles are unique and have been honored with the prestigious *Popular Science* Grand Award for "Best of What's New" (Environmental Technology) and *Discover* magazine's "Technological Innovation Award" for best innovation (Environment). Commenting on the award, U.S. Department of Energy (DOE) Secretary Fedrico Peña said, "There is a tremendous international competition in the development of roof-integrated solar panels, and DOE is proud to be associated with this cutting-edge technology to maintain the U.S. lead in the world."

Uni-Solar building-integrated architectural metal PV panels are reliable, attractive, and cost-effective design options for creating sustainable and energy self-sufficient buildings. Aesthetically-pleasing solar architectural roofing panels are integrated into the roof following the specifications of conventional architectural standing seam panels.



Six kW of peak solar power is provided by United Solar's structural standing seam roofing panels to the Engineering Lab on the campus of the University of California at Irvine. Excess power is fed back to the local electric grid. The system was installed by Solar Utility Inc., Culver City, California, under contract to Southern California Edison.

Uni-Solar roofing products are the key components of a total solar electric system. The system integrates the solar electric roofing panel or shingle with the necessary combiner boxes, inverter, and wiring to convert sunlight into electric energy and distribute it directly to a building. The solar electric roofing products are configured in series or parallel on the roof deck to form an array, which is used in combination with conventional roofing products.

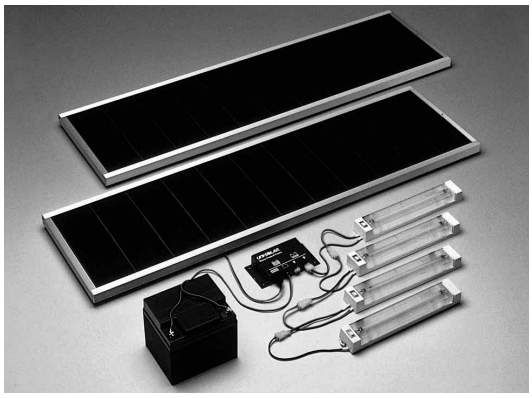


This past year, an important step toward greater commercial use of solar roofing materials was taken. On June 26, 1997, President Clinton said during his remarks before the Special United Nations Session on the Environment, "Now we will work with businesses and communities to use the sun's energy to reduce our reliance on fossil fuels by installing solar panels on one million more roofs around our nation by 2010." Secretary Peña specifically mentioned the Uni-Solar shingles while announcing the "Million Roof Program." To meet the growing demand for roof-integrated PV, United Solar has been taking steps to increase the availability of these roofing products and finding innovative ways to encourage their use.

DOE is coordinating a federal inter-agency working group to develop incentives—such as low interest rates, long-term loans and special mortgage programs for new construction—that take into account the full value of solar roofing materials for both protection and as a source of power. President Clinton also announced that the federal government will use solar roofing at many government-owned facilities.

Today, in off-grid locations, electric power generated by Uni-Solar panels is very cost-competitive with power from conventional sources such as stand-alone motor-generators. And, of course, solar-electric power is pollution-free.

United Solar is selling a complete line of products worldwide. The Uni-Kit® is a solar lighting system that is targeted at supplying power to two billion people in the world who do not have access to electricity. The Uni-Kit Solar Lighting System pictured below converts sunlight to electricity and charges batteries during the daytime for lighting use at night. This versatile system also can power a 12-volt radio or television. Because it is lightweight and durable—there are no glass or crystalline components to break or shatter—it is receiving enthusiastic acceptance throughout the world.



As the market for solar products continues to increase, United Solar plans to expand production from its current five megawatt annual capacity, which will permit us to achieve lower production costs. Our goal is to bring PV roofing system costs down to a level that is competitive with electric power generated by burning coal, gas or oil.

There are huge market opportunities to be addressed in the generation and distribution of electricity. This is one of the world's largest businesses with annual revenues estimated at more than $800 billion, roughly twice the size of the worldwide automotive industry. Moreover, energy forecasters are predicting enormous growth during the next few decades, with revenues in the trillions of dollars.

