

MANY SHADES OF GREEN

2012

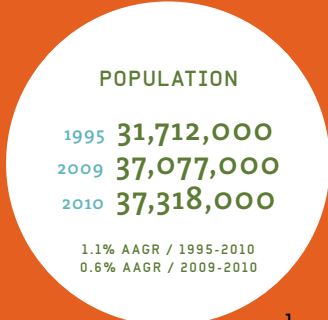
CALIFORNIA'S SHIFT
TO A CLEANER, MORE
PRODUCTIVE ECONOMY



NEXT 10 IS AN INDEPENDENT, NONPARTISAN ORGANIZATION THAT EDUCATES, ENGAGES, AND EMPOWERS CALIFORNIANS TO IMPROVE THE STATE'S FUTURE. NEXT 10 WAS FOUNDED IN 2003 BY BUSINESSMAN AND PHILANTHROPIST F. NOEL PERRY. NEXT 10 IS FOCUSED ON INNOVATION AND THE INTERSECTION BETWEEN THE ECONOMY, THE ENVIRONMENT, AND QUALITY OF LIFE ISSUES FOR ALL CALIFORNIANS. WE PROVIDE CRITICAL DATA TO HELP INFORM THE STATE'S EFFORTS TO GROW THE ECONOMY AND REDUCE GLOBAL WARMING EMISSIONS.

THIS REPORT SERVES AS A COMPANION TO NEXT 10'S CALIFORNIA GREEN INNOVATION INDEX, AND THE ANALYSIS PRESENTED HEREIN BUILDS ON THE GREEN BUSINESS ANALYSIS PUBLISHED IN THE INDEX SINCE 2008. THE INDEX TRACKS CALIFORNIA'S PROGRESS IN REDUCING GREENHOUSE GAS EMISSIONS, IMPLEMENTING INNOVATIVE PUBLIC POLICY, GENERATING TECHNOLOGICAL AND BUSINESS INNOVATION, AND GROWING BUSINESSES AND JOBS THAT ENABLE THE TRANSFORMATION TO A MORE RESOURCE-EFFICIENT ECONOMY.

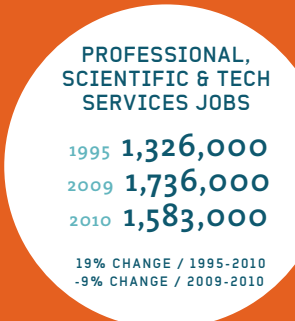
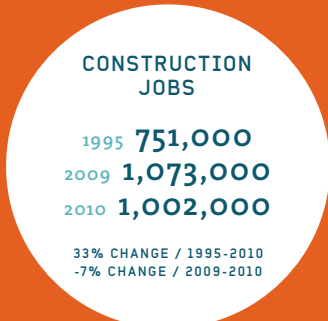
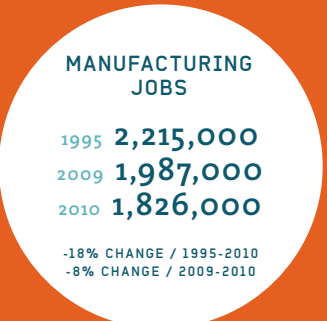
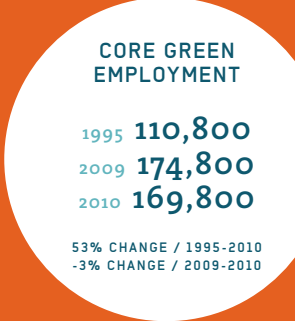
CALIFORNIA FACTS 1995-2010



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GROSS DOMESTIC PRODUCT (GDP) is a way of measuring the size of an economy, and is calculated by summing the value added from all industries in the economy.

1. Average Annual Growth Rate (AAGR) is the year-over-year growth rate, otherwise known as compounded annual growth rate (CAGR). Data Source: California Department of Finance
 2. Date Source: Green Establishment Database. National Establishment Time-Series (NETS) Database
 3. Inflation adjusted dollars (first half 2011) Data Sources: Moody's Economy.com; California Department of Finance
 4. Average Annual Growth Rate (AAGR) is the year-over-year growth rate, otherwise known as compound annual growth rate (CAGR)

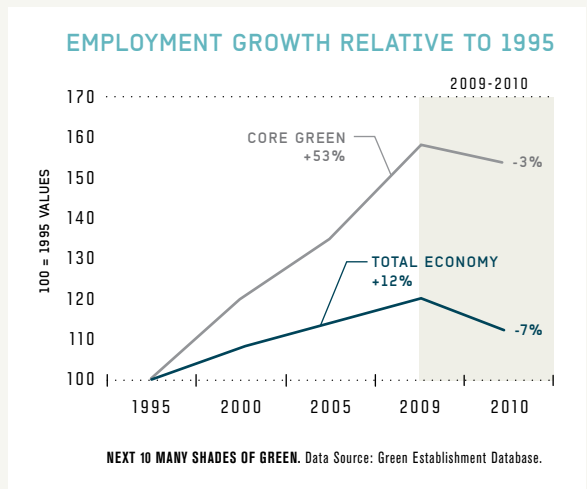
CONTENTS

EXECUTIVE SUMMARY	2
CALIFORNIA'S GREEN ECONOMY	4
The Adaptive Green Economy	7
Occupations in California's Green Economy	11
The Core Green Economy	14
The Value Chain	17
REGIONAL DISTRIBUTION AND TRENDS	21
Bay Area	22
Los Angeles Area	24
Orange County	26
San Diego Region	28
Sacramento Area	30
Inland Empire	32
San Joaquin Valley	34
Central Coast	36
Sacramento Valley	38
North Coast	40
Sierra Region	42
CONCLUSION	44
APPENDIX	46
ENDNOTES	48

EXECUTIVE SUMMARY

The California Core Green Economy reflected greater resilience than the California economy as a whole during the recent recession. Reflecting the brunt of the economic downturn, the total economy slumped by seven percent while the Core Green Economy contracted by three percent from January 2009 to 2010. Over the long term, January 1995 to 2010, the total economy grew by 12 percent while jobs in the Core Green Economy increased by 53 percent. In other words, while the downturn reset Core Green employment back to 2008 levels, total state employment was set back to 2001 levels. (Page 14)

- While statewide Core Green employment fell by three percent in the last observable year, the San Diego Region, the Bay Area and the Sacramento Area have shown the greatest resilience, each with losses of less than two percent from January 2009 to 2010.
- Between 1995 and 2010, Core Green employment expanded in the Sacramento Area by 113 percent and in the Bay Area by 76 percent, followed by the San Diego Region (+65%) and Orange County (+62%).
- As the products and services of the Core Green Economy spread across the rest of the economy, new occupations emerge and existing occupations are increasingly taking on “green” tasks.



THE CORE GREEN ECONOMY CONSISTS OF BUSINESSES THAT PROVIDE THE PRODUCTS AND SERVICES THAT:

- PROVIDE ALTERNATIVES TO CARBON-BASED ENERGY SOURCES
- CONSERVE ENERGY AND ALL NATURAL RESOURCES
- REDUCE POLLUTION AND REPURPOSE WASTE

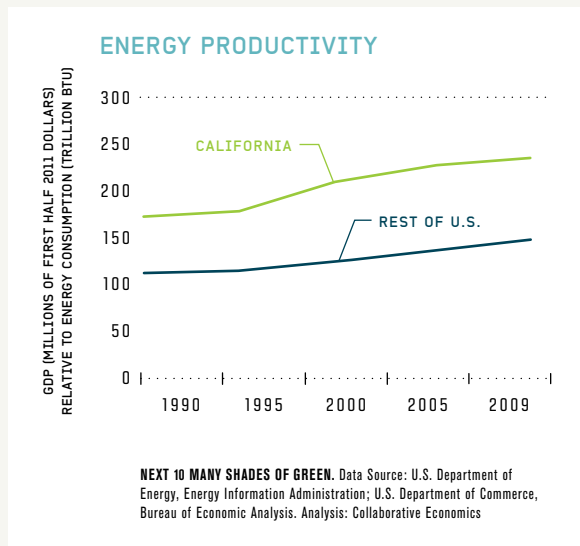
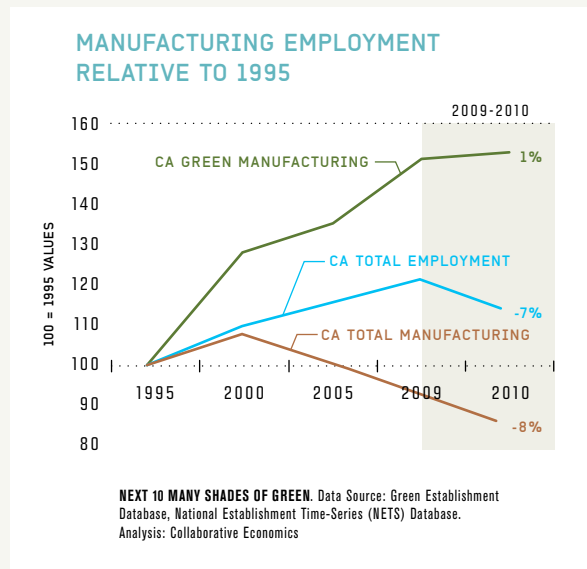
GROWTH	2009-10
Energy Infrastructure	+14%
Advanced Materials	+4%
Clean Transportation	+1%
Energy Generation	+1%
CORE GREEN ECONOMY	-3%
TOTAL ECONOMY	-7%

Employment and business growth varies across the 15 green industry segments and despite the dampening effects of the economic downturn, job gains were witnessed in Energy Infrastructure, Advanced Materials, Clean Transportation, and Energy Generation. (Page 14)

- Employment in Energy Infrastructure grew by 14 percent from January 2009 to 2010. Over the single year, statewide employment in Advanced Materials expanded by four percent while Clean Transportation and Energy Generation grew by one percent each.
- With over 1,200 jobs in 2010, Clean Manufacturing & Industrial Support jobs expanded 2.6 times over 1995. Energy Generation employment has more than doubled in 16 years totaling nearly 47,000 jobs in 2010. Clean Transportation expanded 119 percent over the long term, totaling 6,800 jobs in 2010. Advanced Materials reported the fastest employment growth rate from 1995 to 2010, expanding by 322 percent from a small base to 900 jobs in 2010.

Value chain activities in California's Core Green Economy are diverse, and the impact of the economic downturn has varied across the different sectors. (Page 17)

- Twenty-seven percent of jobs in the Core Green Economy are in Manufacturing, while the share is only ten percent in the total economy. Manufacturing was also the only element of the value chain with recent growth, expanding by one percent from January 2009 to 2010.
- Business Associations as well as Finance & Investment and Installation are leading in long-term job growth, all more than doubling in employment size since 1995.
- While Research & Development has doubled since 1995, jobs dropped ten percent over the recent period.



The California economy was hit hard in the recent economic downturn but the extent of job losses varies by industry. One of the characteristics of the current downturn has been the difficulty all businesses have had in accessing the capital needed to grow and make new investments in equipment upgrades and new products.

Businesses, households and others see the opportunity for improving resource efficiencies (and reducing resource expenditures), yet acting on these choices is constrained by financial markets and market uncertainty related to the public policy environment and the financial crisis. These uncertainties hold back growth in the businesses that provide the products and services that improve efficiencies in the consumption of all natural resources. The application of these products from the Core Green Economy helps improve the productivity of resources consumed, reduces waste and alleviates costs associated with pollution. As a result, consumers save money and businesses improve their competitive edge and that of the economy as a whole.

CALIFORNIA'S *green* ECONOMY

EXPLORING CALIFORNIA'S TRANSFORMING ECONOMY

The global economy entered into a substantial downturn in the latter part of 2007. Some parts of the world, such as China, India, and Brazil, have continued to grow over this period though at slower rates than before. The recovery across the United States has been uneven and further constrained by tight financial markets. When banks do not lend to small and medium sized businesses, these businesses cannot make needed capital investments, launch building projects, or expand production. Without access to capital, the economy cannot grow and pull itself out of the economic downturn. The recession officially lasted from December 2007 to June 2009, yet the U.S. economy and California economy continue to drag.

In this context, the world is still facing sizable challenges that were present before the downturn. These include rising prices and increasing volatility for energy and natural resources. This has been driven primarily by growing global demand from emerging economies for limited resources. A case in point is the fact that oil prices have not dropped following the slowdown of the U.S. economy, but continued to rise as surplus supplies have easily found new markets outside our borders. As populations continue to grow more prosperous, the demand for all resources will continue to rise.

Regardless of our economic health, the impacts of climate change are increasingly felt and loom larger in the distance. Climate change not only threatens our coastal populations through rising sea levels, it also changes weather patterns, disrupting global agricultural production and diminishing the world's major sources of fresh water from rainfall and glaciers. Preparing for these changes is not without cost, but waiting to react to the real impacts of climate change would be much more costly.¹

The economic crisis is making the climate crisis that much more challenging to address given the lack of capital for

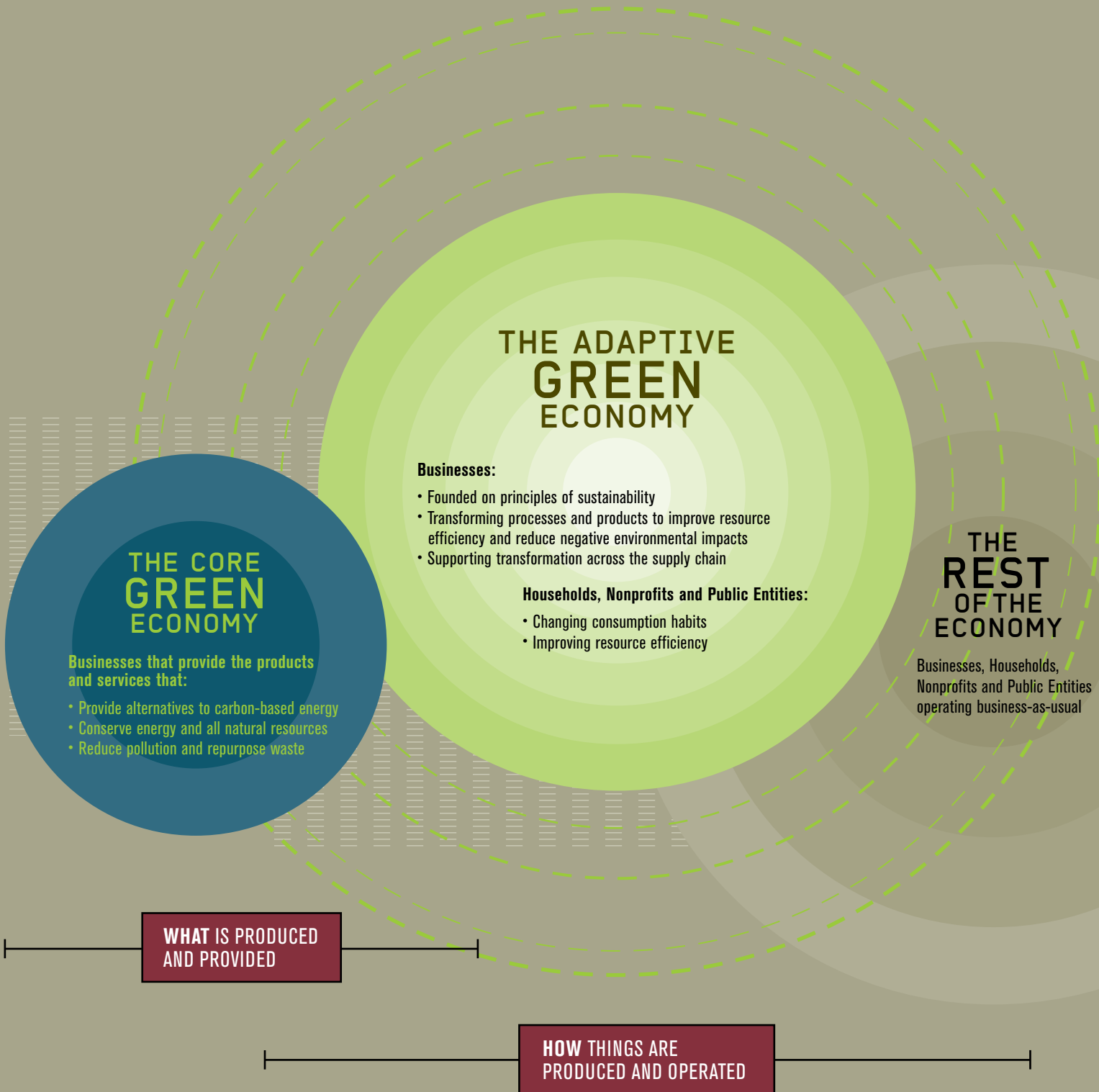
businesses, households and the public sector to make the needed investments in clean energy installations, energy efficiency, and other means for reducing negative environmental impacts (including greenhouse gas emissions) and raising the productivity of energy and all natural resources.

As businesses, residents, and public entities reel from rising resource prices, growing price volatility, and diminishing financial resources, they seek out new ways of cutting costs as a buffer against this growing uncertainty. When consumers seek out new types of products and new ways of doing things, creative entrepreneurs see new markets to serve. This shift to greater resource productivity translates into greater economic competitiveness as we improve our ability to do more with less.

While California's overall economy is lagging the nation's recovery, the state shows signs of recovery, economic growth and greater resource productivity. California's forward-thinking public policy record has served to support the growth of markets related to clean energy and related products. In addition, the state is home to some of the world's most innovative entrepreneurs and research centers. Further, the state benefits from its population of early adopters of new technology. These combined forces drive the innovation process and place the state at the forefront of the growing global green economy.

As consumer habits change, they stimulate new markets and new business activity. As new technologies emerge, they can create greater positive impacts for the environment as well as the economy. By raising efficiency standards, streamlining permitting, offering incentives, and providing creative forms of financing, smartly crafted public policy can reinforce and even speed these vital dynamics.

THE GREEN ECONOMY AND ITS MULTIPLE FACETS



The growing green economy is about both the emergence of new industries and the transformation of existing industries. There are multiple facets to the changes underway, and they are interrelated.

The economy consists of economic actors that are operating business-as-usual and those that are adapting to their new circumstances. Those committed to business-as-usual will eventually be priced out of existence as prices for energy and all natural resources continue to rise.

Other economic actors are seeking out new products and new ways of doing things in order to improve the resource efficiency of their own operations, and they make up the **“Adaptive Green Economy.”** The Adaptive Green Economy includes businesses, households, and public sector organizations that are changing their processes to improve sustainability, reduce costs or anticipate regulatory changes. These entities are reexamining their processes and investing in fundamental changes in their operations, as well as encouraging their suppliers to do likewise. Examples include the efforts of large corporations including Staples, Walmart and FedEx to significantly improve their own energy and resource efficiency and to set standards for their suppliers to follow suit. An added component of these efforts, besides the public relations value for the company, is the public awareness that is raised about actionable cost-effective measures. The actions of these companies and others demonstrate that transitioning away from business-as-usual and to the Adaptive Green Economy is good for the bottom line.² This is not only evident in the growing activities of business associations but also in the growing course offerings related to sustainability at business schools.³

Also included in the Adaptive Green Economy are new businesses founded on principles of sustainability. From the outset, these companies develop their products with consideration for the entire product lifecycle. Examples include Tom’s of Maine toothpaste and Method cleaning products. The success and resiliency of companies in the Adaptive Green Economy will signal to other companies across the economy to consider their own transformation to sustainable business practices. The jobs in the adaptive economy are an important aspect to the overall transformation, because as with information technology (IT), jobs using IT are far greater in number than the jobs creating IT.

The **Core Green Economy** provides the products and services that enable the transformation toward a cleaner, more efficient and more competitive economy. **The Core Green Economy consists of businesses that provide the products and services that:**

- **Provide alternatives to carbon-based energy sources**
- **Conserve energy and all natural resources**
- **Reduce pollution and repurpose waste**

The Core Green Economy represents a diverse mix of industries including novel technologies as well as tried and tested products. These include energy generation and efficiency as well as transportation and water efficiency. The 15 green segments of the Core Green Economy are described on **page 20.**

As these changes progress, demand for clean technology grows. This will yield positive environmental outcomes as well as new opportunities for business and employment growth. Public policy can spur this development by creating markets for clean technology.

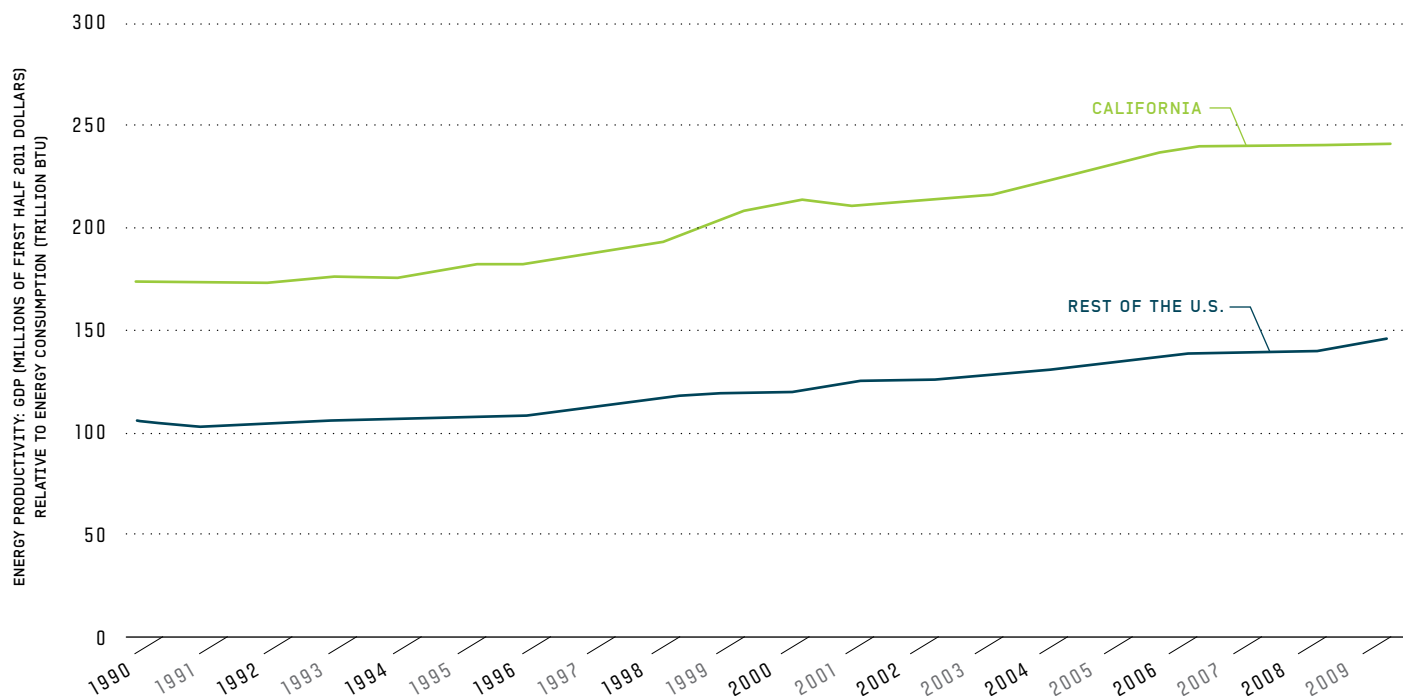
THE ADAPTIVE *green* ECONOMY

As businesses, households and the public sector look for ways to buffer against the uncertainty of rising energy prices, growing volatility and constrained capital markets, they are buying the products and services from the Core Green Economy and becoming more resource productive. As the operations adapt within a business or an entire industry, employees take on new tasks. This change is taking place across all sectors of the economy and at varying degrees.

The California Employment Development Department's Labor Market Information Division surveyed California employers to find out how "green activities" are penetrating the economy.

The results revealed that between 2009 and 2010, across nearly all industry sectors, 263,000 employees spent at least 50 percent of their time in one of the five "green activities." Statewide, Manufacturing represented the largest share, 26 percent (68,490 jobs) of these jobs. By industry, Utilities accounted for the sector with the highest percentage of jobs with "green activities," reporting that 26 percent of all utilities' employees spend at least half the time on "green activities." The Mining, Quarrying & Extraction industry has the second largest share of jobs that involve "green activities" with ten percent.

