

# Green IT, Part 2: The Orange Greenhouse

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By Ned Madden  
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Silicon Valley in northern California is world-famous as a hotbed of technological development. However, on the southern end of the state lies Orange County, a region blooming with its own clean tech activities. Over last year, the Los Angeles/OC area received over \$320 million in VC funding invested in local green technology.

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*[Part 1](#) of this two-part series took an overall look at the challenges facing green IT. Part 2 zooms in on Orange County, Calif., an emerging innovator in green IT and green technology in general.*

California's Orange County (OC) is known famously worldwide as the home of Disneyland and Knotts Berry Farm, John Wayne and Richard Nixon, citrus crops and beige master-planned communities, babes and beaches. But OC is also coming into its own as the hub in a Southern California green tech corridor stretching along the I-5 (and 405) freeways from Los Angeles in the north all the way to the Mexican border on the southern edge of San Diego County.

OC is emerging as a leader and innovator in green tech (aka clean tech and envirotech) -- the application of environmental science to conserve and sustain the natural environment and resources and to curb the negative impacts of human activity on the planet.

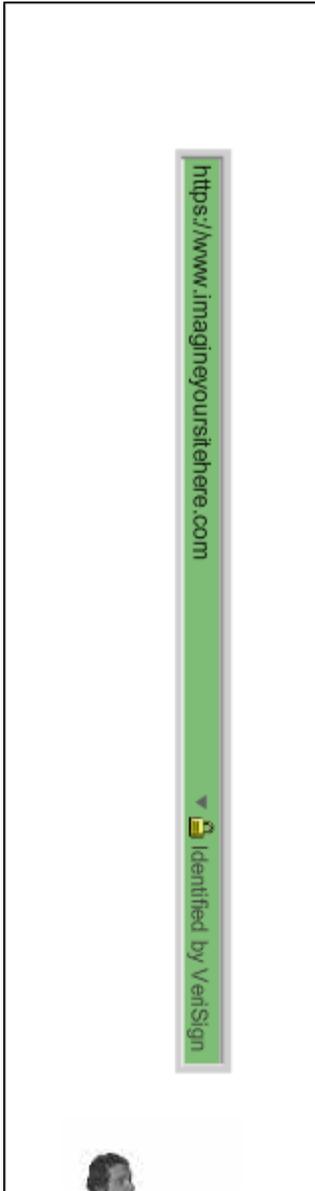
OC is also a source of green IT (aka green computing) innovation. The county is home to Fortune 1,000 tech companies like [Ingram Micro](#), the world's largest technology distributor; [Western Digital](#) (NYSE: WDC) , manufacturer of computer hard disk drives; and [Broadcom](#) (Nasdaq: BRCM) , a supplier of integrated circuits for broadband communications. These companies are industry leaders in the effort to reduce the use of hazardous materials, maximize energy efficiency during a product's lifetime, and promote recyclability of defunct products and factory waste.

In the last year alone, the Los Angeles/Orange County region has seen more than US\$320 million in venture capital funding invested in local green technology, according to the "Orange County Workforce: State of the County 2008 Report" from the Orange County Business Council and the Orange County Workforce Investment Board.

Newport Beach-based [SAIL Venture Partners](#), a national venture capital firm that invests primarily in early-stage companies in the energy/clean tech sector, is high on OC's green prospects.

"Investing in leading clean tech companies requires a global evaluation of technology and markets, and we benefit from our offices in New York, Boston and Washington D.C., as well as our international investors and global board of advisors," said Walter L. Schindler, SAIL Venture managing partner and onetime chairman and CEO of ORYXE Energy International.

"But Orange County has such rich resources of human talent and clean tech-related science and intellectual capital that this is an ideal base of operations for our firm," Schindler told the E-Commerce Times.



## More Green Tech = More Greenbacks

OC's 3 million residents live in a snug 1,000-square-mile territory of mountain foothills, valleys and coastal plains bordered by L.A. and San Diego counties to the north and south and edged by 40 miles of sun-baked Pacific Ocean seashore. OC has a diverse economy based on tourism, building and construction, real estate, financial and legal services, entertainment, aerospace, fashion, high-tech manufacturing and information technology (IT). Now green tech is joining that group as a growing

source of jobs.

"Three out of four green technology employers (in OC) will increase their number of permanent employees, and total employment will increase by about 25 percent in the next 12 months," the Orange County Workforce report [stated](#).

OC possesses a key ingredient essential to any successful green development -- a prestigious local university with well-honed tech-transfer policies. [The University of California at Irvine](#) (UCI) runs numerous research programs focused on global environmental problems such as climate change, stratospheric ozone depletion and air pollution. Campus organizations include the Environment Institute: Global Change, Energy, and Sustainable Resources; the National Fuel Cell Research Center; and the Center for Global Environmental Change Research (CGECR). In addition, UCI has been chosen to lead other California universities in a Green Materials Program that will develop nontoxic alternatives to products used in everyday life.

OC even manufactures premium green automobiles. Irvine-based [Fisker Automotive](#), a privately owned U.S. car company, markets the 2010 Fisker Karma -- the company's first production car. The Karma is a four-door, four-seat 100 mpg clean luxury plug-in-hybrid electric vehicle (PHEV) based on a proprietary high-performance PHEV architecture. Known as "Q-Drive," the technology comes from [Quantum Fuel Systems Technologies Worldwide](#), an alternative energy company also based in Irvine. Fisker Automotive was founded in 2007 by Quantum and Fisker Coachbuild. The Q-Drive system is comprised of a powertrain and two 201 horsepower electric motors powered by an advanced lithium-ion technology battery pack. Fisker owners can drive emission-free for up to 50 miles a day following at-home recharging every evening. For extended range capabilities, a generator is attached to a 260 horsepower turbocharged 2.0-liter Ecotec direct injection (D1) gasoline engine. The Karma has a starting price of \$87,900 (\$80,400 after U.S. government tax credits). More than 1,000 orders for the Karma have been received since the prototype debuted in 2008.

