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JULY 12th, 2005

[Digital Gas and ICCU Ready to Market Ultracapacitor - Said to Have Capability to Lower America's Electric Bill By 15 Percent](#)

Digital Gas, Inc. (OTC Pink Sheets:DIGG) has reported that it will partner with ICCU, based in the Netherlands, to manufacture and market its Digital Ultracap device, an energy storage device that can be used by utilities, as well as distributed renewable energy centers and in the home. The company indicates that the device, since it can store energy at a price of approximately \$400 per kWh (kilowatt-hour), with power electronics, will enable power plants to down size their electrical generation capacity and operate at maximum power efficiency ratios.

This is all possible because large amounts of energy can be stored for use during non-peak hours and then delivered at peak hours, lowering the need for utilities to run at peak energy generation capacities, which are less than optimum in terms of power generation efficiency. The company also suggests that the device will be a big plus for home owners with in-house renewable energy systems. One of the reasons is that the home owners would not have to resell electricity back to grid, but instead could store it and reuse it themselves when the sun isn't shining or the wind isn't blowing. One more important point to note is that a great deal of power is lost, upwards of 50 percent, when electricity is transferred over power cables for a long distance. All of this would seem to suggest that it may become more feasible to establish local power networks that transfer power within a neighborhood.

Digital Gas is planning volume production of the environmentally friendly ultracap in late 2005 or early 2006. The company estimates that sales should reach \$1.7 billion a year by 2010. The factory that Digital Gas has planned is also expected to produce solid oxide fuel cell systems to go along with the ultracapacitor.

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In terms of overall power savings to America, Digital Gas reports that it has been estimated that \$15 Billion a year would be cut from America's \$200 billion annual electric bill.

JULY 8th, 2005

[Lumileds' White Light LEDs Advance to Flashlight Status - Emissive Energy Adopts](#)

Lumileds Lighting reports that it White LEDs have overcome the major hurdle to industry acceptance for general lighting applications. That barrier, a wide variation in color, has according to the company been overcome with a proprietary conformal phosphor die coating process - a varying phosphor thickness is what causes very visible color inconsistency, according to the company. Such color inconsistency, which can be measured at different viewing angles, can result in the white LEDs actually appearing yellow on the edges and blue in the center.

Noting how color variation is viewed by the consumer and how color variation compounds into more problems, was Jason Posselt, Lumileds Director of Product Marketing, "Colour variation in white LEDs has been a barrier to the broad adoption of solid-state lighting in luminaires and other general lighting products because consumers accustomed to conventional illumination are not comfortable with the colour shifts in the light beam of conventional LEDs. This non-uniformity becomes further pronounced with the addition of secondary optics such as reflectors or collimating lenses which are often used in our customers' designs. Our conformal coating technology makes white Luxeon LEDs the first and only semiconductor-based light sources with the colour consistency required to compete with the incandescent bulb."

Robert Galli, CEO of Emissive Energy, voiced his sentiments, "We wanted to use high-power LEDs in some of our flashlight products to give our customers the maximum light output along with the ruggedness and longevity of solid state lighting, but we rejected most white LEDs because of their poor colour quality. Only Luxeon, with its conformal coating process, came up to our standards. Without it, we would not have been able to bring some of our highest-performing products to market."

JUNE 28th, 2005

[Revolt Technology Brings in n7 Million for Alternative to Lithium Ion Battery Technology](#)

Revolt Technology AS, based in Trondheim Norway, has secured n7 million in venture capital in its first round of financing. The investors in the company's rechargeable Zinc-air battery technology included Northzone Ventures, Sofinnova Partners, Techno Venture Management (TVM), and Viking Ventures.

Revolt indicates that Zinc-air batteries, which have been on the market for over 20 years, have a higher energy density

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than lithium-ion batteries. Because the company has devised a method to produce Zinc-air batteries that are rechargeable, the battery is a prime candidate for the replacement of lithium batteries, used in everything from mobile phones to laptop computers. According to Rodermann, Partner at Sofinnova Partners, "Many companies have tried and failed to come up with a technology to replace Li-on. By succeeding in making Zinc-air batteries rechargeable, the founders are positioning ReVolt to become a major player in the worldwide market for rechargeable batteries for use in mobile consumer electronics. We believe ReVolt's breakthrough technology will be particularly useful in mobile telephones, which have become more and more energy consumptive."

Revolt also suggests that Zinc-air batteries cost less to make than their lithium-ion counterparts. Revolt estimates that the market for consumer-based rechargeable batteries, where it plans to focus, will reach 1.6 billion units in 2008. In the mobile phone market, where Revolt has focused its design efforts, is estimated to reach \$3 billion in 2008.