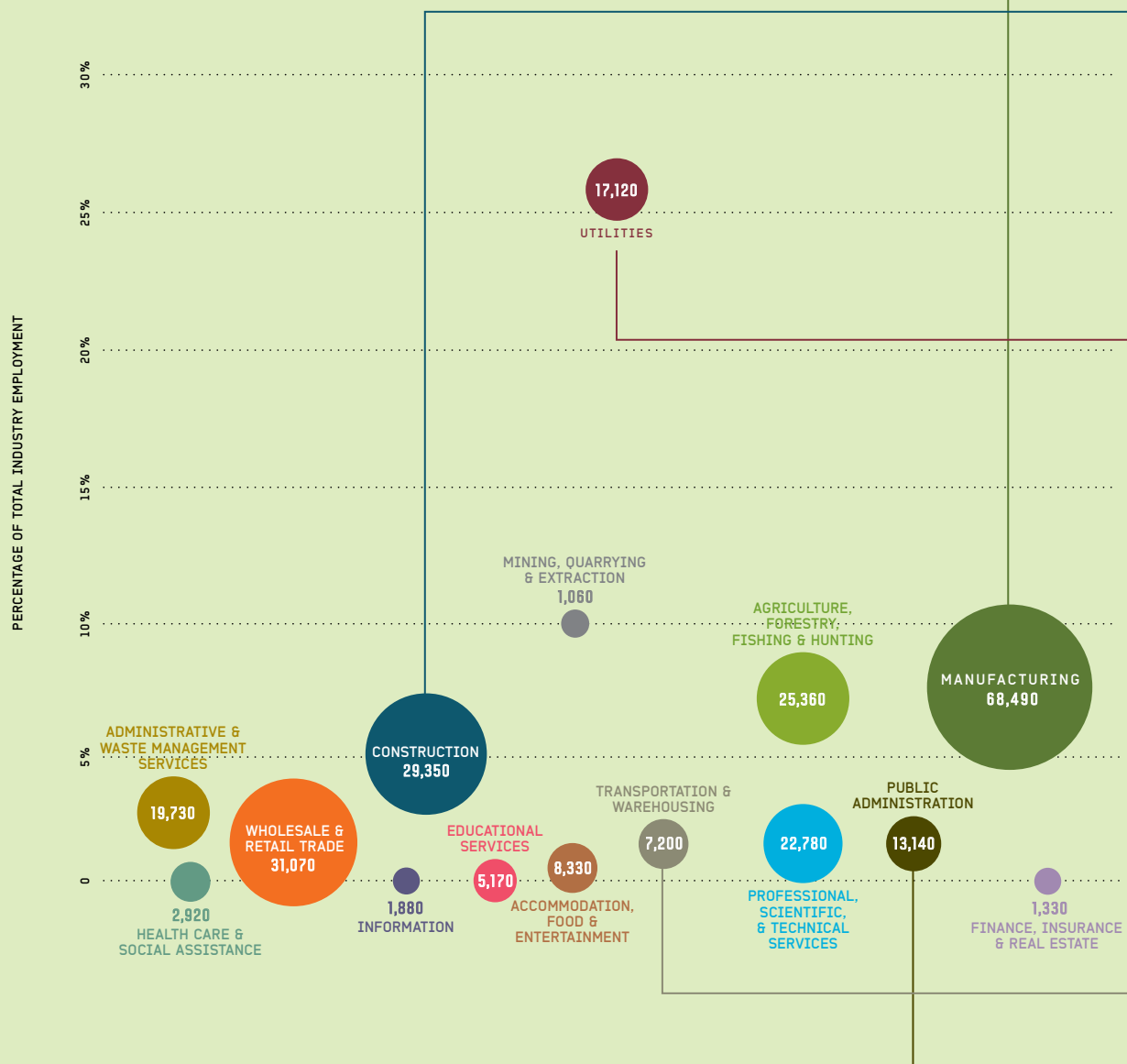
ENERGY PRODUCTIVITY / GDP RELATIVE TO TOTAL ENERGY CONSUMPTION



NEXT 10 MANY SHADES OF GREEN. Data Source: U.S. Department of Energy, Energy Information Administration; U.S. Department of Commerce, Bureau of Economic Analysis
Analysis: Collaborative Economics

CALIFORNIA'S ADAPTIVE GREEN ECONOMY

EMPLOYEES SPENDING AT LEAST HALF THEIR TIME ON GREEN ACTIVITIES



NEXT 10 MANY SHADES OF GREEN. Note: Survey data collected from May 2009 to January 2010. Source: California Employment Development Department, Labor Market Information Division. Analysis: Collaborative Economics

ANHEUSER BUSCH / MANUFACTURING

Located in Fairfield, Anheuser Busch Brewery has expanded its eco-friendly operations. In October 2011, the plant increased its green power supply with the installation of a wind turbine. The Plant General Manager estimates the turbine could provide 20 percent of the electricity for the brewery, in addition to four percent generated from its 6.5 acres of solar panels. The Anheuser Busch Brewery uses a Bio Energy Recovery System to generate more than 15 percent of the brewery's fuel needs by capturing nutrients in brewing wastewater for conversion into biogas. The facility also features a steam recovery project to heat water in the brew house, efficient boiler burners and air compressors, and a lighting upgrade replacing old fixtures with energy efficient gear and timers. Honored more than a dozen times for waste reduction, the Fairfield facility recycles more than 99 percent of its solid waste.

WEBCOR BUILDERS / CONSTRUCTION

As an award-winning leader in sustainable green building, Webcor Builders has been providing clients with efficient, high-performance buildings since the mid-1990s. Webcor Builders has established its leadership in sustainable and green building practices by using fewer building materials and strict environmental practices on site. Webcor also calculates a buildings' carbon footprint from design to finish, employs green office practices and its green building code expertise, and uses sustainable building materials and hi-tech innovation. To date, Webcor has constructed over 15 million square feet of Leadership in Energy and Environmental Design (LEED) buildings. Webcor leads by example, fostering an industry-wide culture of environmental responsibility and awareness through San Francisco's Green Building Task Force. Webcor is also one of the founding members of the Center for the Built Environment at the University of California, Berkeley.

SACRAMENTO MUNICIPAL UTILITY DISTRICT / UTILITIES

Sacramento Municipal Utility District (SMUD) is dedicated to helping customers reduce their carbon footprint as well as electricity costs. SMUD has programs in place to help both residential customers and businesses calculate their energy consumption and predict how much they could save with energy efficient appliances. SMUD also educates customers on conservation and energy efficient remodeling and offers rebates and incentives for products such as LED lighting, recycling refrigerators, clothes washers and dishwashers.

SMUD continues to help customers become more efficient users of energy, promotes the use of renewable resources like the wind and sun, and reduces the amount of greenhouse gases produced locally.

PORT OF LOS ANGELES / TRANSPORTATION

Since committing to the Clean Air Action Plan in November 2006, the Port of Los Angeles has significantly cut its emissions. Using electric trucks, an environmental management system, and water quality improvement initiatives as well as implementing many other procedures, the Port of Los Angeles has seen a 69 percent reduction in diesel particulate matter, a 76 percent reduction in sulfur oxide emissions, and a drop of 48 percent in carbon monoxide emissions among other achievements.

Through the Port of Los Angeles Air Quality Mitigation Incentive Program, a partnership has formed with the California State University Long Beach (CSULB) Foundation to develop and test a new seawater scrubber vessel system. This system has the potential to reduce emissions by as much as 85 percent, even as cargo volumes rise.

UNITED STATES NAVY / PUBLIC SECTOR

The U.S. Armed Forces are adapting to new, more productive ways, and the U.S. Navy is committed to reducing reliance on fossil fuels. For example, Tributyl tin-free hull and propeller coatings and stern flaps are being used to reduce drag and trim loop boiler control systems to optimize the amount of energy used to create steam for shipboard applications. All U.S. Navy warships have equipment onboard to compress and store all plastics, process biodegradable materials for safe discharge, and keep oil waste out of the ocean. The Navy is cleaning up bases that have been impacted by past operations.

The Navy is actively developing and participating in energy, environmental and climate change initiatives that will increase use of renewable energy. The military's geothermal program is managed by the Geothermal Program Office located in Southern California. Their mandate is to oversee exploration for — and development of — geothermal resources wherever they occur on lands under the control of any of the nation's military services.

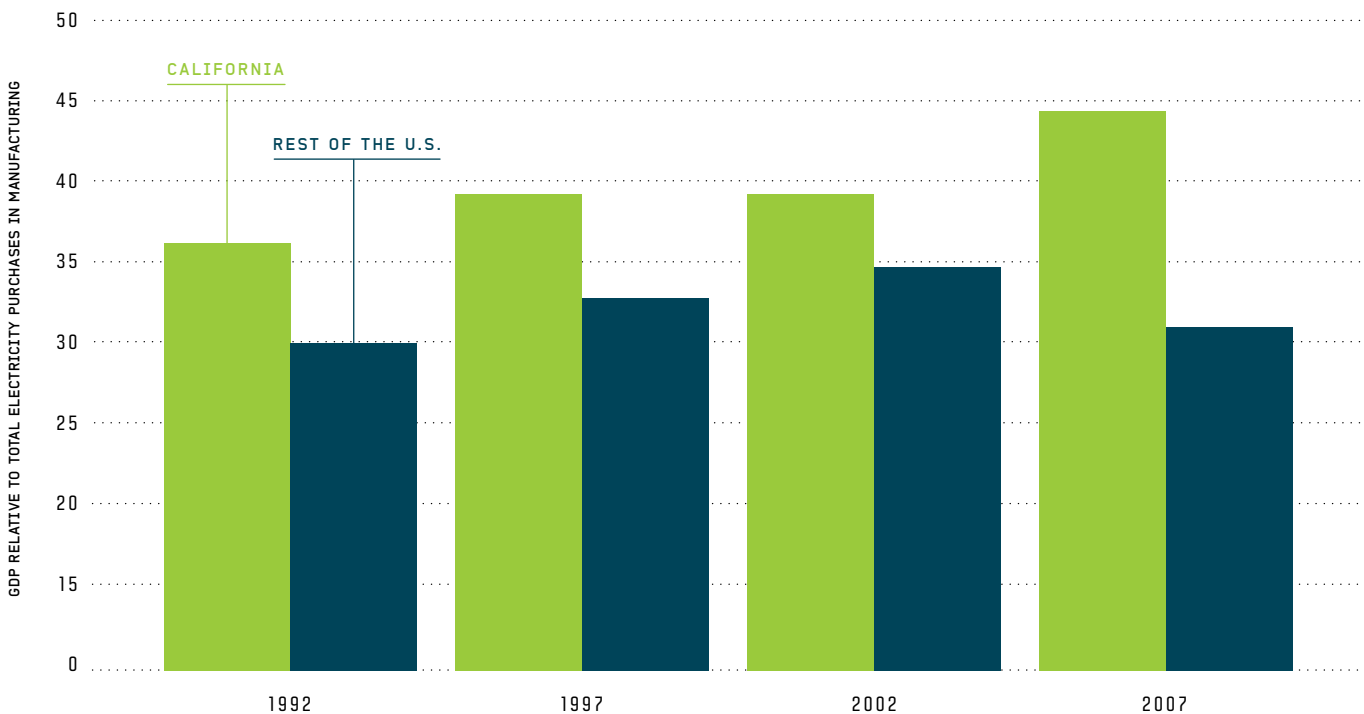
Adapting and Creating New Value

When we improve energy efficiency, we can do more while consuming less. This is so for a household, public office, or business. When a business can produce its products while spending less on energy, cash saved can be invested in new machinery and equipment, research, or hiring new employees. Improving energy efficiency is good for gaining a competitive advantage as a business as well as an economy.

For an economy, energy productivity can be measured by dividing total energy consumption by the gross domestic product (GDP). Growth in energy productivity equates to more dollars of GDP generated per unit of energy consumed. California is 64 percent more productive with its energy than the rest of the country. Energy productivity has been on the rise in both California (+37%) and the rest of the country (+35%) since 1990.

Looking specifically at electricity purchases of manufacturing establishments relative to GDP, California has consistently experienced higher electricity productivity than the national average. This measure expresses the amount of value created for every dollar spent on electricity by manufacturing plants. California's electricity productivity in manufacturing has increased 21 percent from 1992 to 2007. More recently, California's electricity productivity in manufacturing improved 13 percent from 2002 to 2007, while dropping by ten percent in the rest of the nation. In other words, California manufacturers generated nearly \$44 in new value for every dollar spent on manufacturing electricity, \$13 more than manufacturers in the rest of the nation.

ELECTRICITY PRODUCTIVITY IN MANUFACTURING / GDP FROM MANUFACTURING RELATIVE TO TOTAL ELECTRICITY PURCHASES



NEXT 10 MANY SHADES OF GREEN. Note: Manufacturing excludes publishing firms for 1992 data due to differences in SIC and NAICS classifications. Data Source: U.S. Census Bureau, Economic Census 1992, 1997, 2002, 2007 and U.S. Department of Commerce, Bureau of Economic Analysis. Analysis: Collaborative Economics

OCCUPATIONS IN CALIFORNIA'S *green* ECONOMY

As green activities increase across the entire economy, companies providing the products and services required for improving resource productivity and reducing negative environmental impacts will benefit. As a result, jobs related to green activities will grow. In some cases, existing occupations will expand to include new tasks. In other cases, entirely new occupations will emerge.

In most cases, the types of jobs associated with producing products in the Core Green Economy will also be associated with using these products in the rest of the economy as businesses adapt to becoming more resource productive. These occupations range from Ph.D. scientists and engineers to a variety of technicians requiring two-year training as well as support occupations offering on-the-job training.

Some occupations are experiencing new demand in the labor market such as Electricians, Electrical Power Line Installers & Repairers, Environmental Scientists, and Industrial Machinery Mechanics. In some cases, the skills and tasks associated with an existing occupation are expanding to encompass the tasks related to new technology and regulations. These include Supply Chain Managers, Operations & Building Managers, Fuel Storage Technicians, Architects, Energy Infrastructure Engineers, and Sustainable Agriculture Specialists.

In addition to existing occupations, entirely new occupations are emerging. New positions, such as Chief Sustainability Officer or Energy Auditor, target newly recognized needs for improving resource efficiencies and managing sustainability more broadly. In other cases, entirely new occupations are appearing that are specific to the installation and application of new technology such as Solar Photovoltaic Installers, Biofuels Processing Technicians, Biomass Production Managers, Methane/Landfill Gas Generation System Technicians, Solar Thermal Installers & Technicians, and Fuel Cell Technicians.

Education and work experience requirements span short-term on-the-job training to postsecondary vocational awards and long-term on-the-job training. The median annual earnings

of these occupations range from \$27,000 to \$200,000 and higher in the first quarter of 2011.

In response to real changes in the economy, the information on occupational statistics collected and reported by the Federal government is expanding in order to reflect the emergence of new occupations and the increasing demand and changing skill sets of existing occupations related to new green business activities in the economy. Of the existing occupational codes, occupations related to "green" activities have been ordered by the U.S. Department of Labor's National Center for O*NET Development into three categories: Green Increased Demand Occupations, Green Enhanced Skills Occupations, and Green New and Emerging Occupations.⁴ The O*NET report describes the categories as follows:

_Green Increased Demand Occupations: The impact of green economy activities and technologies is an increase in the employment demand for an existing occupation. However, this impact does not entail significant changes in the work and worker requirements of the occupation. The work context may change, but the tasks themselves do not.

_Green Enhanced Skills Occupations: The impact of green economy activities and technologies result in a significant change to the work and worker requirements of an existing occupational code. This impact may or may not result in an increase in employment demand for the occupation. The essential purposes of the occupation remain the same, but tasks, skills, knowledge, and external elements, such as credentials, have been altered.

_Green New and Emerging Occupations: The impact of green economy activities and technologies is sufficient to create the need for unique work and worker requirements, which results in the generation of a new occupational code. This new occupation could be entirely novel or "born" from an existing occupation.

The following tables illustrate examples in each of these categories.

GREEN INCREASED DEMAND OCCUPATIONS

OCCUPATIONAL TITLE	Q1 2011 MEDIAN ANNUAL EARNINGS	EDUCATION & TRAINING
Electrical and Electronic Equipment Assemblers	\$32,492	Short-term on-the-job training
Engine and Other Machine Assemblers	\$36,838	Short-term on-the-job training
Industrial Truck and Tractor Operators	\$36,422	Short-term on-the-job training
Cement Masons and Concrete Finishers	\$49,895	Moderate-term on-the-job training
Computer-Controlled Machine Tool Operators, Metal and Plastic	\$37,281	Moderate-term on-the-job training
Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$35,162	Moderate-term on-the-job training
Mixing and Blending Machine Setters, Operators, and Tenders	\$33,602	Moderate-term on-the-job training
Insulation Workers, Floor, Ceiling, and Wall	\$49,725	Moderate-term on-the-job training
Operating Engineers and Other Construction Equipment Operators	\$64,666	Moderate-term on-the-job training
Production, Planning, and Expediting Clerks	\$49,040	Moderate-term on-the-job training
Structural Metal Fabricators and Fitters	\$38,122	Moderate-term on-the-job training
Electrical Power-Line Installers and Repairers	\$78,805	Long-term on-the-job training
Electricians	\$60,284	Long-term on-the-job training
Industrial Machinery Mechanics	\$55,225	Long-term on-the-job training
Power Distributors and Dispatchers	\$78,864	Long-term on-the-job training
Structural Iron and Steel Workers	\$56,875	Long-term on-the-job training
Chemical Technicians	\$46,234	Associate degree
Electronics Engineering Technicians	\$62,846	Associate degree
Forest and Conservation Technicians	\$39,552	Associate degree
Chemical Engineers	\$108,178	Bachelor's degree
Chemists	\$82,385	Bachelor's degree
Commercial and Industrial Designers	\$66,873	Bachelor's degree
Industrial Engineers	\$90,966	Bachelor's degree
Industrial Safety and Health Engineers	\$87,937	Bachelor's degree
Materials Scientists	\$89,632	Bachelor's degree
Occupational Health and Safety Specialists	\$76,698	Bachelor's degree
Natural Sciences Managers	\$152,552	Bachelor's or higher degree, plus work experience
Environmental Scientists and Specialists, Including Health	\$75,880	Master's degree
Hydrologists	\$94,267	Master's degree
Architectural Drafters	\$55,675	Postsecondary vocational award
Electrical and Electronics Repairers, Commercial and Industrial Equipment	\$57,914	Postsecondary vocational award
Refrigeration Mechanics and Installers	\$50,992	Postsecondary vocational award
Solderers and Brazers	\$39,684	Postsecondary vocational award
Agricultural Inspectors	\$47,450	Work experience in a related occupation
First-Line Supervisors/Managers of Mechanics, Installers, and Repairers	\$69,109	Work experience in a related occupation
First-Line Supervisors/Managers of Production and Operating Workers	\$58,958	Work experience in a related occupation
Industrial Production Managers	\$103,223	Work experience in a related occupation

GREEN ENHANCED SKILLS OCCUPATIONS

OCCUPATIONAL TITLE	Q1 2011 MEDIAN ANNUAL EARNINGS	EDUCATION & TRAINING
Construction Laborers	\$40,646	Moderate-term on-the-job training
Roofers	\$47,408	Moderate-term on-the-job training
Machinists	\$40,666	Long-term on-the-job training
Agricultural Technicians	\$35,297	Associate degree
Electrical Engineering Technicians	\$62,846	Associate degree
Environmental Engineering Technicians	\$58,580	Associate degree
Geological Sample Test Technicians	\$94,603	Associate degree
Industrial Engineering Technicians	\$52,814	Associate degree
Architects, Except Landscape and Naval	\$92,300	Bachelor's degree
Civil Engineers	\$96,312	Bachelor's degree
Construction Managers	\$111,688	Bachelor's degree
Electrical Engineers	\$100,527	Bachelor's degree
Environmental Engineers	\$91,394	Bachelor's degree
Mechanical Engineers	\$92,150	Bachelor's degree
General and Operations Managers	\$129,920	Bachelor's or higher degree, plus work experience
Geoscientists, Except Hydrologists and Geographers	\$85,671	Master's degree
Urban and Regional Planners	\$81,053	Master's degree
Bus and Truck Mechanics and Diesel Engine Specialists	\$48,589	Postsecondary vocational award
Heating and Air Conditioning Mechanics and Installers	\$50,992	Postsecondary vocational award
Construction and Building Inspectors	\$71,001	Work experience in a related occupation
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$88,005	Work experience in a related occupation

EXAMPLES OF OTHER OCCUPATIONS IN GREEN ESTABLISHMENTS

OCCUPATIONAL TITLE	Q1 2011 MEDIAN ANNUAL EARNINGS	EDUCATION & TRAINING
Regulatory Affairs Specialists	\$70,877	Long-term on-the-job training
Automotive Engineering Technicians	\$56,377	Associate degree
Precision Agriculture Technicians	\$50,083	Associate degree
Robotics Technicians	\$51,710	Associate degree
Biochemical Engineers	\$104,003	Bachelor's degree
Energy Auditors	\$72,111	Bachelor's degree
Logistics Analysts	\$80,179	Bachelor's degree
Remote Sensing Scientists and Technologists	\$105,245	Bachelor's degree
Biofuels/Biodiesel Technology and Product Development Managers	\$146,610	Bachelor's or higher degree, plus work experience
Chief Sustainability Officers	\$201,006	Bachelor's or higher degree, plus work experience
Green Marketers	\$105,258	Bachelor's or higher degree, plus work experience
Water Resource Specialists	\$152,552	Bachelor's or higher degree, plus work experience
Climate Change Analysts	\$75,880	Master's degree
Environmental Economists	\$104,307	Master's degree
Transportation Planners	\$78,348	Master's degree
Biofuels Production Managers	\$103,223	Work experience in a related occupation
Brownfield Redevelopment Specialists and Site Managers	\$123,793	Work experience in a related occupation
Recycling Coordinators	\$47,638	Work experience in a related occupation
Solar Energy Installation Managers	\$75,797	Work experience in a related occupation
Solar Sales Representatives and Assessors	\$88,005	Work experience in a related occupation

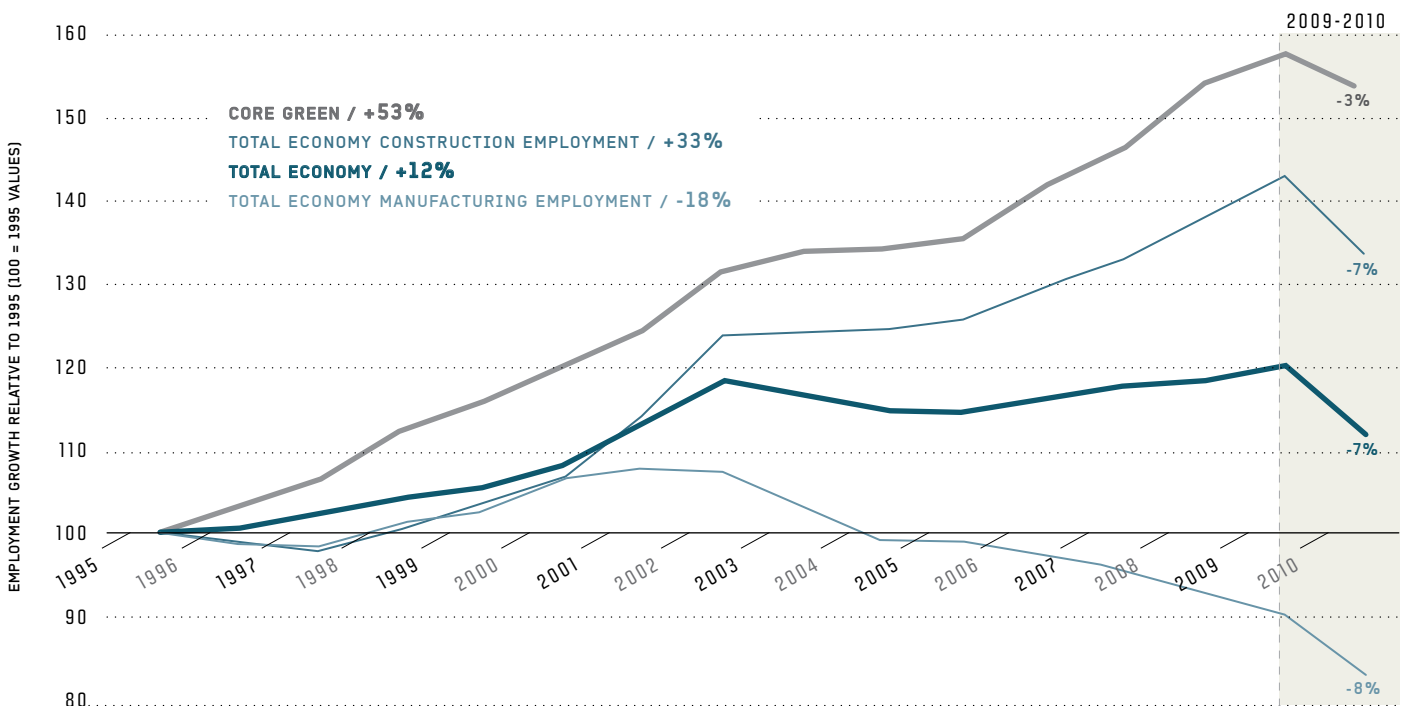
THE CORE *green* ECONOMY

California's Core Green Economy showed signs of greater resilience than the California economy as a whole during the recent economic crisis. The Core Green Economy provides the products and services that enable the transformation toward a cleaner, more efficient and more competitive economy. The businesses that make up the Core Green Economy have consistently outpaced the state's total economic growth. Over the long term, employment in the Core Green Economy increased 53 percent, while the total economy expanded by only 12 percent from January 1995 to 2010 in California. From January 2009 to 2010,

total employment in the state dropped seven percent yet employment in the Core Green Economy dropped by just three percent.

The economy is large and diverse, and the impact of the recent economic downturn varies by industry. All industry sectors, except for Manufacturing, have maintained employment above 1995 levels. In comparison with the major sectors, the Core Green Economy has made the largest strides in employment growth since 1995, and benefited from one of the lowest rates of contraction in the most recent observable year.

