



CleanTECH San Diego



Background

CleanTECH San Diego was created in 2007 to:

- **Support Job Creation.** Advance and diversify the San Diego region's economic development goals
- **Build a Common Agenda.** Bring together the region's diverse clean technology Stakeholders around a common agenda
- **Prepare for the New Economy.** Help San Diego prepare for and benefit from California's proactive regulatory policies
- **Mission:** Accelerate the San Diego region as a world leader in the clean technology economy



Why San Diego?

- **World Class Research Institutes.** A track record for taking innovations out of the lab and creating companies and economic engines
- **History of Building Economic Clusters.** San Diego's clean tech cluster is a natural extension of our existing high tech, biotech and defense clusters. Its all about convergence
- **Strategic Partner Leadership.** The incumbent utility and public university each have best of class rankings which serve as anchors to the clean tech industry
- **Robust Private Sector Activity.** 767 clean tech companies call San Diego home. Upward ticking trend
- **Strong Regional Cluster Organization.** CleanTECH San Diego works to leverage these assets



World-Class Research Institutions

Today there are over 75 research institutes in San Diego with five founded in the last two years

- The Scripps Institution of Oceanography (1903)
- University of California San Diego (1960)
- Salk Institute (1960)
- San Diego Center for Algae Biotechnology (SD-CAB) (2009)



IT/Wireless Industry

Over 3,000 IT and Wireless Companies Call San Diego Home

- **Linkabit** was founded by UC San Diego professor Irwin M. Jacobs in 1968 as the region's first "high tech" communications company.
- Strong crossover to clean tech with software, wireless and IT applications emerging in the clean tech sector



Defense and Security Industry

There are more than 260 defense and security companies operating in San Diego

- Ruben H. Fleet opened the **Consolidated Aircraft** plant in San Diego in 1935
- Companies like General Atomics have expanded operation to include solar energy and biofuels
- SPAWAR is a prolific developer of clean technologies



Biotech Industry

San Diego houses over 600 life science and biomedical companies

- **Hybridtech** was founded in 1978 by UC San Diego professors Ivor Royston and Howard Birndorf as the first “Biotech” Company in San Diego
- Strong crossover to clean technology with biofuels and nutraceuticals.



San Diego Companies Founded by UC San Diego Alumni

Source: San Diego Business Journal, March 28, 2011,

“San Diego County companies founded by UC San Diego alumni, faculty and staff by annual sales 2009 – 2010”

Qualcomm Inc
Life Technologies Corporation
ViaSat, Inc.
Cymer, Inc.
Genoptix, Inc.
American Specialty Health Networks
Entropic Communications
GlobeFlex Capital L.P.
WorldSmart Corporation
Sapphire Energy
Senomyx
Cytori Therapeutics, Inc
Vical, Inc
Sangart, Inc
Gaslamp Insurance Services
AwarePoint
Ortiva Wireless, Inc
ItherX Pharmaceuticals, Inc
Active Motif, Inc
Martinez + Curti Architects
Sotera Wireless, Inc
Rore, Inc
Waterside Center
Ceregene
Airsis, Inc
BrainCells, Inc

Genomatica, Inc
MO Bio Laboratories
Surf Diva, Inc
T...
...
Receptos
WaveLoch
WebPRpro
Nautilus Environmental LLC
Celladon Corp
Traversa Therapeutics
Direct Electron, L.P.
Gravity Skateboards
Huntington Capital
PixelActive, Inc
Seashell Technology, LLC
Carlton Disante & Freudenberger
Lithera, Inc
Sonicboomwellness.com
M Ship Co, LLC
Reality Changers
...
...
Neuro Vigil
Talensmart, Inc