ReVolt plans to concentrate on the market for consumer electronics, where the number of units sold in 2008 is projected to reach 1.6 billion. ReVolt batteries will be particularly adapted to use in mobile telephones, sales of which are expected to reach \$3 billion by 2008.

ReVolt, founded in 2004, is a spin-off of Sintef, considered one of the largest contract research centers in Europe.

JUNE 20th, 2005

[Super Bright LED Technology Spins Additional \\$2 Million Investment - White Light Bulb Contender](#)

Lamina Ceramics has obtained a \$2 million investment from SpaceVest. The round C financing was led by Granite Global, which contributed \$6 million to the \$9 million in financing. Others involved in the round included Morgenthaler Ventures

Lamina with the financing announcement also reported that it has also broke the bright LED record with its brightest ever LED array with a 28,000 lumen solid-state white light engine. The company's Ultra-high lumen LEDs technology are also another LED achievement. Devices based on this technology are capable of producing 16 million colors in an area smaller than a small sized coat button.

Lamina, founded in 2001, as a spin-off of Sarnoff Corporation, has based its award winning ceramic on metal LED technology on over 12 years of research conducted at Sarnoff. Lamina received the Best New LED Product and Technical Innovation Award at Lightfair International.

JUNE 9th, 2005

[Electrovaya Annouces Shipment of New PowerPad Battery - Offers 27 Hours of Charge Free Operation](#)

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Electrovaya Inc. (TSX:EFL) has begun shipment of its new PowerPad 300 - Phosphate series battery. The Lithium Ion SuperPolymer battery has a power rating of 300 Watt-hours and has been targeted toward the health care mobile notebook computer market. In support of the battery, Electrovaya cited a statement from Rey Flores, Client Engineer - Microsoft MVP and Editor of MobileGadgetNews.com, "In my initial tests, the PowerPad 300 ran some of my Notebook & Tablet PCs for up to 27 hours of continuous run time. I consider the PowerPad 300 an excellent product for the mobility needs of a hospital or any power needy road warrior!"

Dr. James. K. Jacobs, Chief Technology Officer of Electrovaya commented on the company's line of batteries for different computer users needs, "With its proprietary Lithium Iron Phosphate based chemistry, the PowerPad 300 - Phosphate series meets the objective of complete mobility for mobile computing. Electrovaya's SuperPolymer(R) rechargeable battery technology is materials independent and we can incorporate most new materials as they emerge. For small batteries, Electrovaya will continue to use industry standard Lithium cobalt oxide, which meets rigorous requirements for the highest energy density. We are pleased to be in a position to commercialize this unique phosphate based material invented by Dr. Goodenough and his team at the University of Texas, and further developed by groups in Canada,"

Electrovaya noted that the PowerPad 300 battery weighs less than 3 kilograms and has dimensions of 12X8.75X1.25 inches. The company states that the battery has run time of up to 24 hours - which offers those that must be off the grid a reliable energy source as well as a reliable back-up source of power from black-outs and other grid problems. The battery technology is based on a Lithium Iron Phosphate (LiFePO4) cathode powder from Phostech Lithium Inc.

JUNE 6th, 2005

[Berkeley Labs Makes Case Against Lanterns - 1.3 Million Barrels of Oil a Day](#)

With all the focus on cars, a researcher at Lawrence Berkeley Labs indicates that the conversion of lanterns to LED light bulbs, would save about 1.3 million barrels of oil a day, or the equivalent of about \$38 billion a year, or approximately 1.6 percent of total world daily oil consumption. In order to convert from lanterns, most of the world's poor, which rely on the energy inefficient and green house gas emission laden kerosene lanterns, would have to replace the lanterns with the latest solid state White LED Lamps.

The researcher, Evan Mills, of Berkeley Lab's Environmental Energy Technologies Division, wrote prolifically about the subject in the May 27, 2005 issue of Journal Science. In that article he indicated that a \$25.00 LED lamp would not only reduce the demand for oil in the world, reduce green house emissions, but would bring a return on the investment. From his data, the payback period would be about one year.

The results of Evan Mills' research suggest that it may be wise

from many standpoints to loan or subsidize those that find it difficult to come up with the \$25.00, which can be as much as one month's pay for those in poor nations, for the solar powered White LED lamps. Such a tactic would lower world oil demand and most likely the price. In addition, the standard of living would improve for those poor, who must now read by the toxic fumes of the dim kerosene lanterns. Additionally, the adoption of these lamps by the world's poor would increase the demand for the expensive and relatively new LED lamps, and in theory, with the increase in LED light bulb production; the cost of LED light bulb production would decrease - as has been the case with all solid state devices throughout history.