EMPLOYMENT GROWTH RELATIVE TO 1995 / CALIFORNIA



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

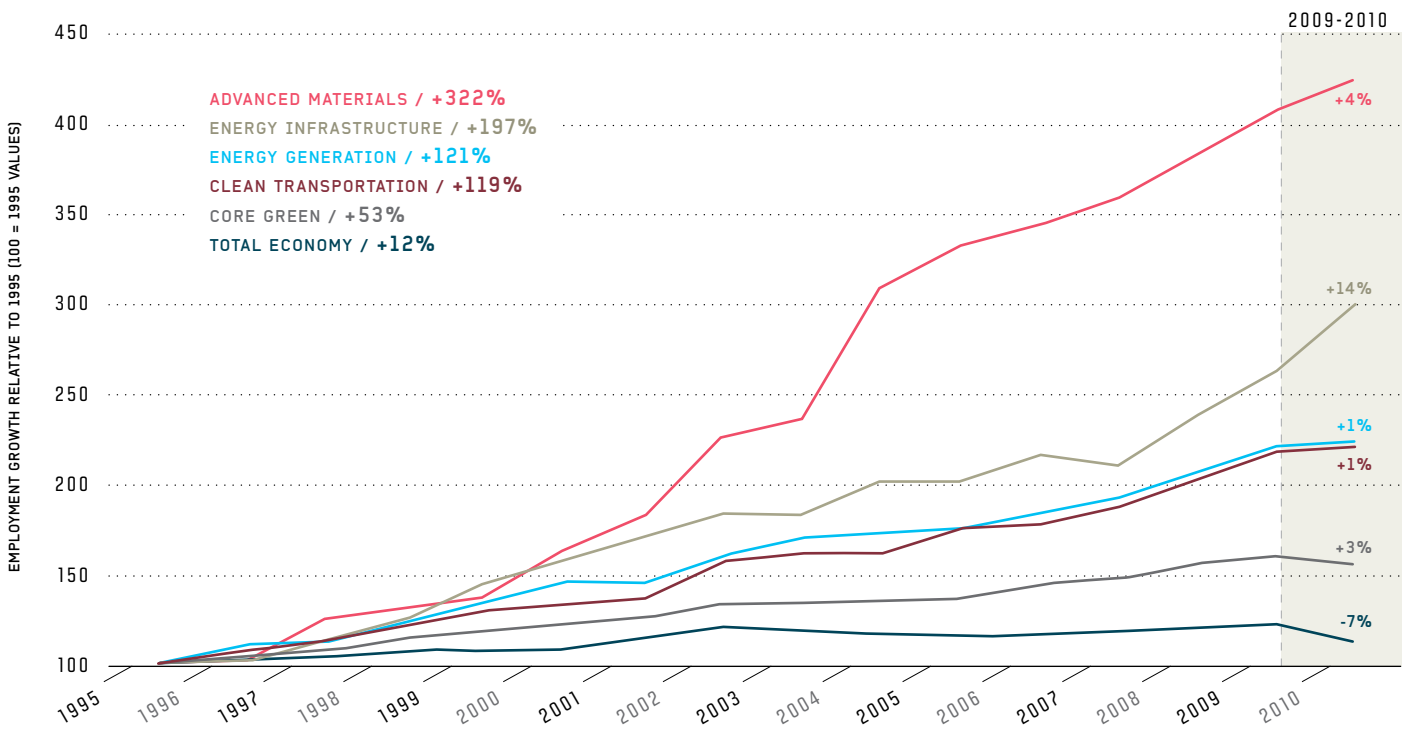
Despite the recent economic downturn, reflected by an overall employment decline in both Core Green and total economy, several Core Green sectors added jobs. From January 2009 to 2010, employment expanded in Energy Infrastructure (+14%), Advanced Materials (+4%), Energy Generation (+1%) and Clean Transportation (+1%).

Across California's eleven economic regions, outcomes vary. Over the long term, the Core Green Economy has outpaced total economic growth in all but the Sierra Region. While statewide green employment fell by three percent in the most recent observable year, the San Diego Region, the Bay Area and the Sacramento Area have shown the greatest resilience with losses of less than two percent from January 2009 to 2010.

Growth in the Core Green Economy varies across the fifteen green segments (detailed on **page 20**). Over a 16-year period, Energy Generation and Air & Environment have experienced the largest employment gains. These two segments combined contributed over 32,900 jobs statewide since 1995. Advanced Materials, Clean Manufacturing & Industrial, and Energy Infrastructure reported the largest percent gains in employment from 1995 to 2010, far exceeding average job growth in both the Core Green Economy and the economy as a whole.

Many of these sizeable and rapidly growing sectors continued to thrive in recent years. While most industries, green or not, suffered employment losses from January 2009 to 2010, as mentioned earlier, this was not the case for Energy

LEADING CORE GREEN SEGMENT GROWTH RELATIVE TO 1995 / CALIFORNIA



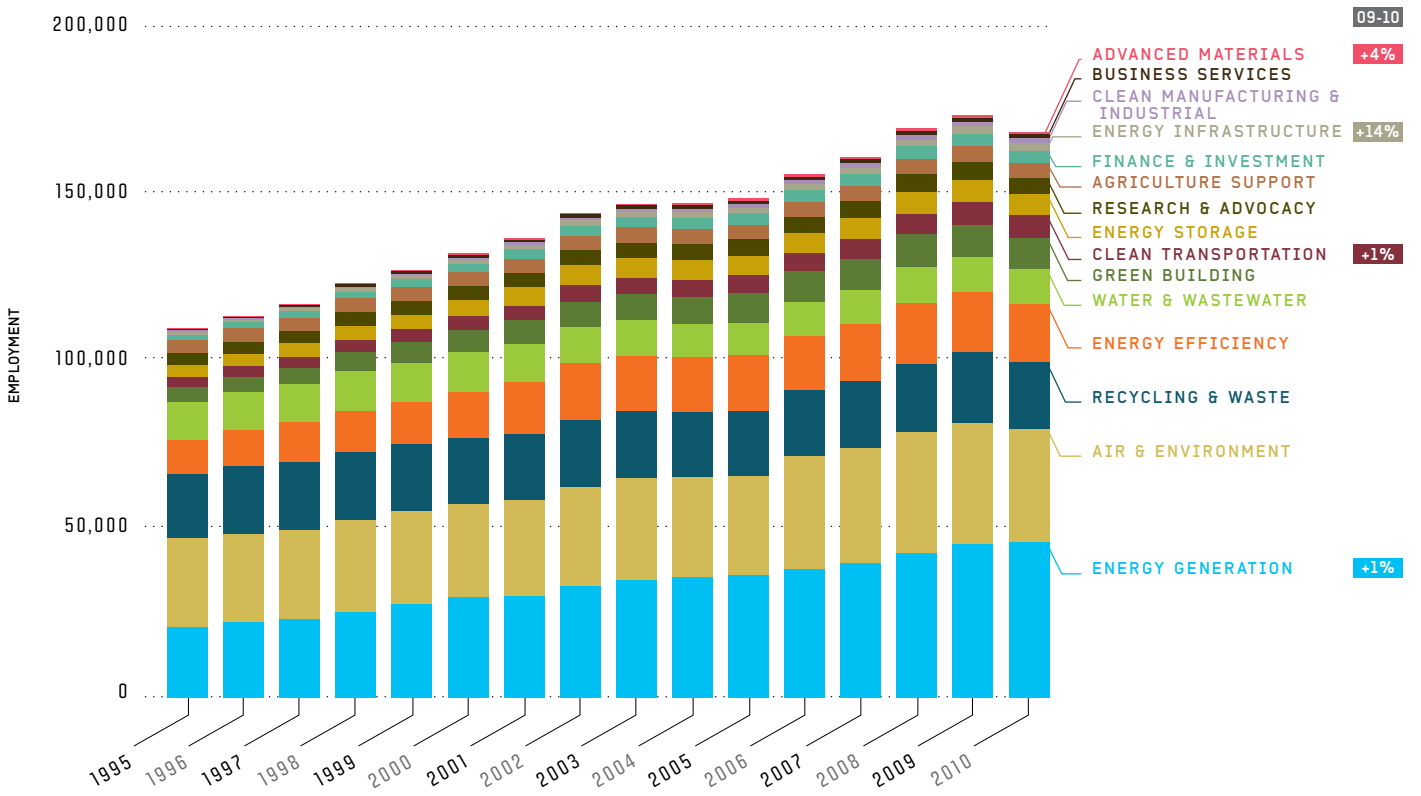
NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

Infrastructure, Advanced Materials, Clean Transportation, and Energy Generation. Jobs were created in each of these segments amidst tough economic conditions. Additionally, employment in these segments has at least doubled since 1995. Energy Infrastructure employment expanded by 14 percent in a single year, with the addition of nearly 300 jobs statewide in 2010.

The trends and composition of the Core Green Economy varies across California's eleven regions (defined on the inside back cover). High concentration of activity in green segments regionally is leading to the development of world-class industry hubs statewide. The Bay Area excels in nearly all green segments and features the state's highest employment

concentrations in Finance & Investment, Advanced Materials, Energy Infrastructure, and Clean Manufacturing & Industrial. In each of these segments, employment is at least 2.6 times more concentrated than in the state as a whole. Clean Transportation activity is highly concentrated in the Inland Empire and Orange County. The San Diego Region is leading the state in Energy Infrastructure, while the Sacramento Area is strong in Green Building. The Sacramento Valley, Sierra Region, and North Coast are clear leaders in Agriculture Support. The following sections will provide further insight into the unique regional stories across the state's eleven economic regions.

EMPLOYMENT BY GREEN SEGMENT / CALIFORNIA



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

THE *value* CHAIN

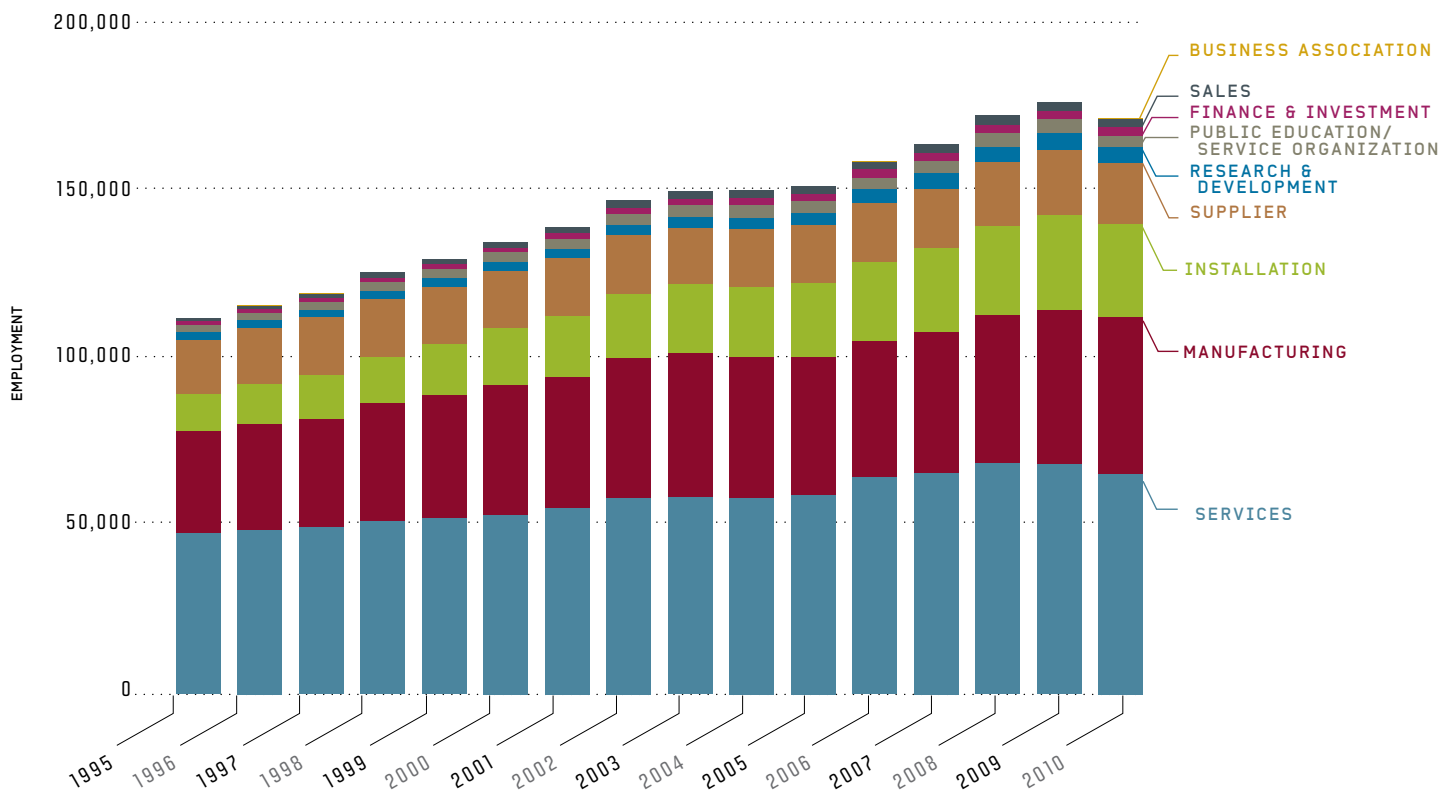
California is home to many companies that are driving technological advancements in products and services that will enable the entire economy to transition to clean energy sources, improve resource efficiencies, and reduce pollution. From the point of conception until delivery to the consumer and the maintenance over the lifetime of the product, there are many distinct activities that take place in the economy.

In addition to viewing the Core Green Economy by green segment, that is, by the field of application of products and services, businesses can also be viewed by their primary functions along the production value chain. These roles include

Research & Development, Manufacturing, Suppliers, Installers, Sales, Service providers, and Public Education Services. All of these roles are represented to varying degrees in California's Core Green Economy, which means there exist: 1) wide-ranging job opportunities across the skills spectrum, and 2) strong potential for continued green business growth building on a diverse business base rich with interrelated competencies.

High-value services and manufacturing make up the bulk of businesses comprising California's Core Green Economy. Thirty-eight percent of employment was attributed to establishments classified as Services in 2010. Manufacturing

EMPLOYMENT ALONG THE VALUE CHAIN / CALIFORNIA



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

activity comprises 27 percent of the employment in the Core Green Economy, compared with ten percent in California's total economy.

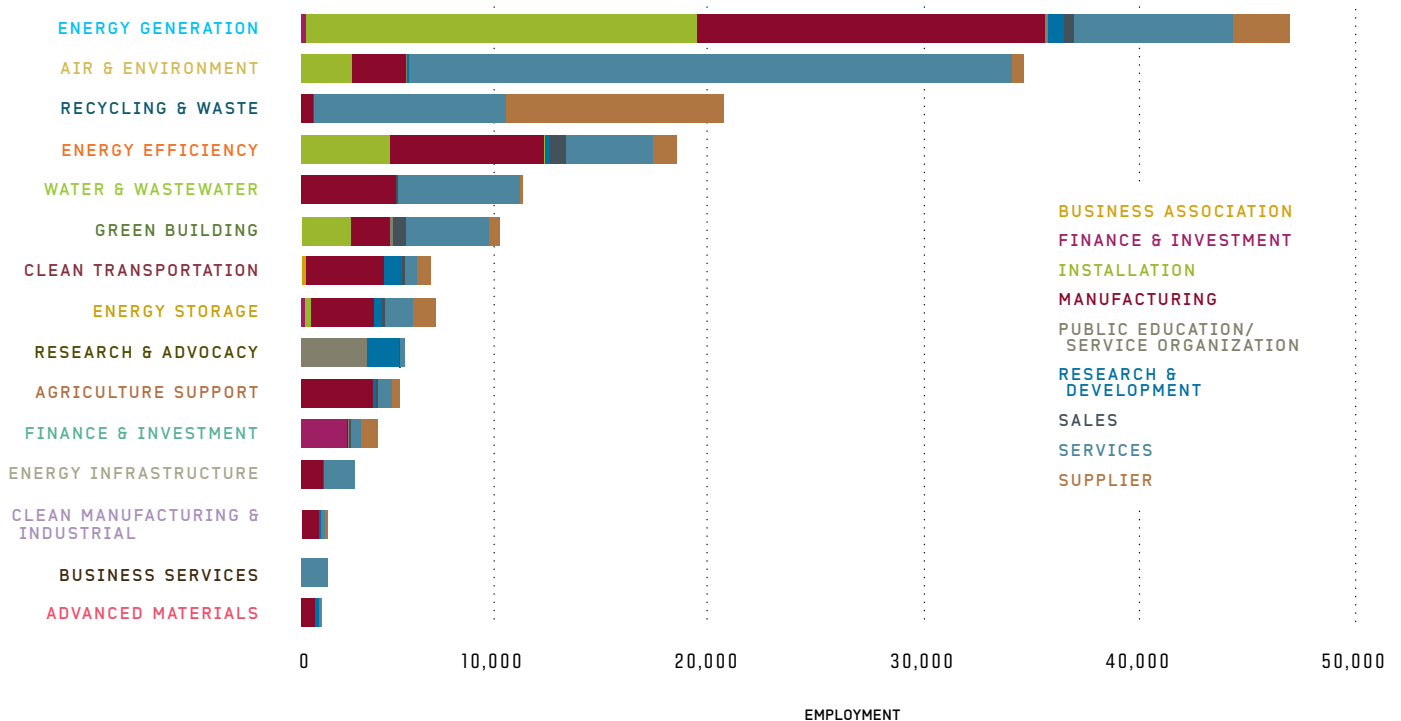
Some value chain sectors have grown faster than others. Growing at the same rate as the Core Green Economy as a whole, Manufacturing employment expanded by 53 percent since 1995. One of the fastest growing sectors of the value chain, Installation, reported employment levels 2.7 times greater in 2010 than in 1995. Finance & Investment, Sales, and Research & Investment exhibited impressive growth in the long-run view.

In the most recent observable period, January 2009 to 2010, Manufacturing was the only value chain sector with employment gains, inching up by one percent. Finance &

Investment and Installation employment remained fairly stable, declining by one percent each. The largest losses took place in Research & Development and Public Education & Service Organizations which contracted by ten percent and 12 percent respectively. However, Research & Development jobs in the long-run nearly doubled since 1995 with the addition of more than 2,100 jobs.

By green segment, Manufacturing and Services hold the largest employment shares, with varied representation among the remaining value chain sectors. Energy Generation, the largest green segment, is comprised chiefly of Installation and Manufacturing jobs which account for 40 and 35 percent, respectively. This is also the only green segment with employment spanning all value chain activities.

VALUE CHAIN EMPLOYMENT BY SEGMENT / CALIFORNIA, 2010



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

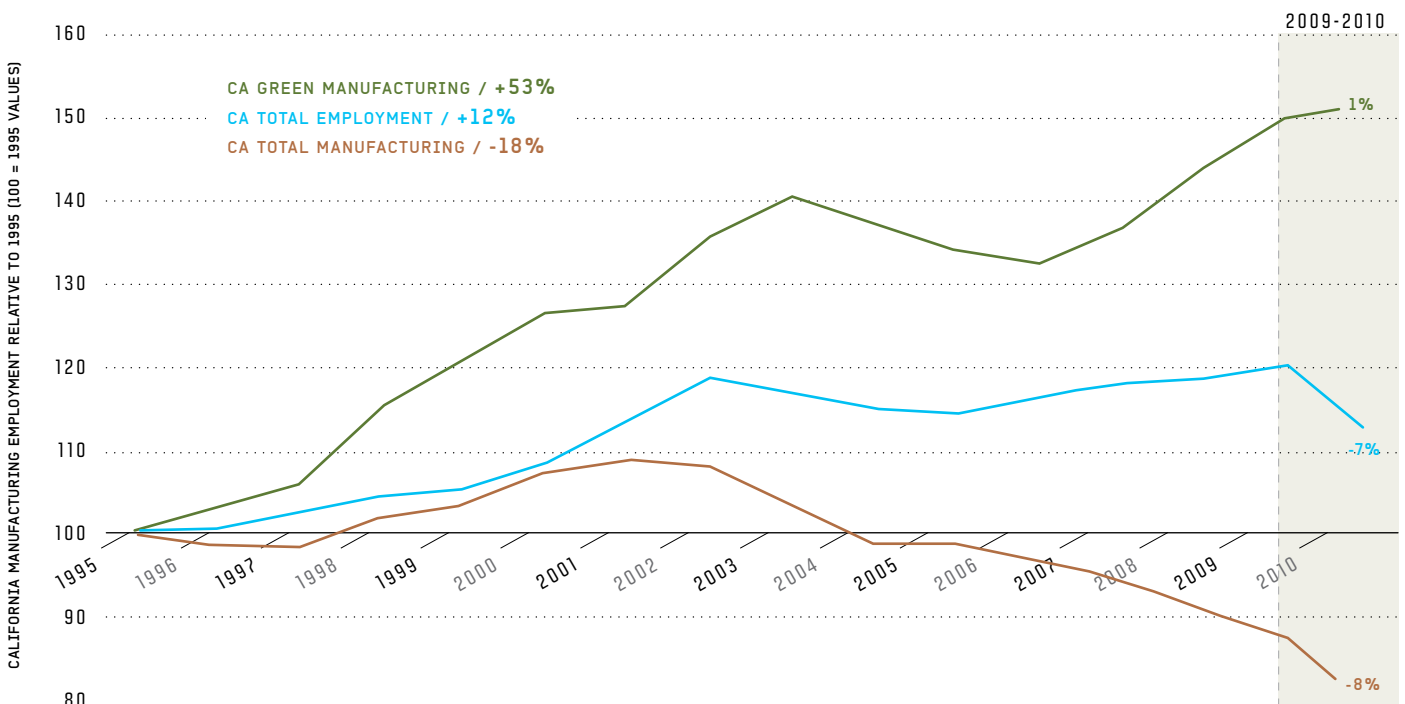
Service jobs dominate in Air & Environment, accounting for 83 percent of segment employment. Recycling & Waste employment is split almost exclusively between Supplier and Services positions. Energy Efficiency is diverse in value chain activities and includes employment in Manufacturing (41%), Installation and Services (23% each), and smaller portions in Supplier, Sales, and Research & Development. Nearly half of Energy Storage employment in the state is in Manufacturing activities.

Looking at roles in the value chain, Manufacturing employment is concentrated in Energy Generation (36%), with significant shares in Energy Efficiency (16%), Clean Transportation (10%) and Water & Wastewater (10%). A staggering two thirds of Installation employment is in Energy Generation, with the remainder falling primarily in Energy Efficiency and Air &

Environment. Clean Transportation accounts for 20 percent of Research & Development. This is second to only Research & Advocacy which features 35 percent of R&D employment in the Core Green Economy.

Compared to the total economy, Manufacturing in the Core Green Economy has outpaced total manufacturing and total employment for the state over the long term and most recently. Illustrated in the chart below, Manufacturing in the Core Green Economy expanded 53 percent from 1995 to 2010 and one percent over the most recent period. Total manufacturing in the state dropped by 18 percent over the 16-year period and by eight percent in from January 2009 to 2010. California's economy as a whole expanded 12 percent over the 16-year period and dropped seven percent over the last observable year.

MANUFACTURING EMPLOYMENT RELATIVE TO 1995 / CALIFORNIA



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database, National Establishment Time-Series (NETS) Database. Analysis: Collaborative Economics

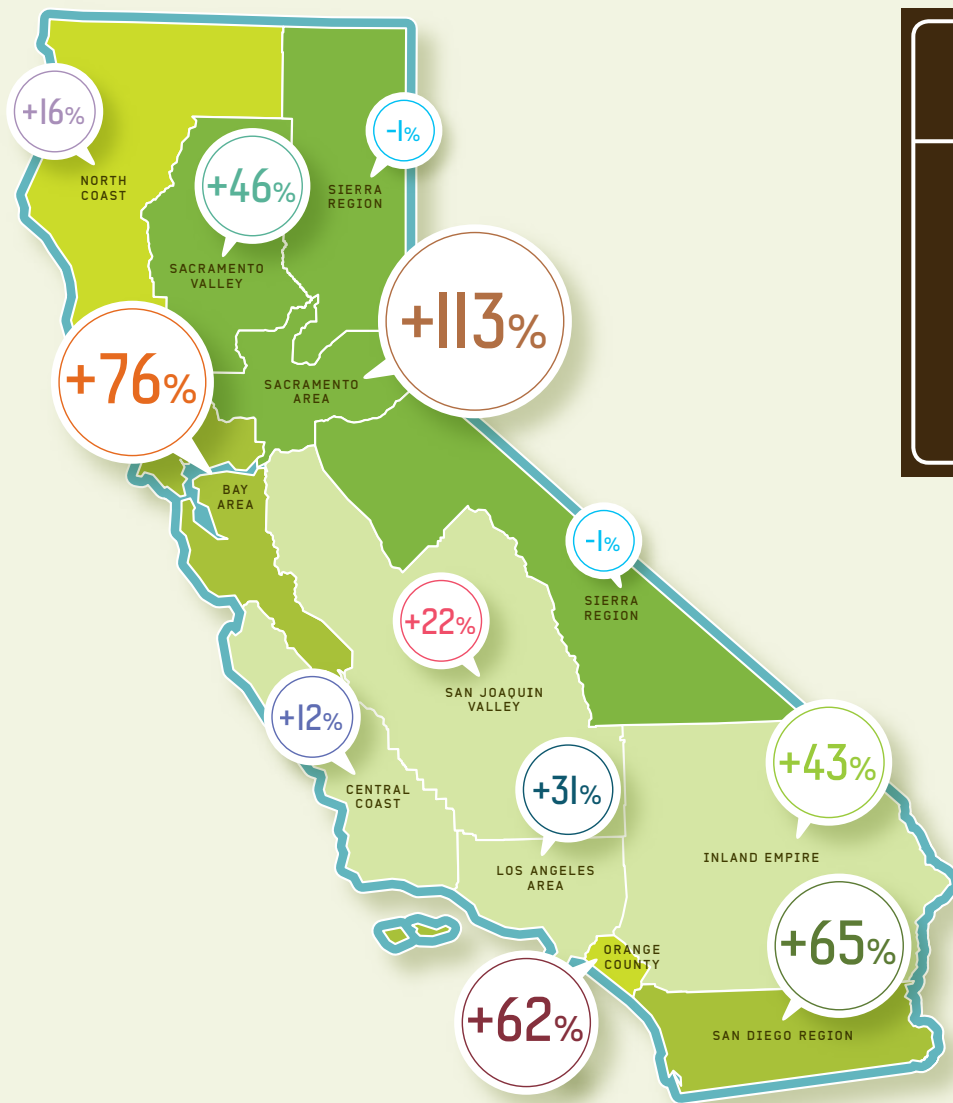
THE FIFTEEN SEGMENTS OF THE CORE GREEN ECONOMY

GREEN SEGMENT	DESCRIPTION
Energy Generation	<ul style="list-style-type: none"> Renewable energy generation (all forms of solar, wind, geothermal, biomass, hydro, marine and tidal, hydrogen, co-generation) Research and Testing in renewable energy
Energy Efficiency	<ul style="list-style-type: none"> Energy conservation consulting and engineering Building efficiency products and services Energy efficiency research
Clean Transportation	<ul style="list-style-type: none"> Alternative fuels (biodiesel, hydrogen, feedstock-neutral ethanol infrastructure) Motor vehicles & equipment (electric, hybrid, and natural gas vehicles, diesel technology)
Energy Storage	<ul style="list-style-type: none"> Advanced batteries (Li-Ion, NiMH) Battery components and accessories
Air & Environment	<ul style="list-style-type: none"> Environmental consulting (environmental engineering, sustainable business consulting)
Recycling & Waste	<ul style="list-style-type: none"> Consulting services 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
Agriculture Support	<ul style="list-style-type: none"> Sustainable land management and business consulting services
Research & Advocacy	<ul style="list-style-type: none"> Organizations 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
Finance & Investment	<ul style="list-style-type: none"> Emission trading and offsets Venture capital and private equity investment
Advanced Materials	<ul style="list-style-type: none"> Bioplastics
Green Building	<ul style="list-style-type: none"> Design and construction Building materials
Clean Manufacturing & Industrial Support	<ul style="list-style-type: none"> Advanced packaging Process management and consulting
Energy Infrastructure	<ul style="list-style-type: none"> Consulting and management services

REGIONAL DISTRIBUTION and TRENDS

The Core Green Economy is present in every region in California, and each region has its own areas of specialization.