San Pasqual Winery
Precision Measurement Engineering Inc
Andrews, Lagasse, Brand and Bell LLP
Quantitative BioSciences
Sandra Dijkstra Literary Agency
Opus Pharmaceuticals, Inc
La Jolla Networks
App2you, Inc
Biological Dynamics
Insiliconed, Inc
Chua Cholater, Inc
Quanlight
...
PulsoSense
Roger Bradley Consulting
Sensormatrix
eProcesses Consulting
Psynomics, Inc
Aviva Systems Biology Corporation
GlySens Inc
SanTech, Inc
...
Nul...
Sorrento Mesa Printing

SciVee
Immersive Media Research
Mathmagical Images
Network Digitality
Crinetics Pharmaceuticals
Emitations.com
Cogionics
Sparkle Farm
Photometria, Inc
MyCats
Nereus Pharmaceuticals, Inc
AEC One Stop Group
...
Bates White
Better Business Funding LLC
Brightcloud Inc
CardioSync Technologies
Cerian Technology Ventures
Covario Inc
Craftsman Wood Refinishing
Dance or Die
David L Christopher
Delphi Private Advisors
Denfran Systems Inc
Domani Investments LLC

Qualcomm, Inc.

Sapphire Energy

Silver Wood Energy Inc.



San Diego Leads in Patent Activity

San Diego shows higher growth in average number of patents published and granted than other regions in CA and Boston

- Over the past two years, the average number of patent applications published per quarter in San Diego increased by more than 8%,
- The average number of patents granted per quarter increased by 40%.

INCREASE IN REGIONAL PATENT ACTIVITY PER QUARTER - 2009 to 2010



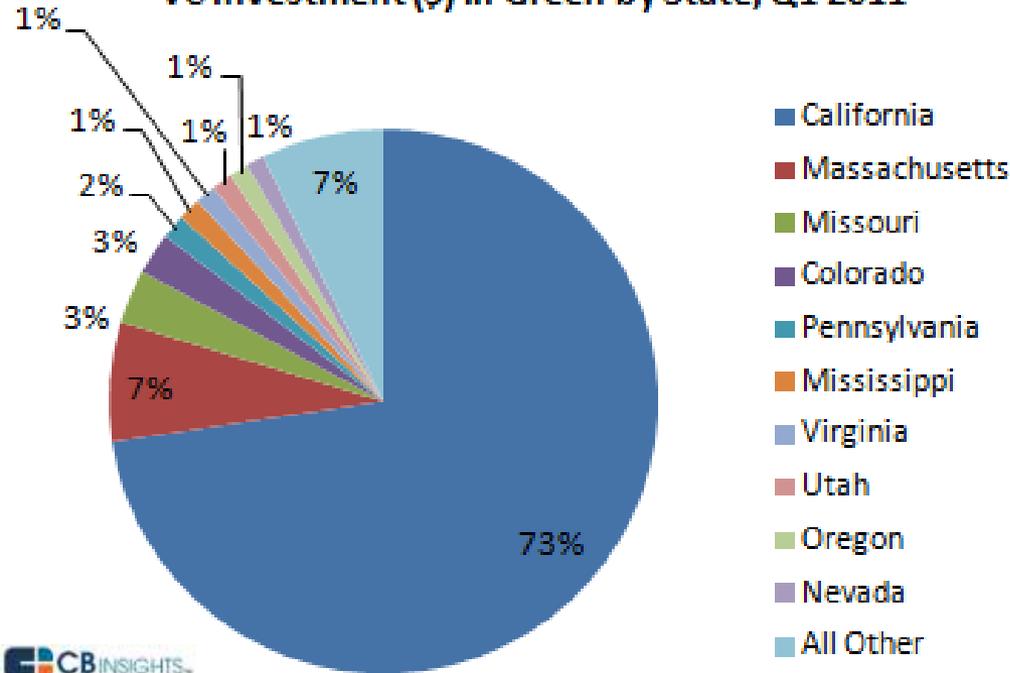
Source: United States Patent and Trademark Office; UC San Diego Extension; CONNECT.



California Leads with 73% of Clean VC in U.S.