Such a subsidy would also benefit the LED light bulb industry and help bring its innovative energy saving product to market. So should the LED light bulb industry subsidize or gain energy credits in return? For that matter, should developed countries provide tax credits for consumers who purchase LED lamps to replace the inexpensive but inefficient incandescent lamps that now light most of their homes? Should laws be enacted to require apartment owners to change all light bulbs to LED light bulbs? To put that into perspective, what would be the energy savings if every light bulb in every apartment in the United States was changed to a LED light bulb? That calculation will be left, for now, to researchers such as Evan Mills or the White LED light bulb companies, themselves.

MAY 31st, 2005

[MTI MicroFuel Wins Frost & Sullivan Award](#)

MTI MicroFuel Cells Inc. was named 2005 Fuel Cell Entrepreneurial Company of the Year by Frost & Sullivan. MTI MicroFuel Cells Inc., a subsidiary of Mechanical Technology Incorporated, (NASDAQ:MKTY), developed the Mobion direct methanol micro fuel cell technology, a energy source designed for a variety of portable electronic devices. The company indicates that a simple design was used in the fuel cell to manage water inside the flow fuel cell - eliminating the need for a complex microfluidic network inside the fuel cell. In reference to a fuel cell it provided to Intermec, a leader in the RF Reader market, MicroFuel stated, "The micro fuel cell was designed to deliver up to five times the runtime of lithium-ion battery-based readers."

MAY 23rd, 2005

[OSRAM LED Light Bulb Surges Past 200 Lumen Lighting Level - Common Light Bulb Market Targeted](#)

OSRAM with the development of its OSTAR "Lighting LED" appears to be in striking distance of the common light bulb. The company states that OSTAR is enabled "to become a serious contender for general lighting applications, such as spotlights, reading lights and safety and effect lighting." Ellen Sizemore, Director, LED Products Group at OSRAM Opto Semiconductors elaborated on the new type of light bulb, "OSRAM's high-performance OSTAR Lighting LED offers an ideal design comprising small dimensions and a low,

six-millimeter profile in conjunction with extremely high luminance. This combination gives designers enormous freedom to incorporate the OSTAR into luminaires and other traditional light sources where size, consistent lighting coloration and performance are critical."

OSTAR measures 3x1 centimeter, has a lighting specification of 200-lumen with a drive current of 700 miliamps, and a 50,000-hour lifetime rating. OSTAR is expected to be available soon in small quantities with production scheduled for the fourth quarter of 2005.

MAY 23rd, 2005

[Cree Licenses LED Lamp Technology to Several Chip Companies](#)

Rohm Co., Ltd., Cotco Holdings, Ltd. and Stanly Electric Co., Ltd. all have received white LED licenses from Cree, Inc., (NASDAQ: CREE). According to Cree, the license gives these companies the right to manufacture and sell white LEDs that incorporate Cree's LED chips.

The license relates to LED patent, U.S. Patent No. 6,600,175, referred to as the '175 patent. Noting the momentum of the LED lamp technology was Scott Schwab, Vice President and General Manager of Optoelectronics at Cree, "We licensed the '175 patent to Nichia Corporation in our cross-license announced earlier this year. These additional licenses further reinforce the importance of this patent and the increasing awareness and respect for intellectual property in the industry. These licenses are a result of our ongoing IP awareness activities, and can enable increased sales of our high performance chips for white LED applications. We continue to seek ways to make Cree products, and our partners who use them, more competitive while defending our technology and IP in the market."

APRIL 27th, 2005

[Power Gateway for Office / Home Energy Generation Market Announced](#)

With the rise of in-house electricity generation modules at the office and home, the need to interface with the electrical grid has grown. Most home owners and office workers, in order to multiplex power into and out of their buildings for purchase and resale on the emerging Energy Internet, need simple one electric plug and play systems that connect all of their in-house and out of house energy sources together. In that vane, Nextek Power Systems, Inc. and Ballard Power Systems, Inc. (NASDAQ: BLDP) have announced a 75 kilowatt Digital Power Gateway to be manufactured as part of an agreement between the two companies.

Mark Robinson, Nextek's Vice President of Sales, commented on new market opportunities that the technology opens up, "Until now, Nextek's power networks have been most applicable to new construction and buildings undergoing lighting refits. Our dealer network can now take advantage of

opportunities in existing buildings that need higher efficiency, backup power systems, and lower-cost metering, monitoring and control systems."

Ballard Power Systems is a provider of zero-emission proton exchange membrane fuel cells as an alternative to internal combustion engines. Nextek Power Systems, Inc. offers direct current (DC) power networks for buildings and accessories for a diverse range of home and industrial markets.

