



CLEANTECH

VENTURE ROUNDTABLE

JUNE 24, 2010

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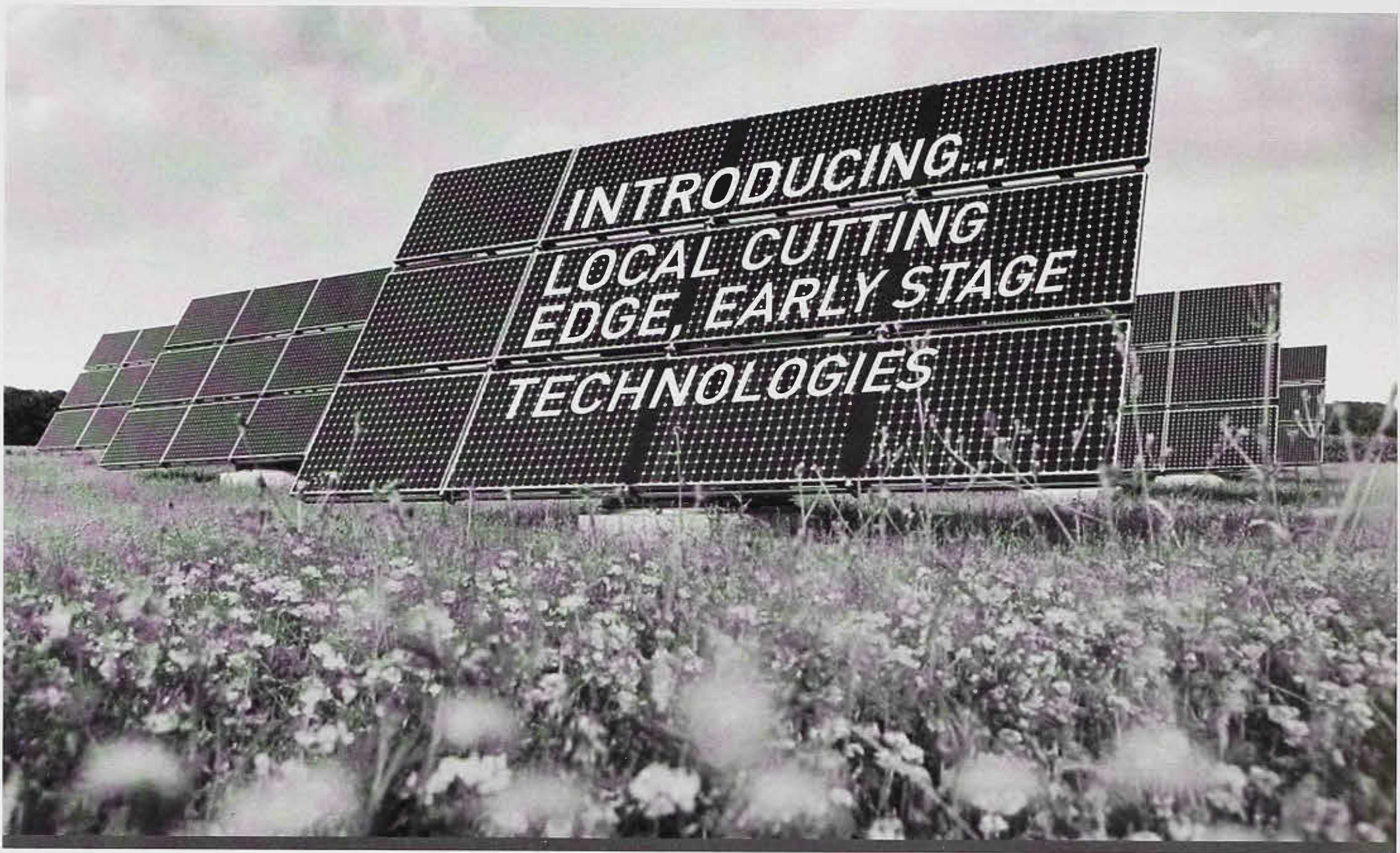


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Welcome CONNECT Supporters and Friends:

On behalf of CONNECT, I am pleased to welcome you to the 2010 Cleantech Venture Roundtable. The Venture Roundtable series aims to introduce you to cutting edge, early stage technologies being developed locally. Today we'll show you five technologies that represent San Diego's innovative and entrepreneurial atmosphere.

