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REGIONAL SEMINAR 2012

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The **Power** of **Data**



San Diego's Cleantech Economy

Presented by **Jason Anderson, CleanTECH San Diego**



CleanTECH San Diego

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



Top10 | Cleantech Cluster Organizations

www.cleantechsandiego.org

CleanTECH San Diego Members

ACADEMIC

- *San Diego State University
- *Scripps Institution of Oceanography
- *UC San Diego

GOVERNMENT

- *City of Chula Vista
- *City of San Diego
- City of Santee
- City of Escondido
- *Port of San Diego
- San Diego County Regional
- Airport Authority
- San Diego Unified School District

INTERNATIONAL PARTNERS

AUSTRADE

- Consulate of Canada in San Diego
- Global CleanTech Cluster Association
- World In-Arm-Scam Chamber of Commerce
- Swiss CleanTech
- Toronto Stock Exchange
- United Kingdom Trade & Investment

NON-GOVERNMENTAL

- *BIOCOM
- *CONNECT
- Clean Technology and Sustainable Industries Organization

World Trade Center San Diego

- *Imperial Valley Economic Development Corporation
- San Diego Business Journal

San Diego Foundation
San Diego Regional Chamber of Commerce

- *San Diego Regional Economic Development Corporation
- *San Diego Workforce Partnership
- South County Economic Development Council
- *TECH America

BUSINESS AND FINANCIAL

- *Bank of America
- *EcoElectron Ventures
- Forestview Advisors
- *Lightsource Renewables, LLC
- Stone & Youngberg
- *Tech Coast Angels
- *UBS Financial Services
- Wells Fargo Advisors
- Ygrene

ENERGY AND UTILITIES

- *AMSOLAR Corporation
- *Assure Controls
- car2go
- Cellana
- ClearEdge Power

Enel Green Power North America

- FlexEnergy
- *General Atomics
- *General Electric
- GreenHouse Holdings, Inc.
- *Honeywell International
- Iberdrola Renewables

Invenergy
K2 Systems
Kai BioEnergy
Kyocera Solar
LS Power

- OneRoof Energy
- OSIsoft
- Pauma Green Fuels
- Pearson Fuels
- PCN Technology
- Power Analytics
- RUBENIUS

- *San Diego Gas & Electric
- Sapphire Energy
- *Sempra Energy
- *Soitec
- Solar Gard
- *Sullivan Solar Power
- *Synthetic Genomics
- Viridity Energy

BUILDERS AND CONTRACTORS

- DPR Construction, Inc.
- HG Fenton
- Nielsen Construction Co.

Swinerton Builders

PROFESSIONAL SERVICES

- Alexandria Real Estate
- *Barney & Barney
- Best Best & Krieger
- *California Strategies LLC
- Chapman & Cutler
- *Cushman & Wakefield
- Deloitte & Touche
- *Ernst & Young
- Eddie Grace Creative Media Group
- Fidelity National Title
- *Green Talent Staffing
- *Haskell & White
- *Hutchens PR
- Irvine Company
- Jones Lang & LaSalle
- *KPMG

- *Latham & Watkins
- Manpower
- Marvin K. Brown
- *Mintz Levin
- *Morrison & Foerster
- Moss-Adams LLP
- Passage Productions
- Pello Events
- *Procopio, Cory, Hargreaves & Savitch
- Promar Designs
- Stoel Rives, LLP
- *Wilson Sonsini