The recent United Nations Convention on Climate Change in Kyoto was attended by representatives from more than 150 nations. The gathering underscored the importance of and opportunities for our technologies. President Clinton has said that "Global climate change is the premier environmental challenge and opportunity of the 21st Century…" Technologies that are available today to meet the global climate change challenge can provide economic growth, jobs, export opportunities and profits while at the same time reducing our dependence on oil and other fossil fuels. Because our PV and battery technologies can play a key role in the climate change challenge, we were invited to participate in both the White House Conference on Climate Change and the convention in Kyoto. We believe that the interest in our products and technologies, together with new programs under development to encourage deployment of environmentally-friendly products worldwide, will have a favorable impact on our business.

United Solar's thin-film amorphous silicon alloy solar panels also are of interest to the telecommunications industry for terrestrial use to power repeater stations and for use in space. While satellites have long used crystalline silicon or gallium arsenide solar cells to generate power, these cells are expensive, fragile and significantly heavier than our thin-film cells. NASA has confirmed high

total area efficiency of 12 percent for United Solar cells under the AM-0 solar illumination present in space. This achievement has generated interest in using United Solar cells in a number of space-based applications that many telecommunication companies believe are crucial to satisfy the demand for more communication bandwidth. This demand is being driven by growth in the number of telephones, the need for faster Internet access, and growth in interactive television, videophones/videotext and other forms of electronic commerce.

With an increasing awareness of the need for low-cost PV to generate power for space-based applications, United Solar is evaluating its technology and products for use in satellites. United Solar has demonstrated the radiation hardness and superior high-temperature properties of its cells which enable them to retain much more power than conventional crystalline cells under high-temperature conditions.

United Solar products use a high-efficiency thin film on substrates of very thin stainless steel or lightweight polymers to achieve specific power density of 50 to 100 times that which can be obtained with conventional technologies. Mass production of United Solar products will result in economies of scale that reduce product cost to a fraction of the cost of products based on conventional technology. We have been approached by several space companies that recognize the need for low-cost PV for use in a constellation of satellites and other space platforms that will be launched during the next five years. We believe that amorphous silicon alloy and related materials are the enabling technology for these applications, and United Solar is the leader in this field.

There is international recognition of Stan Ovshinsky and ECD's role in inventing and developing phase-change optical memory technology.

Energy Conversion Devices, Inc. December 1997
From the desk of
Robert C. Stempel

To: ECD Stockholders

Subject: Recognition of Phase-Change Technology

Last year (1996), the Japan Phase-Change Optical Recording Association held its annual symposium with the theme, "Phase-Change from S.R. Ovshinsky to the Present." This year (1997) at the Ninth Annual Symposium, Stan was the featured speaker and updated the group on the development of phase-change technology. Forty-six companies, all involved in some facet of phase-change technology or production of devices based on the technology, honored Stan as the inventor and developer of phase-change technology. As the manufacturers prepare to enter large-scale DVD production in 1998, they felt that it was important to acknowledge the man who made it all possible.

Matsushita Electric Industrial Co. Ltd., our lead licensee in phase-change technology, planned and organized several recognition events for both Stan and Iris. From a beginning where few companies were interested in phase-change, Japan and the world now acknowledge that phase-change is the winning technology. This is indeed an important recognition as the use of this new data recording technology grows and erasable DVD is introduced.

Chairman

During this past year, it became apparent that ECD's high-capacity phase-change optical memory technology will be the technology of choice for rewritable digital versatile disks (DVD). ECD originated phase-change optical memory and has licensed this technology to leading electronic and computer companies. DVD disks can store seven times more data than comparable CD-ROMs, and they have the potential to broaden the market for optical memory disks, especially if manufacturing throughput can be increased while simultaneously decreasing manufacturing costs. While DVD media are projected by industry forecasters to grow in the near-term to a $2 billion industry for consumer electronics and computer storage, this technology also can extend its impact to the photographic industry and the medical-records industry for storage of X-rays and other medical information.