The companies selected to present today have passed a rigorous screening process conducted by two separate panels of industry experts, venture capitalists and business leaders. First, the Screening Committee volunteered their time to screen all of the applicants and provide coaching to the selected companies in preparation for today's presentations. Next, the Distinguished Judges reviewed presentations by the best 10 applicants and narrowed down the competition to five winning presenters. The time and expertise of these individuals is crucial to the integrity and success of this program, and CONNECT thanks the committee members and judges for generously donating their time.

CONNECT would like to offer a special thanks to our lead sponsor and host, Procopio, Cory, Hargreaves & Savitch LLP; and our supporting sponsors, KPMG and Nielsen Construction Ca. for supporting our efforts to present today's technologies which are poised to become the businesses of tomorrow.

I hope that you enjoy today's program, and look forward to your participation in future CONNECT events.

Sincerely,

A handwritten signature in black ink, appearing to read "Duane Roth".

Duane Roth
CEO, CONNECT

- 10:00 - 10:30am **REGISTRATION AND NETWORKING**
- 10:30 - 10:45am **INTRODUCTION AND WELCOME REMARKS**
 Noel Gillespie, Partner, Procopio, Cory, Hargreaves & Savitch LLP
- 10:45 - 12:15pm **COMPANY PRESENTATIONS**
 Peter Shaw, Managing Director, Procopio Business Advisors
 (15-minute presentation followed by 15-minute Q&A session)
- 10:45 - 11:15am EcoDog, Inc.
 11:15 - 11:45am PCN Technology
 11:45 - 12:15pm Diomedea Storage
- 12:15 - 1:15pm **LUNCHEON WITH KEYNOTE PRESENTATION BY BILL WALTON**
 Introduction by Noel Gillespie, Partner, Procopio, Cory, Hargreaves & Savitch LLP
- 1:15 - 2:15pm **COMPANY PRESENTATIONS CONTINUED**
- 1:15 - 1:45pm AER Sustainable Energy
 1:45 - 2:15pm Lightwave Photonics
- 2:15 - 2:30pm **CONCLUDING REMARKS**
 Noel Gillespie, Partner, Procopio, Cory, Hargreaves & Savitch LLP
- 2:30 - 3:00pm **NETWORKING**

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ROUNDTABLE SCREENING COMMITTEE

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2010 CLEANTECH VENTURE
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**Bill Walton****Executive Chairman, SDSI; Board Member, CONNECT****Board Member, CleanTECH San Diego****Green Ambassador, Greener Dawn**

Bill Walton, CleanTECH San Diego board member, NBA legend, Green Ambassador to Greener Dawn and Emmy award winner for an environmental documentary, will provide a luncheon keynote presentation on his cleantech activities with San Diego start-ups and on the cleantech opportunities in the action and sport innovation space. Walton is Executive Chairman of CONNECT's San Diego Sport Innovators which represents the region's 600+ action sport and active lifestyle companies.

Walton was born on November 5, 1952, in San Diego, California. He was introduced to the game of basketball while in the fourth grade at Blessed Sacrament Elementary School by Coach Frank "Rocky" Graciano. Walton then attended Helix High School, where the basketball coach was Gordon Nash. At Helix, his team won the California Interscholastic Federation High School title two years in a row, while winning their final 49 consecutive games. Walton enrolled at UCLA in 1970 and played center for John Wooden's varsity team for three seasons (1972-1974). He was a member of two NCAA championship teams compiling an NCAA record 88 consecutive game winning streak. He was the recipient of several awards, including the NCAA Player of the Year Award in 1972, '73 and '74. At UCLA, Walton was a scholar-athlete who also earned Academic All-American honors three years in a row. He graduated with honors earning a B.A. in History. Walton's professional career began when he was the No. 1 overall pick in the 1974 NBA Draft by the Portland Trailblazers. He won championship titles with the Blazers and the Boston Celtics. He also played with the San Diego Clippers, and the relocated Los Angeles Clippers. Over the course of his NBA career, he was honored with numerous awards, including NBA's MVP and All-Star Team. Eventually, Walton was inducted into the Basketball Hall of Fame.

