



2006 COMPETITION REPORT

The 2006 California Clean Tech Open

would not have been possible without the generous support of our sponsors and partners, who recognize the need to encourage innovation and growth in clean technology.

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The Clean Tech Age

The primary mission of the California Clean Tech Open (CCTO) is to act as an innovation catalyst that enables the 21st century to become The Clean Tech Age, and to strengthen California's position as the leading clean technology business cluster.

CCTO aims to accomplish this by fostering the development of companies that are creating technologies that support a healthy natural environment, providing environmental benefits in the areas of renewable energy, energy efficiency, pollution reduction, and resource protection and conservation.

Accelerating the Transformation of Clean Technologies from the Lab to the Marketplace

Jobs, wealth creation, and sustainable use of our natural resources can go hand in hand - and we aim to make it happen fast.

The California Clean Tech Open is an annual nationwide business plan competition created by entrepreneurs for entrepreneurs. Our goal is to accelerate the transformation of great ideas into thriving businesses that will turn California into a clean technology powerhouse and enrich the state's other industries.

We're looking for inspired approaches to energy efficiency, smart power, renewable energy, transportation, and water management from entrepreneurs, researchers, and students - any team with the ideas and drive to build a company. The prizes comprise a "start-up in a box" package of cash and services, donated by high-profile sponsors, that will help these new enterprises attract crucial capital investments.

When innovators and their sponsors develop sustainable companies that drive both economic growth and environmental health, the rewards will accrue to all Californians, the nation, and beyond.



OPPORTUNITY

The Growth of a New Industry

Industry experts are comparing the new wave of innovation in clean technology to the early days of similar technology growth drivers in California, including semiconductors, personal computers, and the Internet.

According to the Cleantech Venture Network, venture capital investment in clean technologies increased to \$1.6 billion in 2005, representing a 35% increase over 2004.

"There have been eight consecutive quarters of increasing venture investment, resulting in cleantech now being the third largest investment category behind biotechnology and software. Through just the first half of 2006, investment reached \$1.4 billion in cleantech. Several states have initiated various cleantech initiatives, and the rush is on for commercially viable clean technologies, companies, IP, talent, and job creation in the new economy."

Cleantech Venture Network www.cleantech.com



Clean Energy Projected Growth



History in the Making: the California Clean Tech Open Launch Event

On March 21, 2006, the California Clean Tech Open was officially launched at San Francisco City Hall with a keynote address by San Francisco Mayor Gavin Newsom. With the launch of the inaugural CCTO, a new course in history was charted.

The CCTO inspired a core group of busy professionals and students to volunteer to make the competition a success, taking a significant part of their year and devoting it to promoting the dissemination of clean technologies into the marketplace. In addition, over 50 corporate, academic, and governmental supporters entrusted their brands, knowledge, and resources with the CCTO. As a result of this dedication, the CCTO assembled the largest purse by far of any clean technology business plan competition in history, in order to assist the largest pool of entries in any such competition. CCTO sponsors, partners, and volunteers set the course for making the clean tech dream a reality.

Innovation Partner Technology Demonstrations at Launch Event:

Lawrence Berkeley National Laboratory (LBNL) - UV water purification and "smart window" technologies

Lawrence Livermore National Laboratory (LLNL) - micro-fuel cell

SRI International - direct carbon fuel cell

Electric Power Research Institute (EPRI) - smart grid technologies

Lexus - RX 400h and 450h hybrid vehicles

"The California Clean Tech Open convenes the state's best and brightest engineering minds to develop technological solutions to some extremely complex and important problems. This is a competition with no losers - all of California, and the rest of the world, benefit when natural resources are used more efficiently."

> California Energy Commissioner Art Rosenfeld





Launch Media Coverage

"Contest Seeks 'Clean Technology' Start-Ups" MSNBC March 21, 2006

"Clean Tech Open Sets Challenge for Entrepreneurs in California" *Clean Edge News* March 21, 2006

"Green Contest to Seed Startups" Red Herring March 21, 2006

"Clean Tech Open Challenges Californians" *AutoChannel* March 21, 2006

"California Contest Seeks Clean-Tech Plans" ZDNet March 22, 2006

"Contest Looking for Clean Tech - State Competition Focuses on Making Energy Smarter" San Francisco Chronicle March 22, 2006

"X-Prize for Cleantech?" Cleantech Blog, Cleantech Venture Network March 22, 2006

"Billionaire Green Entrepreneurs; the Sweet Loremo & SF's Cleantech Competition" *The Mercury News* March 23, 2006

"California Comes Clean" *Motley Fool* March 23, 2006 "We are pleased in San Francisco to support this initiative ... This is where we connect the ideological divide and we bring people together. It is no longer the tyranny of 'or', it is now the genius of 'and'. It is not economic growth OR environmental stewardship. It is economic growth AND environmental stewardship."