## Green IT

Following World War II, OC moved from its truest "green" roots as an agricultural economy to manufacturing. During the 1990s, the county had a heavy concentration in high-technology manufacturing. IT employment peaked around the year 2000, with more than 50,000 employees, then dropped dramatically following the bursting of the "tech bubble," according to the Orange County Workforce report. But due to the diversity of firms in the OC economy, the sluggish employment pattern did not severely impact the county workforce as much as it did other tech-heavy regions such as Silicon Valley. By 2005-'06, IT employment in OC had made some recoveries. Today, manufacturing has decreased while computer services, software publishing and Internet business are far more common. This has set the stage for the rise of green IT in the county.

The largest concentration of IT employment is along the 55 freeway corridor of Irvine, Santa Ana and Costa Mesa, as well as the Irvine Spectrum area and the "Orange Crush" junction of the 57, 22 and 5 freeways near Anaheim, Orange and Garden Grove.

In October 2008, the American Electronics Association Orange County Council (AeA OC) hosted, along with a group called Orange County Innovation, the "Innovation & Globalization in Green" conference where Irvine-based [Toshiba](#) [America Information Systems](#) (TAIS) gave out its second annual "Toshiba Green Innovation Awards." The Toshiba promotion recognizes environmental innovation by OC-based companies, institutions and organizations for their "green" products, services, technologies, processes or activities, according to Chris Harrington, TAIS vice president of strategy.

"This contest was a great opportunity for green innovators within Orange County to receive recognition for their environmental efforts," Harrington told the E-Commerce Times. "Toshiba and the panel of judges would like to encourage all types of submissions, not just technology."

[Verde Power Supply](#) of Newport Beach won third-place honors with its data center  energy solution. Verde has developed a patent-pending power supply that achieves a 70 percent energy savings over the energy efficient "80 Plus" power supplies for servers, switches, storage devices and PCs. The Verde system conserves power by drawing on it only when needed and by not requiring a fan for cooling.

Some other OC hi-tech green IT players include:

- **Ingram Micro** (Santa Ana) has four primary product categories: networking products, software, systems and peripherals. To help resellers easily identify environmentally preferable "green" electronic products, Ingram Micro uses the nonprofit Green Electronics Council's EPEAT (Electronic Product Environmental Assessment Tool), an environmental ratings system that evaluates desktop computers, notebooks and monitors based on 51 environmental performance criteria. In addition, Ingram Micro offers a "Go Green" outlet program that provides a simple and responsible way to retire customers' old IT equipment (Refresh IT), an online tool for upgrading outdated equipment with new technology (Trade-Up), and an offering that lets solution providers collect and recycle printer cartridges and cell phones (Recycle). Ingram Micro collects payments for the recyclables from manufacturers and then credits client accounts for that amount.
- **Broadcom** (Irvine) offers 10 gigabit Ethernet (10GbE) switches that provide 240 Gigabits of multi-layer switching capacity on a single chip, which uses 65 nanometer (nm) process technology to achieve the industry's lowest power consumption, ultimately enabling "green" data centers via greater density at a lower power. This means cooler operations that better support a fluctuating volume of users due to the rich multimedia content associated with Web 2.0, online video-on-demand, social networking and interactive gaming. By upgrading its data center with Broadcom's 65nm 10GbE switches, a single 40,000 square-foot data center could save enough power annually to light the Las Vegas strip for 12 hours, according to Broadcom.
- **Western Digital** (Lake Forest) has designed eco-friendly hard drives with GreenPower Technology for WD desktop, enterprise, CE and external hard drive products. One of its 1-TB GreenPower drives uses 4 to 5 watts of power (about 40 percent less than standard drives), and that translates to reducing CO2 emissions by up to 60 kilograms per drive, per year. It's like removing a car from the road for two weeks, according to the company.
- **Ricoh Electronics** (Tustin) is part of Ricoh Company, a \$22 billion global corporation and a leading supplier of advanced office automation equipment (digital copiers, peripherals, printed circuit boards, fax machines, e-cabinets, thermal media, toner, parts, remanufactured toner cartridges, and customer-configured products). Ricoh has established an Environmental Management Information System that includes environmental accounting, laws and regulations designed to effectively reduce environmental impact.
- **D-Link Systems** (Fountain Valley) has a "green" computer networking initiative -- environmentally friendly Green Ethernet switches used by consumers and businesses to manage network communications traffic. The D-Link Green Ethernet switches are the first in the market to automatically decrease energy costs by reducing power consumption without sacrificing operational performance and functionality.
- **Greenwala** (Lake Forest) provides an online "green" destination social networking service. Greenwala.com is a self-described "online social community where people can learn to be green, brag about being green and share their actions with their friends, family and community."

## OC as 'Greenhouse'

OC is "an experimental greenhouse," according to Damien Navarro, managing partner of Irvine-based [Earthbound Media Group](#), a strategic marketing and communications agency recognized for its green initiatives.

"OC is largely past its initial infatuation phase with being green already, and we understand that being green and using green technologies is inevitably going to be a part of daily life," Navarro told the E-Commerce Times. "And the companies behind this are interested in highly sustainable, economically sound and profitable projects that not only contribute to the bottom line but also feed this need to be sustainable. I know that some of the larger server and hosting provider companies we contract with for our clients are intentionally using less electricity and more clean energy and solar cell energy to support their operations. Also, companies like [Google](#) (Nasdaq: GOOG)  as well as those in the gaming, entertainment and advertising industries have settled here, making a strong case for being green." 

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