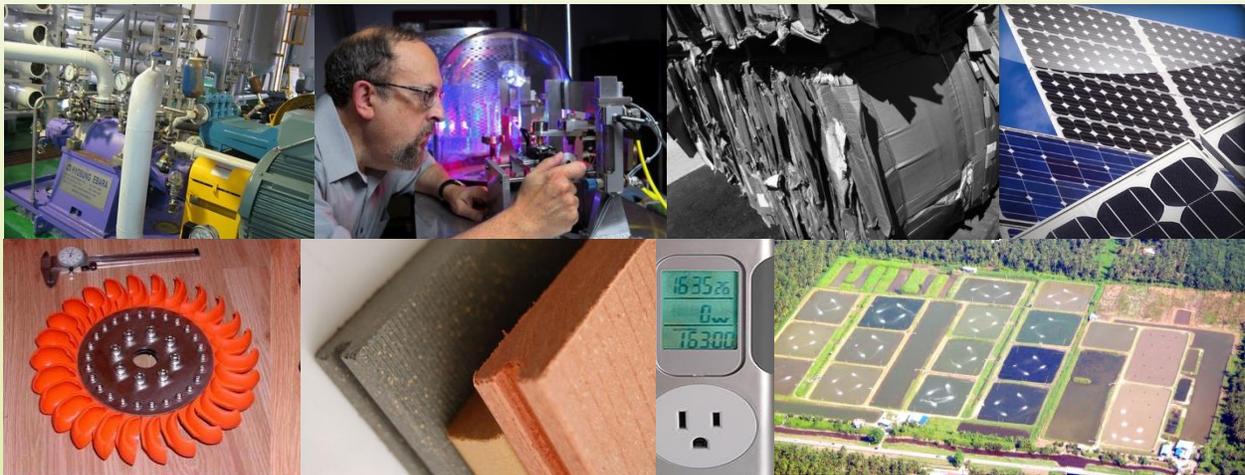


City of Shasta Lake

Clean Tech Market Analysis



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November 2010

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I. Introduction

The City of Shasta Lake is interested in understanding what green industries could be potential targets for the proposed green technology business park. This report presents an overview of the entire green economy to illustrate the expansiveness and diversity of industries considered green.

Then the second key component of the report presents an analysis of Shasta Lake's capabilities and limitations to accommodate green industries. This analysis is rounded out with information on external threats and opportunities that may impact Shasta Lake's success in pursuing green industry locations.

In the final section of the report, recommendations for targets are made that take into account Shasta Lake's assets, liabilities and relevant external market factors. Positioning for the recommended targets is also included; marketing to these targets will be addressed in the final implementation plan.

II. Green Industry Overview

A lot of business activity around “green” and sustainability” is happening in the United States, and globally for that matter. California leads the nation in many green developments, from policy to innovation and job growth. California’s green economy encompasses two general areas:

- Businesses that are directly involved in green industries with products and services that:
 - Leverage clean energy sources;
 - Conserve natural resources;
 - Provide clean alternatives; and
 - Reduce pollution and repurpose waste.
- Businesses “greening” their products, production processes and supply chain.

The segments of the core green economy, those businesses directly involved in green industries, include:

Green Segment	Description
Energy Generation	<ul style="list-style-type: none"> • Renewable energy generation (solar, wind, geothermal, biomass, hydro, marine and tidal, hydrogen, co-generation) • Research and testing in renewable energy • Renewable energy consulting services • Associated equipment, controls and other management software and service
Energy Efficiency	<ul style="list-style-type: none"> • Energy conservation and consulting • Building efficiency products and services • Energy efficiency research • Alternative energy appliances (solar heating, lighting, etc.) • Energy efficiency meters and measuring devices
Transportation	<ul style="list-style-type: none"> • Alternative fuels (biodiesel, hydrogen, feedstock, neutral ethanol infrastructure) • Motor vehicles and equipment (electric, hybrid, and natural gas vehicles, diesel technology)
Energy Storage	<ul style="list-style-type: none"> • Advanced batteries (e.g. Li-ion, NiMH) • Battery components and accessories • Fuel cells
Air & Environment	<ul style="list-style-type: none"> • Environmental consulting (environmental engineering, sustainable business consulting) • Emissions monitoring and control • Environmental remediation