TOTAL CORE GREEN ECONOMY / PERCENT CHANGE IN EMPLOYMENT FROM 1995 TO 2010
EMPLOYMENT CONCENTRATION BY REGION RELATIVE TO CALIFORNIA, JANUARY 2010



Core Green Economy Job Growth
1995-2010 (January)

2010 Employment Concentration
in Total Core Green Economy
(a value of 1.0 indicates employment
concentration equal to the state average)

- Less than 1.0
- 1.0 to 1.1
- 1.2 to 1.3
- More than 1.3

NEXT 10 MANY SHADES OF GREEN.
Data Source: Green Establishment Database
Analysis: Collaborative Economics

BAY AREA

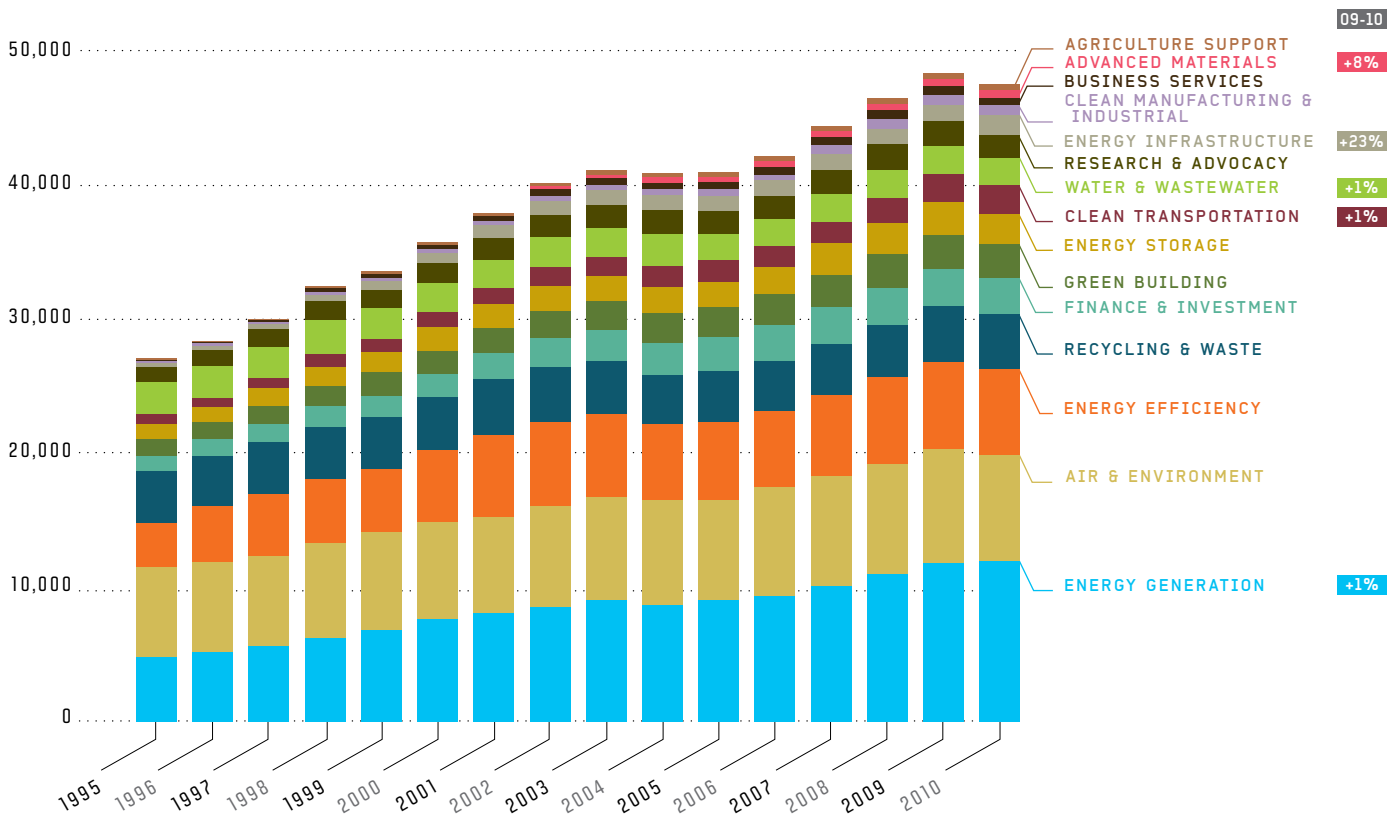
Recognized globally as a powerhouse of green innovation, the Bay Area represents 28 percent of employment and 27 percent of businesses in California's Core Green Economy. With the addition of nearly 20,600 jobs since 1995, employment in green sectors has increased 76 percent. Total Bay Area employment has expanded only six percent. Weakening numbers in the total economy in the Bay Area were mirrored on the state level where Core Green employment fell three percent and businesses ten percent. This means that while suffering, the Bay Area's Core Green Economy is holding out better than the state as a whole. From January 2009 to 2010, green industries in the Bay Area suffered modest contractions; roughly 840 jobs were lost and 350 businesses closed, representing a two and nine percent decline respectively. In contrast, the Bay Area economy as a whole experienced a seven percent decline in employment and a 14 percent decline in establishments.

Despite the overall losses, Energy Infrastructure expanded 23 percent, gaining 290 jobs. Energy Generation, Advanced Materials, Water & Wastewater, and Clean Transportation all reported employment growth. Air & Environment accounted for the greatest losses, shrinking 12 percent in employment and 16 percent in establishments.

The largest segment in the Bay Area's Core Green Economy, Energy Generation accounts for 25 percent of green jobs and 22 percent of green businesses. Employment increased one percent in 2010, and the number of businesses dropped as consolidation continues in this segment. Since 1995, Energy Generation has added 7,200 jobs to the region's Core Green Economy.

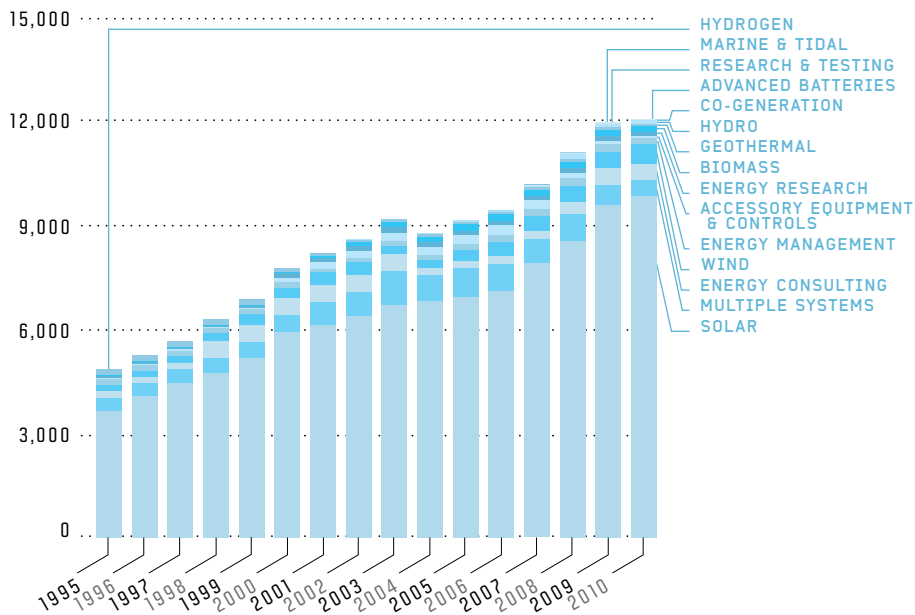
The Bay Area accounts for 30 percent of California's employment in Clean Transportation. Since 1995, employment has doubled, adding over 1,400 jobs. Clean Transportation's growth in the region is driven mainly by the Alternative Fuels industry which has grown 15-fold since 1995. Experiencing a five percent increase in jobs between 2009 and 2010, the Alternative Fuels industry has made strides in the Bay Area while other segments have receded.

EMPLOYMENT BY GREEN SEGMENT / BAY AREA



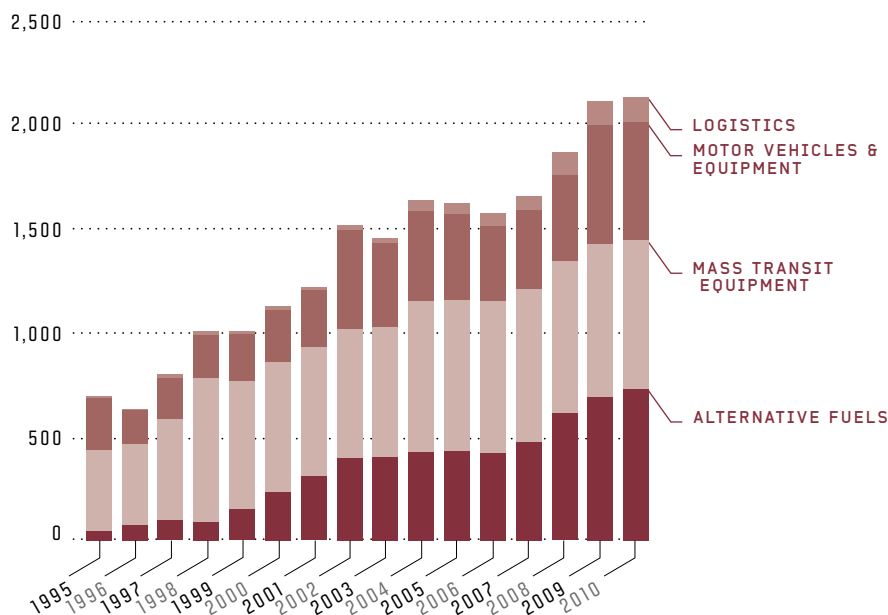
NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY GENERATION JOBS / BAY AREA



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

CLEAN TRANSPORTATION JOBS / BAY AREA



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

BAY AREA EMPLOYMENT

CORE GREEN	1995	2009	2010	PERCENT CHANGE	
				1995-2010	2009-2010
EMPLOYMENT	27,200	48,700	47,800	76%	-2%
ESTABLISHMENTS	2,100	3,800	3,500	67%	-9%

ADVANCED ANALOGIC TECHNOLOGIES, INC.

ENERGY EFFICIENCY

Headquartered in Silicon Valley, Advanced Analogic Technologies develops advanced power management semiconductors. AnalogicTech is committed to powering innovation through increased energy efficiency, flexible power management options, and less design complexity. Their innovations, such as the ModularBCD, TrenchDMOS fabricators, and process and packing technologies, have played a critical role in system design and have powered some of the most creative consumer products today.

AnalogicTech has expanded its operations to China and now has Asia based operations and logistics. With its total employment of over 275 people, AnalogicTech is leading the way in energy efficient power management semiconductors.

www.analogictech.com

LOS ANGELES AREA

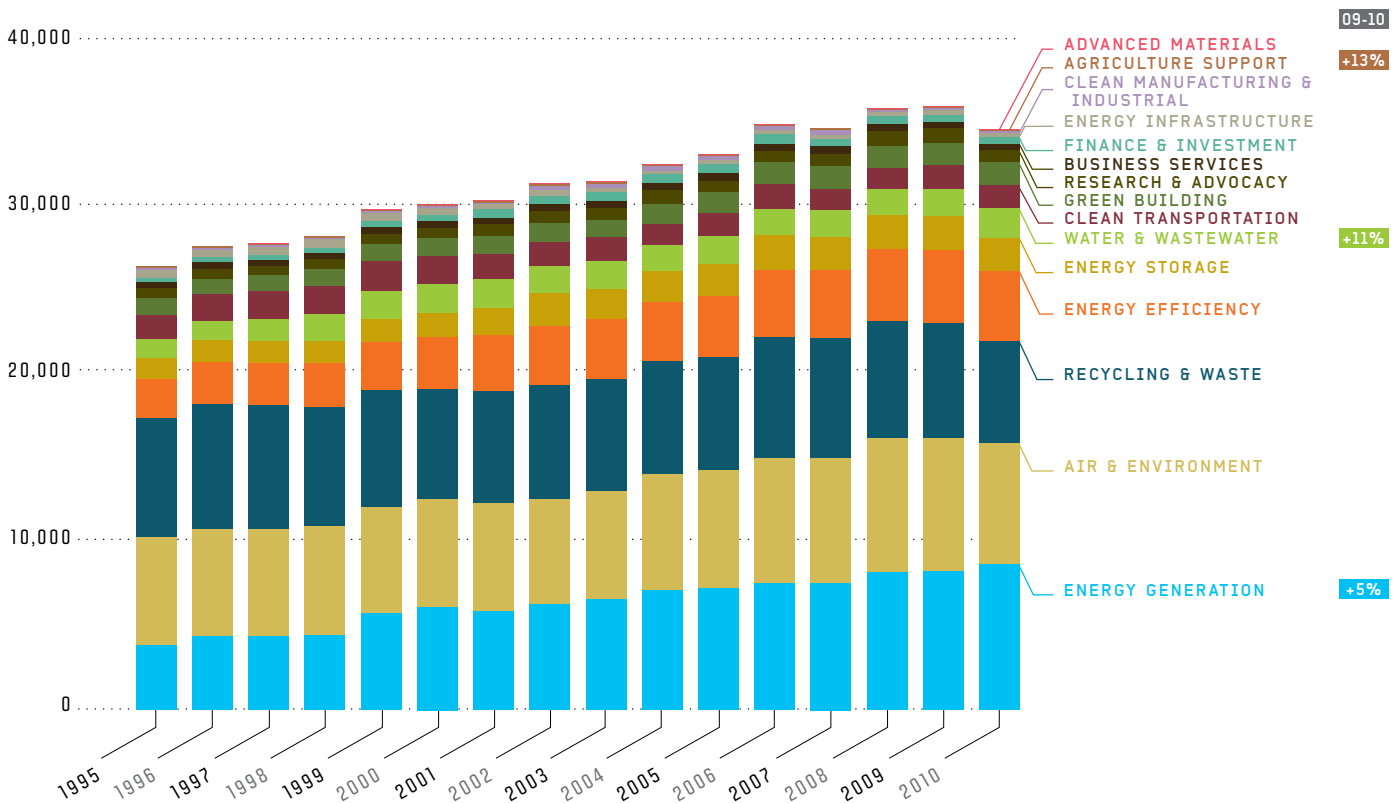
With 21 percent of jobs and businesses, the Los Angeles Area represents a significant portion of California's Core Green Economy. Until 2010, growth in the Los Angeles Core Green Economy had been steady. From 1995 to 2010, there have been large gains in Core Green employment. During this time, Core Green employment in Los Angeles grew 31 percent, adding approximately 8,200 jobs. Despite recent losses, the Core Green Economy is still outperforming the overall economy of the Los Angeles region which saw a nine percent decline in employment and a 16 percent decline in establishments.

Employment growth in Water & Wastewater has defied the effects of a weak economy, growing 11 percent from January 2009 to 2010 and adding 170 jobs. Agricultural Support had a gain in both employment and establishments while other segments experienced jobs loss. Recycling & Waste, Air & Environment and Energy Efficiency are large industries in the Los Angeles Area that suffered losses in both jobs and businesses. In the last year, employment in the three sectors contracted by nine percent.

Energy Generation accounts for 25 percent of Core Green employment in Los Angeles and bucked general trends by adding almost 420 jobs (a 5% growth rate) between January 2009 and 2010. Comprising 82 percent of jobs in Energy Generation, Solar is by far the largest and one of the most prolific subsegments. Its seven percent gain in 2010 reflects the addition of more than 480 jobs. Since 1995 the Solar industry has added over 4,300 jobs and almost 280 businesses to the Los Angeles region.

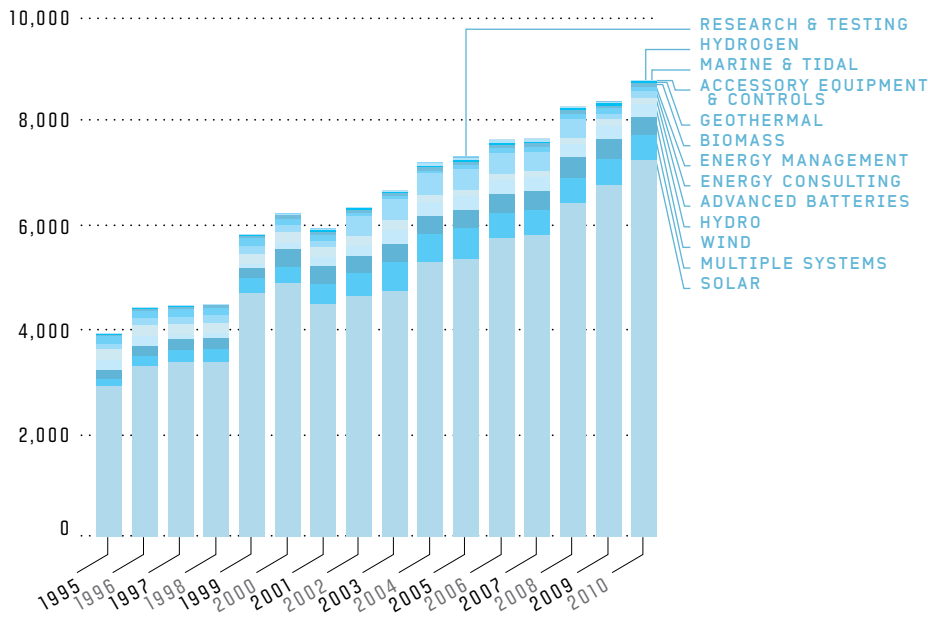
Energy Storage employment in the Los Angeles region is diverse with positions in Advanced Batteries, Fuel Cells as well as Hybrid Systems. Between January 2009 and 2010 Energy Storage experienced a three percent decline in jobs. Employment in larger segments like Fuel Cells and Advanced Batteries remained relatively flat in the most recent year, but has shown solid growth since 1995. Over 16 years, Advanced Batteries jobs doubled, and Fuel Cell employment increased by 19 percent.

EMPLOYMENT BY GREEN SEGMENT / LOS ANGELES AREA



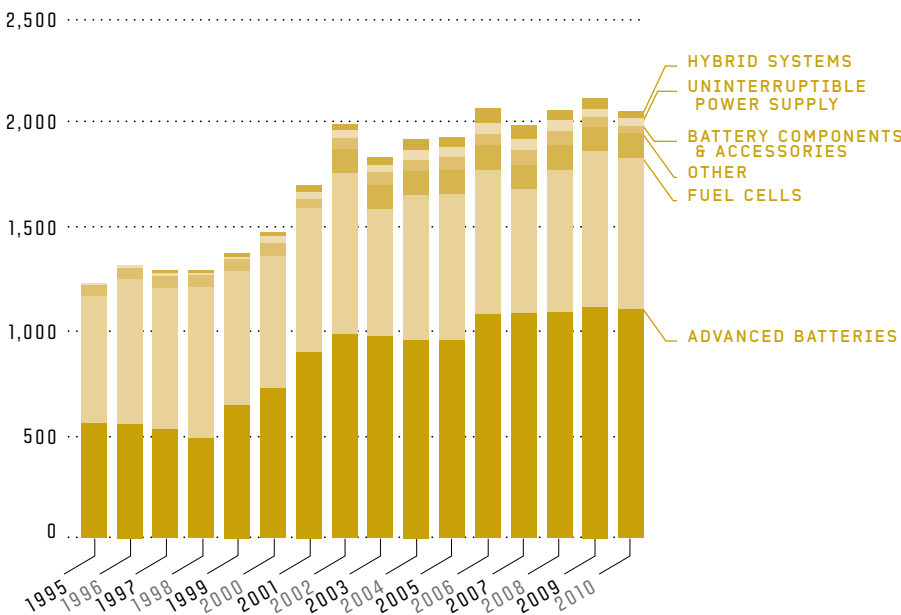
NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY GENERATION JOBS / LOS ANGELES AREA



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database.
Analysis: Collaborative Economics

ENERGY STORAGE JOBS / LOS ANGELES AREA



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database.
Analysis: Collaborative Economics

LOS ANGELES EMPLOYMENT

CORE GREEN	1995	2009	2010	PERCENT CHANGE	
				1995-2010	2009-2010
EMPLOYMENT	26,600	36,000	34,800	31%	-4%
ESTABLISHMENTS	2,000	3,200	2,800	41%	-13%

EPD CONSULTANTS

WATER & WASTEWATER

From their headquarters overlooking the Port of Los Angeles, EPD Consultants creates sustainable water systems and solutions. EPD Consultants designs custom water reuse systems while providing expertise in sustainable development technologies with emphases in decentralized wastewater treatment and reuse, green building systems, watershed planning, storm water management, aquaculture, agriculture, and marine systems. Their services also include feasibility studies, storm water management, stream and lake restoration, wetland and pond landscaping systems as well as civil engineering for land development, roadways, drainage, utilities and public facilities.

www.epd-net.com

ORANGE COUNTY

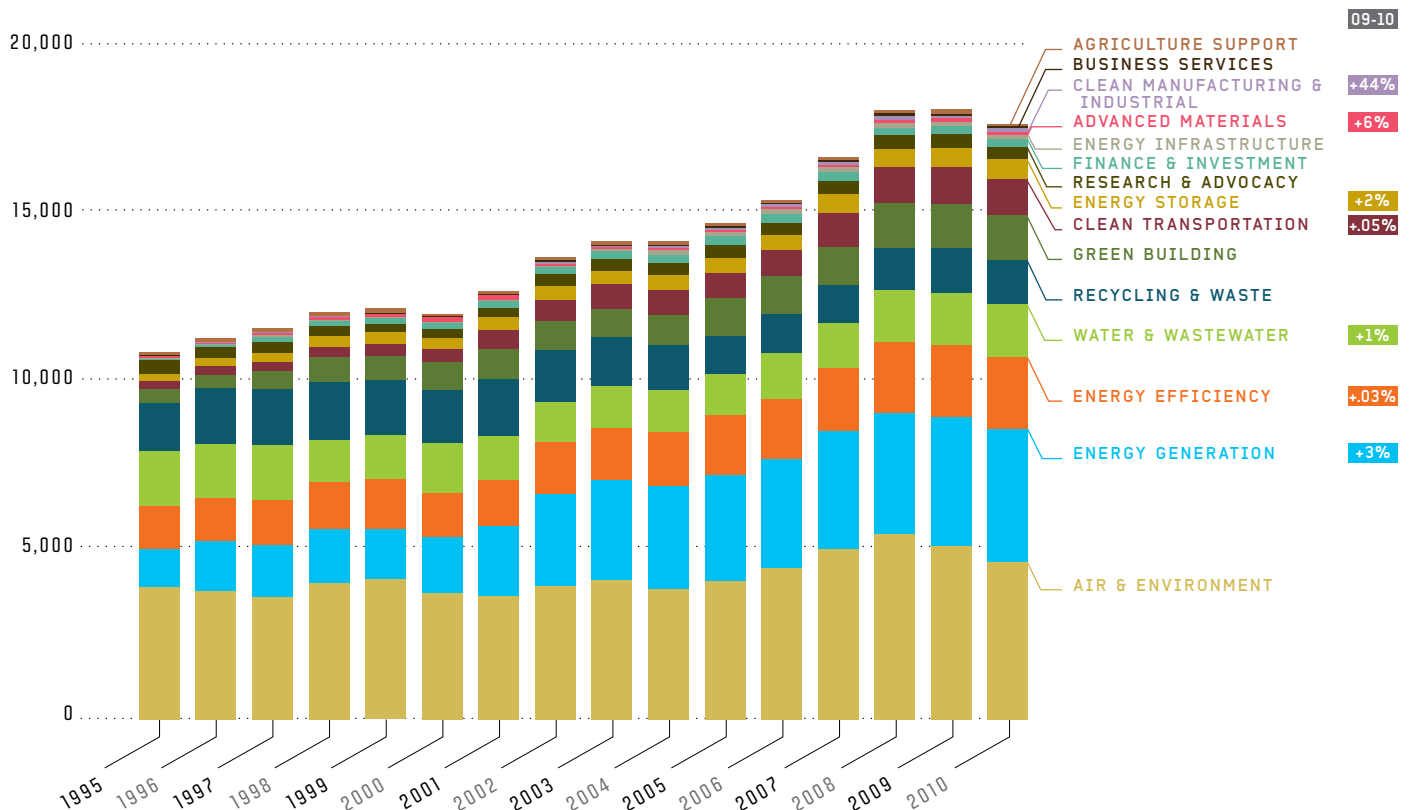
While maintaining its ten percent share of California's Core Green Economy, Orange County experienced losses in both jobs and businesses between January 2009 and 2010. During that time, Orange County saw a two percent decline in Core Green employment and a nine percent decline in businesses. The Core Green Economy fared better compared to the region's overall economy which saw a nine percent decline in employment and a 16 percent decline in establishments. Despite recent downturns, Orange County's Core Green Economy has experienced regular growth in almost every year since 1995. Overall more than 6,800 jobs and 530 establishments have been added to the region's Core Green Economy.

