



## Clean Energy Technology CEO Roundtables: Greater Sacramento Region Key Findings

### **Clean tech company leaders see the region's potential...**

"This region has a rare opportunity to create a 'Silicon Valley' or 'Research Triangle' for the clean tech sector—we have all of the resources to make it happen."

Peter Van Deventer, SyanpSense Corporation

August 27, 2007

### **They recognize the need for regional collaboration...**

"We need to work with the Sacramento Area Council of Governments and all of our elected leaders to create a regional renewable energy portfolio standard and regional energy efficiency standards."

Kirk Uhler, Solar Power, Inc. & Placer County Board of Supervisors

September 5, 2007

"In Germany the 'green regions' were built through creating local markets and research institutes. The places with the best incentive programs became the country's leading regions for creating technologies."

Florian Edler, SunTechnics

September 12, 2007

### **Clean energy companies will create new jobs...**

"There is a huge opportunity out there to put a lot of people to work."

Martin Webb, Plan It Solar

September 11, 2007

### **And, we need to act now...**

"The industry is growing, but from a global perspective there isn't much time. Speed is key."

Russell Reyes, Solar City

September 12, 2007

## OVERVIEW

Business, education, and community leaders across the Sacramento region are rapidly pursuing strategies to enhance the local market, develop the necessary workforce, create supportive local policies, and facilitate the growth of businesses in the Clean Energy Technology cluster. In order to help prioritize action areas for the coming year, Partnership for Prosperity's Clean Energy Technology Action Team identified the need to connect directly with the region's existing network of clean tech CEOs to hear their perspectives about how our region should support their industries and businesses.

Approximately 70 CEOs from the Greater Sacramento Region<sup>\*</sup> were invited to participate in one of four Clean Tech Business Roundtable Luncheon meetings in August and September, 2007. Leaders from 24 clean tech companies decided to attend the luncheons, and leaders from an additional 3 companies were interviewed by phone and email. Each luncheon was also attended by a small group of representatives from regional economic, business and education organizations. The Roundtable luncheons were generously sponsored by the Golden Sierra Workforce Investment Board and the Sacramento Employment and Training Agency/Sacramento Works, and meeting hosts included the City of Roseville, the McClellan Technology Incubator, and the Sacramento Area Commerce and Trade Organization. Valley Vision, through its role as the project manager for the Clean Energy Action Team, provided the staffing support to design and facilitate all four luncheons. A complete meeting-by-meeting record of attendance is detailed in Appendix A.

Over one-third of area companies attended one of the Business Roundtable events. Of the 24 companies that participated, half were solar-related firms that span the full spectrum of technology development and deployment. Many of the solar companies that attended the luncheons play a dual role of developing new technologies as well as designing and installing model systems. Three of the technology firms focus on energy efficiency technologies, while two others focus their research on bio-energy. Two participating companies primarily offer consultation services related to energy solutions. Two companies center on green building production and related products and services. We had one company of each of the following types: electric vehicle sales, advanced recycling technology, and a test facility for new clean technologies.

The emphasis of each luncheon was on gathering insights from the clean tech company representatives on a series of questions:

1. What do you think the Sacramento region should do to become the hub for clean technology businesses?
  - What are the things we should do to set ourselves apart from other regions?
  - What are the factors that helped them to choose to locate their business here?
2. What is the hardest part of being a clean technology business right now?
3. As you look forward to the next 5 -10 years what do you expect your workforce needs will be?
  - Are you able to meet your workforce needs right now?
  - Do you train your employees in-house, or do you hire employees that are already trained?
  - Do you have certain training needs that are not being met by local/regional organizations?
4. What things can be done by local government and your local utilities to better support your growth and development (i.e. developing supportive policies, serving as the trial grounds for new products, easing permitting and regulatory barriers, etc.)?
5. How do you think we could support the expansion of the regional market for clean tech products and services?
6. Do you have certain advocacy recommendations for legislation at the state and federal level that our partners at the Metro Chamber could help you to support?