San Francisco Mayor Gavin Newsom

"California Clean Tech Open, a Newly Electric Green" WorldChanging.com March 23, 2006

"California opens \$500,000 Clean Tech Contest" CNET April 18, 2006

"Environmentally-Friendly Business Competition" Entrepreneur Magazine, Daily Blog April 21, 2006

"California's Clean Tech Competition Awards \$50,000 for Energy Efficiency Innovation for Business" *Energy Vortex* April 26, 2006

"Cleantech Gets Green - Venture Capitalists Want in on the Next Wave" Seed Magazine May 4, 2006

"Solar Power 2006 Set to Showcase California Clean Tech Open Entrepreneurs Finalists" *Environmental Expert* July 20, 2006



A New Wave of Entrepreneurs

Of 156 business plan submissions for the 2006 competition, 47 finalist teams were selected to participate in an intensive mentoring program to prepare them to present their business plans to the CCTO judging panel. World-renowned experts in their domains, competition judges included academics from leading universities and research laboratories, entrepreneurs, venture capitalists, and leaders in manufacturing and public utilities.

Throughout the summer of 2006, finalists took part in a series of free workshops conducted by the CCTO and led by business leaders in their respective fields. The goal was to provide the mentoring, training, and access to investors necessary to help these entrepreneurs take their early stage ideas and turn them into real businesses.

Only five teams, representing clean technologies in the areas of energy efficiency, transportation, renewables, smart power, and water management, would win. Through generous sponsorship and industry participation, the winning teams were awarded prizes of cash and in-kind services amounting to a total of more than \$600,000.

Team Entry Summary

Total Business Plan I 100%	Entries	156
By Category		
Renewables	59	38%
Transportation	42	27%
Energy Efficiency	23	15%
Smart Power	16	10%
Water Management	16	10%

"The California Clean Tech Open is not a contest where you submit and go away. Rather, it is a high level experience that will help you grow in many ways. The process provides expert-level education from those who have already been successful. And, following the process will provide you with your own validation that what you are trying to accomplish is feasible."

> Jim Seidel, CEO EDC Technologies Smart Power Winner







Spring and Summer Workshops

CCTO spring and summer workshops covered the essentials for launching a start-up company, while offering important networking opportunities for contestants. These workshops would not have been possible without the business and technology leaders who generously donated their time and experience to the competition.

April 27 – Innovation Partners Technologies and Entrepreneurs Matching Event

Brice Freeman, EPRI, Office of Innovation -"Insights into Utility Markets"

David Weinerth, TVC – ''TVC Resources to Help Entrepreneurs''

Lawrence H. Dubois, Vice President, Physical Sciences, SRI; Scott Elrod, Manager, Hardware Systems Laboratory, Palo Alto Research Center (PARC); Glen Dahlbacka for Pamela Seidenman, Marketing Manager, LBNL; and Leah Rogers, Business Development Specialist, LLNL - all presented examples from their clean technology portfolios that were ready for commercialization.

Over 80 entrepreneurs participated in this matching event and submitted their resumes for distribution to lab technology licensing officers.

Event held at SRI International in Menlo Park, CA.

July II - Executive Summary Feedback

Alex Beavers, Head of Commercialization Process for Clean Technologies in the Physical Sciences Division of SRI - Introduction

David Weinerth, Founder, Technology Ventures Corporation (TVC) - "Executive Summary Feedback"

Dr. George Basile, Researcher, Educator, and Consultant - "Strategic Sustainability for Clean Tech Start-Ups"

July 17 - Business Plan Overview

Bill Joos, Founder and Managing Director, Go To Market Consulting - "How to Create a Compelling Business Plan"

Hal Etterman, Founder, Knight Financial Plans and Services – "Developing Realistic and Effective Financial Projections"

July 25 - Sustainability, Finance, and Marketing

Joel Makower, Co-Founder and Principal, Clean Edge, Inc. - ''Clean Tech Markets and Trends''

David Weinerth, Founder, Technology Ventures Corporation (TVC) - "Market Analysis in the Business Plan"

Aug 7 - Corporate Structures and Intellectual Property

Doug Collom, Partner, Wilson Sonsini Goodrich & Rosati (WSGR) - "Proper Formation of a Start-Up, Corporations, and Stock Options"

Peter Eng, Partner, and Michael Murphy, Partner, WSGR – "Patent and Licensing Issues for Start-Ups"

Aug 16 - Entrepreneur Panel and Term Sheets

Yogi Ransingh, Partner, Ernst & Young, Moderator

Bruce Maxwell, Founder, Maxwell Consulting - "Financing Strategies"

Warren Weiss, Partner, Foundation Capital; Bill Kirsch, Managing Director, Costella Kirsch; Chris Vargas, Entrepreneur and Member of The Angels Forum; and Gary Conley, CEO, SolFocus, H2Go - "Fundraising for Start-Up Companies"

Donna Petkanics, Partner, WSGR – ''Term Sheets from Venture Capital Investors''

All workshops were held at WSGR in Palo Alto, CA.



Judging Process

Judges for the 2006 California Clean Tech Open included academics, researchers, entrepreneurs, social entrepreneurs, venture capitalists, non-profit founders, environmental experts, legal professionals, and patent experts. Each category of the competition had its own panel of judges, who discussed the strengths and weaknesses of every contestant.

The judging process took place in two rounds. In the first round, judges reviewed executive summaries for each team. In the second and final round, teams submitted full business plans, which they presented to the judging panel for their category. Six-to-ten finalist teams were chosen per category based on the following criteria:

- Concept and Product
- Feasibility
- Market Opportunity
- Financials and Profitability
- Team
- Environmental and Societal Impact

Finally, each judging panel selected a winning team for its category, based on the highest scores for all criteria and the team's demonstrated level of commitment and passion for commercializing its technologies in the near future.