APRIL 21, 2005

[MathWorks Introduces Electrical Power System Simulator](#)

The MathWorks introduced SimPowerSystems 4, a design tool aimed at a number of different industries. The tool comes complete with model libraries that include electric sources, electric machinery, three phase components as well as standard passive components such as resistors, inductors and capacitors. Terry Denery, Physical Modeling Product Marketing Manager at The MathWorks, implied that the tool has many uses and could be instrumental for the design of renewable energy projects, "SimPowerSystems 4 leverages the power of Simulink to provide an efficient environment for multidomain modeling and controller design. Now, engineers can model the generation, transmission, distribution, and consumption of electrical power, as well as its conversion into mechanical power, all within Simulink."

TransEnergy Technologies Inc. developed the block libraries and algorithms for SimPowerSystems. SimPowerSystems 4 sells for \$3000.00.

APRIL 18th, 2005

[Lumileds offers Renewable Solid State Light Bulbs With One-Year Payback Time](#)

Lightfair International Lumileds Lighting, a manufacturer of LEDs and provider of solid state lighting solutions for a variety of consumer and industrial applications, has introduced its color-matched white Luxeon Lamps. These lamps, according to the company, solve the uniform white light problem that have limited the applications of solid state white light bulbs, known as renewable light bulbs in some circles.

According to Keith Scott, Market Development Manager and Lumiled, "The lighting community looks for white-point consistency whether viewing the light source directly or the effect that's being created."

Besides the uniform white light, other benefits that the company lists include a one-year payback time, light output levels of 500 to 1200 lumens, and a lumen maintenance of 70 percent at 50,000 hours. The company states that the complete lighting system, or Luxeon Lamps, integrated with drivers, heat sink and optics, will deliver a 1 year to 2 year payback when used to replace incandescent and halogen luminaries.

The Luxeon Lamps were on display at Lightfair International in New York last week.

APRIL 6th, 2005

[Toshiba Develops Battery With One Minute Charge Time](#)

Slow battery charge time, which has been an obstacle for consumer acceptance of hybrid cars and portable electronic devices such as laptop computers, has apparently been overcome, Toshiba Corp. at the end of March announced that it has developed a battery that can be recharged to the 80 percent level within one minute, which is estimated to be about 60 times faster than most present day lithium batteries. The battery design is largely attributed to nanomaterial technology.

Toshiba has indicated that the battery is expected to be first used in hybrid vehicles, when Toshiba brings the product to market sometime in 2006. A prototype of the battery measures 3.8mm thick, 62mm high and 35mm deep and has a capacity of 600mAh.

MARCH 29th, 2005

[Residential Solar Financing from GE Consumer Available](#)

GE Consumer Finance is reported to be active in the financing of residential solar products. The unit, which is affiliated with GE Energy, a solar energy company, indicates that residential solar facilities offer a cost-effective solution to consumer's energy bills. Mike Pryde of GE Consumer Finance said, "Solar electric power makes good economic sense for consumers. We've seen interest growing exponentially across the U.S. over the last few years and expect that to continue. Financing a solar electric system enables consumers to budget for a fixed, monthly financing payment for a limited period of time. This is offset by their reduced electric bill, which will always be substantially less with the solar system as long as the sun continues to shine."

MARCH 24th, 2005

[Flywheel Based Energy Storage Technology Company Accumulates \\$10 Million](#)

Flywheel based energy systems provider Pentadyne Power Corporation has completed a follow-on close to its Series C funding round. The financing adds \$10 million more to the \$8 million it already raised from its initial Series C round. The follow-on round was led by Rustic Canyon Partners.

Pentadyne plans to use the funds to further its product commercialization efforts through Emerson Network Power/Liebert, a market leader in the area of uninterruptible power supplies (UPS). One of Emerson

Network Power's latest products is the Liebert FS Advanced Flywheel Energy Storage System, which is used as a replacement for lead acid batteries in Liebert UPS products.

Flywheel technology has gained market recognition for several reasons. These include the capability of flywheels to provide transparent power system transition from the utility grid to a generator during a power black-out, the ability to provide better quality power from utility grids (protection from short lived power drop outs and transients) and as a safer power backup system than lead-acid batteries, especially in chemically intensive, fire prone industrial environments.

MARCH 21st, 2005

[Detachable Fuel Cell, Fundamental to First Fuel Cell Motorbike](#)

Out of England arrives the first fuel cell motorbike. Intelligent Energy Holdings, Plc., a London based energy company introduced the ENV, billed as the first fuel-cell motorbike. According to the CEO of Intelligent Energy Holdings, Dr. Harry Bradbury, "People soon will be able to use a bike like ENV, leaving work in the city, then driving to the countryside, detaching the CORE and re-attaching it to another vehicle, such as a motorboat, before using it to power a log cabin. The very same fuel cell then could be re-charged from a mini hydrogen creator, the size of a shoebox. The launch of ENV breaks new ground and opens an entire new field of opportunities for low- and high-power fuel cell motorbikes."