Walton started his broadcasting career in 1990 as an analyst for the then Prime Ticket Network. Walton worked for CBS Sports in the early '90s during the NCAA Final Four and then for NBC for many years, including work on the 1996 Atlanta and 2000 Sydney Summer Olympic Games. Over the last 15 years he has worked for ABC, ESPN, NBC, CBS, Fox, MSNBC, Turner Sports, KCAL and the NBA. In 2001, Walton won an Emmy for best live sports television broadcast. Walton looks forward to building the San Diego Sport Innovators (SDSI) program with CONNECT. SDSI is a business accelerator that connects and drives the growth of San Diego's vibrant sports economy by offering innovative programs and services for start-ups, mature companies and service providers.

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At Procopio we recognize the global movement toward clean and sustainable energy and we appreciate the challenges and diverse needs of businesses operating in these sectors.

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KPMG LLP is proud to sponsor CONNECT's 2010 Cleantech Venture Roundtable, and would like to thank today's presenters: AER Sustainable Energy, Diomedea Storage, EcoDog, Inc., Lightwave Photonics, and PCN Technologies.

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Our Thanks to the Distinguished Judges & Congratulations to the Winners of the 2010 CONNECT Cleantech Venture Roundtable

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**PRESENTING
COMPANIES**

Venture Roundtable Presenter:

Larry Stambaugh, Director

Contact Information:

Ron Pitt, Co-founder and CEO

858-880-0178

Ron@EcoDogInc.com

www.EcoDogInc.com

925 Poinsettia Ave #1, Vista, CA 92081-8452

Has a company been formed?

Yes

Technology Readiness Level:

Actual product/service proven through successful operations

Patents Awarded:

2 patents pending

Sources of Funding:

Self, Friends and Family, Angel

Annual Revenue:

\$458,000 projected in 2010; \$287M projected in 2014

Number of Employees (Exec/Non Exec):

5/2

Amount sought:

\$250K-1M bridge funding and \$1-5M Series-A round

Company Overview:

EcoDog is committed to developing hardware and software tools that will enable homeowners to easily and affordably take control of energy consumption to lower their utility bills while contributing to overall reduction in demand for electricity.

Product or Service Description:

EcoDog's FIDO Home Energy Watchdog System is an easy-to-use energy residential energy monitoring systems that shows users exactly how and where they are consuming electricity in real-time with room-by-room detail so they can readily identify "energy hogs" in the home. The system displays energy use in both dollars and kiloWattHours. The software also provides personalized strategies on how to save energy, including projected cost savings. Typical monthly savings range from 15-25 percent and more. As utilities roll out new Smart Meters with Time of Use billing, significantly greater savings are anticipated because FIDO permits users to easily fine tune energy consumption to avoid costly peak use surcharges.

Technology and/or other Discriminators Description:

EcoDog's FIDO Home Energy Watchdog is a user-installable hardware/software system that comprises an energy measuring module — installed at the breaker panel — that communicates using Power Line Carrier Communication (PLC) through the home's existing power lines with a module linked to a PC via USB. Since it's installed at the breaker panel, the system is able to display room-by-room energy usage detail using included software on the PC as well as remotely via text or e-mail. The software tracks energy consumption throughout the home and uses proprietary algorithms to give recommendations to the user on how to reduce electric costs based on consumption patterns and the local utility billing structure. FIDO can also be used to monitor and coordinate residential alternative energy (solar, wind, generator, etc.) installations.