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<sup>\*</sup> We considered the Greater Sacramento Region to include companies in Yolo, Sacramento, Yuba, Sutter, Placer, El Dorado, and Nevada Counties.

A small portion of each meeting was dedicated to sharing information about existing programs and projects being spearheaded by partnering organizations, in order to profile some of the available economic development resources in the region.

## **OUTCOMES**

Each Clean Tech CEO Roundtable luncheon was characterized by an air of very open communication, a positive outlook for the future of the sector in the region, and represented genuine relationship-building between companies and our organizational leadership. Important information was gathered about ways our Action Team can better support and grow the region's clean tech sector. Most of these recommendations are for actions that should be focused on at a regional scale, and demand a true partnership approach to successfully fulfill the objectives. Recommendations have been divided into several topic areas, including: Workforce Development, Roles for Local Governments and Utilities, Outreach & Education, Business Development, Funding Support, and State & Federal Engagement.

Within each topic area the gathered information and recommendations are presented as bulleted lists. None of the items have been prioritized based upon feasibility of success, cost of implementation, and potential impacts. Over the next month regional leaders and our partners working on the Action Team will need to review and evaluate this information in order to assess which items should be the focus of our work in 2008.

## **Workforce Development**

The companies that attended the luncheons spanned an array of types of clean energy technologies, as well as missions within the spectrum of research, development, testing, sales, and installation. As expected, the workforce requirements and expectations of these diverse companies varies to some degree, but we discovered a remarkable level of consistency in the needs identified by two broad categories of companies—those that create new technologies, and those that are responsible for sales, service, and installation of clean technologies.

Companies that create new technologies cited the following workforce development needs:

- Engineers, engineers, engineers. Any kind, just more of them. They specifically mentioned mechanical, structural, and electrical engineers. And they'd like high quality ones, too.
- Technology firms need people with senior management skills to help with the business side of the start-up companies.
- Companies would like to retain more PhD and Masters-level researchers from clean technology-related programs at UC Davis.
- Growing companies need financial analysts.

Companies responsible for sales, service, and installation of clean technologies mentioned the following workforce development needs:

- There is a need to create certification programs oriented towards training trade/union employees, contractors, architects, and building inspectors about the types of new green building products and their proper utilization.
- Representatives from our solar companies (including photovoltaic and solar thermal companies) repeatedly requested solar-specific training programs. They recommended courses on solar technologies that would build a basic understanding of the systems and options. Because the technologies are evolving so rapidly, they still expect to do some specific installation training in-house.
- There are opportunities to provide continuing education so that people starting in the solar industry have opportunities to progress up a career ladder. For example, a solar installer may want to go back to school to gain design experience, or project management training.
- We heard from several company leaders that they need employees with "basic skills:"
  - Some science background from high school and/or junior college
  - Ability to draft a formal business letter
  - Ability to work through processes and forms (specifically to complete rebate paperwork)
  - General project management skills
  - Strong verbal communication
  - Effective salespeople
- Companies felt it was important to "train the trainers" at local community colleges about the new technologies.
- People with training in certain trades are able to transfer their skills to clean tech applications pretty smoothly. Specifically, trained plumbers and electricians can be fairly easily taught how to apply their knowledge to new technologies. Furthermore, people with refrigeration expertise can transfer to working on evaporative and cooling efficiency technologies.
- There may be growing opportunities to train workers to do "home performance contracting," which involves focusing on efficiency-testing existing residential structures to develop of cost-effective energy solutions.