The motorbike, which is said to exceed the performance of any other electric bikes, has a top speed of 50 mph. To those who don't want to disturb the peace and quiet of the countryside, while zooming down an off-road trail at over 50 mph, the motorbike is for all practical purposes, silent. It has a noise emissions rating of your typical home computer. One can also travel up to four hours before refueling.

MARCH 17th, 2005

[Advanced Micro Devices' Microprocessors Offer 28 Percent Power Savings - Wins Energy Star from EPA](#)

AMD (NYSE: AMD), the recognized adversary of Intel for the title of microprocessor market leader, has taken one more step towards domination of the microprocessor market. The company's Cool'n'Quiet technology, which has been designed into all of AMD's Athlon 64 desktop processors, has received the 2005 ENERGY STAR Award. This award is given to company's who have demonstrated a significant contribution to the reduction of energy consumption. The U.S.

Environmental Protection Agency made the award to AMD on March 15th at its 2005 ENERGY STAR Awards Ceremony in Washington D.C. AMD received the award as a result of its contribution to the reduction in energy requirements for PCs. AMD was able to demonstrate to the EPA that computers based on its Cool'n'Quiet technology achieved a power savings of up to 35 Watts. Commenting on the energy test results and the award, Craig Hershberg, Product Manager for Office Equipment and Consumer Electronics at the U.S. EPA stated, "In AMD's tests, Cool'n'Quiet showed a significant decrease in power consumption resulting in energy efficiency improvements up to 28 percent, making it an ideal candidate for the ENERGY STAR Certificate of Recognition."

The number of PCs shipped each year is in the order of 200 million units. Using this number, AMD's "potential" power reduction contribution, if its microprocessors were shipped in every PC, would equal over 6000 million watts.

MARCH 16th, 2005

[Well Known Hearing Aid Chip Company Announces Very Low Power Bluetooth Wireless Headset](#)

Gennum Corporation, noted for its hearing instrument integrated circuit technology, has introduced a very low power, Bluetooth headset. Gennum's Z-E-N Bluetooth headset, which is based on Gennum's multiprocessor DSP has a rated power consumption of 1 milliwatt at a 42 MIPS processing rate. The company says that its new headset is 25 percent smaller than its previous Z-E-N headsets and is lighter - weighing in at less than an ounce, 22 grams. Battery life time has been extended and talk time is now seven hours.

MARCH 4, 2005

[Fear of Power Outages Prompts Growth of PoE Products](#)

The recent announcement that Adtran has introduced a Power Over Ethernet (PoE) switch-router and now that MGE UPS Systems, an uninterruptible power supply company, has selected PowerDsine's Midspan PoE products for VoIP, Wireless LANS and network security camera applications, it could be assumed that PoE has established a market for itself. One of the keys to the acceptance of the technology is that PoE based systems help assure that electronic devices won't be shut down in the case of a widespread power outage. This is a concern for enterprise providers, who want to rid themselves of the chaos that ensues from a power outage - such as lost data, downed servers, missing web sites and a flood of phone calls and emails from upset webmasters. Such problems may also result in internet access providers adopting battery free based back up and voltage regulation systems, such as flywheel energy storage devices and alternative off-grid power systems.

FEBRUARY 17th, 2005

Another License Source For Electric Socket Compatible LCD Lamps

Reports have just come in that Nitride Semiconductors Co. and the University of Tokushima have developed a lamp LED that operates off alternating current. This technology would eliminate the need to utilize an AC to DC converter for LED light bulbs - a nagging cost that has hampered their acceptance. As reported earlier in the Semiconductor Evening News, Seoul Semiconductors has also developed a similar product, which it has scheduled for production (2005). The report indicated that Seoul Semiconductor Co., which is listed on the Korean Stock Exchange, licensed the technology, without specifically citing Nitride Semiconductor Co. or the university as the licensor.

FEBRUARY 16th, 2005

Photovoltaic Fashion- A Must Wear For Environmentalists

In just a few short years, expect the likes of fashion designers such as Maud N Lil and Donna Karan to offer solar fabric based fashions. These clothes, which generate their own electricity will power all the new wearable electronic devices of the times and perhaps may serve to keep you just a tad warmer on a cold winter day.