Competitive Analysis:

Tendril - Designed to facilitate utility control of residential demand "seamlessly connects smart consumer devices (like thermostats and outlets) to the existing utility back office" TED, GreenBox, ONZO Whole-home monitoring devices Google Power Meter, Microsoft Hohm - Web-Based, not real-time, whole home monitoring with questions about security and privacy. EcoDog's key differentiating features include: facilitates consumer control (as opposed to utility control) to optimize the balance between savings, flexibility and comfort; real-time circuit-by-circuit electric consumption data as well as whole house usage information displayed in dollars and kiloWattHours; will work with any meter, does not require smart meter or any particular brand of meter; uses Power Line Communication, no wiring required; will communicate with ZigBee and other protocols in the near term; power saving recommendations tailored to each household based on usage patterns and rate structures; monitors power generation as well as consumption; incorporates the most advanced solar (and other alternative generation) monitoring on the market, enabling in-home net metering based on actual tiered utility rates; and keeps all detailed usage data on the home PC to eliminate privacy and security vulnerabilities

Market Size:

\$5.95B

Management Team:

Ronald L. Pitt, Co-Founder and CEO: Technology development and business management executive

Regina McNamara, Co-Founder and CFO: Finance and accounting executive

Susan Connell, VP of Marketing: Marketing and public relations executive

K. C. Jacobson, VP of Sales: Sales executive

David McIntosh, VP of Operations: Infrastructure, manufacturing and logistics executive

Venture Roundtable Presenter:

Venkat Shastri, President and CEO

Contact Information:

858-761-1575

venkat@pcntechnology.com

www.pcntechnology.com

16450 via Esprillo, San Diego, CA 92127

Has a Company been established?

Yes

Technology Readiness Level:

Actual product/service completed and qualified through test and demonstration

Patents Awarded:

1- Communication module

Current Investors:

Self, Friends and Family, Angel, VC

Annual Revenue:

\$2.4M projected in 2010; \$77M projected in 2013

Number of Employees (Exec/Non Exec):

3/9

Amount of Funding Sought:

\$5-7M to close Series-B round

Company Overview:

PCN is a communication and networking systems company whose products and services serve energy, industrial, commercial and defense markets. Applications include two-way communication for distribution and outage management in utility grids; industrial networking and commercial power distribution and management; environmental control and energy efficiency; and networking and control of equipment, appliances and metering devices. PCN is headquartered in San Diego, Calif.

Product or Service Description:

PCN's products provide embedded communication and networking solutions that enable their customers to establish industrial and commercial networks, smart metering and smart grid infrastructure, energy efficiency solutions and security systems. These open standard products have been designed to have convergence across multiple technologies and protocols and have been designed out of commercial off-the-shelf silicon components.

Technology and/or other Discriminators Description:

At the heart of PCN's value proposition is a patented technology that transforms noisy conductive media into reliable communication channels. Examples of conductive media includes utility powerlines and AC electrical circuits in buildings, twisted and untwisted pair voice and data cables, co-ax cables, current loop analog data cables, electrical wires in DC low voltage circuits, and copper bus-bars that transmit power – literally any conductive material can serve as a physical medium for data communication. Through the transformation of these disparate physical media, PCN's technology naturally brings about their convergence into a perspective that they are all simply communication channels. As a result, PCN's products are able to access vast amounts of existing infrastructure all over the world and establish reliable communication networks which in turn enable machine intelligence, automation and energy management. In a nutshell, PCN's technology singularly transforms any conductive media infrastructure into a communicating smart grid, something not found elsewhere in the competitive landscape. There are technologies that leverage existing powerlines for communication. Besides their sensitivity to noise and interference, they have always been incapable of transferring data across transformers, capacitive banks and other power transfer equipment placed in-line on utility grid. This has so significantly limited the reach of these technologies that large scale commercial deployment in many parts of the world has remained elusive. In addition to dealing with channel noise, PCN's technology also communication across transformers and other power transfer equipment without any need for special purpose communication hardware.

Competitive Analysis:

There are two technologies that leverage existing powerlines for communication: powerline communication (PLC) and broadband ver powerline (BPL). Both technologies are sensitive to noise and interference and incapable of transferring data across transformers, capacitive banks and other power transfer equipment placed in-line on utility grid. Both traditionally go only a distance of about 1/2 km, beyond which they need repeaters. Certain wireless technologies also compete with PCN's technology. However, they are also sensitive to environmental noise and interference. In addition, they typically suffer from high latencies as the network scales up.

Market Size:

>\$5B

Management Team:

Venkat Shastri, President and CEO

David Strumpf, CTO

Daniel Drolet, VP of Business Development

Richard Hoff, Director of Manufacturing

Bruce Jackson, Director Corporate Development and Marketing

Venture Roundtable Presenter:

Steve Iverson, CEO

Contact Information:

619-846-9147

steve@diomedestorage.com

www.diomedestorage.com

4046 Mira Verde St, Oceanside, CA 92056

Has a company been formed?