A historically strong driver of growth in Orange County's Core Green Economy, Energy Generation added 120 jobs and expanded by three percent from January 2009 to 2010. Advanced Materials and Manufacturing & Industrial are relatively small segments, but have experienced high growth in the most recent year. Employment in Advanced Materials and Clean Manufacturing & Industrial expanded by six and 44 percent, respectively, over the last observable 12 months, and both have more than doubled in employment since 1995.

Energy Efficiency is the third largest green segment in Orange County. Like Clean Transportation, Energy Efficiency's small overall growth obscures more dynamic action. While research and consulting were hit hard, sub segments that produce concrete goods seemed to fare better. Making up (in total numbers) for the job loss in research and consulting, Solar Appliances & Devices, Lighting, and Energy Conservation Products all added jobs. Combined, these three segments grew 12 percent from January 2009 to 2010 and added nearly 110 job opportunities.

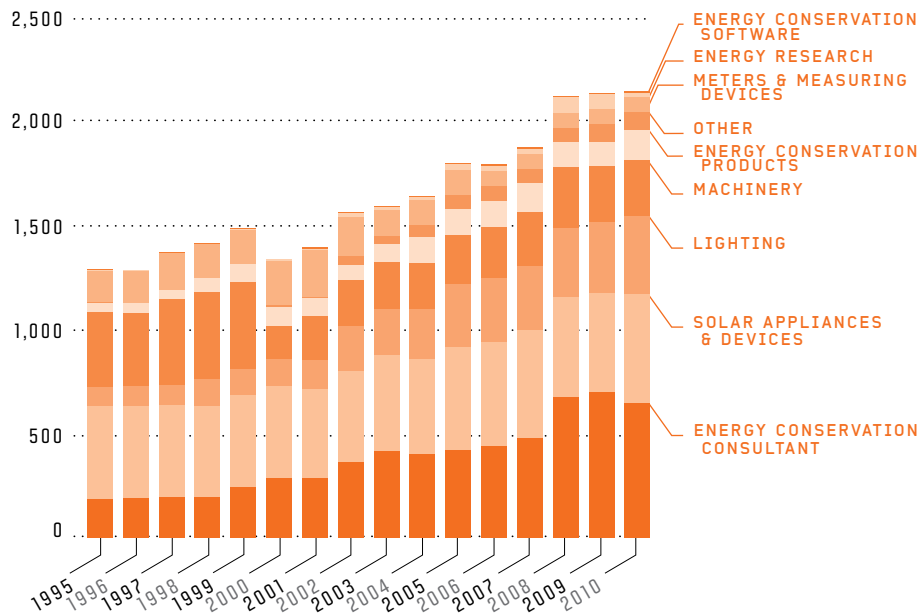
Faring better than the region's Core Green and overall economy from January 2009 to 2010, Clean Transportation experienced modest growth of less than one percent. However, nominal job growth within the segment actually represented more substantial action occurring in its subsegments. Motor Vehicles & Equipment, the largest sub segment, experienced four percent job growth over the course of the year. Combined with Mass Transit Equipment, the two subsegments compensated for losses in Alternative Fuels. Since 1995, Clean Transportation employment has grown by more than a factor of four.

EMPLOYMENT BY GREEN SEGMENT / ORANGE COUNTY



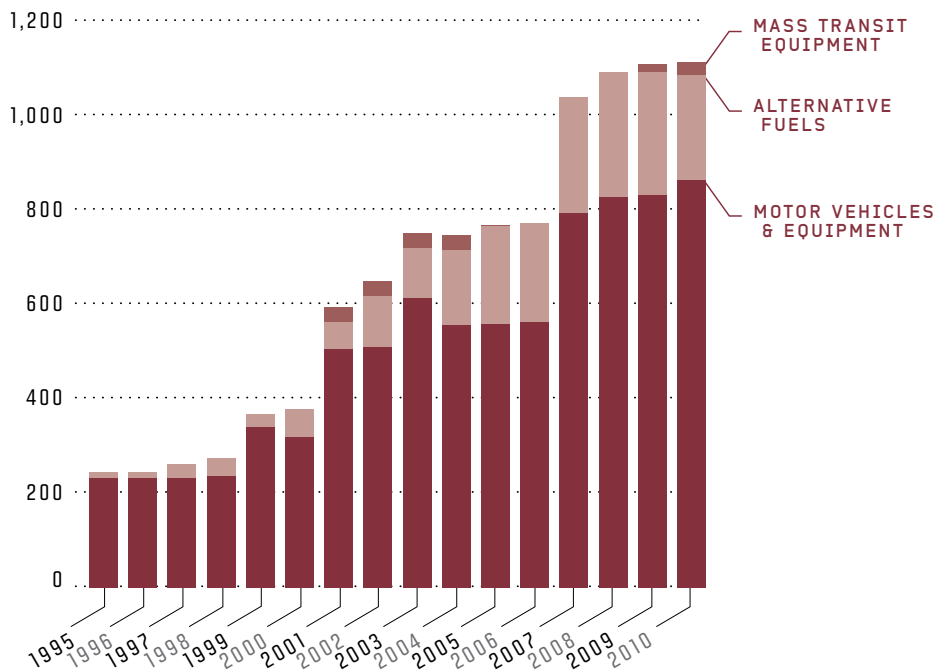
NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY EFFICIENCY JOBS / ORANGE COUNTY



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

CLEAN TRANSPORTATION JOBS / ORANGE COUNTY



NEXT 10 MANY SHADES OF GREEN. Note: The employment increase in 2007 is due to a single company in Motor Vehicles & Equipment. Data Source: Green Establishment Database. Analysis: Collaborative Economics

ORANGE COUNTY EMPLOYMENT

CORE GREEN				PERCENT CHANGE	
	1995	2009	2010	1995-2010	2009-2010
EMPLOYMENT	10,900	18,200	17,800	62%	-2%
ESTABLISHMENTS	700	1,400	1,200	74%	-9%

T3 MOTION, INC.

CLEAN TRANSPORTATION

Considered an innovator of battery electric vehicles, T3 Motion, Inc. is a Costa Mesa-based company that engages in the design, manufacture, and marketing of personal mobility vehicles powered by electricity. Founded in 2006, the company's primary products are the T3 Series, the CT Micro Car, and the R3. The T3 Series is an electric stand-up vehicle (ESV) designed specifically for public and private security personnel that is powered by a quiet zero-gas emission electric motor. The CT Micro Car is a compact, highly energy-efficient, low-speed vehicle also designed for public and private security firms. Finally, the R3 is a brand new two passenger BEV convertible with the ability to accelerate to speeds of up to 70 mph and has a range of 80-100 miles per charge.

T3 Motion is a leader in electric vehicle innovation in Southern California. Their commitment to clean energy is evident in their mission to provide technology that benefits both personal and professional users and the environment.

www.t3motion.com

SAN DIEGO REGION

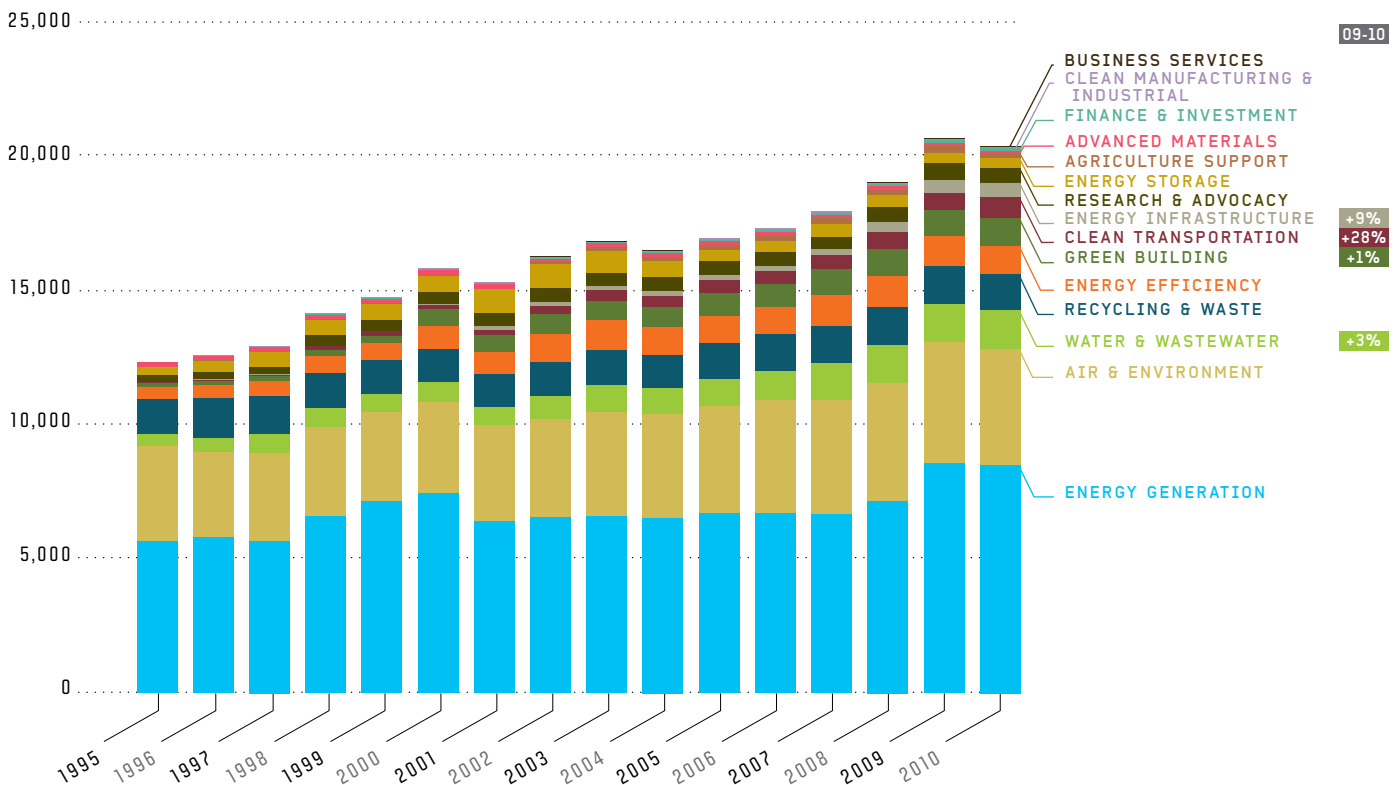
The San Diego Region is one of California's most vibrant, concentrated centers of the Core Green Economy. While the region accounts for nine percent of the state's total employment, it represents 12 percent of the state's jobs in the Core Green Economy. From January 2009 to 2010 San Diego's Core Green Economy experienced a loss of one percent, but fared better than the overall economy where employment fell by five percent. The decline in green employment over the course of the last 12 months represents the first time since 2001 that the region has seen retraction in its Core Green Economy.

The overall trends in employment and business growth in the San Diego Region were reflected to varying degrees across the Core Green segments. Notable exceptions to the overall decline occurred in Clean Transportation (+28%), Energy Infrastructure (+9%), Water & Wastewater (+3%), and Green Building (+1%) from January 2009 to 2010. These four segments added a combined 260 jobs which helped to partially offset the losses in the most recent observable year.

Energy Generation comprises 42 percent of employment in San Diego's Core Green Economy. Although segment employment declined by one percent between January 2009 and 2010, the Solar subsegment made modest gains. Solar added over 50 jobs in 2010 which is a two percent improvement over last year. Employment in larger subsegments like Multiple Systems, Hydro and Accessory Equipment & Controls held steady over the last observable 12 months.

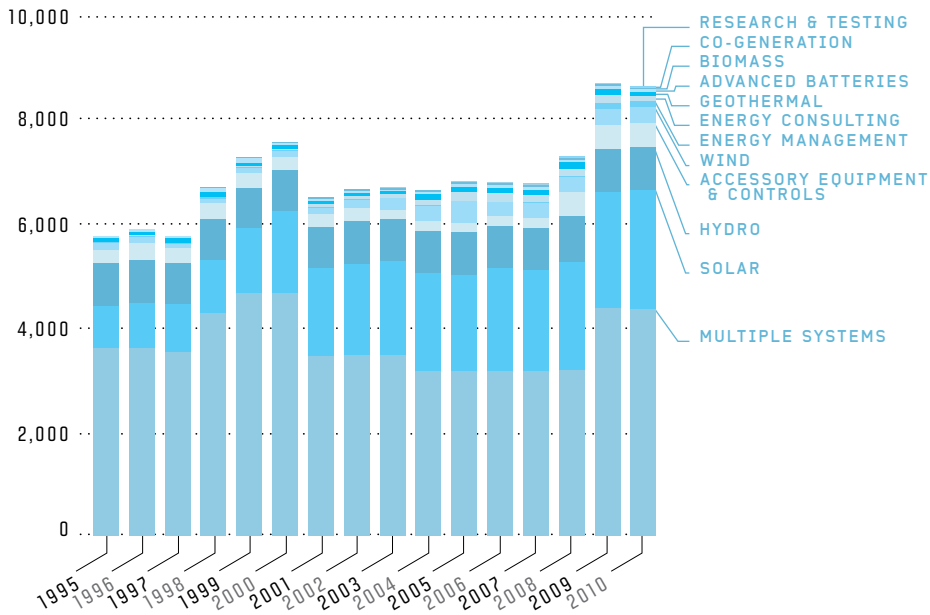
Between January 2009 and 2010, Clean Transportation employment expanded by 28 percent. Since most other segments experienced losses or only minor gains, Clean Transportation's job and establishment growth were strong. Both sub segments, Alternative Fuels and Motor Vehicles & Equipment experienced significant employment increases. In 2010, Alternative Fuels added nearly 130 jobs (+31%) and Motor Vehicles & Equipment added almost 50 jobs (+22%).

EMPLOYMENT BY GREEN SEGMENT / SAN DIEGO REGION



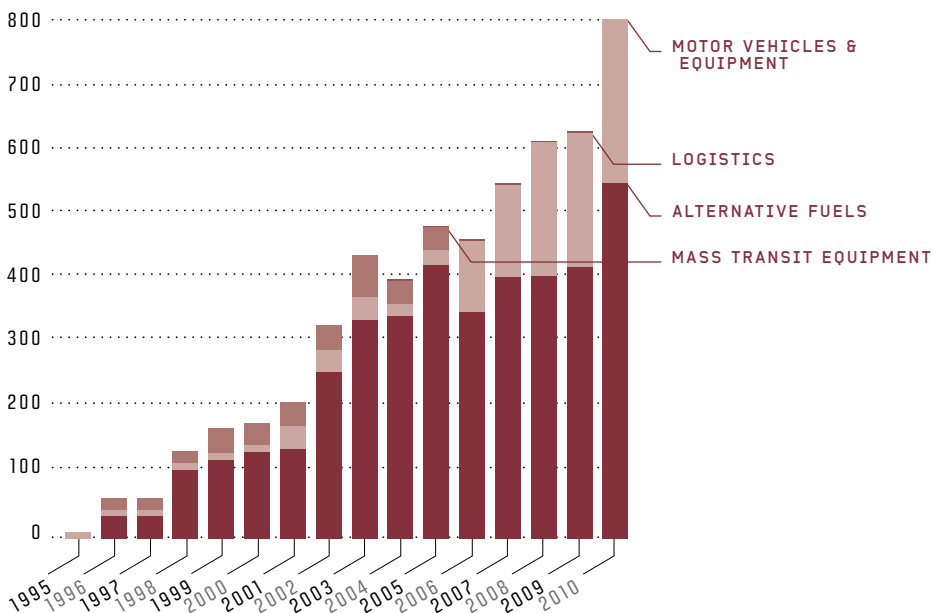
NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY GENERATION JOBS / SAN DIEGO REGION



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database.
Analysis: Collaborative Economics

CLEAN TRANSPORTATION JOBS / SAN DIEGO REGION



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database.
Analysis: Collaborative Economics

SAN DIEGO EMPLOYMENT

CORE GREEN	1995-2010	2009-2010	PERCENT CHANGE		
			1995-2010	2009-2010	
EMPLOYMENT	12,400	20,800	20,500	65%	-1%
ESTABLISHMENTS	690	1,300	1,200	72%	-10%

CIRCLE BIODIESEL & ETHANOL CORPORATION

CLEAN TRANSPORTATION

Founded in La Jolla in 2006, Circle Biodiesel & Ethanol Corporation develops technology and manufactures equipment for biodiesel, ethanol and methane industries worldwide. At the forefront of the industry, their patented biofuel technology includes a suction dredge system and method. They have patents pending for extracting oil from algae, producing human food from Jatropha, and self-contained biofuel production and water processing apparatus.

Dedicated to advancing renewable and sustainable biofuels and food, Circle Biodiesel & Ethanol Corporation has created the Zero Waste Alternative Energy Village, incorporating algae production and harvesting, ethanol and biodiesel production from the algae fiber and oil, and even methane from the unprocessed material left over from operations.

www.circlebio.com

SACRAMENTO AREA

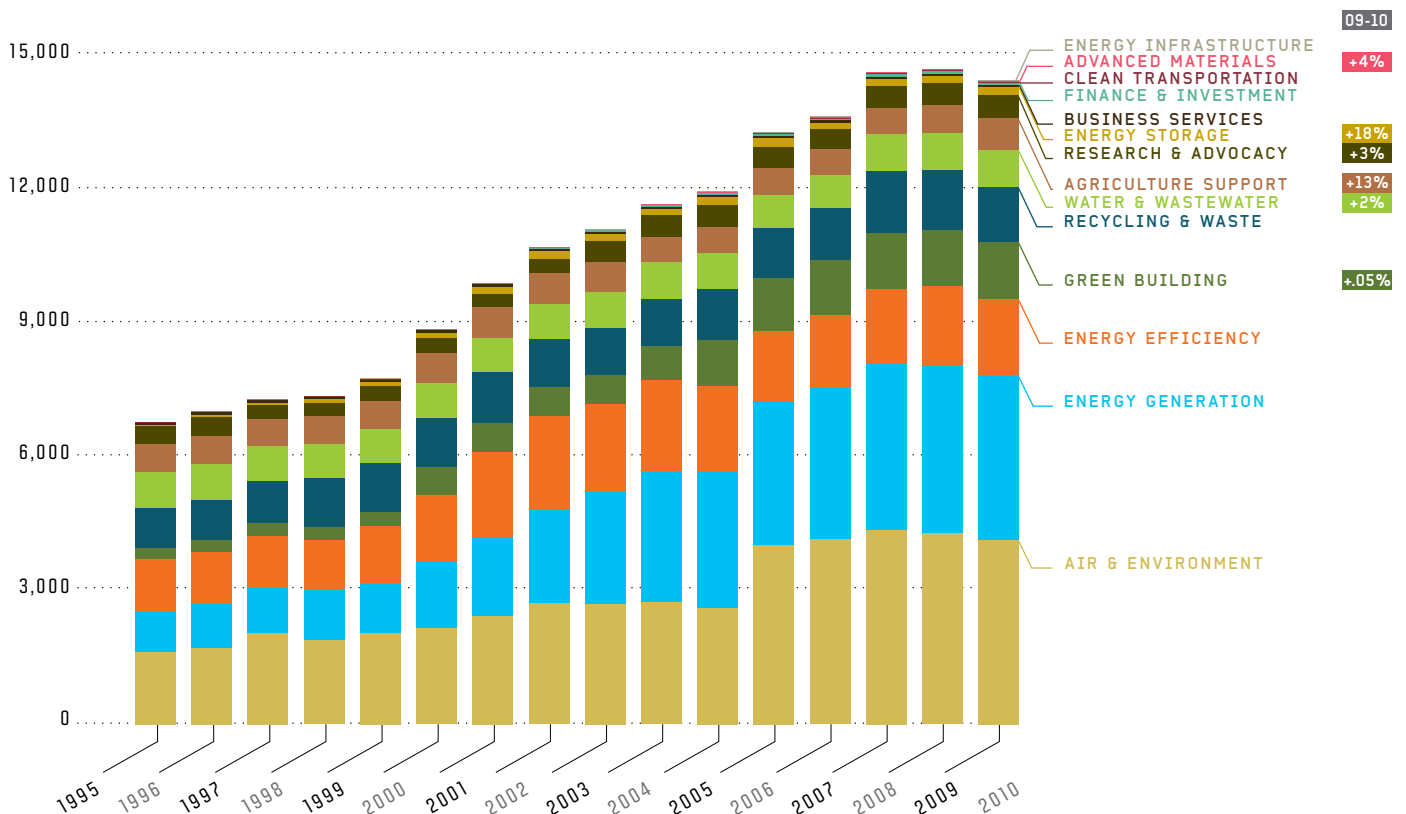
Since 1995, Sacramento's Core Green Economy has grown at a faster pace than every other region in the state, represented by a 113 percent increase in employment. In addition to its rapid growth, Core Green employment is highly concentrated in the region, 43 percent higher than the statewide average. Compared to the economy as a whole, growth in Core Green employment is far outpacing growth of total employment in the Sacramento Area recently and in the long run. Employment in the total economy fell by four percent in the most recent observable year and declined by two percent in the Core Green Economy. Since 1995, the Sacramento Area has gained approximately 7,700 new job opportunities in the Core Green Economy.

Green Building and Agricultural Support are highly concentrated in the Sacramento Area's Core Green Economy, with establishment shares 1.7 times higher than the state average. While holding stable in the most recent year, Green Building has also stimulated the Sacramento Area's green economy with employment growing five-fold since 1995. From 1995 to 2010, there have been over 2,500 new jobs created in Air & Environment, a 155 percent increase.

Energy Generation represents over a quarter of the Sacramento Area's Core Green employment. Despite the slight two percent decrease in the last year, employment and establishments grew substantially from 1995 to 2010 and added nearly 2,800 jobs and 130 new businesses. Within Energy Generation, the solar industry represents a regional strength. Though the industry's employment fell by six percent over the last observable year, Solar makes up nearly 70 percent of employment in Energy Generation and has nearly quadrupled in employment since 1995.

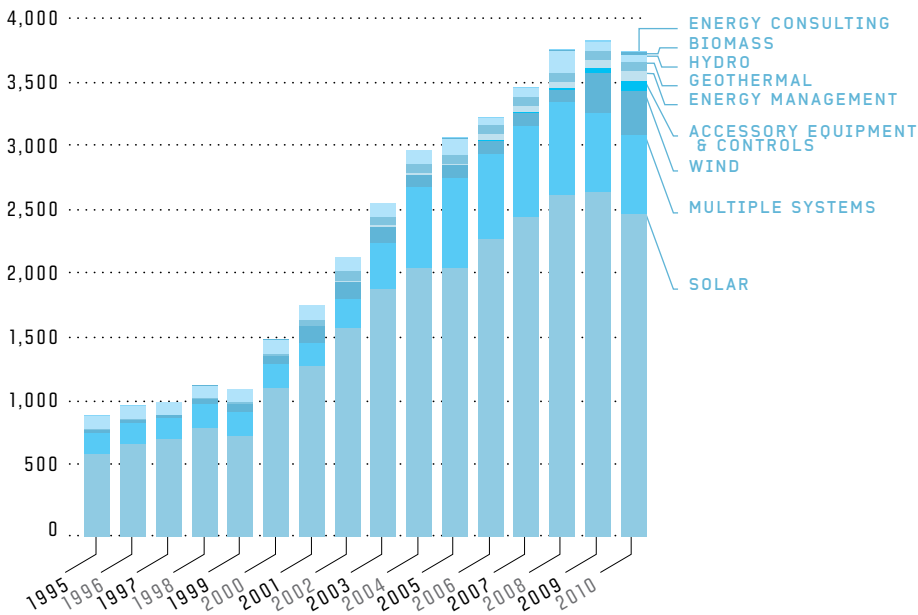
Business activity related to Energy Efficiency products and services is highly concentrated and diverse in the Sacramento Area. Within Energy Efficiency, Machinery accounts for nearly half of segment employment, creating a nine percent increase in employment from 2009 to 2010 and adding more than 70 new job opportunities. Employment in Lighting has increased substantially in the long run, expanding from only a few jobs in 1995 to over 220 in 2010.