San Diego Leads in Number of Deals Funded

VC Investment (\$) in Green by State, Q1 2011



Top 10 Cities by Deals

San Diego, CA	(4 deals \$62M)
San Jose, CA	(3 deals \$80M)
Santa Clara, CA	(2 deals \$197M)
Sunnyvale, CA	(2 deals \$121M)
Oakland, CA	(1 deals \$201M)
Irvine, CA	(1 deals \$150M)
San Leandro, CA	(1 deals \$135M)
Santa Monica, CA	(1 deals \$76M)
Pleasanton, CA	(1 deals \$75M)
Kansas City, MO	(1 deals \$58M)



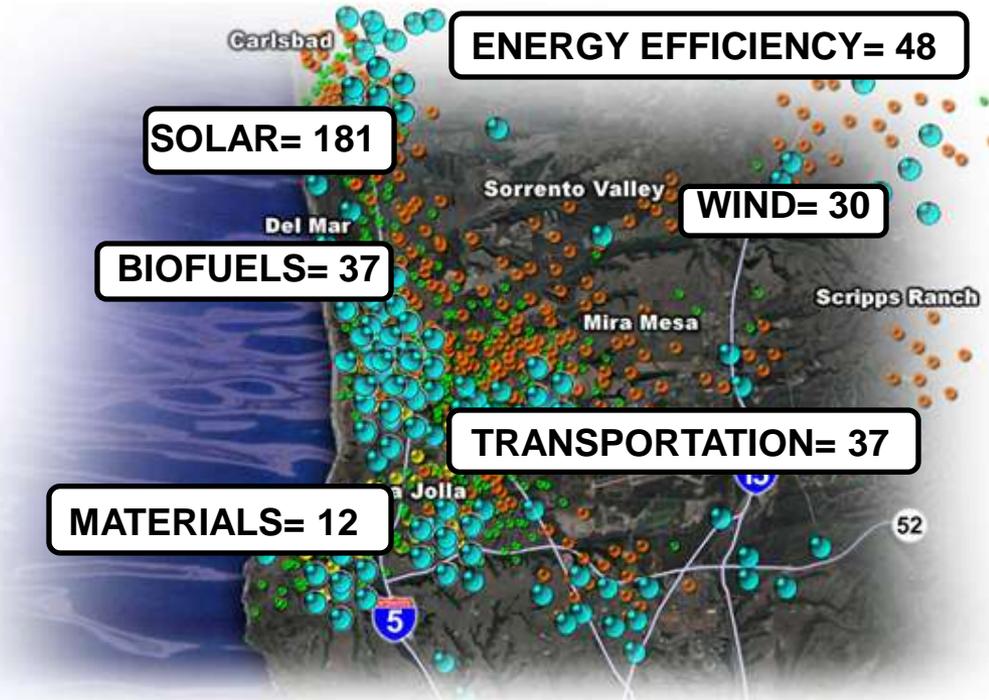
The San Diego Clean Tech Economy

Top 10

Cleantech Cluster
Organizations for 2010!

767 Clean Tech Companies and Counting

- Robust, upward trending new company growth
- Over 300 innovator companies and over 400 market enabler companies
- County-wide distribution. Dense formation around universities, research institutes and colleges
- Strong activity in solar, transportation, batteries, energy storage and biofuels



Solar Leadership: Adoption, Innovation and Manufacturing

Nearly 200 solar companies call San Diego home

California's Number 1 Solar City

- San Diego has highest solar PV adoption rates in the state with 100 MW installed.

Solar Manufacturing

- Soitec Solar selected San Diego for its manufacturing site, adding 500 new high tech jobs.
- Siliken, Kyocera and others also committed.