Yes

Technology Readiness Level:

Actual product/service proven through successful operations

Patents Awarded:

1 patent has been filed

Sources of Funding:

Self

Annual Revenue:

\$350,000 projected in 2010; \$28M projected in 2014

Number of Employees (Exec/Non Exec):

1/3

Amount sought:

\$2M Series-A round

Company Overview:

Diomed Storage is a green, energy-efficient, cloud storage service.

Product or Service Description:

The Diomed Storage Service is an energy-efficient cloud storage service designed for the long-term storage of archival and backup data. It enables backup application developers and large end-users to integrate cost-effective, petabyte-scale storage capabilities into their products or IT processes.

Technology and/or other Discriminators Description:

Diomedes Storage has developed several patent-pending technologies that dramatically lower the cost, space, and power required for maintaining backup and archival data. Like a hybrid car alternating between gas and electric power, Diomedes's Hybrid Storage technology allows customers to shift data between high-performance storage and energy-saving storage. The result is data storage which uses less than 0.5 microwatt per megabyte – 60 times more efficient than competitors' systems. The Company has filed its first patent (that contains several significant claims) and has additional intellectual property opportunities to pursue. Some of Diomedes's most compelling intellectual property is in the areas of power management and real-time power consumption analysis of stored data - an industry first.

Competitive Analysis:

Competitors: The current market leader is Amazon S3 (a service of Amazon Web Services). Diomedes is gaining market share by focusing on customers with archival and backup data. Amazon's "one-size-fits-all" option is far from optimal for backup and archival customers. Storing backups on Amazon S3 is like flooring your gas pedal at a stop light. Diomedes is five times less expensive and 60 times less power consumption than Amazon S3 for backup data. More than 500 pounds of CO2 emissions saved per year for each 1 TB migrated from Amazon S3.

Market Size:

\$3.7B

Management Team:

Steve Iverson, CEO: Steve Iverson was previously the founder and CEO of Streamload, a consumer online storage service. Iverson won the 2005 San Diego Venture Group Pitchfest (\$10k prize), was an Ernst & Young Entrepreneur of the Year finalist and was awarded the *San Diego Metropolitan Magazine* "40 under 40" distinction. Iverson holds a B.A. in Computer Science from Pomona College in Claremont, Calif.

In addition, Diomedes employs two other people (both engineers) and also employs an offshore engineering team that is ready to scale.

Venture Roundtable Presenter:

Paul Roben, CEO

Contact Information:

858-210-9144

paulroben@yahoo.com

3150 East Fox Run Way, San Diego, CA 92111

Has a company been formed?

No

Technology Readiness Level:

Product/service prototype demonstration in a relevant environment

Patents Awarded:

US2010028485, 2010-02-04 "Talaromyces emersonii enzyme systems" (original international filing date 10/2/2006; IE 20060090). Claims strains of T. Emersonii as secretors of thermostable enzymes and the use of those enzymes for bioconversion processes. Additional IP filed in the last year under the title of "biofuel production from algae."

Sources of Funding:

Angel

Annual Revenue

\$193,000 projected in 2011; \$5.75M projected in 2015

Number of Employees (Exec/Non Exec):

3/0

Amount of Funding Sought:

\$3M Series-A round

Company Overview:

AER Sustainable Energy (AER) was formed by an experienced management team who previously successfully built AER Limited – Ireland's leading biofuels supplier. The mission of AER is to develop algae as a renewable bioenergy to help address the major energy challenge facing the world today. Algae is a 2nd generation biofuel feedstock which shows great promise as a future fuel source for the world. AER has distinctive patented enzyme technology which helps to release the full value of algae and radically improve the economics for algae producers and processors. Current methods to extract the valuable constituents of algae, including pressing, solvents and drying, are crude, inefficient, result in low yields and are unable to extract valuable niche co-products. AER's technology provides a simpler, more elegant way to break down algae, improving yields, lowering costs and increasing the speed to market. The technology will be made available to all algae producers and the financial returns will be substantial as the algae industry develops.