The CCTO thanks the judges who donated their time and energy to the 2006 competition.

Venture Capitalists, Angels, Entrepreneurs, and Investment Companies

John Walecka of Redpoint Ventures Matt Trevithick of Venrock Associates Marianne Wu of Mohr Davidow Ventures (MDV) Warren Weiss of Foundation Capital Rob Day of Expansion Capital Partners Alexander Sloan of Expansion Capital Partners Keith Gillard of BASF Ventures Paul Hsiao of New Enterprise Associates (NEA) Todd Kimmel of Advanced Technology Ventures (ATV) Tim Woodward, David Dreessen, and Matt Jones of Nth Power Chris Vargas of Generations Investments Kent Pavey and John Parsons of The Angels Forum Mark Perutz and Seth Miller of IP Morgan's Bay Area Equity Fund Paul Frankel of Ecosa Capital Robert H. Hambrecht of WR Hambrecht & Company

Geoff Ralston, Entrepreneur, formerly Chief Product Officer at Yahoo!

David Goldman, Entrepreneur, formerly with AOL

Tom Sidley of Aequitas Capital Management

Legal

Herb Fockler, Donna Petkanics, Bob O'Connor, Marc Gottschalk, Randy Lewis, Brady Berg, and Paul Shinn, all of WSGR

Domain Experts and Consultants

Jonathan Livingston and Hal La Flash of Pacific Gas and Electric Company (PG&E)

Jeffrey Steinfeld, PhD, of MIT University

Slav Hermanowicz, PhD, David Jenkins, PhD, and Robert Dibble, PhD, all of University of California, Berkeley

Jonathan Koomey, PhD, of Stanford University

Anushka Drescher, PhD, of Waterhealth International

Ed Beardsworth, PhD, of UFTO

Sara Kurtz, PhD, of National Renewable Energy Laboratory

Peter Biffar of Terradex

Mark Farley of Raydiance

Alex Beavers, PhD, and Malhotra Ripudaman, PhD, of SRI

Frank Levinson, PhD, of Small World Group

Gibs Sung-Ku Song of Samsung AIT

Luke Pustejovsky of Gigacrete, Inc.

Roland J. Hwang of Natural Resources Defense Council



Finalists' Awards Ceremony

"In a presentation today at San Francisco City Hall, five companies won what is essentially the 'Academy Awards' of technology in a competition to help save Mother Earth."

KTVU Channel 2 News

On September 26, 2006, the North Light Court in San Francisco City Hall filled with over 250 attendees to witness the inaugural California Clean Tech Open Finalists' Awards Ceremony. The CCTO was honored to host such national, state, and industry leaders as California Energy Commissioner Art Rosenfeld, National Resource Defense Council Co-Director Ralph Cavanaugh, and renowned venture capitalist and biofuels expert, Vinod Khosla, Principal and Founder of Khosla Ventures.



Welcome

Laurent Pacalin, Co-Chair California Clean Tech Open

Moderators

Marc Gottschalk, Partner Wilson Sonsini Goodrich & Rosati and Legal Oversight Chair California Clean Tech Open

Leslie Murdock, Entrepreneur, CFO and Financial Oversight Chair California Clean Tech Open

Keynote Speakers

San Francisco Mayor Gavin Newsom

Vinod Khosla, Principal and Founder Khosla Ventures

Ralph Cavanagh, Co-Director Energy Program Natural Resource Defense Counsel

Arthur H. Rosenfeld, PhD, Commissioner California Energy Commission

Final event planning by Ellen Luttrell and organic food provided by JZ Cool.

After the awards ceremony, attendees took part in a networking reception in the South Light Court at City Hall, where finalists displayed their innovations and business concepts to sponsors, potential investors, and the press.



Finalists' Awards Ceremony Media Coverage

"VCs Pick Clean Tech Investments" San Jose Mercury News September 26, 2006

"California Contest Picks 'Clean Technology'Winners" *Reuters* September 26, 2006

"Local Companies Earn Green-Technology Honors" Palo Alto Online September 26, 2006

"Clean Tech Start-Ups Tout Wares for VCs" San Jose Mercury News September 27, 2006

"Clean Start-Ups Score Funding" *Red Herring* September 27, 2006

"Khosla: Ethanol Not Final Fuel" *Red Herring* September 27, 2006

"Cleaner Technology on Display" CNET September 29, 2006



"For a few hours Tuesday, City Hall became a microcosm of Silicon Valley. Eager entrepreneurs mingled with venture capitalists, all of them there to find and fund the best ideas in green technology.

"Warren Weiss, a managing director of Foundation Capital in Menlo Park, which has made four clean-technology investments in the past three years, singled out several start-ups that he said piqued his interest. 'Bringing together fresh businesses with the best universities, it's really Silicon Valley-style here today,' he said. 'It's exciting.'"

> "Clean Tech Start-Ups Tout Wares for VCs" *Mercury News* September 27, 2006









The "start-up" in a box package of cash, office space, and in-kind services that each category winner received was designed to provide these new entrepreneurs with the essentials needed to get their start-up companies off the ground, and in the optimal position to attract additional capital investment to grow their businesses.