ECD recently was awarded a two-year, multi-million dollar contract to support development of a new, low-cost manufacturing system for DVD. The new disks will be fully compatible with current DVD standards, and the objective of the development program is to increase manufacturing throughput and significantly reduce costs. Low-cost DVD-ROM disks are expected to enable the economical distribution of multimedia publications. The contract was awarded by the U.S. Commerce Department through the Advanced Technology Program of the National Institute of Standards and Technology. The new manufacturing system to be developed will produce both pre-recorded DVD-ROM media and phase-change rewritable DVD-RAM media.

Optical Memory Disk Technologies

Disk Type	Storage Type	Read Compatibility	Capacity	Technology
CD	Read-only (audio)		650MB (74 min.)	
CD-ROM	Read-only	CD, Photo CD, CD-R, CD-RW (after 1997)	650MB	
DVD-ROM	Read-only	CD, CD-ROM, DVD, Photo CD, CD-R, PD, CD-RW, DVD-RAM	4.7GB	
DVD	Read-only (video)		4.7GB (2 hrs.)	
Photo CD	Write-once (images)	(no separate drive)	650MB (100 images)	
CD-R	Write-once	CD, CD-ROM, Photo CD	650MB	
PD	Phase-change Rewritable	CD, CD-ROM, Photo CD, CD-R	650MB	ECD
CR-RW	Phase-change Rewritable	CD, CD-ROM, CD-R, Photo CD	650MB	ECD
DVD-RAM	Phase-change Rewritable	CD, CD-ROM, DVD, Photo CD, CD-R PD, CD-RW, DVD-ROM	2.7GB	ECD
DVD-RW	Phase-change Rewritable	CD, CD-ROM, DVD, Photo CD, CD-R PD, CD-RW, DVD-ROM	3.0GB	ECD

ECD's phase-change technology is used in all of the rewritable products shown.

ECD's thin-film phase-change technology is used in the recording layer deposited on the surface of this rewritable PD disk.

ECD will use its pioneering expertise in roll-to-roll vacuum manufacturing and phase-change materials to develop a low-cost, high throughput manufacturing system that both formats and coats the DVD media in a single process. We expect this new technology, when fully developed, will increase throughput and reduce cost by a factor of 10.

As the chart on the previous page shows, ECD technology is expected to be used in all of the new rewritable optical memory products. Several Japanese manufacturers have announced plans to introduce DVD-RAM drives and disks "at strategic prices" (i.e., at affordable prices) in the U.S. with volume production starting at about 200,000 drives/manufacturer/year.

The demand for high-capacity data storage continues to increase. Recently, ECD teamed with Calimetrics, Inc. and Polaroid Corporation to win a federal government Advanced Technology Program award administered by the National Storage Industry Consortium to develop new optical disk storage technologies. The goal of the research and development program is to deliver up to 10-fold increases in storage capacity and significant increases in the data transfer rate of phase-change, write-once and rewritable DVD-compatible optical storage technologies. These technologies currently store between 2.6GB and 3.9GB of data (equivalent to 1,800 to 2,700 computer floppy disks) on a single-layer CD-size disk. The increased capacity and performance targets of the research program would make it possible to store several hours of High-Definition TV (HDTV) content, or thousands of professional-quality, high-resolution still photos, on a single-sided disk. The project team is developing technology to record data using our proprietary ability to provide multiple levels of reflectivity on Ovonic phase-change optical disks.

We believe that the long-range potential for phase-change material is virtually unlimited with these new technological advances that greatly increase capacity and lower cost. With many manufacturers who already have licensed phase-change technology and many more applying for licenses, we expect a steady growth in phase-change royalties.

We expect a steady growth in

phase-change royalties.

Intellectual Property/Patents

ECD's most valuable asset is its extensive patent portfolio of 352 issued U.S. patents and 825 foreign counterparts. Covering all aspects of our core businesses, they have resulted from our more than 30 years of work in the advanced technologies described earlier in this letter.