Green Segment	Description
Recycling & Waste	<ul style="list-style-type: none"> • Consulting services • Recycling (paper, metal, plastics, rubber, bottles, automotive, electronic waste and scrap) • Recycling machinery manufacturing • Waste treatment
Water & Wastewater	<ul style="list-style-type: none"> • Water conservation (control systems, meters and measuring devices) • Development and manufacturing of pump technology • Research & testing • Consulting services • Water treatment and purification products/services
Agricultural Support	<ul style="list-style-type: none"> • Sustainable land management and business consulting services • Sustainable supplies and materials • Sustainable aquaculture
Research & Advocacy	<ul style="list-style-type: none"> • Organization and research institutes focused on advancing science and public education in the areas of renewable energy and alternative fuels and transportation
Business Services	<ul style="list-style-type: none"> • Environmental law legal services • Green business portals • Green staffing services • Green marketing and public relations
Finance & Investment	<ul style="list-style-type: none"> • Emissions trading and offsets • Venture capital and private equity investment • Project financing (e.g. solar installations, biomass facilities, etc.)
Advanced Materials	<ul style="list-style-type: none"> • Bio plastics • New materials for improving energy efficiency
Green Building	<ul style="list-style-type: none"> • Design and construction • Building materials • Site Management • Green real estate and development
Manufacturing & Industrial Support	<ul style="list-style-type: none"> • Advanced packaging • Process management and consulting • Industrial surface cleaning
Energy Infrastructure	<ul style="list-style-type: none"> • Consulting and management services • Cable and equipment

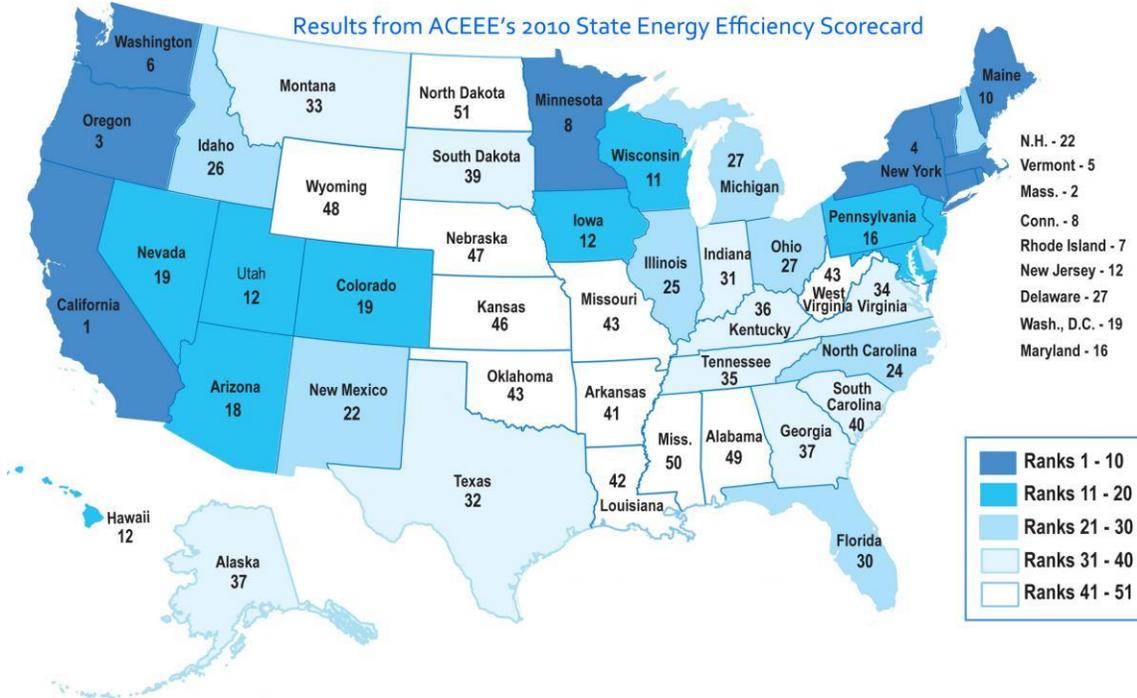
Source: 2010 California Green Innovation Index, produced by Next 10 and prepared by Collaborative Economics