The prizes for each category winner included:

Cash

\$50,000 category prizes provided by Agora Foundation; AMD; Lexus; Pacific Gas and Electric Company, Southern California Gas Company, and Southern California Edison; and Mark Farley, Charlene and Derry Kabcenell, Frank H. Levinson, Geoff Ralston, and Michael and Amy Santullo

Office Space

\$25,000 in office space provided by PG&E and Plug & Play Real Estate

Legal Services

\$5,000 in legal services provided by Wilson Sonsini Goodrich & Rosati

Public Relations

\$5,000 in public relations services provided by A&R Edelman

Accounting Services

\$5,000 in accounting services provided by Horn Murdock Cole

Executive Search Services

\$25,000 in executive search services provided by PeopleConnect

Other Services

\$15,000

Total Value for Each Winner \$130,000 "All of the in-kind services have helped us get traction in those areas quicker than we had anticipated because of the willingness and enthusiasm demonstrated by these partners, who are the best in their respective fields. WSGR has provided fantastic counsel for us, we have a new hire in mind from PeopleConnect, A&R Edelman has already begun to engage on the PR front, and we're excited about starting our relationship with Horn Murdock Cole. We can't wait to move into our new offices that were provided by PG&E!"

> Bob Cart, CEO and Co-Founder GreenVolts Renewables Winner



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Prize Contributors







WER Wilson Sonsini Goodrich & Rosati





Energy Efficiency

Sponsored by California Investor Owned Utilities

The Energy Efficiency category comprises technologies that can significantly reduce wasted energy, focusing on the common goal of saving the equivalent of "a power plant a year." Examples include advanced light sources, solid-state power flow controllers, and wide area measurement systems.



The Energy Efficiency award was presented by Bill Morrow, President and COO, PG&E.

"We celebrate our 30th year of putting in place California energy efficiency programs. When we look at the statistics across the United States, Californians lead by using less than half the energy of what others use in comparable states.

"PG&E does not want to stop here. We intend to invest one billion dollars over the next two years to further this program. In fact, when you look at our statistics today, nearly one third of the energy delivered to the homes in California is done so with renewable sources, including solar, wind, and hydro. And, half of the energy delivered is either emission- or carbon-free."

> Bill Morrow, President and COO PG&E



WINNERS

Adura Technologies

Adura Technologies provides a wireless lighting management solution designed to save businesses over 50% on lighting energy costs and offers a quick payback. With flexibility enough to allow easy configuration for growing or shrinking lighting needs, Adura enables dramatic energy savings as well as dynamic control capabilities.



"It is indeed very strange for us to take calls

from VCs who first congratulate us on our award and then ask us if we would be interested in meeting."

> Zach Gentry, CEO Adura Technologies Energy Efficiency Winner

Energy Efficiency Finalists Teams

Adura Technologies Aquarian Microsystems High Merit Thermoelectrics Hyphase Energy | Systems Research Corporation NiLA, Inc. NovaTorque Practical Technology Reclaim Electric Zikon Electronic Ink

"I entered the competition in the hopes of getting more exposure for my company NiLA, Inc. in the clean tech space, and got much more out of the whole experience. Investors stop and listen when I tell them that NiLA, Inc. was a runner-up in the CCTO."

> lim Sanfilippo, CEO NiLA, Inc. Energy Efficiency First Runner-Up







Transportation Sponsored by Lexus

The Transportation category encompasses technologies that improve fuel mileage, reduce air pollution, and minimize dependence on gasoline. Examples include more efficient batteries, affordable fuel cells, and readily available flexible fuel vehicles.



Lexus provided hybrid vehicles, the RX 400h and GS 450h, for display outside San Francisco City Hall during the launch and finalists' events.

"Possibly the biggest boon from KiteShip's winning the California Clean Tech Open is the sense of validation it has provided. Our founding team has toiled at this technology for ages, and daily enthusiasm is sometimes hard to sustain. The validation, not only of our peers, but of some of the best venture capital and innovating minds in Silicon Valley have been a huge shot in the arm for our people, our business plan, and our company's opportunities. We heartily thank all involved."

> Dave Culp, CEO Kiteship Corporation Transportation Winner





WINNERS

KiteShip Corporation



The world's fleet of 90,000 ships burns two billion barrels of heavy fuel oil a year, producing three times as much atmospheric pollution as all of the automobiles on the planet put together. KiteShip develops, builds, and sells very large traction kites, which reduce ship owners' crippling fuel costs by up to 25%, and vastly reduce emissions of greenhouse gases and pollutants.

Transportation Finalists Teams

AC Fox Aurora Biofuels BGT Biogasoline Compressor Control Company KiteShip Corporation RideSpring SAgA Fuel Systems, Inc. SoCool, Inc. Thermokinetics "Frankly, the process has been even more valuable to us than the prizes. The CCTO organization was extremely free and open with regard to training, mentoring, and critiquing the process of fine-tuning our business plan, which we feel is now world-class."

Dave Culp, CEO KiteShip Corporation Transportation Winner







Smart Power Sponsored by AMD

The Smart Power category encourages the link between IT and electricity delivery - building an "energy web" that gives consumers greater control over when and how their energy is delivered and used. An example is energy portals with real-time pricing information.



The Smart Power award was presented by Donna Sadowy, Senior Member, Technical Staff Global Environmental Health & Safety, AMD.