During 1997, the Japanese Patent Office in Tokyo recognized and registered the important, basic Ovonic Battery patent for nickel metal-hydride batteries. In doing so, ECD prevailed over the opposition of major Japanese and foreign battery manufacturers. This patent is a counterpart to U.S. Patent No. 4,623,597 that specifies the fundamentals that make NiMH batteries possible and commercially feasible. Japan joins 14 other industrial nations that have recognized the patent. In addition to the basic patent, a continuing stream of significant patents assure that Ovonic Battery will continue its leadership in the NiMH battery field.

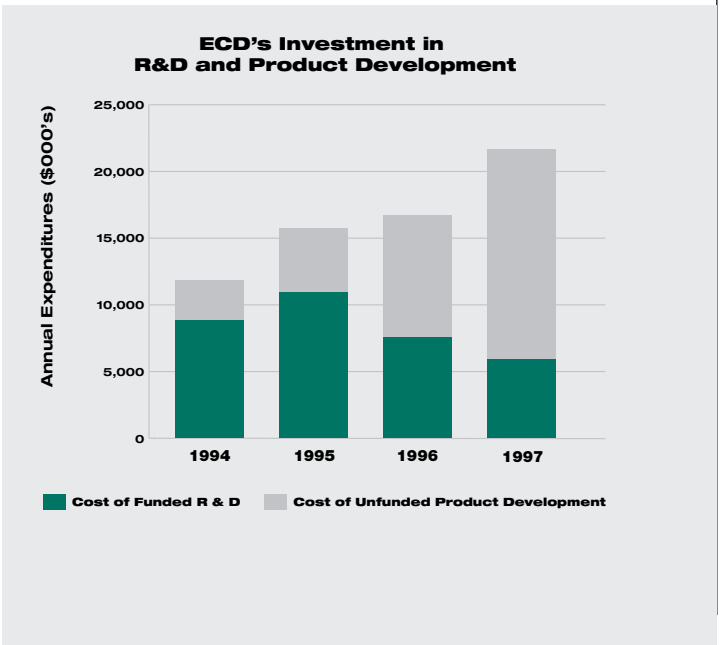
During this past year, ECD spent $3 million defending its patent rights, primarily against Matsushita Battery Industrial Co., Ltd. (MBI), with respect to certain Ovonic Battery U.S. patents covering proprietary technology for NiMH batteries.

The case was conducted in the U.S. District Court for the District of Delaware. On December 23, 1997, the judge issued the final order and opinion giving ECD and Ovonic Battery precisely the results we had sought, with the sole exception of denying our request for attorneys' fees. The decision effectively limits MBI and its joint venture with Toyota Motor Corporation, Panasonic EV Energy Co. of Osaka, Japan, to one low energy density model EV battery (MHI-BX) covered by prior agreement with MBI without the ability to further improve the battery by utilizing ECD's advanced NiMH technology. The MHI-BX battery has lower specific energy than the current production GM Ovonic EV battery and significantly less energy than our advanced family of batteries, which puts the GM Ovonic battery in a much stronger competitive position.

This very favorable court outcome, coupled with the issuance of the basic Japanese patent for our Ovonic NiMH battery, confirms our dominant position and enhances our future business transactions. Both actions illustrate the strength of our basic intellectual property rights worldwide.

Financial Results/ Undervalued Assets

During the past year, ECD leveraged its strong financial position to invest in its many products. (For details of the company's financial performance, refer to our 1997 Annual Report on Form 10-K.) These investments improved our manufacturing base and also supported our product development for the very successful "Family of Batteries" noted earlier in this letter. Our product development expenditures were $21.4 million in 1997, only $5.7 million



of which was offset by outside funds as shown in the chart on page 14. These investments have resulted in patents and other proprietary rights that increase the value of the company, although Generally Accepted Accounting Principles require that they be expensed.

As a result, our balance sheet does not reflect the value of some of our most important assets. In the chart below, ECD's patents—as well as our 49.98 percent interest in the United Solar joint venture (in which our joint venture partner has invested more than $55 million) and our 40 percent interest in GM Ovonic—are valued at zero.