That is if Konarka Technologies, Inc. and the Ecole Polytechnique Federale de Lausanne (EPFL) are successful in their attempts to develop photovoltaic fibers and textiles. The two companies hope to develop a fully integrated woven photovoltaic material, which can be used for the construction of tee-pees, tents and clothes, or for that matter, sleeping bags.

Dr. Jan-Anders Manson, the director of the Laboratory of Composite and Polymer Technology will lead the project at EPFL. The project, which is expected to take about a year, has been funded by the Swiss Commission for Technology and Innovation (CTI). CTI is an organization which is devoted to commercialization of educational based research.

Konarka obtained its light-activated plastic power technology (or dye-sensitized solar cell technology) through a license from Dr. Michael Gratzel, who is affiliated with EPEL.

FEBRUARY 15th, 2005

Finance Seminar on Renewable Energy Investments Scheduled

Squire, Sanders & Dempsey L.L.P. has planned a special program (February 22, 2005) on renewable energy investment and finance opportunities. The seminar will feature panel discussions on financing wind power, solar power and biomass power projects. Speakers at the program will be from the Arizona Distributed Energy Industry, the Arizona Corporation Commission and lawyers from the law firm of Squire, Sanders & Dempsey L.L.P. The law firm, founded in

1890, with over 700 lawyers, has numerous offices throughout the United States. Contact D. Jennings at djennings@ssd.com for further details. ***Request More Information - Specify Company, Product, Etc.***

FEBRUARY 14th, 2005

[Funding For Adjustable Glare Control Promotes Health and Energy Savings](#)

Look outside your window today and what do you see? Ever wish you could instantly control the glare or the amount of ultraviolet light coming through your window. Well apparently now you can. Research Frontiers Inc., which just received \$5 million in funding, offers smart control film. The film, once applied to windows, or your sunglasses for that matter, gives the user the capability to adjust the tint and glare – eliminating ultraviolet rays or unwanted solar heat. In the summer time, the tint on sunny windows can be automatically increased to reduce the heat entering the building. In the winter time, the tint can be reduced to let in the warmth of the sun's winter rays. So how will the technology mix with new solar energy producing windows? Are there any plans for Research Frontiers to work with solar window companies?

Besides potential temperature control, different applications for the product include the automotive market, where glare can be a safety hazard, as well as aircraft, and eyewear markets to name a few. Nippon Sheet Glass Co. Ltd. is one of 34 that have licensed the technology.

The four United States based funds were not named. The investment was in the form of a purchase of one million shares of the company's common stock with five year warrants.

FEBRUARY 10th, 2005

[Flywheel Energy Source Starts to Take Hold](#)

As reported recently on the Semiconductor Evening News, energy flywheels are now used in semiconductor wafer fabs to provide a well regulated supply of energy, and as a reliable backup system for power outages. The New York State Energy Research and Development Authority (NYSERDA) has also realized the importance of this technology. Such is the case the NYSEDA has granted Beacon Power Corporation an executed contract. The contract between Beacon Power and the NYSEDA is also part of an initiative between the U.S. Department of Energy (DOE) Energy

Storage Research Program and NYSERDA. The goal of this program is to develop an advanced energy storage solution for frequency regulation and grid stability in New York State. Most likely this contract has been motivated in part by the memorable New York City black-out. The contract has been valued at \$645,000.

Beacon has pointed out that regulation services purchased in the United States by four regional grid operators exceeded \$400 million in 2003. As well, Beacon sees a potential market for flywheel technology in the renewable energy market. Wind, solar and biomass alternatives will be supported with its grid regulation technology.

FEBRUARY 9th, 2005

Cree and Nchia Team Up for White LED Bulb Race

Cree, Inc. and Nichia Corporation have entered into a patent cross-licensing agreement related to white LED bulbs, also know as solid state white lighting. The companies have an existing patent cross-license agreement, which was announced in November 2002.

FEBRUARY 8TH, 2005

[Solar Wrap, Will it Replace Handiwrap?](#)

The ever popular handiwrap, now marketed as Saran Wrap by SC Johnson, may want to give solar wrap a hard look at. Konarka Technologies Inc. reports that it has "light-activated power plastic." The company's web site implies that its nanotechnology manufacturing process, based on titanium dioxide, can be applied to almost any material, from cloth to windows, and even paint. The end result is an energy producing product, which offers lower cost than silicon based solar cells. The company says that its technology can produce photovoltaic products with an efficiency rating of 8 percent, but without the extra weight associated with today's solar cells. Konaraka and Oak Ridge National Laboratory, which does research on energy technology with the United States Department of Energy, have been working together since 2004 to develop and commercialize Konaraka's process technology.