## Roles for Local Governments and Utilities

When we asked the CEOs to reflect on the ways that local governments and utilities could better support their companies and industries, their recommendations and examples often fell within a consistent framework:

**supportive policy → increased demand for technologies → business growth → CET cluster thrives**

CEOs mentioned many examples of how the creation of policies that are supportive of clean energy technologies plays a keystone role in triggering the expansion of the sector. Some of case studies that were referenced during our meetings include:

- ✓ California's creation of aggressive renewable energy portfolio standards accounts for major growth in the renewable energy sector in the state. Several international solar firms have chosen to locate their US headquarters in California because they expect such a significant market expansion.
- ✓ Germany is a world leader in the solar industry because of its commitment to progressive rebate programs and the creation of other government-sponsored incentives to support the installation of green technologies.
- ✓ Davis Electric Cars has been able to successfully market their vehicles to California state employees because of an existing policy to provide free parking and charging for EVs in downtown Sacramento (the benefits are valuable enough to cover the cost of the vehicle).
- ✓ California has been able to accelerate the "greening" of the commercial building sector due to its emphasis on purchasing LEED-certified buildings, and retrofitting existing facilities. It is believed that this has helped to hasten the adoption of new clean building technologies across the board.

Some of the specific policy ideas that were suggested for local government consideration include:

- Facilitate the installation of clean technologies across the entire region
  - Standardize permitting requirements, fees, and process times across all jurisdictions
  - Expedite permit processes and fast-track approval for "green" projects
  - Create fire codes that are amenable to new technologies (specifically rooftop solar installations)
  - Educate building department staff about new technologies
- Increase the strength of the local market by establishing incentive programs for installing new technologies. Providing rebates is one example of how this could happen.
- Offer government facilities that can serve as the pilot testing grounds for new technologies—this will help new companies develop their project portfolios and builds the credibility of their products.
- Serve as a connector between existing clean tech firms and the new companies and building projects landing in a community. Provide new building owners with incentives to buy local clean tech products.
- Assist in bringing new residential developments together to purchase a single, neighborhood-scaled clean energy installation (for instance, support the creation of one solar array to power 100 homes).
- Establish aggressive efficiency mandates for new construction projects.

During our discussions the utilities were strongly encouraged to support local governments in the accomplishment of the above objectives. It was also pointed out that one of the region's economic advantages—lower energy costs as compared to other areas in California—is also creating a barrier for entry for energy efficiency product sales. Many representatives of our local solar and green building companies felt that instituting "time of use" electricity rate structures would help this situation because there would be greater cost burdens associated with peak load times. While PG&E has initiated broad use of this kind of rate structure, SMUD and Roseville Electric have not.

## **Outreach & Education**

Local clean tech company leaders shared many ideas about how the region could do a better job communicating and educating about the sector. Enhanced outreach efforts will help build better understanding of clean tech products, support the expansion of the market, and form connections between clean tech companies and the region's leadership.

Ideas include:

- Elevate the awareness of the companies that exist here right now. Do a better job at marketing the region's success stories, and use local media outlets to share this information.
- There is a need for consumer education, specifically homebuyers, about the advantages and real values of energy efficient features.
- Build connections with the banking community to assist homeowners with financing the purchase and installation of clean technologies.
- Make the process of forging relationships with academic campuses easier, for the purpose of attracting interns and partnering on research activities.
- Local clean energy technology companies would like the opportunity to share their products with other companies that already exist in the region.
- Continue to internally and externally brand the region as a hub for this sector.
- Refine the categories of companies within the Clean Energy Technology arena, and set up business networks within each focus area (i.e. solar, biomass, energy efficiency)
- Create a regional website for the clean tech cluster that has information and links for the following:
  - Available Jobs/hiring
  - Learning about region's companies and technologies
  - Financing support for purchasers of green technologies
  - Existing economic development resources
  - Etc.