Noteworthy Green Trends

Manufacturing Employment: The green economy in California is generating a higher percentage of growth in manufacturing jobs. Twenty-one percent of California’s green jobs are in manufacturing, compared to 11% of employment in manufacturing across all industries in California¹. This employment figure alone captures attention for further study of the opportunities for Shasta Lake.

Energy Efficiency: There are growing market opportunities for energy efficiency companies as twenty-seven states have adopted or have pending Energy Efficiency Resource Standards (EERS) that establish long-term, fixed efficiency savings targets – doubling the number of states with energy efficiency regulations since 2006². These states account for two-thirds of electricity sales in the United States.

The following map identifies leading states for energy efficiency:



¹ 2010 California Green Innovation Index, produced by Next 10 and prepared by Collaborative Economics

² American Council for an Energy Efficient Economy, Key Findings from the ACEEE’s 2010 State Energy Efficiency Scorecard

Traditional Companies are Increasingly “Going Green”: Many market drivers contribute to a broader spectrum of companies employing energy efficiency, waste reduction, renewable energy power sources and other sustainable practices. Drivers range from cost savings and avoidance of environmental lawsuits to attractive new product lines and public relations.³

California Policies Foster Green Market Opportunities: California has established leadership in the United States for environmental policy over the last seventy years. The California Energy Crisis of 2000 and 2001 further incited commitment by lawmakers for solutions.⁴

California is Global Leader in Green Innovation: California leads the nation for green patent registrations, with more than 450 between 2007 and 2009. Financing to support innovation is strong in California. Venture capital investment in California’s green business since 2006 accounts for twenty-four percent of total global VC investment.⁵ California received \$6.5 billion clean tech venture capital funding from 2006 to 2008, accounting for over two-thirds of all U.S. investment in clean technology firms.⁶

³ “For Companies, Green is the New Black”, by Tara Struvk for Investopedia.com

⁴ 2010 California Green Innovation Index, produced by Next 10 and prepared by Collaborative Economics

⁵ ibid

⁶ “Cleantech Ecosystems: Why Massachusetts and California are Ahead of the Rest”, by Thomas R. Burton and Billy Najam

III. SWOT Analysis

In order to understand which green industries will be viable in the proposed Shasta Lake green technology business park, it is important to understand the strengths and weaknesses of a Shasta Lake location. Interviews with local employers, both in the City of Shasta Lake and Shasta County, were conducted to assess the local business climate. Who better understands the business climate in Shasta Lake than employers who operate in it every day? A detailed report of findings from these interviews is presented in Appendix E.

Interviews with utility representatives in the region were conducted to investigate potential opportunities that relate to smart grid, smart metering and other sustainable practices that could possibly be manufactured and maintained by companies targeted for the business park.

Additionally, several site location consultants were interviewed as to the appeal and value a green technology park would have for their clients. A summary of the site selector's perspectives is presented in Appendix F.

Findings from these interviews and additional industry research contributes to the following analysis for Shasta Lake's strengths, weaknesses, opportunities and threats (SWOT) for locating businesses in a green business park.

Strengths

What positive attributes does Shasta Lake offer for a business considering relocation or expansion?

- Livability and lifestyle amenities (Note: Quality of life is a subjectively-evaluated factor. However many people who run their company with a green philosophy have a greater respect for the environment, and correspondingly a high likelihood of appreciating the amenities available in the Shasta Lake area.)
- Pro-business community.
- Accessible city government staff and elected officials.
- Available labor (historically high-unemployment), although typically unskilled or low-skilled
- Low operating costs for California location.
- Low electricity rates/Municipal Utility District.
- Renewable energy sources.