Product or Service Description

AER's opportunity lies not in the direct production of algae, but in the marketing of its enzyme technology to algal producers and processors to enable them to improve their yields of the desired product, lower their costs and increase their speed to market. The enzymes will initially be sold to producers on a "solution scale" via a small salesforce, which will focus on getting the enzymes designed into the algal production process of the customer. The viability of this approach has already been demonstrated in successful production of the enzymes and testing with multiple potential customers. AER will subsequently establish a sales partnership with traditional enzyme companies once the enzymes are established in the industry. Value based pricing will enable AER to capture a fair share of the extra value brought by its enzymes to the algae industry. The value based approach is underpinned by patent protection. The value is increasingly shared over time as the industry develops scale and competitive initiatives emerge, but even in the longer term AER is likely to capture half the value created.

Technology and/or other Discriminators Description:

AER's differentiated enzymes can be optimized in cocktail mixes and targeted to different algal strains enabling the single-step high-yield extraction of multiple algal constituents. These include the oils for biodiesel production, simple sugars for bioethanol production and other high-value chemicals. The resulting algal mass is also higher in protein content, thereby increasing its value as animal feed. This single-step approach avoids the use of traditional, inefficient, expensive and energy-intensive extraction methods. The enzyme technology releases multiple algal components such as simple sugars thus providing other revenue streams through the production of co-products, such as bioethanol. The nature of the process protects and isolates valuable large molecules which enable high-value revenue from niche co-product markets.

Competitive Analysis

Competition comes from 2 main sources: Established enzyme-producing companies and alternative major energy technologies. There are a number of established companies producing enzymes for cellulosic ethanol production, such as Verenum and Novozyme. AER Algae's advantage over these companies derives from its patent-protected technology that was developed over 15 years of academic research. It is envisioned that AER will approach some of these companies as a partner for the production of its enzymes, once they become established. A second source of competition comes from alternate fuel technologies, such as cellulosic ethanol. Algal biofuels have significant advantages over alternative approaches and close scrutiny of algal technologies has led to large investments in these businesses. At present, there is no clear consensus on a winning technology: a portfolio approach is assumed, with algae playing a leading role.

Market Size:

\$1.9B (algae enzyme market)

Management Team:

John Travers, Co-Founder and Ireland CEO: John Travers has worked for over 15 years in the energy industry and is currently CEO of AER Limited, which is the leading supplier of biofuels in Ireland and won an international government tender to supply biofuel to the Irish market for the period 2007-2011.

Maria Tuohy, CSO: Maria Tuohy has world-class knowledge in the areas of conversion of algae and other forms of biomass to bioenergy, molecular genetics, biotechnological application of novel biocatalysts and cell biology.

John Teeling, Chairman: John Teeling has been involved in energy and resource projects for 30 years and is a highly distinguished entrepreneur and business manager.

Venture Roundtable Presenter:

Josh Lampl, CFO

Contact Information:

Robert Jorgenson, CEO and CTO

952-807-6459

Robert.jorgenson@gmail.com

www.lightwavephotonics.com

1106 Second Street, #163, Encinitas, CA 92024

Has a Company been established?

Yes

Technology Readiness Level:

Validation in laboratory environment

Patents Awarded:

2-world utility patent applications for the fundamental design

Current Investors:

Angel

Annual Revenue:

\$125,000 projected in 2010; \$63M projected in 2014

Number of Employees (Exec/Non Exec):

2/0

Amount of Funding Sought:

\$1M

Company Overview:

Lightwave Photonics, Inc. (LPI) is a Light Emitting Diode (LED) chip intellectual property company seeking to transfer its lower cost and higher brightness chip solutions to the \$8.2B packaged LED market, projected to grow to \$20B by 2014. Pain: The high initial entry price for LEDs on a per lumen basis is holding back wide spread market adoption of solid-state lighting. The retail price of a LED lamp is 10 times the cost of a comparable compact fluorescent bulb (lifetime costs are about equal after taking into consideration energy use, maintenance and disposal). LED Chips represent up to 40 percent of luminaire cost. Solution: LED chips based on LPI's keystone technology promise a 35 percent to 68 percent reduction in the cost of ownership per Kilo-Lumen and that can help accelerate the growth of solid-state lighting products.