FEBRUARY 7, 2005

Olla Members Target OLED Light Bulb Market

The use of Organic Light Emitting Diode (OLED), to reduce energy costs and provide the world with a unique alternative to the traditional lamp, was further affirmed with the establishment of OLLA. OLLA is an

integrated R&D project whose goal is to demonstrate OLED light tiles for general lighting applications. The organization plans to demonstrate the technology by 2008. The IST (Information Society Technologies) has partially funded the project.

One of the goals of the members, which includes lighting industry leader, Philips Lighting, is to produce white OLED bulbs that have at least a 10,000 hour life and have an efficiency of 50 lumen per watt. Part of the organizations work is to develop new materials and new OLED manufacturing processes.

The 24 members include well known companies in the lighting industry, research oriented non-profits and numerous universities. The European based companies include Aixtron AG, Covion Organic Semiconductor GmbH, Fraunhofer Institute fur Photonische Mikrosysteme, H.C.Starck GmbH, IMEC, Osram Opto Semiconductors GmbH , Philips Electronics Nederland B.V, Philips GmbH Forschungslaboratorien, Philips Lighting GmbH, Sensient Imaging Technologies GmbH, Siemens AG and VTT Technical Research Centre of Finland.

Counterparts to the OLLA in United States and Japan include the Next-Generation-Lighting Initiative and the Lighting21 program, respectively.

FEBRUARY 7th, 2005

[XsunX Appoints Scientific Adviser For Solar Windows](#)

XsunX, Inc. announced that Dr. Richard Rocheleau has joined the Company's Scientific Advisory Board. Dr. Richard Rocheleau is the director of the Hawaii Natural Energy Institute (HNEI) of the University of Hawaii. He brings with him credentials in the areas of photovoltaic and semiconductor manufacturing. XsunX has developed what it calls Power Glass. This technology permits glass windows to generate electricity from the sun.

FEBRUARY 7, 2005

[Microsemi's Energy Saving Light Sensor In Hewlett-Packard's Notebooks](#)

Thanks to Microsemi Corporation's new light sensor, users of the latest HP Compaq notebook computers will see less power drain on their portable's battery supply. The latest model 6200 and 8200 series computers automatically adjust the brightness of the LCD display according to the ambient light of the area.

When in dim lighting environment, the LCD display will dim, which lowers the power drain. The user can also adjust the brightness level for different types of content – for example movies or text.

FEBRUARY 4th, 2005

[Dust Networks Contract and Funding Promises Reduced Electric Bills](#)

Dust Networks, a wireless micromachine company, whose technology has the potential to reduce your electric bill, has completed a \$22 million round of funding. The funding was led by Crescendo Ventures also included Cargill Ventures, Foundation Capital and Institutional Ventures Partners. The series B funding brings Dust Networks funding to date to \$30 million.

Along with the funding comes news that the United States Department of Energy (DOE) selected Dust Networks to participate in a program to make commercial and residential buildings more energy efficient. Dust will work with SVA Lighting and the U.S. Department of Energy's Livermore Berkeley National Laboratory on an advanced lighting system. The lighting control system is a wireless system that turns on and off lights based on user occupancy and security needs. Because the wireless control system does not need wires, buildings and homes save on costs associated with the wiring of light switches – so watch out electricians.

According to the Department of Energy about 30 percent of the 600 billion kilowatt hours used for powering buildings and homes is for lighting needs. Studies have indicated that the wireless lighting control technology could save up to 40 percent on lighting costs or about \$8 billion in the United States alone. SVA Lighting has high hopes for the technology. That company anticipates Dust Networks Smartmesh networks will greatly reduce the installation costs of dimmable fluorescent ballasts, which in turn will result in widespread acceptance of the energy saving devices.

FEBRUARY 1st, 2005

[Alternative Energy Financing Emerges](#)

With the interest in solar energy and numerous government incentives, venture capitalists and lending institutions are expected to bring out the red carpet. GE's Technology Lending and Energy Financial Services Initiative is one recent example. The organization just announced a program to provide financial solutions to clean energy companies. Clean Energy companies'

products range from fuel and solar cells, to wind and wave power, and biomass gasification among others.

For those that want to speak in person with GE, Cleantech Venture Forum VI is the place to go. The conference is to be held March 22 to 24, 2005 in San Francisco. GE is a co-sponsor for the event.

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FEBRUARY 1, 2005

[Mirrors Cut Solar Cell Energy Costs in Half](#)

Energy Innovations, Inc., which has under development a low-cost rooftop photovoltaic based solar concentrator system, has announced the acquisition of Prevalent Power Inc. Prevalent (to be called EI Solutions) will assist with Energy Innovation's Sunflower solar concentrator. Sunflower is based on mirrors, which track the sun, and concentrate the sun rays onto a solar panel. Energy Innovations reports that Sunflower will be able to provide energy at a lower cost than the utilities presently can. The company indicates that Sunflower will be able to reduce the cost of solar electricity by 50 percent or more.