- Clean Energy and Green Building training programs offered at Shasta College.⁷
- Central to West Coast markets (i.e. located half-way between Seattle and San Diego).
- Located on Interstate-5 with direct access.
- Expedited permit processing.
- Low lease rates; low-cost real estate.
- Low unionization.
- Incentives - Enterprise Zone (for jobs and equipment, including energy efficiency equipment) and Recycling Market Development Zone.
- Electric utilities provide energy efficiency audits and incentives to upgrade equipment for businesses and households.
- Smart metering installation by Shasta Lake Electric Utility establishes the City's forward-looking approach for green industry adoption.
- Housing affordability.

Weaknesses

What issues may eliminate Shasta Lake from site location consideration?

- Higher transportation costs due to distance from markets.
- Perceived to be a remote location.
- Limited scope of skilled and experienced workers.
- Limited local supplier base.
- Lack of local venture capital fund(s).
- Small local market for green products relative to other urban centers in California.
- Limited local green incentives and city green policy.

Opportunities

What external factors could support Shasta Lake's pursuit of developing and filling a green technology business park?

- Tourism venues in Shasta County expose entrepreneurs and business owners to the area.

⁷ www.shastacollege.edu/ewdsustainability/

- Location preferences of California green business entrepreneurs for quality of life. According to a recent survey of green businesses in California⁸, the highest ranking site location factors included (1) the executive’s place of residence – of particular importance to for small firms, (2) the local market for firm’s product and service, and (3) quality of life.

Table 5.9 Location Factors for Green Businesses

	Most Relevant Factor	2nd Most Relevant Factor	3rd Most Relevant Factor	All 3 Factors Combined
n=	295	266	231	295
Executives' Residence	35%	12%	16%	58%
Local Market for your Product	22%	24%	15%	56%
Quality of Life	21%	21%	16%	52%
Labor Pool	2%	9%	10%	19%
Availability of Space	3%	9%	6%	16%
Local University or Research Organization	5%	4%	5%	13%
Availability of Financial Capital	2%	7%	4%	12%
Other Firms in the Area	1%	5%	6%	11%
Suppliers in the Area	2%	4%	5%	10%
Other	5%	6%	16%	23%

Source: UC Berkeley Green Business Survey, 2009

- California is a global leader in green innovation (i.e. top U.S. state in patent registrations).
- California is attracting the majority of global clean tech venture capital funding.
- California renewable energy portfolio is a market driver for renewable energy installations.
- California mandates for energy efficiency buildings is a market driver. CALGreen Building Codes went into effect 2011.
- California 20x2020 Water Conservation Plan is contributing to increased demand for conservation practices and related products.

⁸ Innovating the Green Economy in California Regions, Center for Community Innovation, UC Berkeley Green Business Survey, 2009

- Green business location consideration favors California.⁹
- Increasing corporate and consumer interest/demand for “greener” product development.
- State and federal incentives for green products.

“Although the initial place of resident and personal preferences of the firm’s main executives are important factors, 72 out of the 368 (20%) green companies in the survey say that they considered other locations outside their home region. Among those, 65% considered another location within California (47 out of 72), 32% another location within the US, and 3% an international location.”

Source: UC Berkeley Green Business Survey, 2009

Threats

What external factors could jeopardize Shasta Lake’s realization of a successful green technology business park?

- California regulations drive up production costs and make it difficult for businesses, especially manufacturers, to compete with out-of-state businesses.
- What if funding is lost for state and federal green programs due to budget cuts?
- Potential loss of or changes to the State enterprise zone program and/or redevelopment agencies.
- Increasing competition as more communities target green industries.
- Emerging trend for growth of clean tech jobs in Mexico, where production costs are low yet proximity to key U.S. markets is an advantage.¹⁰

There are many advantages for green businesses to locate in Shasta Lake. The weaknesses are important to keep in mind as industries are screened down to recommended targets. Huge opportunities for green industries in California exist for Shasta Lake to exploit with an awareness of the potential threats to a green business park.