Product or Service Description:

LPI's initial product is an advanced engineered substrate used in the production of high performance and lower cost LED chips. It deploys a grown epitaxially metal mirror (GEMM) that enables LED structures projected to lower the cost of ownership of LED chip production, and ultimately reduces the cost of solid-state lighting solutions for the end customer. LPI's business model is to sell these wafers with a license to use our advance LED chip structures to the approximately 50 LED chip manufacturers that are located primarily in Taiwan, China, Korea, the E.U. and the U.S.

Technology and/or other Discriminators Description:

LPI's core innovation is an optimized vertical LED chip structure that utilizes a highly reflective and conductive internal crystalline lattice matched metal mirror (the GEMM). The LPI chip structure is projected to lower the cost per lumen: 1) No wafer removal is required (higher production yields); 2) Allows more chips per wafer; 3) Provides for a thinner structure that reduces epi growth time and improves binning yield through reduced wafer bow. Better performance is expected through improved light extraction (half cavity modes), less light absorption (thinner device), better current injection and good thermal management properties.

Competitive Analysis:

LEDs compete against several incumbent lighting technologies that have lower initial cost such as compact florescent lights (LEDs are still about 10X more expensive), T8 lamps, Halogen lamps and cold cathode florescent lights in the general illumination and backlighting markets. The advantage for LEDs, however, is that their lifetime cost is currently lower than most of these lighting technologies—they run for 50,000 to 100,000 hours, and they contain no Mercury. LPI competes with, but can also be complementary to alternative chip extraction technologies such as photonic crystals (Luminous Devices), novel packaging structures (Illumitex). Sora (substrates) and Kaai (devices) are two start-up chip companies seeking to deploy LEDs and LD for next generation Blu Ray devices using a non-polar chip structures. Finally, non-LED technologies are targeting niche illumination segments including systems based on plasma emitters such as Luxim Corp. and Topanga. LPI may also compete against or ally with traditional wafer companies that produce value added substrates (patterned sapphire templates) to supply LED manufacturers for subsequent growth steps (Rubicon Technology, St. Gobain, Kyocera, Wafer Works and TDI) and GaN on Silicon suppliers. The GEMM technology enables the lowest cost and most efficient chip structure to be grown on all of these templates, making LPI a valuable partner. Differentiation: LPI's advanced wafers will provide the lowest cost of ownership per lumen for LED manufacturers. LPI projects the lowest manufacturing cost per kilo-lumen to enable chip manufacturers to either make more profit per LED wafer or increase their market share. An estimated 65 percent improvement in brightness is achievable for the same chip area. Compared to the conventional LED grown on 4-inch Sapphire wafers, LPI chips are projected to have a 68 percent lower manufacturing cost per Kilo-lumen at the die level (before phosphor and packaging costs). Compared to the Flip Chip, LPI projects a 3 percent reduction in the cost per kilo-lumen. The industry is currently transitioning to 4-inch growth wafers.

Market Size:

LEDs \$20B; Engineered Substrates \$3B

Management Team:

Robert Jorgenson, CEO and CTO: Over 10 years experience developing blue and green light emitters. He was Chief Epitaxy Growth scientist at Oriol, Inc. (Flip-Chip Intellectual Property sold to L.G. Electronics).

Josh Lampl, CFO: Over 10 years investing in Cleantech companies and funds including Evergreen Solar, Stirling Energy Systems, Cleantech Venture Group, and Nth Power.

Advisors:

Dr. Eric Virey, Director of Business Development, Principal MT2 Strategies: For the past 12 years held various R&D, engineering, manufacturing and marketing position with Saint-Gobain.

Warren Weeks, President Compound Group, LLC: Began career at Cree, founding team of Nitronex & INTRINSIC Semiconductor (Sold to Cree). Advisor on business strategy.

Albert Jabocs, Esq, Troutman Sanders LLP: Advisor on intellectual property strategy.

Dr. Robert Davis, CMU Materials Dept.: Advisor on GaN materials and processes.



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