"For some of the award winners, we understand the competition will enable them to pursue growth into the U.S. national market. For others, the competition will allow them to promote their technology as a solution everywhere from high growth markets to high tech facilities. We think the competition did a good job in providing tools, training and recognition, not only to the prize winners, but to the finalists in each category."

> Donna Sadowy, Senior Member, Technical Staff Global Environmental Health & Safety AMD



WINNERS

EDC Technologies

EDC Technologies has developed a hot water controller that reduces natural gas consumption in multi-family apartments, condominiums, dormitories, and hotels and motels by 15-40%. The technology allows users to see proof of their savings via the Internet, where they are offered the ability to view performance of other components within their hot water environment.

Smart Power Finalists Teams

EDC Technologies Em2 Energy Box Energy Recommerce Grid Saver Hive Power Wireless Load Shedding

> "We learned a lot from taking part in the competition. Both the workshops and the mentoring have facilitated the development of the company and prepared us for future growth. It has also provided great exposure to both customers and investors ... We are now in the process of seeking funding, and I can directly apply what we learned from participating in the CCTO."

Peter Rexelius, CEO Energy Recommerce Smart Power First Runner-Up



SMART POWER PRIZE CALIFORNIA CLEAN TECH OPEN 2006 WINNER





Renewables

Sponosored by Mark Farley, Charlene and Derry Kabcenell, Frank H. Levinson, Geoff Ralston, and Michael and Amy Santullo

The Renewables category includes innovations that enable and accelerate the migration to renewable energy and materials. Energy examples include widely distributed, low-emission power sources, such as fuel cells and solar power, as well as biofuel, ethanol, and biomass. Material examples include agricultural-based plastic substitutes and waste stream reuse technologies.



The Renewables award was presented by Bill Morrow, President and COO of PG&E.

"The California Clean Tech Open competition gave CoolEarth Solar a lightning course in Silicon Valley business. It relentlessly rushed and guided us to craft a competitive business plan starting with nothing but a great technology. The competition introduced us to investors and mentors, culminating in a 'you-can't-pay-for-thiskind-of-press' opportunities, as we were invited to present at Solar Power 2006, the world's premier solar energy meeting.

"It was the most stressful summer of my life, but CoolEarth Solar is now off the ground and on our way to making solar electricity beat coal without subsidies, thanks to the CCTO."

> Eric Cummings, Founder Cool Earth Solar Renewables First Runner-Up





WINNERS

GreenVolts

GreenVolts supplies renewable energy, matching peak demand at costs competitive with natural gas used for peak demand generation. GreenVolts' revolutionary High Concentration Photovoltaic (HCPV) technology produces energy at half the cost of traditional solar panels without reliance on scarce silicon wafers.

Renewables Finalists Teams

Aerotecture International CoolEarth Solar GreenVolts NuEdison Practical Technology SEPCOR SolarRoofs, Inc. Stellaris Corporation Sun Phocus Technologies Viresco Energy, LLC "Both investors and potential customers have heard of GreenVolts through the CCTO, and they are instantly confident in us as a company because they know a distinguished group of investors, financiers, technologists, and others have reviewed and endorsed our business plan and early activities."

> Bob Cart, CEO GreenVolts Renewables Winner









WINNERS

Water Management Sponsored by Agora Foundation

The Water Management category focuses on improving the availability of clean water for sustainable growth and improved public health, as well as conservation and efficiency. Examples include advanced water treatment techniques and water-efficient appliances.



"The California Clean Tech Open was a refreshing combination of critical business analysis combined with recognition for social responsibility. We were driven to defend a sound business plan and demonstrate the reality of our socially responsible mission to a host of qualified business people and technically astute advisers. The working sessions were enlightening and on target for the goal of developing a progressive company, and we thank CCTO for the great support and guidance throughout."

> Dan Matthews, President Meridian Design, Inc. Water Management First Runner-Up







Crystal Clear Technologies

"Investors and opportunities are coming our way solely because of the CCTO win. It was not just a panel of five that reviewed our business plan, but a community of highly educated and knowledgeable professionals, respected in their field, that lent full credibility to the award."

> Lisa Farmen, CEO Crystal Clear Technologies Water Management Winner

Crystal Clear Technologies (CCT), using nanocoating technology, has created proprietary filter media with dramatically higher absorption capability and capacity than currently available media, at considerably lower costs. CCT can deliver potable water from a river at \$1.50/100 gallons, versus competitive systems that offer \$16.50 - \$49/100 gallons.

Water Management Finalists Teams

Acillix Incorporated Aqua Pura Technologies A-Z Comp Crystal Clear Technologies Ferrate Solutions Filtratin Dynamics Meridian Design, Inc. WaterWise Systems



WATER MANAGEMENT PRIZE CALIFORNIA CLEAN TECH OPEN 2006 WINNER



FINALISTS

Forty-seven finalists were chosen from 156 business plan submissions that ranked the highest in their categories by concept and their potential to lead the future of clean technology. Finalist teams were chosen based on viability of technology, business concept, financials, market dynamics, team members, and environmental sustainability.