⁹ Ibid

¹⁰ Clean Tech Job Trends 2010, by Ron Pernick, Clint Wilder, Trevor Winnie

IV. Recommended Industries for Shasta Lake

Taking into account the SWOT analysis, targeting should leverage Shasta Lake's quality of life and focus on green entrepreneurs already located in California.

Let's break down the components of this recommendation:

Green Entrepreneurs

Understanding that quality of life is a leading factor for green entrepreneurs, Shasta Lake's setting and lifestyle provide a competitive advantage in recruiting green businesses. The majority of local companies located in Shasta Lake for this reason and it should be further packaged to attract green entrepreneurs who can locate anywhere they chose to live. The City of Shasta Lake Community Action Plan (Strategy 15ID) includes a goal to implement a "Come Live and Work Where You Like to Play" campaign. Marketing to green entrepreneurs would align to this strategy.

Green entrepreneurs will find value in a business park that supports their efforts to produce green products, using renewable energy sources, conservation practices and sustainable materials. Providing a setting with a business park that has been developed with LEED principles in mind such that when the company builds their facility they earn more LEED points, will be an advantage that is recognized by this target.

Focus on companies beyond the start-up phase of their business and moving into production beyond the pilot stage of their innovation. Service industries that support green and sustainable practices should also be targeted.

Pro forma

- Owner operators
- Less than 50 jobs, most likely 1-20 jobs
- 5,000 – 50,000 square feet (office, manufacturing or flex space)
- Sales under \$5 million

Sectors

Green Segment	Area of Focus for Shasta Lake
Energy Generation	<ul style="list-style-type: none"> • Tier II component parts for small hydro, solar, biomass and co-generation
Energy Efficiency	<ul style="list-style-type: none"> • Building efficiency products and services • Energy efficiency meters and measuring devices • Energy conservation and consulting
Energy Storage	<ul style="list-style-type: none"> • Battery components and accessories
Air & Environment	<ul style="list-style-type: none"> • Environmental consulting (environmental engineering, sustainable business consulting) • Environmental remediation
Recycling & Waste	<ul style="list-style-type: none"> • Recycling (paper, metal, plastics, rubber, bottles, automotive, electronic waste and scrap)
Water & Wastewater	<ul style="list-style-type: none"> • Water conservation (control systems, meters and measuring devices) • Development and manufacturing of pump technology • Water treatment and purification products/services
Agricultural Support	<ul style="list-style-type: none"> • Sustainable land management and business consulting services • Sustainable aquaculture
Green Building	<ul style="list-style-type: none"> • Building materials
Energy Infrastructure	<ul style="list-style-type: none"> • Consulting and management services • Cable and equipment
Consumer Products	<ul style="list-style-type: none"> • Companies who desire to produce a green product to address consumer demands, close to West Coast markets, without the high cost penalties of other parts of California

Located in California

Companies outside of California perceive a location in the state to be highly regulated and cost prohibitive. By targeting companies that already understand the value of being located in a progressively “green” state; the city can avoid those objections. With Shasta Lake’s cost competitiveness for site/building development, operational costs and cost of living, it is well positioned for a strong financial case.

State pro-environment, green industry regulations and incentives have fostered a positive business climate for green businesses. Venture capital investments follow the robust innovation of California entrepreneurs and the outcome is leadership as a global green innovation area. Shasta Lake can take advantage of California's strong green culture and global position.

Source Areas

- San Francisco Bay Area/Silicon Valley
- Sacramento Region
- San Joaquin/Central Valley

Value Proposition

Shasta Lake has the potential to offer target companies a location for their business that is the greenest place in California with a competitive cost structure and exceptional lifestyle. The marketing strategy to reach targets with an effective message will be presented in the Implementation Plan.

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Appendix

A. 2010 California Green Innovation Index



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B. The 2010 State Energy Efficiency Scorecard

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C. Article: “For Companies, Green is the New Black”

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D. Article, “Cleantech Ecosystems: Why Massachusetts and California are Ahead of the Rest”

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E. Local Interview Results Report

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F. Site Selector Interview Results Report



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G. Innovating the Green Economy in California Regions

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