Sapphire Energy

General Atomics

OSIsoft

UC San Diego

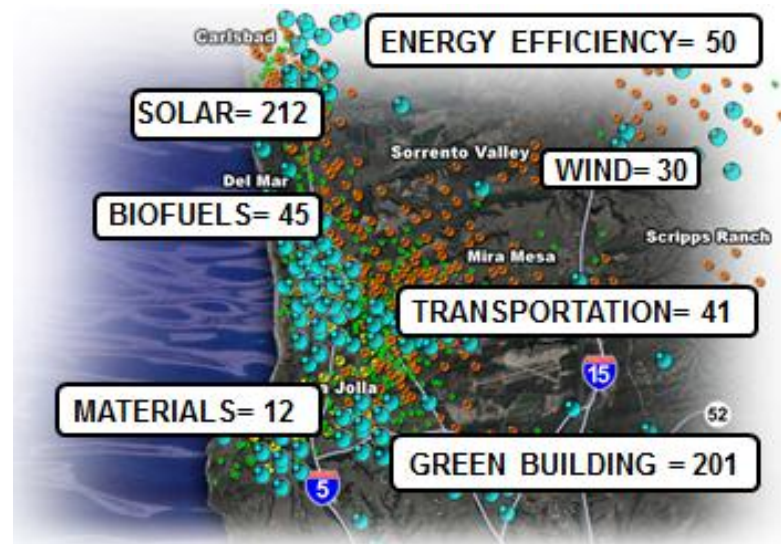
City of San Diego

Soitec

Regional Cleantech Economy

850+ Companies and Counting:

- Robust, upward trending new company growth
- More than 350 innovator companies and 500 market enabler companies
- County-wide distribution: Dense formation around universities and research institutes
- Strong activity in solar, transportation, smart grid, energy efficiency, energy storage and biofuels



Renewable Energy

California's #1 solar city

- San Diego has highest solar PV adoption rates in the state with 16,000 rooftop installations and 125 MW installed
- More than 200 solar companies in San Diego

Secured \$154M in CREBS Allocation

- CleanTECH San Diego led a regional coalition enabling its 18 municipalities to install solar on rooftops

iHUB Designation

- Solar, energy storage and biofuels

San Diego Welcomes Soitec

- Leader in CPV technology
- Economic development project with SDG&E, UC San Diego, City of San Diego, and San Diego Regional EDC



Soitec Economic Impact

- 450 direct jobs at the factory
- 1,000 indirect jobs
- Annual production capacity of 200 MW

Renewable Energy Cont.

Iberdrola Renewables

- Iberdrola Renewables gains approval to develop Tule Wind Power Project in East County:
 - Project to power 60,000 homes
 - 900 local construction and operations jobs
 - \$3.5M in annual tax revenue
 - \$105M in tax revenue generated over the 30-year life of project



San Diego State University – Imperial Valley Campus Renewable Energy Generation Training and Demonstration Center

- \$1.6M SBA grant awarded to SDSU and CleanTECH San Diego to establish commercial-scale proof of concept center to perform technology demonstrations, supported by commercialization services
- Project to improve and expand pipeline of financial and intellectual capital from San Diego and other cleantech hubs



Biofuels

Industry

- More than 40 biofuels companies in San Diego
- Strong research assets
- Imperial Valley link

EDGE Initiative

- Workforce training for biofuels industry
- Partnership with BIOCOM, Regional EDC, UC San Diego and San Diego Workforce Partnership
- \$4M for workforce development; one of five DOL grant recipients
- 225 trainees, 43 employed, 4 programs accredited (to date)

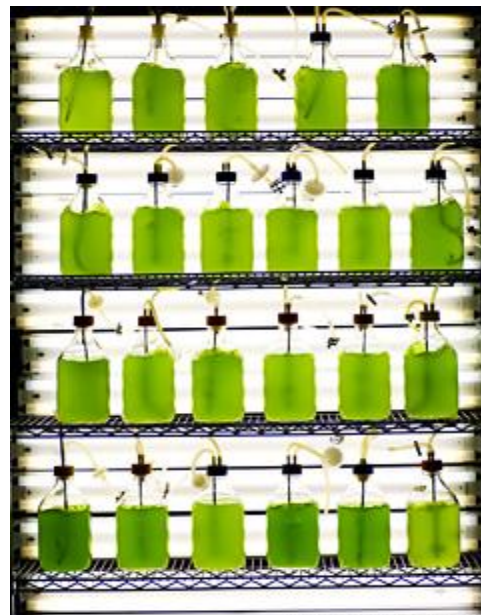


PHOTO: DAVID YELLEN

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
- 10% of the 20,000 Nissan EVs ordered by San Diegans
- ECOTality deploying part of \$220 million DOE grant to install charging stations nationwide; 2,500 dedicated to San Diego
- CPUC \$120M settlement with NRG to bring 200 fast charging stations to California