Energy Efficiency

Adura Technologies - 2006 California Clean Tech Open Winner

Adura Technologies provides a wireless lighting management solution designed to save businesses over 50% on lighting energy costs with a quick payback. With flexibility enough to allow easy configuration for growing or shrinking lighting needs, Adura enables dramatic energy savings as well as dynamic control capabilities. www.aduratech.com

Aquarian Microsystems

Aquarian Microsystems intends to replace passive pressure-drop copper tubes in refrigeration and air-conditioning units with an active microvalve that will result in improvements of between 3% and 12% in appliances such as residential refrigerators.

www.aquarianmicro.com

High Merit Thermoelectrics

High Merit Thermoelectrics (HMTE) is a thermoelectric (TE) device manufacturing company that offers devices that include an innovative material that out-performs the competition, nearly quadrupling device efficiency. These devices are long-lasting, compact,



environmentally-benign power sources that directly convert heat into electrical energy and can be utilized world-wide (anywhere excess heat is produced). www.highmerit.com

www.nignment.com

Hyphase Energy

Hyphase Energy is developing a fuel cell-enabling technology known as Catalyst Enhancing PolymersTM (CEPTM) that will reduce the amount of platinum required to run a given fuel cell by half, improve fuel cell performance, and lower production costs. www.hyphaseenergy.com

J Systems Research Corporation (JSRC)

JSRC products are modules and components of an air conditioning system consisting of two components: heat exchangers that are smaller than others with similar capacity while providing substantially higher EER, and compressors that will initially have capacities of 65,000 BTUs in a smaller and lighter package.





NiLA, Inc. - 2006 California Clean Tech Open First Runner-Up

NiLA is building the NiLA Lighting System, an environmentally sustainable LED lighting system for film and television production. The NiLA Lighting System contains no lead or mercury, uses 50% less energy, lasts 25% longer, and generates 70% less heat than traditional lighting systems.

NovaTorque

NovaTorque has developed patent-protected, bench-top proven motors that reduce energy consumption, heat build-up, and product size. While focusing on manufacturability and production costs, NovaTorque expects to replace less efficient five horsepower motors while remaining price competitive. www.novatorque.com

Practical Technology

Practical Technology's high efficiency Photonic Band Gap (PBG) lighting solution overcomes the cost and compatibility limitations of today's energy efficient lighting. PTI's solution uses a costeffective PBG manufacturing process to yield lighting of similar quality and cost to conventional incandescent lights at efficiencies of LEDs.

Reclaim Electric

Reclaim Electric's innovative system will generate valuable power from the vast waste heat emitted by computers, HVAC and other equipment. While reducing energy costs as well as indirect greenhouse gases, Reclaim's system is ideal for large data centers and other large facilities looking to cut back on inefficient processes and energy demands.

Zikon Electronic Ink

Zikon's nanotechnology-based Electronic Ink enables next generation flat and flexible displays for consumer and commercial applications ranging from TVs, cell phones, and laptops to electronic labels and toys. Zikon's Ink will enable its partners and customers to produce low cost highly reflective flat panel displays through application of proven patented technology and processes.

Transportation

AC FOX

AC FOX is a new thermal reactor product that uses the concentrated thin stillage "syrup" to generate heat energy for an ethanol plant. Use of AC FOX improves ethanol profitability and enhances the energy balance of ethanol as a fuel. AC FOX allows for complete disposal solution for the "syrup" byproduct while simultaneously producing low cost process heat and lowering CO2 emissions. The possibility of savings is over \$400 million in energy costs and reduced CO2 emissions by four million tons per year.







Aurora Biofuels - 2006 California Clean Tech Open First Runner-Up

Aurora's proprietary technology, developed at the University of California, Berkeley, allows Aurora Biofuels to create biodiesel with 130x higher yields and 50% lower costs than current production methods. http://aurorabiofuels.com

BGT Biogasoline

BGT Biogasoline's technology converts sugar through initial fermentation to butyric acid, conversion of the butyric acid to hexane, and isomerization of the hexane into high-octane (i.e., 93 octane) hexane isomers with higher energy content than ethanol. Since BGT Biogasoline processes the same feedstock as ethanol producers, there is sufficient existing feedstock to produce billions of gallons of biogasoline per year. Unlike ethanol, biogasoline can be used in existing gasoline engines, shipped via pipelines, blended with petroleum-based gasoline, and stored in gas stations without costly modifications. www.bgtbiogasoline.com



Compressor Control Company

Compressor Control Company's (CCC) first product is a patented pneumatic electric device (PED) that is an electrical energy storage and control mechanism. This fully controllable electric storage system completely replaces batteries and power control electronics in many high power mobile and stationary applications. The PED is used to greatly extend battery life in both conventional and "plug-in" hybrids. The PED is low cost and is manufactured with existing components from mature high volume industries. It is safe, non-toxic, and uses only recyclable materials.

phxmotor@aol.com

KiteShip Corporation – 2006 California Clean Tech Open Winner

The world's fleet of 90,000 ships burns two billion barrels of heavy fuel oil a year, producing three times as much atmospheric pollution as all of the automobiles on the planet put together. KiteShip develops, builds, and sells very large traction kites, which reduce ship owners' crippling fuel costs by up to 25%, and vastly reduce emissions of greenhouse gases and pollutants. www.kiteship.com

RideSpring

RideSpring is a Web-based service that significantly increases the use of carpooling at client companies. RideSpring is a company-focused alternative commute service that makes it easy for co-workers to find suitable carpool partners at work. The system is incentive-based and is ideal for companies of 100 employees or more. www.ridespring.com



SAgA Fuel Systems, Inc.