EMPLOYMENT BY GREEN SEGMENT / SACRAMENTO AREA



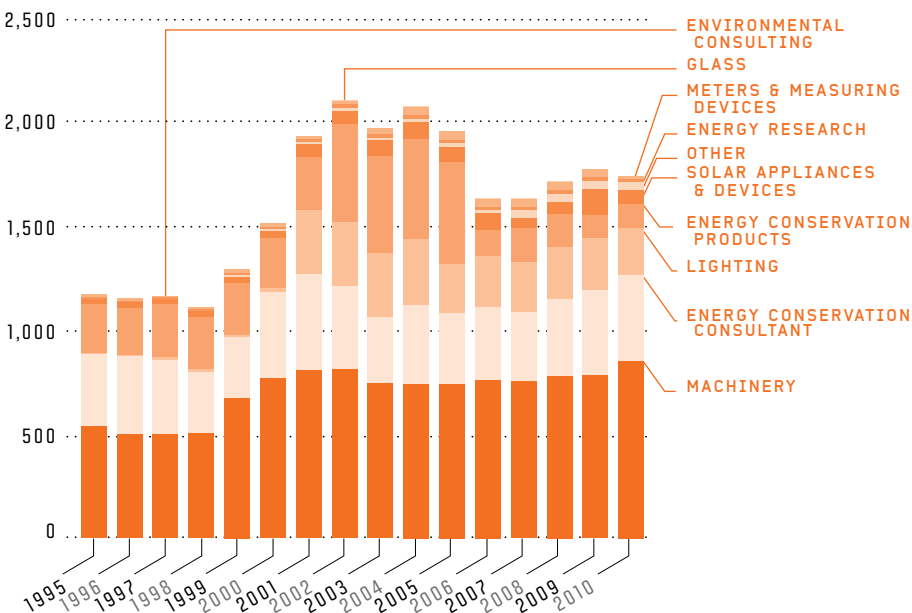
NEXT 10 MANY SHADES OF GREEN. Note: The growth in Air & Environment in 2006 is due to the creation of a single company
 Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY GENERATION JOBS / SACRAMENTO AREA



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY EFFICIENCY JOBS / SACRAMENTO AREA



NEXT 10 MANY SHADES OF GREEN. Note: The increase in Lighting employment in 2001 is due to a new company. Data Source: Green Establishment Database. Analysis: Collaborative Economics

SACRAMENTO AREA EMPLOYMENT

CORE GREEN	1995	2009	2010	PERCENT CHANGE	
				1995-2010	2009-2010
EMPLOYMENT	6,800	14,700	14,500	113%	-2%
ESTABLISHMENTS	600	1,100	1,000	72%	-8%

AUTOCELL ELECTRONICS, INC.

ENERGY EFFICIENCY

From their corporate headquarters in Sacramento, AutoCell Electronics has specialized in the design and manufacture of high quality energy efficient light bulbs and LED lights since 2000. Their main product is the compact fluorescent lamp (CFL) which is designed to replace incandescent light bulbs. Compact fluorescent lamps give the same amount of visible light while using only a fifth of the power it would take to light a normal light bulb. They are also designed to last eight to 15 times as long as a normal light bulb and do not generate as much heat. In addition to selling CFLs, AutoCell Electronics supplies its customers with products ranging from indoor and outdoor light fixtures, high-wattage light bulbs, and other energy saving devices such as electronic digital timers and water conserving showerheads. All of AutoCell's products come with the ENERGY STAR label and are available for residential, commercial, and government users.

www.autocell.net

INLAND EMPIRE

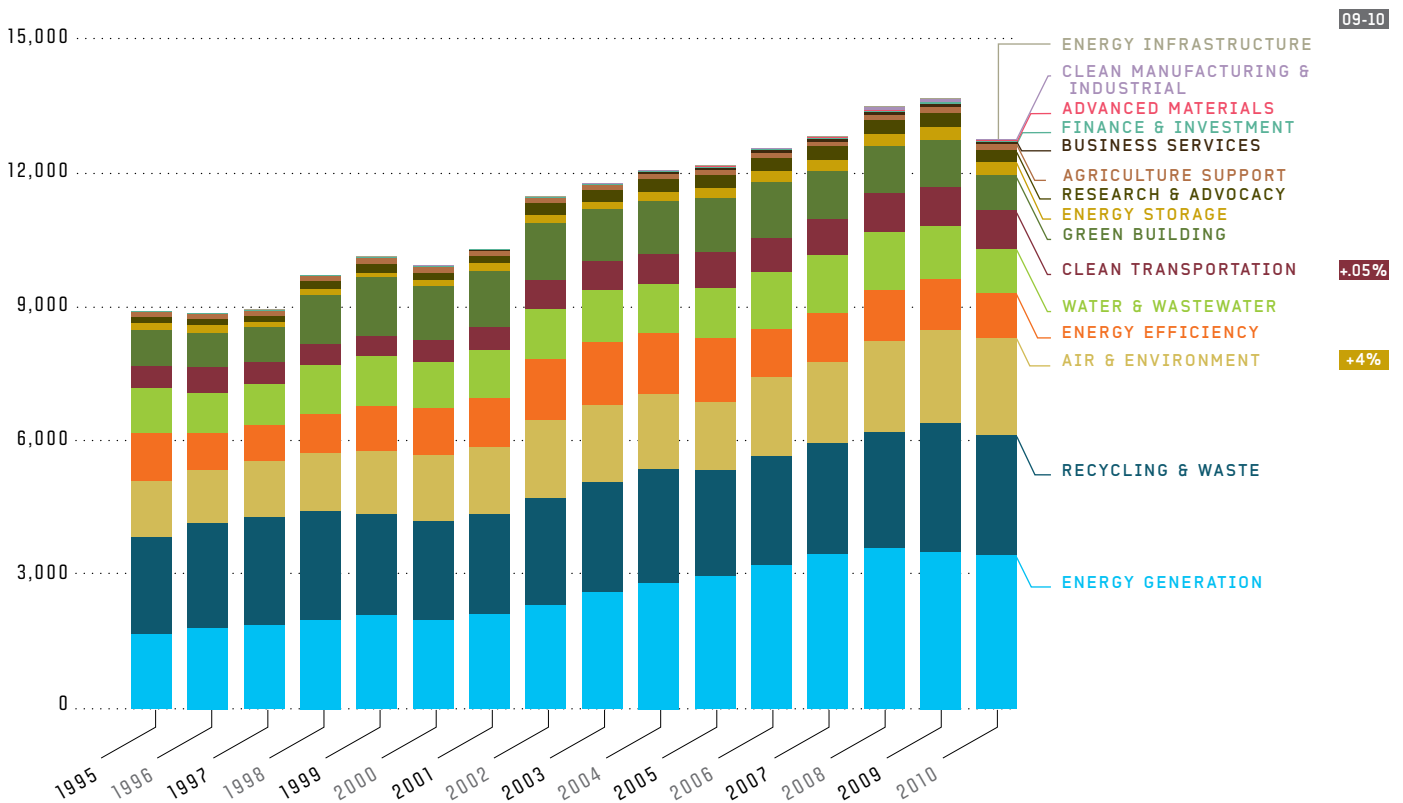
Since 1995, the Inland Empire has witnessed steady growth in the Core Green Economy. Representing eight percent of the total California Core Green Economy, regional green employment expanded by 43 percent since 1995 and added nearly 3,900 new jobs. However, like the rest of the state, the region experienced the loss of jobs and establishments between January 2009 and 2010. Harder hit than many other regions, the Inland Empire saw a seven percent decline in Core Green employment while total employment in the region fell by five percent.

The rise and fall of specific green segments within the Inland Empire seems to be moving contrary to that of other regions. Air & Environment, down in almost every other region, was one of two sectors in the region to see growth between January 2009 and 2010. Clean Transportation employment inched up in 2010 and has expanded by 69 percent since 1995, driven primarily by growth in Alternative Fuels and Mass Transportation Equipment.

Air & Environment is one of the largest segments in the Inland Empire. Between January 2009 and 2010 the segment grew four percent, adding 80 jobs to an otherwise declining job market. Additionally, all subsegments within Air & Environment grew in the most recent year. Environmental Consulting expanded by two percent, Emissions Monitoring & Control saw an uptick in jobs of four percent, and Environmental Remediation increased by 16 percent.

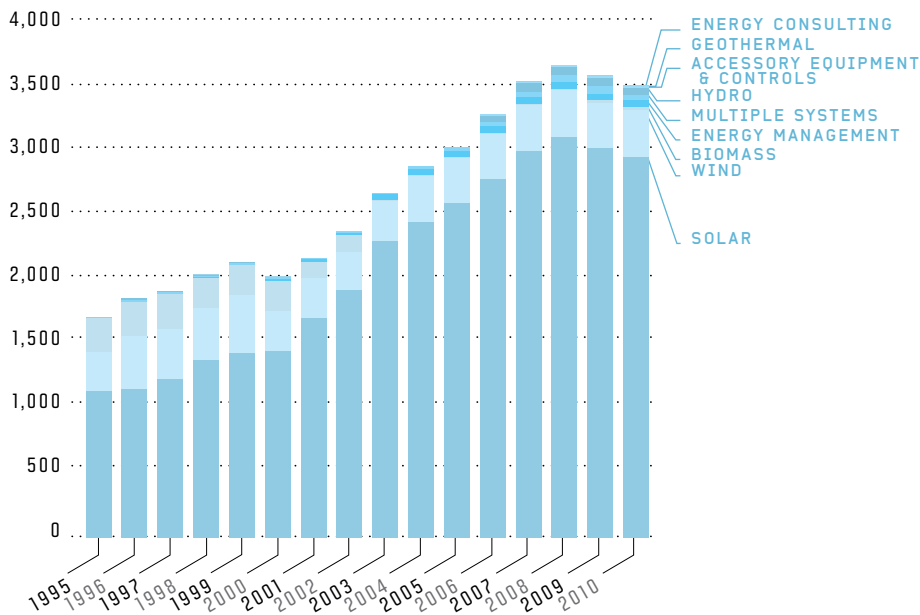
Experiencing a two percent decline in employment, Energy Generation was mostly able to hold its ground, maintaining or gaining jobs in two-thirds of subsegments. Energy Generation in the Inland Empire is comprised mostly (84%) of Solar. While the last two years brought modest declines to the Solar subsegment in the Inland Empire, the industry has grown 159 percent since 1995, adding almost 1,800 jobs. Employment in Wind establishments grew in 2010 by five percent and expanded by 24 percent since 1995.

EMPLOYMENT BY GREEN SEGMENT / INLAND EMPIRE



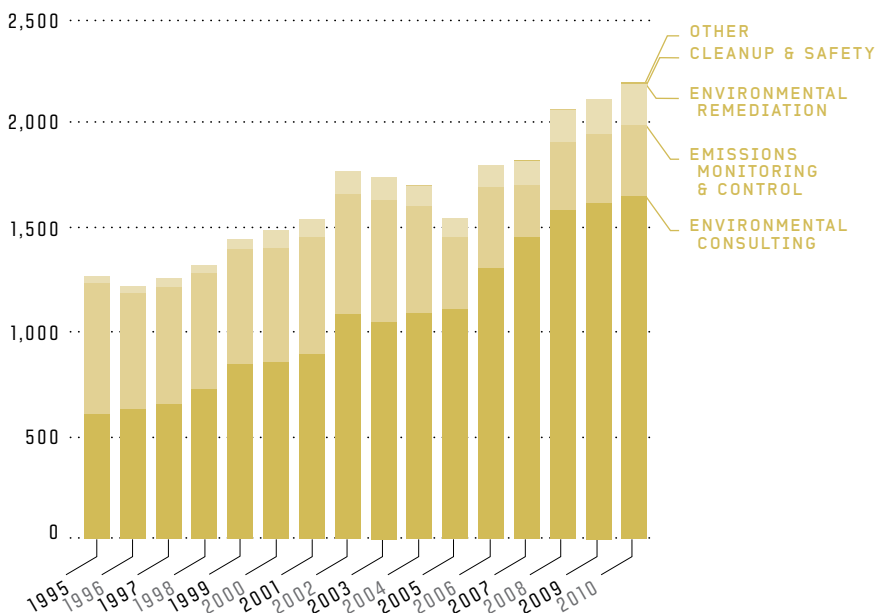
NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY GENERATION JOBS / INLAND EMPIRE



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database.
Analysis: Collaborative Economics

AIR & ENVIRONMENT JOBS / INLAND EMPIRE



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database.
Analysis: Collaborative Economics

INLAND EMPIRE EMPLOYMENT

CORE GREEN	1995	2009	2010	PERCENT CHANGE	
				1995-2010	2009-2010
EMPLOYMENT	8,900	13,700	12,800	43%	-7%
ESTABLISHMENTS	590	1,200	1,100	87%	-9%

WORLDWIDE ENVIRONMENTAL SOLUTIONS, INC.

ENERGY GENERATION

Founded in 1993, Worldwide Environmental Solutions (WES Tech) is an environmental engineering company that has developed a new technology to capture greenhouse gases from organic waste and convert the emissions into clean, renewable energy. WES Technology is a combination of a mechanical and biological process that is considered "first in the world." This technology is patented for organic waste-to-energy and qualified as a Clean Development Mechanism under the Kyoto Protocol. The three day process is self-sufficient and produces the natural gas requirement out of methane gas collected from the organic waste. In addition to marketing their technology, WES Tech provides services in system designs and engineering, fabrication, construction, compliance and permitting, project management, environmental consulting, and technical services.

www.wesglobal.net

SAN JOAQUIN VALLEY

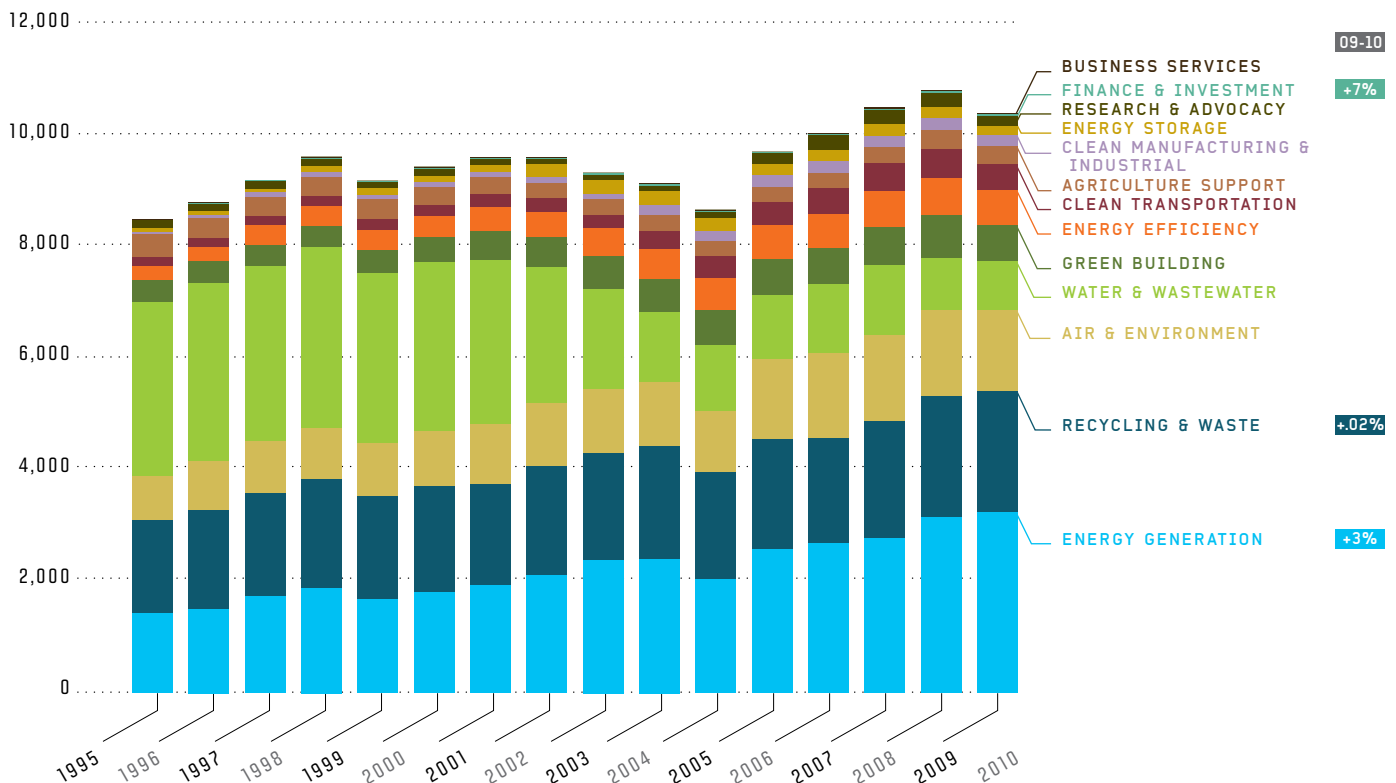
Although slowing by less than four percent in the most recent year, the San Joaquin Valley's Core Green Economy expanded by 22 percent from 1995 to 2010. Meanwhile, in the last year, employment trends in the Core Green Economy contracted four percent, reflecting overall trends in the region's total economy. The last 16 years produced nearly 1,900 jobs and over 320 new business establishments in the region's Core Green Economy.

Recycling & Waste and Manufacturing & Industrial are highly concentrated and represent important specializations in the San Joaquin Valley's Core Green Economy. Recycling & Waste was responsible for 21 percent of Core Green employment in the San Joaquin Valley in 2010. In the last year, employment opportunities have remained stable, and employment in this segment grew 31 percent (510 jobs) from 1995 to 2010 and establishments grew 25 percent (adding nearly 60 establishments). Manufacturing & Industrial employment comprises a modest share of the region's Core Green employment, but it has increased nearly five-fold in employment since 1995.

Employment in Energy Generation increased by three percent in the last year, adding nearly 100 new jobs regionally, and by 126 percent over the long term. Solar and Wind account for the majority of job growth. Solar employment expanded by six percent in 2010 and represents 61 percent of segment employment. Jobs in Wind held steady in 2010 and increased by 52 percent over the last 16 year period.

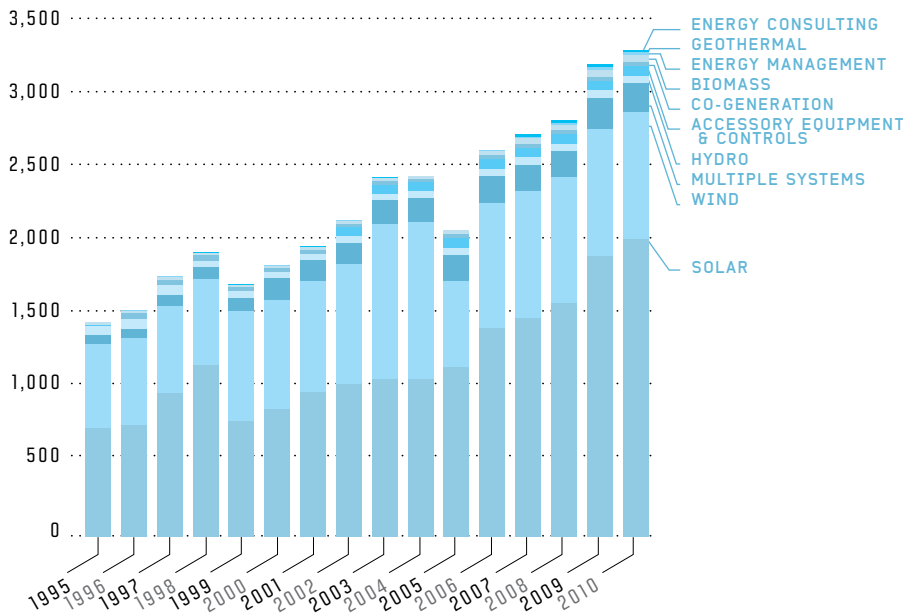
Employment and businesses in Clean Transportation tripled from 1995 to 2010. Despite contracting in the most recent year, subsegments experienced large gains since 1995. Alternative fuel employment represents over three-quarters of Clean Transportation employment in the San Joaquin Valley and grew 294 percent from 1995 to 2010. Jobs in Motor Vehicles & Equipment expanded by 51 percent since 1995.

EMPLOYMENT BY GREEN SEGMENT / SAN JOAQUIN VALLEY



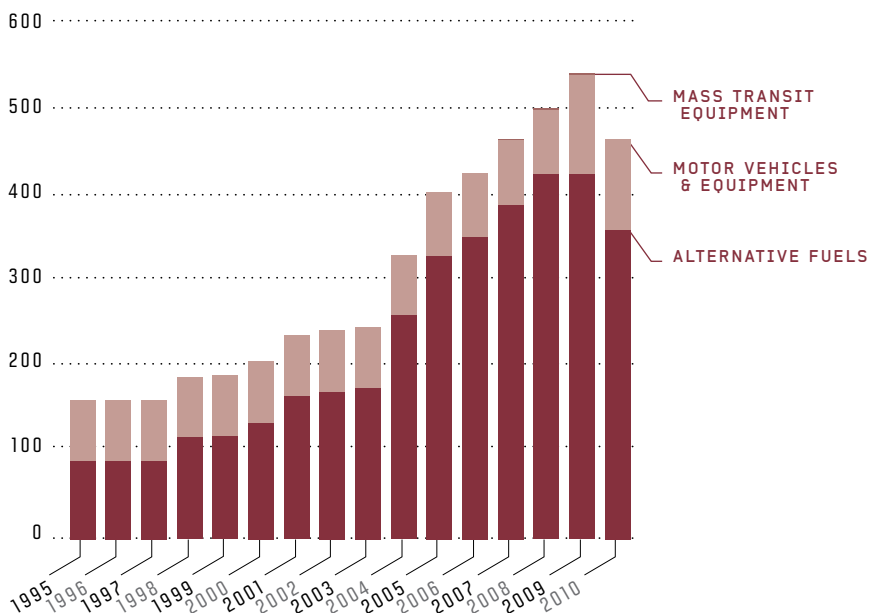
NEXT 10 MANY SHADES OF GREEN. Note: The employment reduction in Water & Wastewater from 2001 to 2004 is due to public utility employment reduction
 Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY GENERATION JOBS / SAN JOAQUIN VALLEY



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database.
Analysis: Collaborative Economics

CLEAN TRANSPORTATION JOBS / SAN JOAQUIN VALLEY



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database.
Analysis: Collaborative Economics

SAN JOAQUIN VALLEY EMPLOYMENT

CORE GREEN	1995	2009	2010	PERCENT CHANGE	
				1995-2010	2009-2010
EMPLOYMENT	8,500	10,800	10,400	22%	-4%
ESTABLISHMENTS	610	1,000	900	53%	-10%

ELECTRIC VEHICLES INTERNATIONAL

CLEAN TRANSPORTATION

Headquartered in Stockton, Electric Vehicles International (EVI) is a leading manufacturer of alternative energy vehicles specializing in battery electric vehicles (BEV) and range extended electric vehicles (REEV) for multiple applications covering a diverse range of transportation options. In August 2011, UPS purchased one hundred EVI vehicles, which marked the largest deployment of zero emission delivery vehicles in California and one of the largest single deployments in the world.