Region Preparing for Largest Deployment in History

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



Nissan LEAF



Chevrolet Volt

Clean Transportation Cont.

car2go

- San Diego selected to host nation's first ever all-electric vehicle car sharing program manufactured by Daimler
- San Diego chosen due to favorable policies that support deployment of public infrastructure for electric vehicle recharging
- Host a fleet of 300 EV with over 6000 subscribers



UC San Diego to Host World's Largest Campus EV Infrastructure

- California Energy Commission awards UC San Diego grant with RWE and ABB to build world's most diverse campus for public EV charging
- Grant provides for 26 Level Two chargers and three DC fast chargers



Solar-to-EV Project at the San Diego Zoo

- First of its kind in the region; 10 solar canopies producing 90 KW of solar power to five EV charging stations and delivering excess energy to the grid
- Carbon emissions reduced is equivalent to removing 21 cars from the road annually



Energy Efficiency

Industry

- More than 50 energy efficiency companies in San Diego
- Majority of municipalities in the county awarded DOE EECBG project grants

Street Light Working Group

- Consortium of CleanTECH San Diego, SDG&E and cities in San Diego County;
- 13 cities, 55,000 street light retrofits in progress
- 40% kwh reduction (average); 20 million kWh annual savings
- \$3M annual taxpayer savings; \$30M over 10 year light life
- \$25M in local economic development/job creation



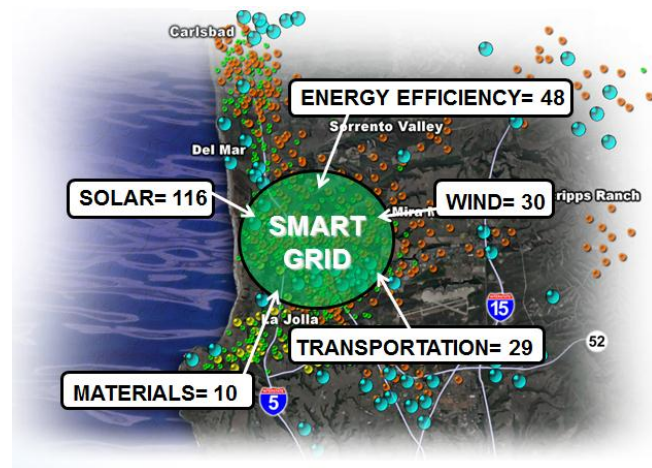
Smart Grid

Regional Leadership

- SDG&E
 - proactive advanced meter installations; voted Nation's Most Advanced Smart Grid in 2012 by *Power Magazine*
 - 20.8% of energy from renewables in 2011
- UC San Diego – microgrid test bed; solar forecasting and grid stability research

Smart City San Diego

- GE, SDG&E, City of San Diego, UC San Diego and CleanTECH San Diego partnership designed to:
 - Prepare region for one of largest EV deployments
 - Test key energy efficiency and smart grid solutions
 - Set measureable standard for sustainability



Jason Anderson Bio

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As vice president of CleanTECH San Diego, Jason Anderson leads several initiatives critical to the mission of the organization, including the Biofuels Initiative, advocacy efforts, and economic development programs. In addition, Anderson is executive director of the CleanTECH San Diego Education Foundation, designed to develop education and workforce development programs aligned with the mission of CleanTECH San Diego. In 2012, Anderson was appointed by the Mayor of San Diego to the City's Sustainable Energy Advisory Board (SEAB).

Prior to joining CleanTECH San Diego, he served as vice president of business development for the San Diego Regional Economic Development Corporation (EDC) and, before joining EDC in 2006, worked at the State Capitol in Austin, Texas as legislative director for State Senator Frank Madla. Anderson graduated from the University of Texas in Austin with a bachelor's degree in corporate communications and is a 2008 graduate of LEAD San Diego.



THANK YOU

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