We are certain that our stockholders agree that these assets are of enormous importance to the company. Despite their value not being recorded on our balance sheet, these assets—particularly the intellectual assets—greatly enhance our ability to execute a three-pronged commercialization strategy consisting of:

- Joint ventures and business alliances that enable ECD to dominate important growth markets;
- Licensing ECD products to provide a strong royalty stream; and
- Building our manufacturing base to bring to market materials, battery electrodes, finished products and production equipment.

As a direct result of our investment strategy, ECD has been awarded a number of important new, funded development contracts during the last year, and we continue to make progress in commercializing key enabling technologies for the energy and information industries.

ECD's Undervalued Assets

	Carrying Value at June 30, 1997	Current Market Value
Patents	$-0-	ECD's patent portfolio consists of 352 United States and 825 foreign patents, including many basic patents in materials, devices and production technology.
Joint Ventures/Subsidiaries		
United Solar (Owned 49.98% by ECD)	$-0-	Canon has invested more than $55 million for its 49.98% interest in United Solar in recognition of the value of ECD's technology contributions.
GM Ovonic (Owned 40% by Ovonic Battery)	$-0-	GM has invested approximately $20 million in production manufacturing equipment for its 60% interest in GM Ovonic in recognition of ECD's technology contributions.
Sovlux (Owned 50% by ECD)	$-0-	KVANT/MINATOM has invested $15 million for its 50% interest in Sovlux in recognition of ECD's technology contributions.
Ovonic Battery Company (Owned 93.5% by ECD)	$(19,406,000)	Ovonic Battery has entered into royalty-bearing license and other agreements with: GM Ovonic, Hitachi-Maxell, GP Batteries, Matsushita, Samsung, Eveready, USABC, APIC, Walsin, Varta, three major Japanese manufacturers, Furukawa, Daido Steel, Harding Energy, Canon, LG Chemical, Piaggio, Saft, Honda, Hyundai, Sanoh and Sovlux.
Capital Equipment	$6,968,000	Estimated replacement value in excess of $15 million.
Tax Loss Carry Forward	$-0-	Estimated $39 million in reduction on future income taxes.

Our long-serving director, Jack T. Conway, is retiring from the board of directors and is not standing for re-election this year. Jack has devoted much of his life to labor and social issues. He has had an active national role in improving labor-management relations in the collective bargaining process. He also was involved with the Aspen Institute for Humanistic Studies as a Senior Fellow for many years. Jack is committed to the concept of renewable energy, and as the current President and CEO of the Community Housing Corporation of Sarasota, Florida, he is actively engaged in encouraging the use of solar energy, including the use of solar roofing products manufactured by United Solar. We have greatly appreciated Jack's important contributions, advice and counsel over the years, and we look forward to a continuing relationship as he becomes a Director Emeritus.

We have made considerable progress during this past year in the fields that we have originated and pioneered: nickel metal-hydride batteries, thin-film photovoltaics and phase-change memories and switching. These fields have led to the creation of new growth industries based on our core products, thanks to the dedication and hard work of our talented colleagues and employees. We appreciate the efforts and support of our board of directors whose members contributed to our progress, and we thank our stockholders for their support.

Stanford R. Ovshinsky
President and Chief Executive Officer

Robert C. Stempel
Chairman

December 1997

We are deeply saddened that our long-time collaborator and close friend, Jack Conway, died on January 6, 1998. We were informed of this news as we were going to press. We will miss him greatly.