EVI also converts existing vehicles into more energy efficient vehicles. They have developed new technologies, such as their advanced powertrain system with the most sophisticated advanced controller, which not only controls the motor, but the transmission proprietary design, and re-generation.

www.evi-usa.com

CENTRAL COAST

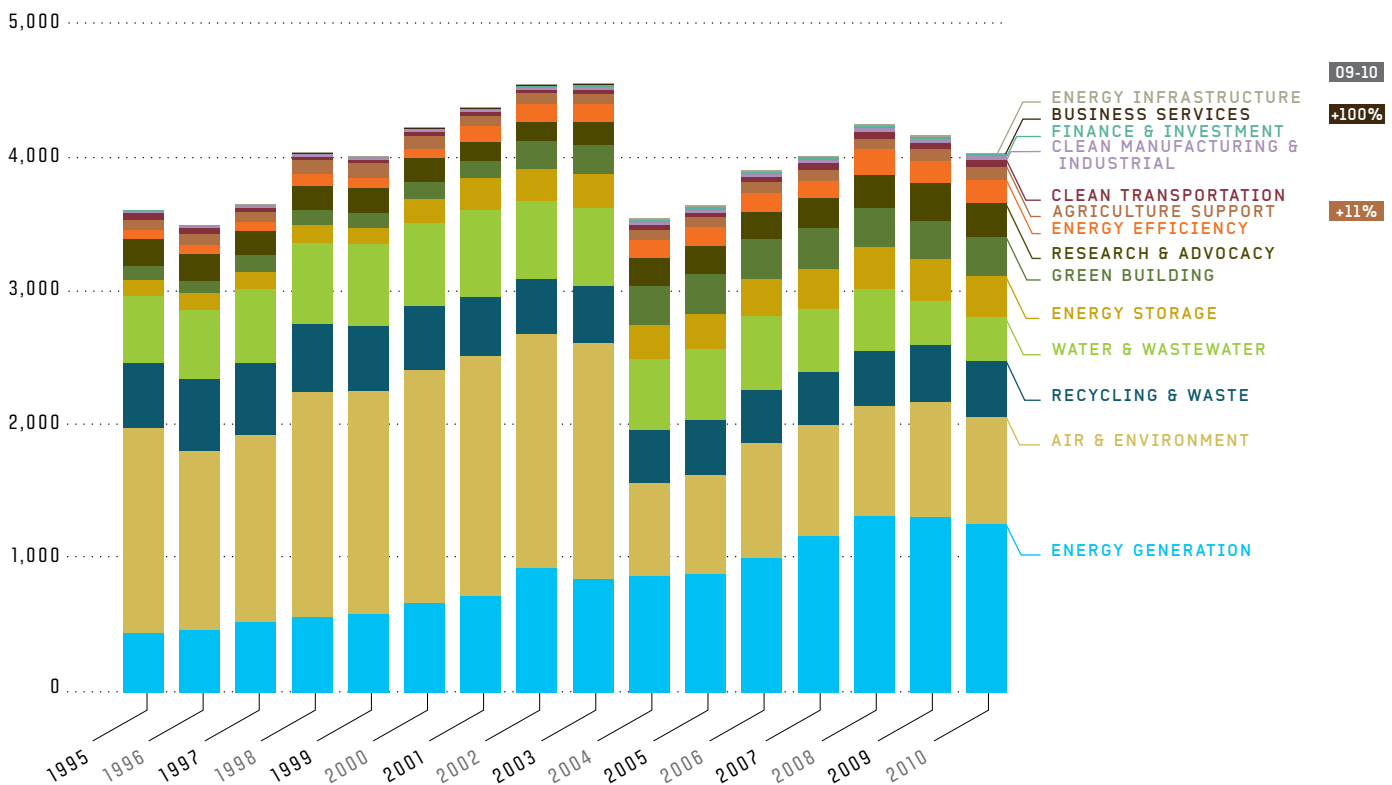
Although there are specific areas of growth in the region, the Central Coast is one of only three regions in which the Core Green Economy as a whole is lagging overall economic growth. However, this is in part explained by the downsizing and restructuring of a single firm resulting in the loss of nearly 1,000 jobs in 2003. Core Green employment contracted by three percent in the Central Coast in the most recent reported year, but has grown by 12 percent from 1995 to 2010. Over the last 16 years, Core Green businesses grew by 42 percent, adding approximately 140 new establishments.

While overall growth has been modest, individual green segments are displaying promise. Employment in Agriculture Support increased 13 percent in the last year and 22 percent from the start of 1995 to 2010. Largely associated with sustainable building materials, employment in Green Building fared better than other industries from 2009 to 2010. However, numbers more than doubled between 1995 and 2010. Despite significant job losses in Air & Environment in 2003, new businesses have started up since then and account for 20 percent of Core Green Economy jobs in the region.

Energy Generation represented almost 31 percent of Core Green employment in the Central Coast in 2010. From 1995 to 2010, employment in Energy Generation expanded by approximately 820 jobs. Most recently, employment in Multiple Systems picked up 22 percent between January 2009 and 2010. Although decreasing by eight percent during that same time period, Solar employment accounts for 77 percent of jobs in this segment.

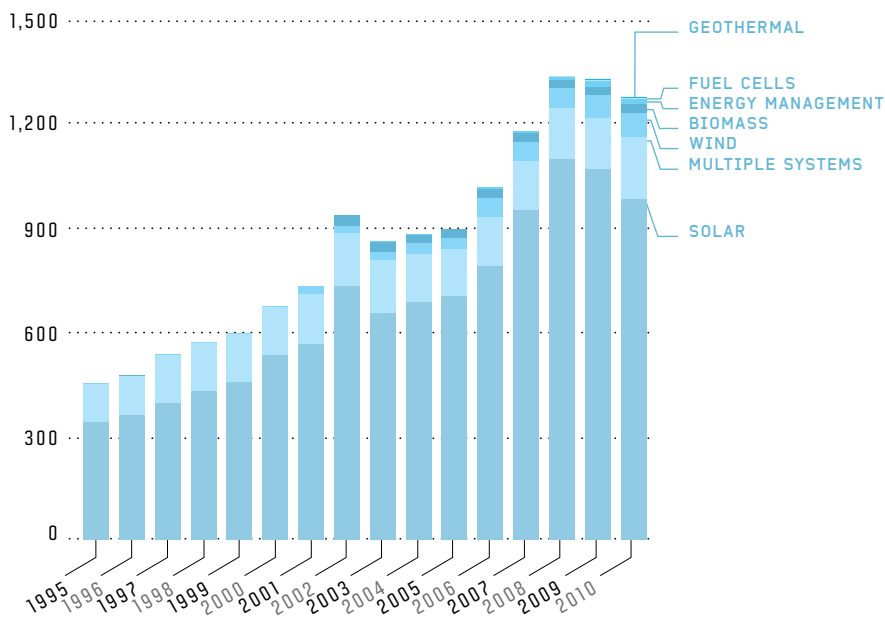
Energy Storage represents nearly 31 percent of employment in the Central Coast's Core Green Economy. The region reveals specialization in this segment despite a four percent decrease in jobs over the past year. Employment increased 165 percent (190 jobs) from 1995 to 2010. The Fuel Cells industry makes up 84 percent of Energy Storage. Though the industry has contracted by two percent, in the long-run, it maintains strength, with the addition of 160 employment opportunities over the last 16 years.

EMPLOYMENT BY GREEN SEGMENT / CENTRAL COAST



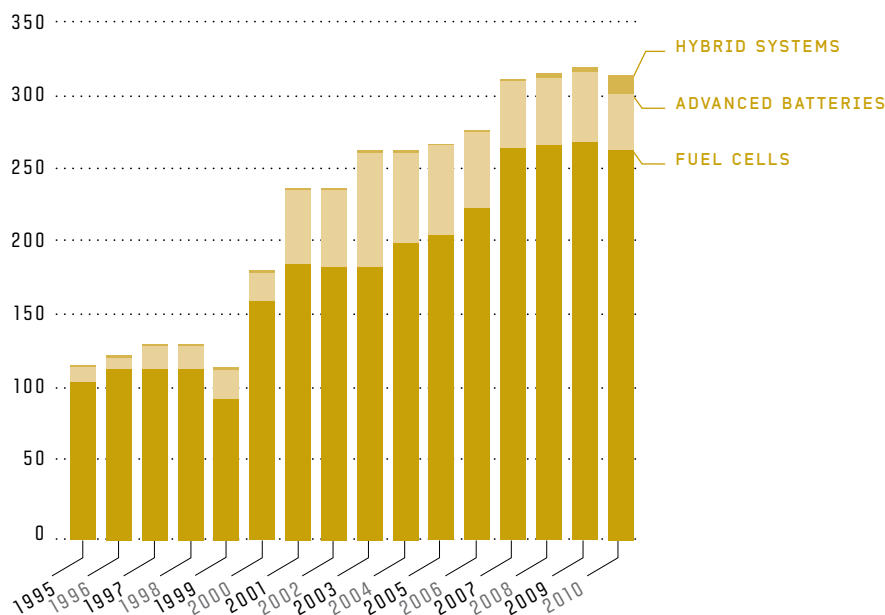
NEXT 10 MANY SHADES OF GREEN. Note: The dramatic drop in employment from 2003 to 2004 was due to the bankruptcy of a company in Air & Environment
Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY GENERATION JOBS / CENTRAL COAST



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY STORAGE JOBS / CENTRAL COAST



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

CENTRAL COAST EMPLOYMENT

CORE GREEN	1995	2009	2010	PERCENT CHANGE	
				1995-2010	2009-2010
EMPLOYMENT	3,600	4,200	4,000	12%	-3%
ESTABLISHMENTS	330	510	460	42%	-10%

CLEANER EARTH COMPANY, INC.

RECYCLING & WASTE

Based in Arroyo Grande, Cleaner Earth Company (CEC) is a full service, quality-oriented, professional environmental waste management and consulting firm providing cost-effective services to both private and public sector clients. CEC has a staff of specialists in the fields of chemistry, environmental engineering, emergency response, and regulatory compliance. These services include providing hazardous waste services, consulting, transportation, lab services, recycling for households and businesses alike, the design, construction, and operation of permanent household hazardous waste collection facilities, and emergency response services for governments requiring hazardous waste cleanup.

www.cleanerearthcompany.com

SACRAMENTO VALLEY

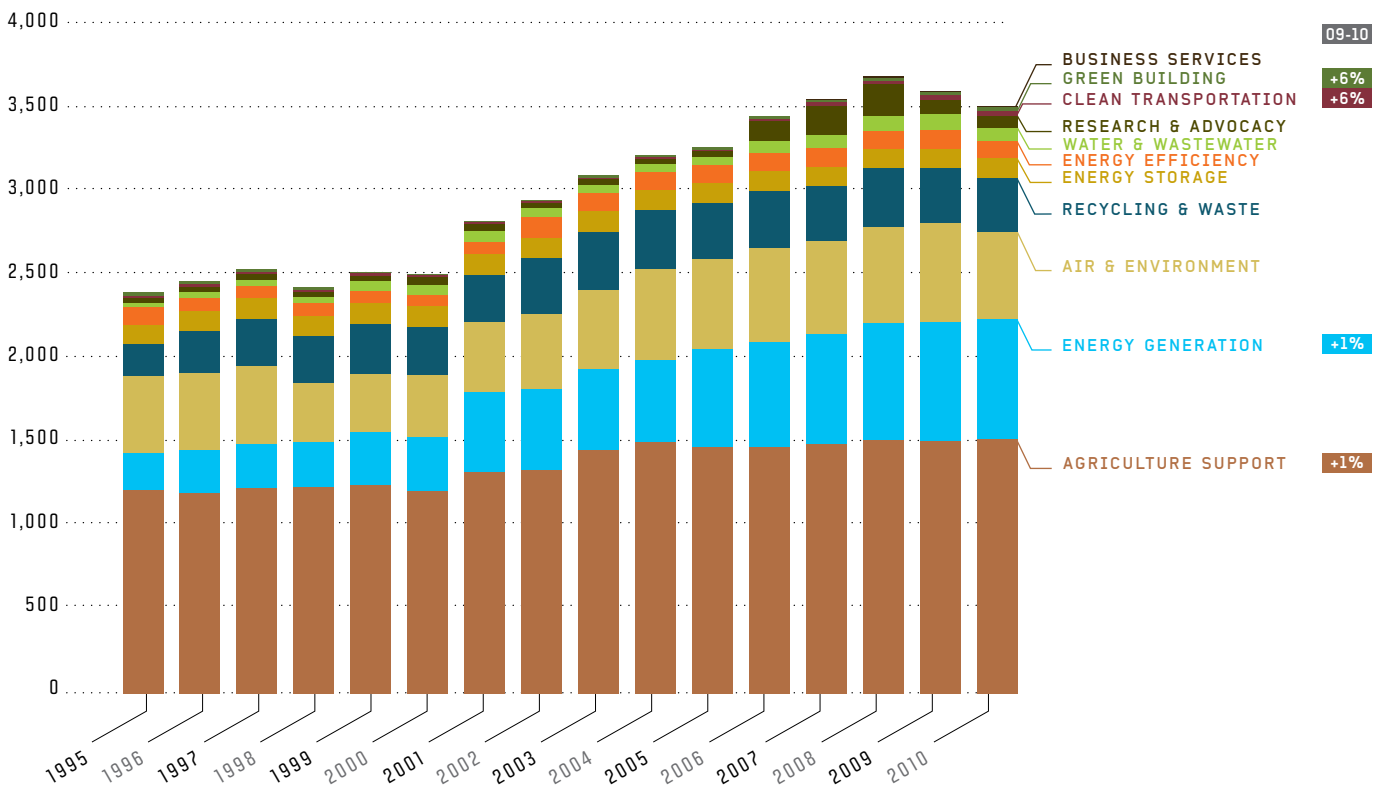
The Sacramento Valley is a leader in the state in Agriculture Support and the production of biofuels. These activities have driven growth in Core Green employment and establishments over the long term and helped maintain growth in more recent years. For the last two years, the region has experienced modest declines in employment and establishments. From January 2009 to 2010, Core Green employment fell by three percent and establishments by seven percent. However, despite these recent declines, the Core Green Economy has made significant gains over the last 16 years. Core Green establishments have almost doubled since 1995 and jobs have increased by 46 percent with the addition of over 1,100 new jobs.

Even with a struggling economy, four segments made modest gains in recent years. Clean Transportation (+6%), Green Building (+6%), Agricultural Support (+1%), and Energy Generation (+1%) all saw job growth in the last observable 12 months. Job losses over the course of 2010 were mainly in Air & Environment. Employment in the segment which represents 15 percent of the Sacramento Valley's green jobs declined 11 percent from January 2009 to 2010.

The Sacramento Valley is the state's leader in Agriculture Support. The concentration of Agricultural Support workers in the Sacramento Valley Core Green economy is 26 times greater than it is statewide. Representing a commanding 43 percent of Core Green employment in the region, Agriculture Support employs over 1,500 people in the Sacramento Valley and has increased in employment by 25 percent since 1995. This segment's employment is almost entirely in Land Management, which includes activities like organic fertilizer, erosion control, and precision irrigation.

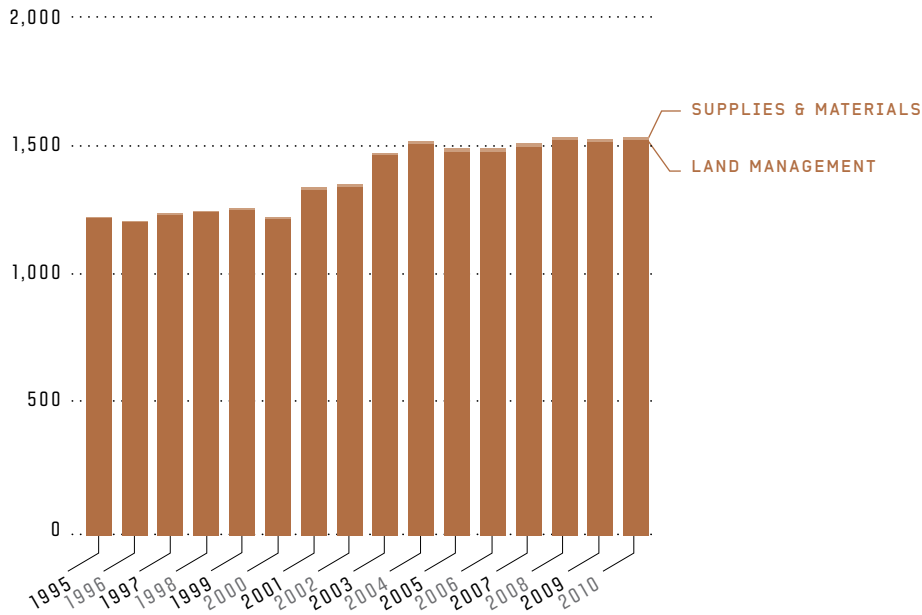
Similar to Agricultural Support, Energy Generation maintained jobs between January 2009 and 2010 and even made some modest gains. The Sacramento Valley has added almost 500 Energy Generation jobs over the last 16 years, growing twenty percent. The fastest growing, most prolific sub segment is Solar which has nearly quadrupled in employment since 1995. In January 2010, Solar accounted for more than 420 jobs in the Sacramento Valley. Employment in Biomass also made large gains in the past 16 years with jobs more than tripling since 1995.

EMPLOYMENT BY GREEN SEGMENT / SACRAMENTO VALLEY



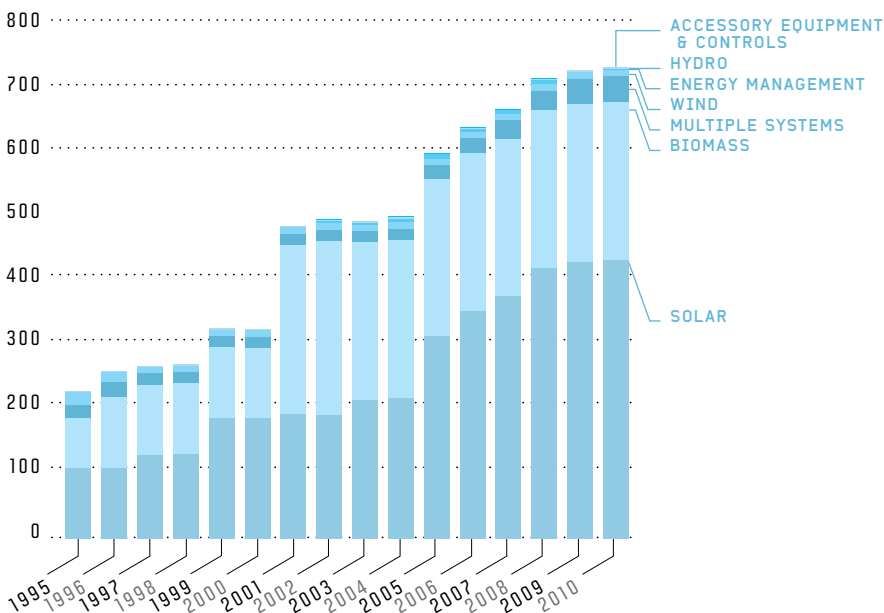
NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

AGRICULTURE SUPPORT JOBS / SACRAMENTO VALLEY



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database.
Analysis: Collaborative Economics

ENERGY GENERATION JOBS / SACRAMENTO VALLEY



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database.
Analysis: Collaborative Economics

SACRAMENTO VALLEY EMPLOYMENT

CORE GREEN				PERCENT CHANGE	
	1995	2009	2010	1995-2010	2009-2010
EMPLOYMENT	2,400	3,600	3,500	46%	-3%
ESTABLISHMENTS	140	290	270	96%	-7%

SPRINGBOARD BIODIESEL

CLEAN TRANSPORTATION

Based in Chico and in operation since 2005, Springboard Biodiesel, known as AGR Energy prior to 2008, develops and manufactures biodiesel solutions. Springboard Biodiesel focuses on delivering the most innovative biodiesel products and technologies that enable local biodiesel production from the widest array of feedstocks. By allowing their customers to make biodiesel from various sources including vegetable oils and seed crops, they minimize their costs and earn a compelling economic return for an environmentally beneficial fuel. Springboard Biodiesel's main products are the BioFuel family of automated biodiesel processors and accessories, fuel pumps, and tanks, which it sells to consumers, small businesses, and municipalities.

www.springboardbiodiesel.com

NORTH COAST

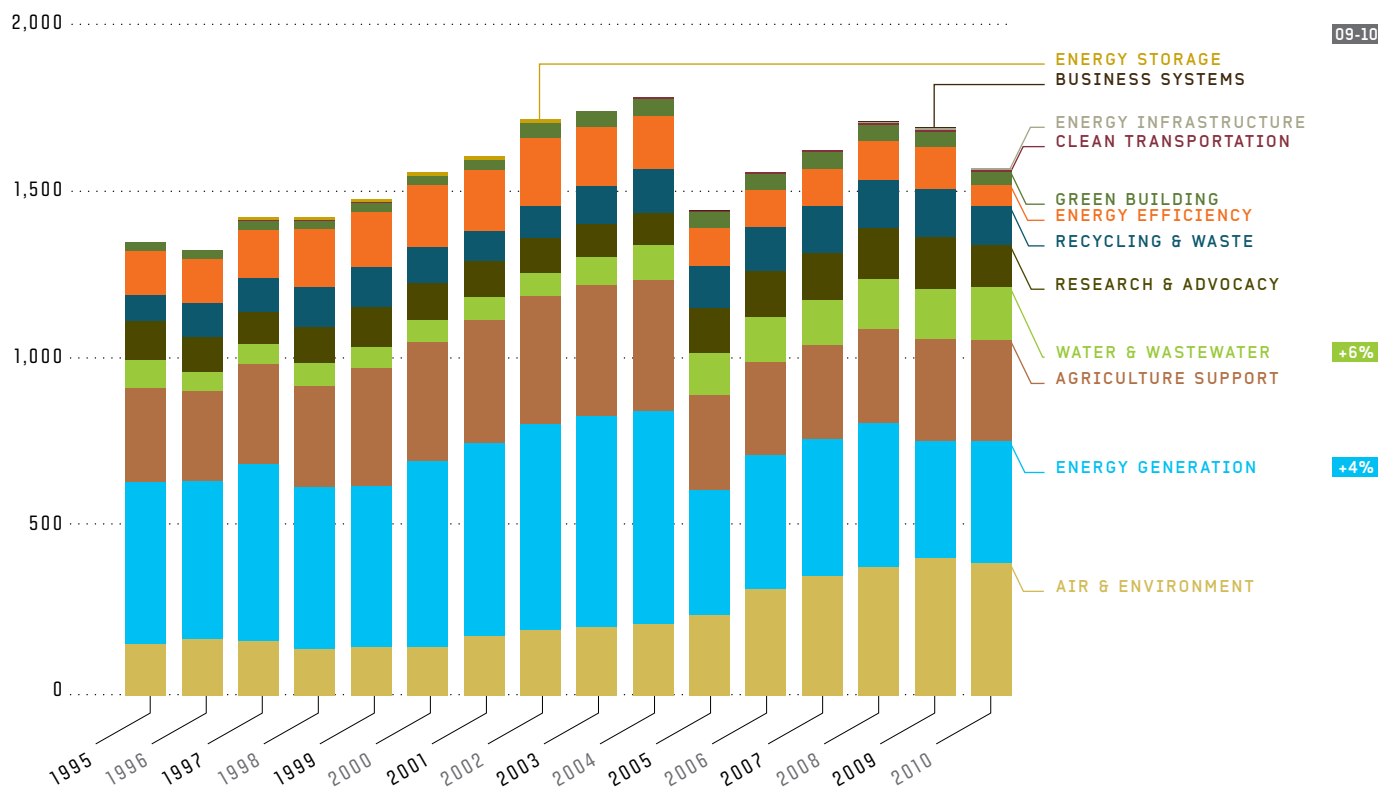
The North Coast's Core Green Economy has shown substantial growth in the past decade. Since 1995, Core Green employment has grown by 16 percent adding roughly 220 jobs in the North Coast. Core Green businesses in the region have shown similar growth expanding 55 percent to more than 260 establishments in 2010. Despite the North Coast being one of three regions where growth in the Core Green Economy trailed the overall economy from January 2009 to 2010, the region still displayed growth in Water & Wastewater (+6%) and Energy Generation (+4%). Overall, Core Green growth has outpaced the total economy in both employment and establishments.

The North Coast has had consistent growth from key segments including Air & Environment and Water & Wastewater. Agriculture Support has also played a vital role in the growth of the region's Core Green Economy. With employment levels holding steady in the last year, Agriculture Support accounts for 19 percent of the region's Core Green employment and is primarily in Land Management. Over the past 16 years, employment in Recycling & Waste has increased by 44 percent, mainly spurred by a jump in Recycling jobs, though in the most recent year the industry has decreased by 20 percent.

Also reflecting a sizable employment share, Air & Environment represents 25 percent of the region's Core Green economy. Environmental Consulting was the largest and fastest growing sub segment within Air & Environment. In 2010, Environmental Consulting accounted for nearly 400 jobs, an increase of 158 percent since 1995. Employment in Emissions Monitoring & Control was hardly present in 1995, but has expanded considerably in the last 16 years and grew by eight percent in the last observable 12 months.

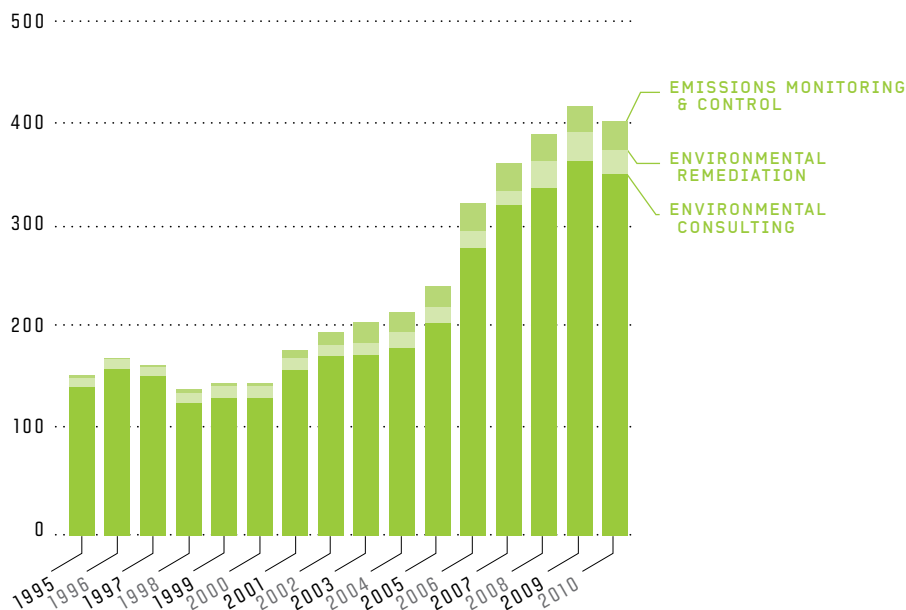
In the North Coast, Water & Wastewater accounts for ten percent of regional Core Green employment. From January 2009 to 2010, total employment in the industry grew by six percent. Since 1995, Water & Wastewater jobs increased by 88 percent and establishments by 56 percent. The sub segment Wastewater Treatment accounts for 70 percent of the larger Water & Wastewater industry in the North Coast.