Secured \$154M CREBS Allocation

- Will support new jobs and approximately 20 MW of power.
- 1 of 5 dollars available came to San Diego

iHUB Designation - Solar Energy Storage



CREBS Winners

San Diego Scores Big with Clean Renewable Energy Bonds

- San Diego Region Secures \$154 MM in CREBs
- Allocation is 19% of Total Moneys Available
- Financing Opportunities will Support New Jobs and 20 Megawatts of New Solar Power Projects. Winners Include:

City of Chula Vista	\$29,648,926
City of Lemon Grove	\$1,004,494
Fallbrook Public Utility District	\$292,091
San Diego State University	\$2,442,005
San Diego Unified School District	\$74,290,010
San Dieguito Union High School District	\$8,269,000
City of Santee	\$3,081,420
Santee School District	\$20,660,000
University of California, San Diego	\$14,961,540
Total for San Diego Region	\$154,649,486



UCSD Clean Renewable Energy Project

Project Details

- Awarded to Sullivan Solar Power, May 18, 2011.
- Total Contract cost: \$3.52M.
- Sullivan provided highest quality proposal and lowest cost.
- Campus plans to realize a net energy cost savings of ~\$1.8M over next 20 years.
- Plan to complete project by March 2012.



Energy Efficiency and Smart Grid

Innovation Hotbed

- Flux Power, Xnergy, Lightwave Photonics

Utility Leadership

- SDGE designated 'Most Intelligent Utility in Country' for two years running
- Seamless and proactive advanced meter installations

University Leadership

- UCSD is home to the most advanced microgrid in the country

New Collaborative: Smart City San Diego

- Partnership between San Diego, UCSD, SDGE, GE and CleanTECH San Diego, designed to set the measureable standard for sustainability.



Clean Transportation

Industry

- Innovation from small and large companies on charging, metering, storage and fuel choice.
- Home to nearly 40 clean transportation companies

EV Adoption is Here: San Diego is out Front

- 2,000 Evs expected to hit San Diego streets this year alone
- EcoTality deploying part of \$230MM DOE grant to install charging stations

Region is Preparing for Largest Deployment in History

- SDG&E preparing for grid impacts
- UCSD researching grid and storage scenarios
- City and CleanTECH San Diego exploring regulatory strategies to support deployment



Nissan LEAF



Chevrolet Volt



Biofuels: San Diego at its Best

Over 30 biofuels companies in San Diego

- Strong research assets
- Imperial Valley link

Already an economic contributor

- SANDAG study shows 410 direct jobs
- \$108 million in total economic activity

State and national visibility

- State iHub designation
- Strong press. DCI provides national reach

EDGE Initiative

- Workforce training for biofuels industry
- Partnership with BIOCUM, EDC, UC San Diego and San Diego Workforce Partnership

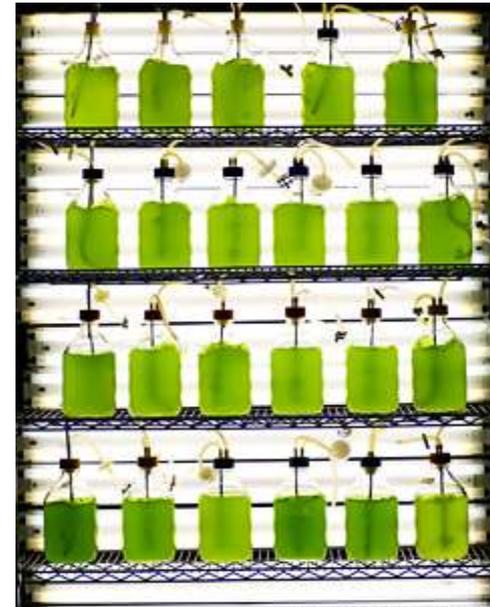


PHOTO: DAVID YELLEN



International Leadership: Expanding our Reach

San Diego Launches Global Clean Tech Cluster Association

- 30 Countries participate worldwide
- Showcase 10,000 international companies and 500 universities and research institutions

CleanTECH San Diego Ranked Top 10 Cluster Organization in the World

- Only two other US Clusters Ranked

International Partners and CleanTECH Members:

- AUSTRADE
- Consulate of Canada
- German Consulate
- Swedish-American Chamber of Commerce
- Swisscleantech
- Toronto Stock Exchange
- United Kingdom Consulate
- World Trade Center