FEBRUARY 1st, 2005

[Fujitsu Reduces Chip Packaging Energy Costs 18 Percent with CO2 Free Design](#)

Fujitsu has stated plans to use only 100 percent biodegradable plant materials for the manufacture of its embossed carrier tapes used to ship its integrated circuits. As a result of the change, Fujitsu expects to reduce carbon dioxide (CO2) emissions by 11 percent.

The company had previously used polystyrene to make the embossed carrier tape. Fujitsu had previously used biodegradable materials for only 20 percent of its chip products. The plant based tape resin takes an estimated 18 percent less energy to produce than the polystyrene based tape.

JANUARY 26th, 2005

Battery Free Technology Company Doubles Revenue

Active Power, Inc., announced its revenue increased 98 percent for its fourth quarter ended December 31, 2004 over the same period last year. Revenues for the fourth quarter were \$4.8 million. For the full year, revenues were \$15.8 million, up 78 percent over 2003 levels.

Active Power designs, manufactures and markets a flywheel energy storage system. This system offers an alternative to battery based back up systems. The system besides a safer back-up system also provides cleaner power. The flywheel will kick in when the utility grid fails, even if for only a few seconds.

Semiconductor manufacturers are a major market for the product. Chip companies must protect delicate process equipment from power spikes. As well chip companies prefer to keep potentially lead acid based battery back-up systems away from their expensive capital investments.

JANUARY 26th, 2005

AC Powered White LEDs Spell End to Incandescent Light Bulb

Seoul Semiconductor, which licensed its LED light bulb technology from Solid State Lighting and Display Center (SSLDC) at the University of California, was reported through AFX News Limited to have developed a LED based light bulb that operates with standard alternating current (AC). The company, which now seeks to patent the product, reports that the capability to power the LED from AC as opposed to direct current (DC), solves the traditional problem associated with using LEDs as a light bulb.

The LED light bulb may save up to 80 percent of power over the classical bulb, primarily because, unlike the standard incandescent bulb, the LED bulb dissipates little received energy as heat. Furthermore, the LED light bulb can last over a life time. The company puts the life of a LED light bulb at 80,000 hours, or about 10 years of continuous operation.

The LED light bulb has been planned for production before the days grow short this year, around autumn. The original projection for LED light bulb production, at the time of the SSLDC agreement, was the year 2007. SSLDC also has a license agreement with Cree.

In related news, Catalyst Semiconductor, Inc. added to its

family of solid state illumination products with the introduction of a high efficiency white LED driver, the CAT3606.

JANUARY 25th, 2005

Solar Water Pump Here After 24 Years

It was reported that Sustain Limited and Grundfos Pumps Limited have developed a solar water pump specifically for the African market. The water pump, which has been in the development phase since the 1980s, has a capability to obtain water from a depth of 120 meters and to supply water for over 600 people. Sustain Ltd., which is a sustainable energy company, won the 2004 H & V News Environmental Initiative of the Year for its A1 Boiler design.

JANUARY 24th, 2005

[Zigbee Wireless finds Power in the Sun](#)

Oki Electric Industry Co has begun testing a solar battery-based Zigbee sensor network in Kobe, Japan.

JANUARY 21st, 2005

[Nanosys and Sharp in Fuel Cell Development Agreement](#)

Sharp, a world leader in solar cells, entered into an agreement with Nanosys Inc. to develop fuel cells for consumer electronic product applications. Gadgets mentioned include cell phones, lap tops and PDAs.

JANUARY 20th, 2005

[CAP-XX NanoTechnology Based SuperCapacitor Battery Wins Award](#)

The World Economic Forum named CAP-XX Inc a 2005 Technology Pioneer for its supercapacitor technology. These capacitors, are used in portable battery systems and solar cell based electronic systems to supply peak (high burst) power currents - effectively extending the life and reducing the necessary battery size required. CAP-XX has shipped over 500,000 of its supercapacitors since it began production three years ago.

JANUARY 20th, 2005

[Power-over-The Ethernet Powers PowerDsine](#)

Power over Ethernet (PoE) technology, used to transmit power supply energy over standard Ethernet cable, has been a growth market because it is costly to run AC power lines and sockets to where the Ethernet peripheral needs to be located (surveillance cameras). PowerDsine has won over NETGEAR, Inc. with its PoE solution. NETGEAR will use the solution in its ProSafe 8 Port 10/100 Desktop Switch.

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