DIRECTORS AND OFFICERS

Stanford R. Ovshinsky, President, Chief Executive Officer and Director, ECD; Chief Executive Officer and Director, Ovonic Battery; President, Chief Executive Officer and Director, United Solar Systems Corp.; Member, Board of Managers of GM Ovonic L.L.C.; Co-Chairman of the Board of Directors, Sovlux

Robert C. Stempel, Chairman of the Board and Executive Director, ECD; Chairman, Ovonic Battery; Member, Board of Managers of GM Ovonic L.L.C.; former Chairman and Chief Executive Officer, General Motors

Iris M. Ovshinsky, Ph.D., Vice President and Director, ECD; Director and Secretary, Ovonic Battery

Nancy M. Bacon, Senior Vice President and Director, ECD; Director, United Solar Systems Corp.; Director, Sovlux

Umberto Colombo, Ph.D., Director, ECD; Chairman of the Scientific Councils of the ENI Enrico Mattei Foundation and of the Instituto Per l'Ambiente, Italy; former Chairman of ENEA (Italian National Agency for New Technology, Energy and Environment)

Hellmut Fritzsche, Ph.D., Vice President and Director, ECD; retired Professor of Physics and former Chairman of the Department of Physics, The University of Chicago

Joichi Ito, Director, ECD; President of: Eccosys, Ltd. and Digital Garage KK, Japan; President and Representative Director of PSI Japan KK

Seymour Liebman, Director, ECD; Director, United Solar Systems Corp.; Executive Vice President and General Counsel, Canon U.S.A., Inc.

Walter J. McCarthy, Jr., Director, ECD; retired Chairman and Chief Executive Officer of Detroit Edison, Detroit, Michigan

Florence I. Metz, Ph.D., Director, ECD; Director, Ovonic Battery; retired Project Manager for Business and Strategic Planning, Inland Steel, East Chicago, Indiana

Haru Reischauer, Director, ECD; Director, United Solar Systems Corp.; Author and Lecturer, La Jolla, California

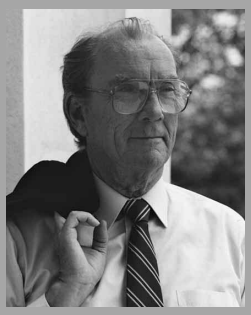
Nathan J. Robfogel, Director, ECD; Vice President for University Relations, Rochester Institute of Technology, Rochester, New York; retired Partner, Harter, Secrest & Emery, Rochester, New York

Stanley K. Stynes, Ph.D., Director, ECD; retired Professor and former Dean, College of Engineering, Wayne State University, Detroit, Michigan

Ralph F. Leach, Chairman Emeritus, ECD; former Chairman of the Executive Committee of J.P. Morgan & Company and Morgan Guaranty Trust Company, New York

Jack T. Conway, Director Emeritus, ECD; Chairman of the Community Housing Corporation of Sarasota, Florida; former Senior Fellow with the Aspen Institute

Robert R. Wilson, Ph.D., Director Emeritus, ECD; Founder and former Director, Fermi National Accelerator Laboratory; Emeritus Professor of Physics, Cornell and Columbia Universities; former President of the American Physical Society



Jack T. Conway
Director, ECD

Subhash K. Dhar, President, Chief Operating Officer and Director, Ovonic Battery

Marvin S. Siskind, Vice President and Patent Counsel, ECD

Michael A. Fetcenko, Senior Vice President and Director, Ovonic Battery

Ghazaleh Koefod, Secretary, ECD

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Photo courtesy Chevrolet Division, GMC

On July 4, 1997, Chevrolet's S-10 electric pick-up became the first electric truck to successfully complete the 156-turn, 12.42 mile road race to the top of Pikes Peak, Colorado. Ovonic NiMH batteries powered the truck, which was equipped with a production electric motor but with chassis modifications for racing safety. The S-10 reached the summit (14,110 ft.) in an EV record time with 30 percent of the batteries' charge remaining. Driver Larry Ragland said, "We could have kept going except that we ran out of mountain." This record-setting run demonstrates the high power and robust design of the Ovonic NiMH battery.

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This letter is accompanied by a copy of the Company's Annual Report on Form 10-K for its fiscal year ended June 30, 1997. Stockholders are encouraged to read the enclosed Annual Report carefully, including the information contained in the section captioned Cautionary Statement for Purposes of the "Safe Harbor" Provisions of the Private Securities Litigation Reform Act of 1995.

ECVCM.LS-97