## **Business Development**

Several ideas were presented that would further support business growth and development in this sector:

- Help create alliances between clean tech companies that can work together to complete residential and commercial projects (like green builders, solar companies, HVAC installers, etc.).
- As the industry matures it needs support in the creation of acceptable "industry standards" that will help to ensure a consistent level of performance for products and services. Standards need to be created for methods, designs, testing, certification, permitting, fire codes, and installation processes.
- Connect companies with available economic development resources in the region—use a "speed dating" model to expose company leaders to a high number of organizations all in one venue. It should be noted that several organization participants at the luncheons were surprised at how little familiarity the company leaders had with the array of resources currently available in our region.
- Continue to recruit more clean energy technology companies to the region.
- Create more special opportunities like the clean tech business plan competition, and support events like First Tuesday "Angel" Meetings with local investors.
- Recruit vendors for needed base materials that are part of clean technologies—like a company that will locally provide the silicon wafers for photovoltaic panels.

## **Funding Support**

As expected, “young” clean tech companies are seeking as much funding support as possible to help bring their technologies to market. In addition to simply making more funding resources available in the Greater Sacramento Region, company leaders had these funding-related recommendations:

- Help venture capitalists and other investors better understand the differences associated with financially supporting technology development companies verses investing in the “bricks-and-mortar” companies that do product refinement, sales, and distribution.
- Create incentives for local investment in the region’s clean tech companies.
- Companies would appreciate assistance with tracking applicable private, state, and federal funding opportunities to support their businesses.

## **State & Federal Engagement**

Several issues operate at a scale that goes well beyond our regional boundaries—specifically state and federal level challenges and opportunities that affect the clean tech sector. Companies would like to be supported in addressing the following items:

- Support extension of the federal solar tax credit, and support its expansion for the residential marketplace.
- Within California we need to appreciate the “lessons-learned” from the state’s solar initiative (SB1). While it is groundbreaking legislation, it also is associated with dramatically increasing the complexity of calculating rebate amounts and incentive values, which is a time drain for many solar companies and can be a barrier to new business opportunities.
- According to current legislation, it is very difficult to encourage commercial property owners to install solar systems on leased facilities because they can be regulated like mini utilities for serving as power providers.
- Under current law, utilities are required to give customers credit towards their bill if they produce more power than they consume (via a solar installation or other means), but they don’t have to pay the owner for excess power production that goes back to the grid. This artificially limits the incentive to achieve maximum efficiency.
- There should be a statewide effort to raise money to support clean tech companies, like there was to jumpstart stem cell research.
- One company explained that the State’s support for federal grant applications is pulled back when there is more than one California company competing for the funds. This makes the grant approval process more challenging than it should be.
- In the State’s regulatory environment it is more desirable for agencies to set criteria that technologies need to meet, rather than defining which types of technologies are acceptable for use. For instance, the California Integrated Waste Management Board has a “fuzzy” list of technologies they deem acceptable, yet it seems that special interests in the legislature are the ones dictating these lists.

## TIPS & BEST PRACTICES

In addition to providing all of the specific recommendations cited above, our clean tech company leaders highlighted several examples of best practices that merit further investigation, and tips to support our overall effort to become the hub for the clean tech sector:

- ✓ Look to the efforts of the Silicon Valley Leadership Group as an example of how to unite the region around shared goals. Specifically, research their Solar Tech effort to help create standards for the solar industry.
- ✓ Study the programs implemented by the state of New Jersey to incentivise PV installation.
- ✓ Leverage the asset of having the Renewable Energy Institute in our region.
- ✓ Our existing strengths in the overall energy sector should serve as a more prominent marketing feature for branding the region—showcase the fact that we are the home to multiple utilities, energy-related companies, and energy experts that have been here for a long time.
- ✓ Created more nuanced distinctions between the types of clean energy technology firms that are blossoming in the region—and provide tailored support to each type of company.
- ✓ Nevada County has a model system for solar installation permitting—the permits are available online and they have a reasonable fee.
- ✓ Tap into the growing pool of retired engineers in the region and get them more active in helping move these companies forward.
- ✓ Certification programs to produce the next generation of clean tech workers should consider using the NABCEP model (North American Board of Certified Energy Practitioners).
- ✓ Cal Poly was mentioned as one university that has developed a solar-focused program within its engineering department.
- ✓ The region needs to be prepared for consolidations to occur within the industry after the current period of rapid expansion has passed. This could have big effects on local companies.