SAgA Fuel Systems has developed and patented the Sustainable Agricultural Additives (SAgA) renewable fuel system technology. SAgA covers a spectrum of formulations that combine vegetable oils, alcohols, and water into remarkably clear, stable micro-emulsions that can be blended to match the viscosity of any host fuel including diesel, gasoline, heavier fuel oils, and biofuels.



SoCool, Inc.

SoCool has created a solar-powered air conditioning unit to fit in the existing footprint of a passenger vehicle's sunroof or moonroof, and operates while the vehicle is moving, idling or shut off. The device operates without an electrical or mechanical connection to the car's power resources or AC unit. Because the unit is not gaspowered, the vehicle could get as much as a 21% increase in gas mileage on a hot day. www.travelsocool.com

Thermokinetics

Thermokinetics is developing a family of advanced internal combustion engines and an underlying engine technology. "The Engine" employs a thermodynamic cycle that is different from and more efficient than current engines, resulting in a nearly 50% reduction in fuel consumption and pollutant emissions, including carbon dioxide, and is compatible with a wide range of liquid and gaseous fuels.

thomasrobinson828@comcast.net

Smart Power

EDC Technologies - 2006 California Clean Tech Open Winner

EDC Technologies has developed a hot water controller that reduces natural gas consumption in multi-family apartments, condominiums, dormitories, and hotels and motels by 15% - 40%. The technology allows users to see proof of their savings via the Internet, where they are offered the ability to view performance of other components within their hot water environment. www.savegas.com

Em2

Em2 is taking a unique perspective to automatic metering infrastructure (AMI) in order to develop a communication network capable of supporting a wide variety of data clients that include utility metering and control, enabling more efficient usage of limited energy resources. AMI's system is an open standards communication network that uses Internet Protocol (IP) and a variety of installed (and future) communications infrastructures to service a variety of clients. The system supports multiple wide area network backbone transmission mediums including, but not limited to, power lines, telephone lines, fiber, and cellular networks.





Energy Box

The Energy Box is a battery-based electrical energy platform that supports add-ons for electrical generation, usage, and management. Its base price will start in the 100s of dollars and will be packaged so it can be used and assembled without having an electrician's license. The vision is to unleash a revolution in home electrical energy that is equivalent to the PC revolution.

Energy Recommerce - 2006 California Clean Tech Open First Runner-Up

Energy Recommerce provides Web-enabled monitoring systems and services to help private and commercial energy investors maximize their return on investment. The monitoring system, and its related services, helps to ensure its photovoltaic system performs as expected throughout its lifetime.

www.energyrecommerce.com

Grid Saver

Grid Saver is an appliance remote control system that provides real-time distributed demand response to utilities and grid operators without producing associated greenhouse gases. Utilities instantly regain electrical capacity during high electric demand periods by switching off major appliances through a single control point.

Hive Power

Hive Power intends to create a renewable energy utility for the state of California that will offer its members clean energy that is affordable, and comes from local, distributed, renewable sources. Hive Power will give customers a choice of energy source while benefiting the greater community by increasing the total renewable power in the grid. www.hive-power.com

Wireless Load Shedding

Wireless shedding of electrical load enables utilities and customers to exercise control of gridwide, temporary load surges, and respond intelligently to local fluctuations of power demand and global fluctuations in power price.

Renewables

Aerotecture International

Aerotecture International has developed aeroturbines that can use turbulent or gusty winds silently without vibration. They can easily be integrated into existing structures or design plans, and use buildings or other wind barriers as accelerators instead. The turbines are selfregulating and easily visible to birds. www.aerotecture.com

CoolEarth Solar – 2006 California Clean Tech Open First Runner-Up

CoolEarth has developed a proof-of-principle model for inflatable solar concentrators, has begun prototyping the water-cooled photovoltaic receiver, and designed the concentrator support and harness structures. CoolEarth uses a mix of proprietary systems and manufacturing processes with integration of off-the shelf technologies to build concentrators that collect sunlight 25% less expensively than one-sun photovoltaics, while creating opportunities for generating recurring revenues.

www.coolearthsolar.com



FINALISTS

GreenVolts – 2006 California Clean Tech Open Winner

GreenVolts supplies renewable energy, matching peak demand at costs competitive with natural gas used for peak demand generation. Its revolutionary High Concentration Photovoltaic (HCPV) technology produces energy at half the cost of traditional solar panels without reliance on scarce silicon wafers. www.greenvolts.com

NuEdison

NuEdison has developed a photovoltaic module that reduces the amount of silicon solar cell material required for a given power output, reducing module cost and increasing productivity. Concentrating optics generate more power from less cell area, which reduces manufacturing costs by an estimated 25%. www.nuedison.com

Practical Technology

Practical Technology's low-cost, high-efficiency, high-concentration fixed trough solar photovoltaic system combines advantages of several existing technologies to yield high amounts of energy per land area at rates competitive with conventional utilities.

SEPCOR

SEPCOR has built a working 2kW system that has been operating at a major university in California since December 2005. Starting in June 2006, this demonstration unit will be expanded to a 30kW power plant. SEPCOR is now seeking to raise additional capital to build a 1 MW thermal solar generating production plant. www.sepcor.net

SolarRoofs, Inc.