EMPLOYMENT BY GREEN SEGMENT / NORTH COAST



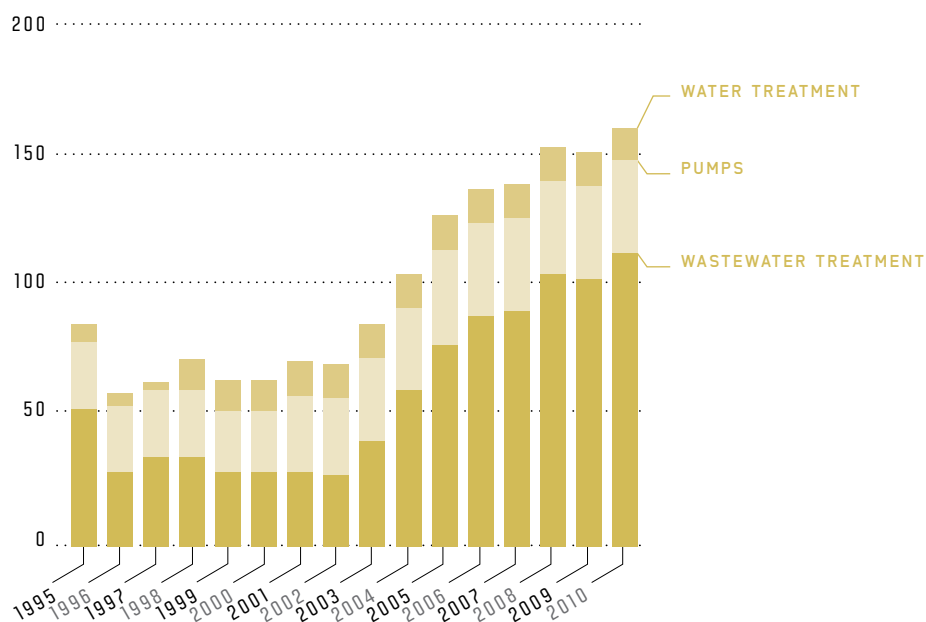
NEXT 10 MANY SHADES OF GREEN. Note: The decrease in employment from 2004 to 2005 is due to a closer of a single establishment in Energy Generation
Data Source: Green Establishment Database. Analysis: Collaborative Economics

AIR & ENVIRONMENT JOBS / NORTH COAST



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

WATER & WASTEWATER JOBS / NORTH COAST



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

NORTH COAST EMPLOYMENT

CORE GREEN	1995	2009	2010	PERCENT CHANGE	
				1995-2010	2009-2010
EMPLOYMENT	1,400	1,700	1,600	16%	-7%
ESTABLISHMENTS	170	290	260	55%	-8%

SOLID WASTE SERVICES, INC.

RECYCLING & WASTE

Located among the Redwood forests of Mendocino County, Solid Waste Services, Inc. (SWS) is a family owned solid waste and recycling company operating out of Willits for the past 40 years. The company provides fully integrated services offering residential, commercial, and industrial solid waste collection, recycling collection and processing, green waste collection and processing, solid waste transfer services, and state certified "buy-back" recycling centers. Their fleet is provided to have clean emission equipment in order to be a sustainable, efficient, and eco-friendly collection company in full compliance with California Air Resource Board (CARB) regulations.

As a leader of waste and recycling services in Northern California, SWS is dedicated to plan, develop, and implement sustainable collection, processing, and recycling programs to both rural and urban communities through increased innovation and technological advancement.

www.solidwasteservices.net

SIERRA REGION

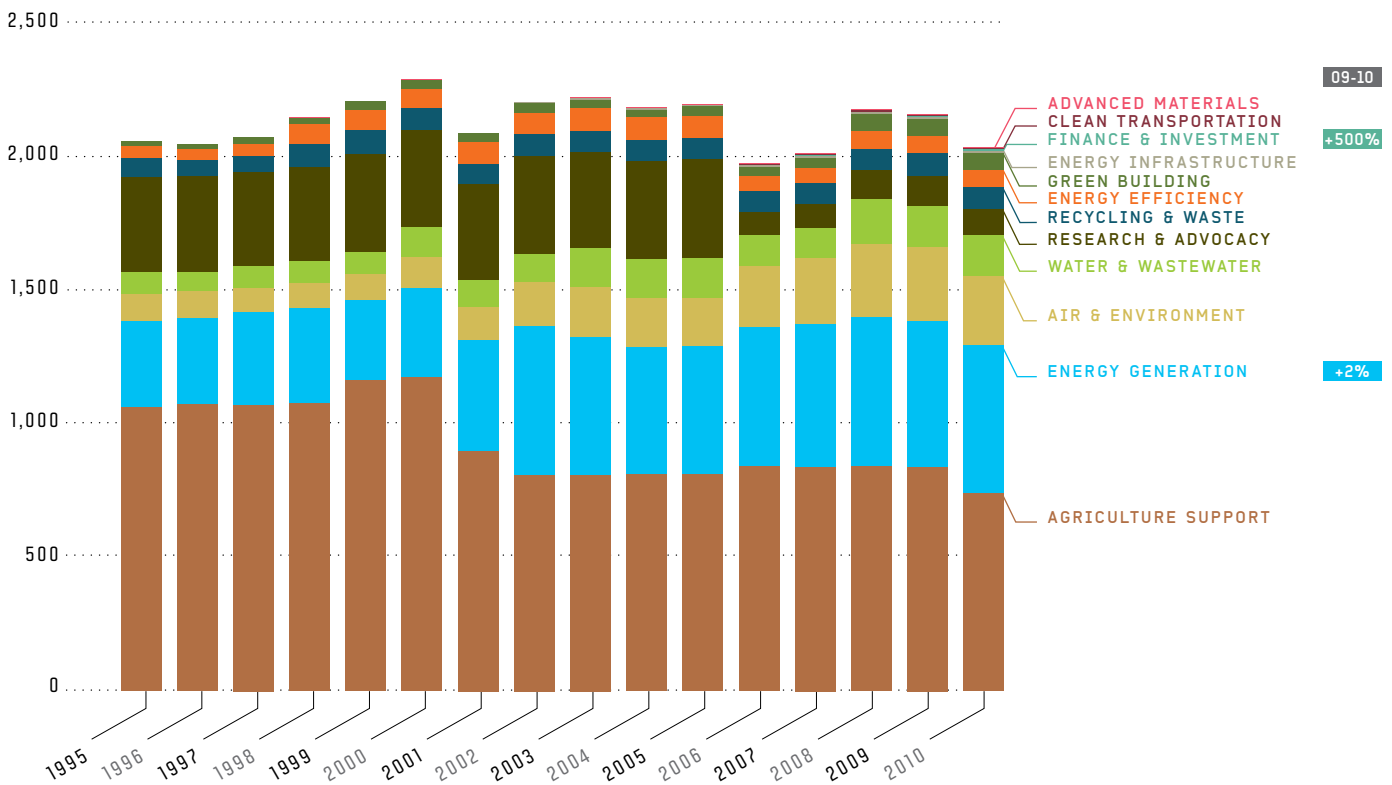
The Sierra region is one of three regions in the state in which Core Green employment lags total employment growth. The drop in employment is largely due to the closure of a single Agriculture Support company working in sustainable forestry, from which the region has not fully rebounded. Within the last year, Core Green employment and establishments have decreased by six percent each. In the long-run view, Core Green business growth in the region increased by 58 percent and employment fell by one percent.

Despite the economic downturn, certain industries display some resilience. Over the past year, Water & Wastewater, Energy Efficiency, Energy Infrastructure, and Green Building have all remained constant while Energy Generation showed a two percent growth. Building Design and Construction are driving growth in the Green Building segment in the region. Employment in Air & Environment dropped by four percent in the last 12 months, however this industry remains ever-growing in the long run, as it has increased 83 percent (over 40 new businesses) within the last 16 years. Long term growth in Energy Efficiency has been powered mostly by business activity related to solar appliances and devices.

Water & Wastewater employment has grown 93 percent since 1995, while remaining stable in the most recent year. The vast majority of employment in this segment is in the area of Wastewater Treatment, which accounts for 79 percent of Water & Wastewater employment. The number of business establishments in Water & Wastewater decreased by six percent from 2009 to 2010 but increased by 45 percent over the 16-year period.

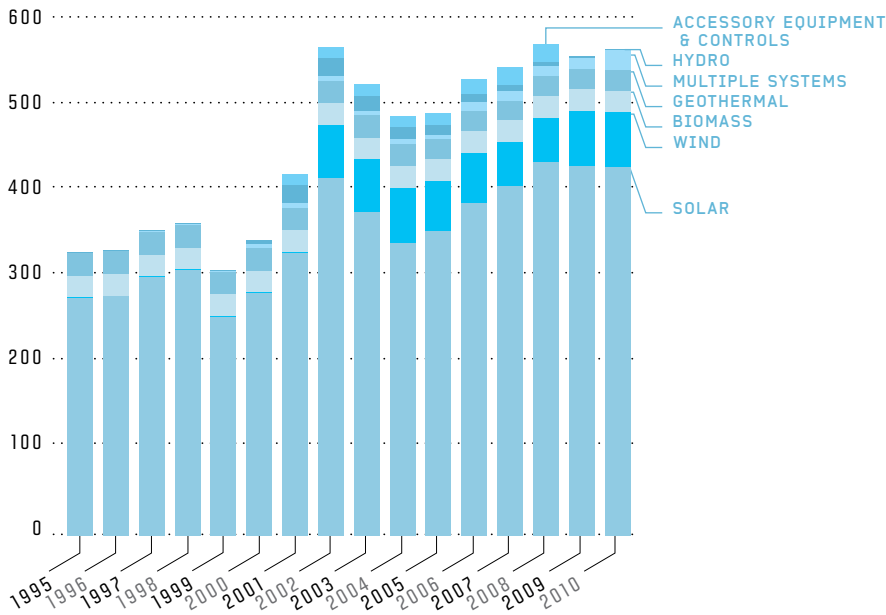
With employment shares well above the statewide average and reporting a two percent growth over the past 12 months, Energy Generation is highly concentrated in the region. Thirty new business establishments opened their doors between 1995 and 2010. Solar and Wind jobs are driving this growth. Over three-quarters of segment employment is in Solar and employment expanded by 55 percent since 1995. Over the course of the most recent observable twelve months, employment in Wind remained stable.

EMPLOYMENT BY GREEN SEGMENT / SIERRA REGION



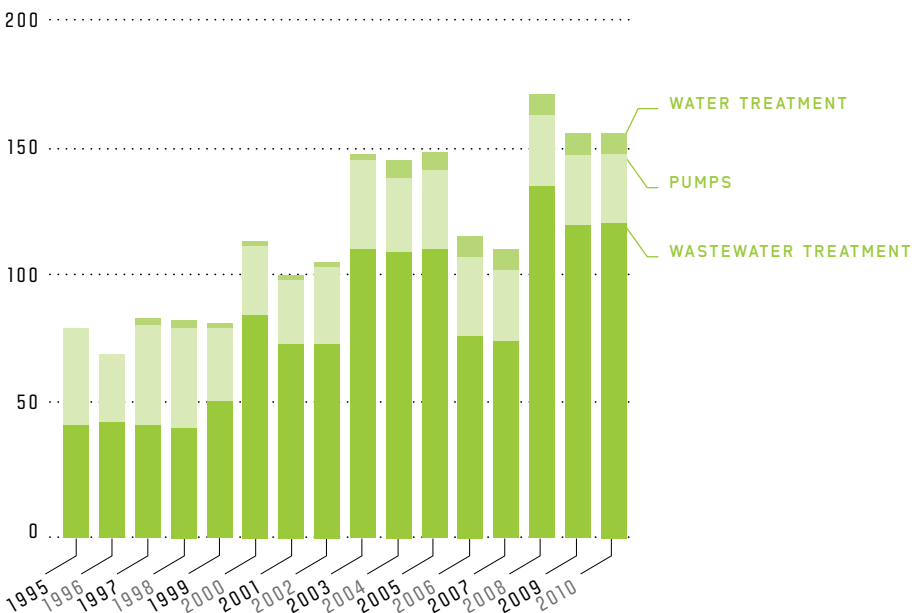
NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

ENERGY GENERATION JOBS / SIERRA REGION



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

WATER & WASTEWATER JOBS / SIERRA REGION



NEXT 10 MANY SHADES OF GREEN. Data Source: Green Establishment Database. Analysis: Collaborative Economics

SIERRA REGION EMPLOYMENT

CORE GREEN	1995	2009	2010	PERCENT CHANGE	
				1995-2010	2009-2010
EMPLOYMENT	2,100	2,200	2,000	-1%	-6%
ESTABLISHMENTS	160	260	250	58%	-6%

HL POWER COMPANY ENERGY GENERATION

Located in Wendel, California and in operation since July, 1989, the HL Power Company generates carbon neutral electricity from natural organic waste including in-forest chips as well as mill and urban wood waste. The use of in-forest chips reduces both wildfire potential and the amount of open burning conducted in the community. Twenty-six employees help produce 30 MW of net power, produced for Pacific Gas and Electric.

www.hlpower.com

CONCLUSION

In sum, the recent economic recession and slow recovery have dealt California a major blow, and different sectors of the economy have suffered to varying degrees. While California's economy as a whole suffered a seven percent drop in employment from January 2009 to January 2010, the state's Core Green Economy dropped by three percent.

It is important to keep in mind that businesses across the economy have suffered from the drying up of the financial markets. Without the ability to access capital, businesses cannot make needed equipment upgrades, expand production or make other necessary investments that would support broader economic growth. Uncertainty surrounding the national political environment undermines the ability for businesses to plan ahead, especially in areas related to the Core Green Economy.

The problem is that prices will continue to rise for energy and all natural resources,⁵ global competition will continue to grow for all products and services, and the real impacts of climate change are increasingly observed and causing significant economic hardship with every cataclysmic weather episode. The price tags for stronger hurricanes, more extreme droughts and heavier flooding are not only felt at the point of rebuilding but also in rising insurance rates for coastal populations and agricultural producers.

The need to adapt to our changing global economic context as well as the global environmental context is now. In so doing, this economic activity will translate into growing businesses and employment in industries providing the vital products and services that enable a transition away from carbon-based fuels, improve resource efficiencies and reduce negative environmental impacts.

California's Core Green Economy shows signs of greater resilience than the economy as a whole. Over the past 16 years, its growth has outpaced the economy as a whole by more than a factor of four, and percentage losses are half those of the state's total employment.

Despite these losses, some segments posted employment gains in the most recent observable period (January 2009 to 2010). Employment in Energy Infrastructure increased 14 percent, Advanced Materials expanded by four percent while Clean Transportation and Energy Generation grew by one percent each. Across the value chain, Manufacturing jobs in the Core Green Economy expanded by one percent from January 2009 to 2010, the only value chain segment to do so.

And some regions of the state have fared better than others. The San Diego Region, the Bay Area and the Sacramento Area have shown the greatest resilience, each with losses of less than two percent from January 2009 to 2010.

California's Core Green Economy is diverse and well distributed across the state. The state's Core Green Economy has weathered the recent economic storm better than the economy as a whole. Continued public policy efforts which support the development of new markets related to these industries, as well as increasing access to capital for businesses otherwise capable of growing, will ensure that growth in the Core Green Economy can continue and that California's competitive edge in these industries will also continue.

APPENDIX

ADAPTIVE GREEN ECONOMY

Employer Survey by the California Employment Development Department's Labor Market Information Division

The California Green Economy Survey (Green Survey) was performed by California Employment Development Department's Labor Market Information Division. The survey counted the number of green jobs, which were defined as those producing goods or services that result in "GREEN" or:

- **G**enerating and storing renewable energy.
- **R**ecycling existing materials.
- **E**nergy-efficient product manufacturing, distribution, construction, installation, and maintenance.
- **E**ducation, compliance and awareness.
- **N**atural and sustainable product manufacturing.

The survey was mailed to 51,100 private and public sector employers across all industries, firm sizes and counties within the state. Geographic areas include all metropolitan areas and non-metropolitan groups of counties. North American Industry Classification System (NAICS) at the two or three digit level was used for industry classification.

Energy Productivity

Energy Productivity Energy consumption data are from the U.S. Department of Energy, Energy Information Administration's State Energy Data System, Consumption Physical Units, 1960-2009 and Table F20: Total Energy Consumption, Price, and Expenditure Estimates by Sector, 2009. Total energy consumption includes all of the following sources: petroleum, natural gas, electricity retail sales, nuclear, coal and coal coke, wood, waste, ethanol, hydroelectric, geothermal, solar, and wind energy. GDP data come from the Bureau of Economic Analysis, U.S. Department of Commerce, GDP by state (millions of current dollars). GDP values are inflation-adjusted and reported in 2011 First

Half dollars, using the CPI for the U.S. City Average from the Bureau of Labor Statistics.

Electricity Productivity in Manufacturing

Data are provided by the U.S. Census Bureau, 1992, 1997, 2002 Economic Census, U.S. Census Bureau 2002 Service Annual Survey, and the U.S. Commerce Department, Bureau of Economic Analysis. Select Operating Expenses for California, Florida, New York, Texas, and the United States (1992, 1997) combines total compensation, total cost of materials, total capital expenditures, depreciation charges during year, and total rental payments because total operating expense data was not available on the state level. Total Operating Expenses for the United States (2002) were estimated directly by the U.S. Census Bureau. Manufacturing does not include publishing firms for 1992 data because of differences in SIC and NAICS classifications. This represents roughly a three percent difference in number of establishments counted in the Manufacturing industry. Private libraries are included in the Information industry estimates only when establishments have payrolls. Industry groupings are based on two-digit NAICS codes, except for the following: Trucking & Warehousing (48-49) excludes couriers & messengers, scheduled passenger transportation, rail transportation, oil pipelines, the post office, and other transportation services; Finance (52) consists only of securities & commodity contracts intermediations and brokerages; Professional, Scientific, & Technical Services (54) excludes office of notaries, landscape architectural services, & veterinary services; Administrative & Waste Services (56) excludes landscaping services; and Other Services excludes pet care services, religious organizations, and labor unions and similar labor organizations. U.S. Census Bureau does not provide data for agriculture, utilities, management of companies and enterprises, educational services, and public administration.

Occupations in California's Green Economy

Occupations selected based on Collaborative Economics' Green Establishments Database. The industry codes for the establishments in the Green Establishments Database were used to determine the occupations in California's green businesses. The occupational staffing pattern was provided by the California Employment Development Department, Labor Market Information Division's Occupational Employment Statistics (1st Quarter 2011). The 2008 Median Annual Wage was provided by the U.S. Bureau of Labor Statistics' Occupational Employment Statistics (May 2008). The identification of the green increased occupations and green enhanced skills occupations was made available by the U.S. Department of Labor, Employment and Training Administration's O*NET. The National Center for O*NET Development submitted a report in early 2009 titled *Greening of the World of Work: Implications for O*NET-SOC and New and Emerging Occupation*. That report provides a definition of the occupations classified as green increased and enhanced skills occupations.

CORE GREEN ECONOMY

California's Core Green Economy: Green Business Establishments Database

Collaborative Economics has developed an approach for identifying and tracking the growth of businesses with primary activities in the Core Green Economy. This methodology was originally developed for work carried out on behalf of Next 10, a California-based nonprofit, and published in the California Green Innovation Index (2008, 2009, 2010, 2012 forthcoming). Building on this work, CEI designed and conducted the nationwide analysis of green business activity on behalf of the Pew Charitable Trusts. The Pew Center on the States reformatted the results of the analysis and developed the report, *The Clean Energy Economy* (June 2009).

The accounting of green business establishments and jobs is based on multiple data sources (including New Energy Finance and the Cleantech Group,TM LLC) for the identification and classification of green businesses and also leveraged a sophisticated internet search process. Collaborative Economics designed the parameters of the internet search platform which was engineered by PlanetMagpie, a Bay Area-based IT service company. The National Establishments Time-Series (NETS) database based on Dun & Bradstreet business-unit data was sourced to extract business information such as jobs. The operational definition of green is based primarily on the definition of cleantech defined by the Cleantech Network. This sample offers a conservative estimate of the industry.

The jobs numbers reported in the database reflect all jobs at each business location. In the case of multi-establishment companies, only the green establishments are included. While this approach does not examine specifically green occupations that are appearing across the entire economy (such as Chief Sustainability Officer), it does account for the businesses behind the products and services that these new professionals need to use in their jobs (such as advanced metering devices, co-generation equipment, and various high-efficiency materials).

The multilayered process involves both automated and manual verification steps of business establishments and their activities. In cases where the results were uncertain and the activities of a business establishment could not be verified (e.g. on a company's website), the establishment was dropped from the database. Therefore, the database offers a conservative estimate for the numbers of establishments and jobs in the Core Green Economy.

ENDNOTES

- ¹ David Roland-Holst and Fredrich Kahrl. 2008. *California Climate Risk and Response*. Next 10.
- ² Business Roundtable. 2010. "Enhancing our Commitment to a Sustainable Future." Business Roundtable's S.E.E Change and Climate Resolve initiatives. Forbes "Top Ten Green Companies in Fortune 500" verified this list and more, May 2011.
- ³ K. Galbraith. 2009. "Sustainability Field Booms on Campus." New York Times. (August 19, 2009)
- ⁴ Erich C. Dierdorff, Jennifer J. Norton, Donald W. Drewes, Christina M. Kroustalis, David Rivkin, Phil Lewis. February 2009. "Greening of the World of Work: Implications for O*NET-SOC and New and Emerging Occupations" National Center for O*NET Development. U.S. Department of Labor, Employment and Training Administration. (<http://www.onetcenter.org/reports/Green.html>) The report defines "green" as economic activity related to reducing the use of fossil fuels, decreasing pollution and greenhouse gas emissions, increasing the efficiency of energy usage, recycling materials, and developing and adopting renewable sources of energy. The "greening" of occupations refers to the extent to which green economy activities and technologies increase the demand for existing occupations, shape the work and worker requirements needed for occupational performance, or generate unique work and worker requirements.
- Green occupations identified in this report come from three different sources: (a) occupations included in the 2006 O*NET-SOC taxonomy, (b) N&E occupations identified from research conducted on in-demand industry clusters, and (c) N&E occupations identified during the current research on the greening of the world of work.
- O*NET has identified 64 O*NET SOC occupations as "Green Increased Demand" occupations, 60 occupations as "Green Enhanced Skills", and 91 occupations as "Green New & Emerging (N&E)" occupations; however, 46 of which are still waiting final approval. In this analysis of California's Core Green Economy, 41 "Green Increased Demand" occupations and 34 "Green Enhanced Skills" occupations were identified in the state's Green Establishments.
- ⁵ For example, oil prices rose above \$100 per barrel in 2011 and are expected to remain at least that high in 2012. See the Energy Information Administration (<http://www.eia.gov/todayinenergy/detail.cfm?id=4550>) as well as recent projections by the American Auto Association (<http://www.nytimes.com/2011/12/29/business/oil-prices-predicted-to-remain-above-100-a-barrel-next-year.html?pagewanted=all>).

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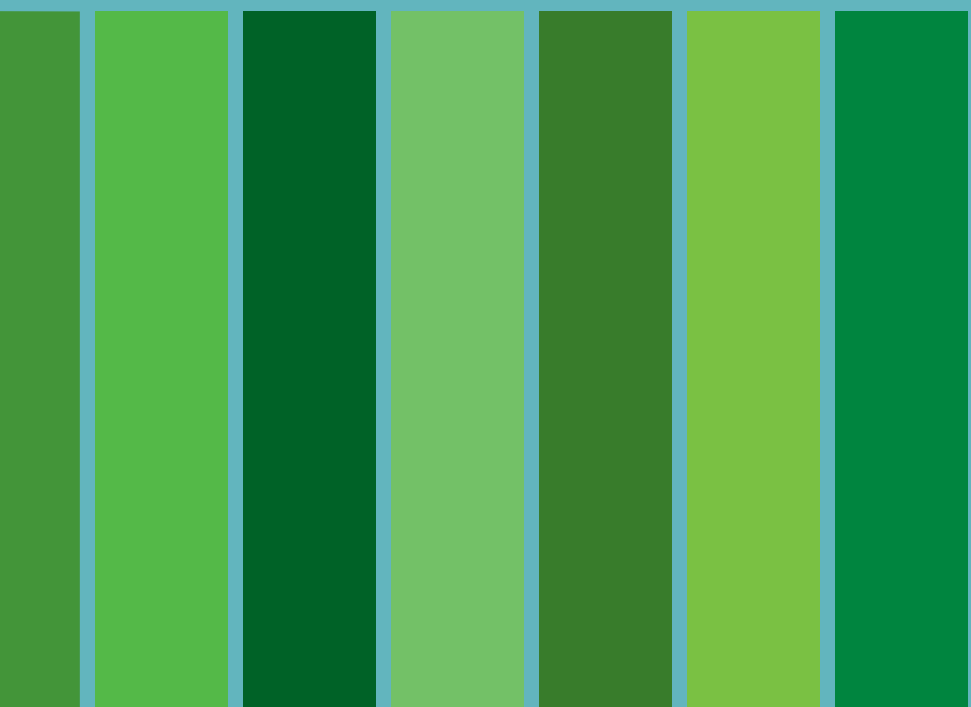
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MANY SHADES OF GREEN:
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