## NEXT STEPS

Business Roundtable participants will be asked to carefully review these outcomes and ensure they are on track with the feedback from the four events. Following this period of review, members of the Partnership for Prosperity Clean Energy Action Team will evaluate all of these recommendations and identify which items should be prioritized for action in 2008 based on upon feasibility of success, cost of implementation, and potential impacts. These suggested action areas will be highlighted in the final version of this report.

**APPENDIX A**

**Luncheon Attendees**

<b>Date</b>	<b>Clean Tech Company Representatives</b>	<b>Organization Representatives</b>
27-Aug-07	Catherine Brown, DT Solar Eric Toolson, PLEXOS Solutions LLC Jennifer Pecha, SCHOTT Solar, Inc. Peter Van Deventer, SynapSense Corp. Richard Rios, Verde Development Solutions	George Hempe, Golden Sierra WIB Jason Buckingham, Golden Sierra WIB Lew Patridge, Golden Sierra WIB Chuck Neeley, Economic Resource Council Joshua Alpine, City of Colfax Norma Santiago, El Dorado County Board of Supervisors Julia Burrows, City of Roseville Bob Burris, Sacramento Area Commerce and Trade Organization Matt Yancey, Sacramento Metropolitan Chamber of Commerce Kristine Mazzei, Valley Vision
5-Sep-07	Don Rodes, Solar Aire Al Rich, SolarRoofs.com Dave Clark, Sunlight Power Solar Services Jim Bayless, Treasure Homes Kirk Uhler, Solar Power, Inc.	George Hempe, Golden Sierra WIB Jason Buckingham, Golden Sierra WIB Julia Burrows, City of Roseville Bob Burris, Sacramento Area Commerce and Trade Organization Matt Yancey, Sacramento Metropolitan Chamber of Commerce Niki Davisson, Sierra College Raquel Arata, Whole Person Learning Noramah Burch, Whole Person Learning Kristine Mazzei, Valley Vision
11-Sep-07	Mark Berman, Davis Energy Group Rick Bofinger, Jerico Mechanical Bob McChesney, Carbon Sequestration, LLC Andy Minden, Pacific Renewable Fuels Dennis Schuelte, Renewable Energy Institute Michael Theroux, Theroux Environmental Martin Webb, Plan It Solar	Julia Burrows, City of Roseville Bob Burris, Sacramento Area Commerce and Trade Organization Jon Jeisel, Valley Vision Sandy Kirschenmann, Los Rios Community College District Kathy Kossick, Sacramento Employment and Training Agency Kristine Mazzei, Valley Vision Robin Purdy, Sacramento Employment and Training Agency Ingrid Rosten, CleanStart J.D. Stack, Sacramento Area Regional Technology Alliance Matt Yancey, Sacramento Metropolitan Chamber of Commerce
12-Sep-07	Dean Budney, Mobius Technologies, Inc. Florian Edler, SunTechnics Energy Systems, Inc. Silvia Fernandez, Conergy Darlene Kelly, Davis Electric Cars, Inc. John Lefebvre, Solar City Dave Piper, DelSol Power Mark Reimers, Solar City Russell Reyes, Solar City Sergey Vasylyev, SVV Technology Innovations, Inc.	Bob Burris, Sacramento Area Commerce and Trade Organization Julia Burrows, City of Roseville Mark Ingram, Sacramento Employment & Training Agency (Board Chair) Sandy Kirschenmann, Los Rios Community College District Kristine Mazzei, Valley Vision Robin Purdy, Sacramento Employment and Training Agency Brent Smith, Sierra Economic Development District Matt Yancey, Sacramento Metropolitan Chamber of Commerce