SolarRoofs has a patent for an innovative collector, the MegaMat, along with advanced designs for all the components of a complete solar thermal system. The company's founder was instrumental in creating the first generation of solar thermal systems. This new company will develop the next generation of solar thermal collectors.



Stellaris Corporation

Stellaris has developed a system that reduces the cost of solar modules by more than 40% and increases their efficiency by more than 20%, leaving a module cost of \$1/watt. With a high-speed manufacturing process and unique architectural aesthetic qualities, Stellaris' solar energy solution is positioned to make an easy entrance into the market. www.stellaris-corp.com





Sun Phocus Technologies

Sun Phocus dramatically improves the costeffectiveness, efficiency, and aesthetics of buildingintegrated solar power. Sun Phocus intends to sell its patented HoloSunTM solar concentrator to manufacturers of electricity-generating windows, skylights, shingles and spandrel, which compose the \$2.75 billion global building-integrated photovoltaics (BIPV) market. www.sunphocus.com

Viresco Energy, LLC

Viresco Energy is a green energy company established to commercialize a revolutionary hydro-gasification technology developed at the University of California, Riverside. This proprietary thermo-chemical process produces sulfur-free liquid fuel and other usable energy forms from renewable energy sources, such as agricultural residues, green and woody waste, and other carbonaceous matter: www.virescoenergy.com

Water Management

Acillix Incorporated

Acillix is developing a microbial-based technology for demineralizing water for industrial use. The technology offers complementary performance for reverse osmosis (RO). Acillix will significantly reduce operating expenses for industrial water consumers currently using RO systems while reducing water purchasing, sewage disposal, overall energy costs, and generating a marketable byproduct – industrial salt. www.acillix.com

Aqua Pura Technologies

Aqua Pura's mission is to revolutionize the water remediation industry. The strategy is to license HydroxiRem, the lowest-cost method for destroying organic-based water pollution, to existing remediation firms.

A-Z Comp

A-Z Comp has come up with a method of removing oil and hydrocarbons from water that significantly surpasses the filtering efficiency (by at least 100x) and costs less (at least half) than existing methods. www.azcomp.us





FINALISTS

Crystal Clear Technologies - 2006 California Clean Tech Open Winner

Crystal Clear Technologies (CCT), using nanocoating technology, has created proprietary filter media with dramatically higher absorption capability and capacity than currently available media, at considerably lower costs. CCT can deliver potable water from a river at \$1.50/100 gallons, versus competitive systems that offer \$16.50 - \$49/100 gallons. www.simplyclearwater.com

Ferrate Solutions

Ferrate has developed a water treatment technology that involves a powerful disinfectant with more oxidation potential than chlorine or ozone. The process results in only harmless residue with no soluble residue.

Filtration Dynamics

Filtration Dynamics has the concept, potential, and goal to improve the drinking water and wastewater treatment market with a time, space, and energy-saving patents-pending fluid filtration technology. The approach is designed to address industrial, agricultural, and municipal wastewater prior to addressing drinking water.

Meridian Design, Inc. - 2006 California Clean Tech Open First Runner-Up

Meridian Design has the capability to create a \$20 retail water purification system that eliminates all water-borne pathogens. The technology is based on ultra-violet light purification, and is free of consumption or maintenance issues. The system is designed to improve drinking water in developing regions of the world.

WaterWise Systems, Part of Ed Burton Company (EBC)

EBC has developed "living machine" biotechnologies and a business plan for utilizing waste water from municipalities to sub-irrigate wastewater forests. This solution will produce large stands of trees, which sequester carbon dioxide into biomass, producing shade and microclimate buffers.

www.edburtoncompany.com



ORGANIZERS

California is filled with entrepreneurs looking to change the world. In the fall of 2005, a group of such entrepreneurs decided to start a competition to help accelerate the creation and adoption of clean technologies. The MIT Club of Northern California's Renewable Energy and Clean Technology Series provided a forum for these like-minded entrepreneurs to find each other. The MIT Enterprise Forum of Cambridge provided inspiration in the form of the Ignite Clean Energy Competition. By December 2005, a steering committee was formed and the competition planning process had begun in earnest. Two organizations joined the competition as early supporters, providing tremendous manpower and support - A&R Edelman and WSGR.



Michael Santullo, Entrepreneur* Competition Co-Chair

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Benjamin Matteo, Entrepreneur* President, MIT Club of Northern California Research Community Outreach Chair

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*Member of the Executive Council of The California Clean Tech Open

ORGANIZERS



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CONTACT INFORMATION

For more information about sponsorships or business plan submissions for the 2007 competition, please contact us.

California Clean Tech Open 2006

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Please email any comments or questions to one of the email addresses below:

For questions related to participating in the competition: contestants@cacleantech.com

For sponsorship questions and opportunities:

sponsors@cacleantech.com

To volunteer: volunteers@cacleantech.com

For media questions:

media@cacleantech.com

For website issues: webmaster@cacleantech.com

Any other questions:

info@cacleantech.com

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ARE YOU READY?

The organizers of the California Clean Tech Open have officially launched:

CALIFORNIA CLEAN TECH OPEN - 2007

Calling All Clean Technology Entrepreneurs, Inventors, Sponsors, and Those Who Believe in Clean Tech

Join us in accelerating the transformation of great ideas into thriving businesses that will make California a clean technology powerhouse, and the 21st Century the Clean Tech Age.

www.cacleantech.com



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