

RACE: 29 states have selected delegates

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from the audience as she made her way offstage.

Obama's winning margins ranged from substantial to crushing.

He won roughly two-thirds of the vote in Washington state and Nebraska, and almost 90 percent in the Virgin Islands.

Late Louisiana returns showed Obama with 55 percent of the vote, to 39 percent for the former first lady. As in his earlier Southern triumphs in Alabama, Georgia and South Carolina, Obama, a black man, rode a wave of African-American support in Louisiana. Clinton won the white vote overwhelmingly.

In all, the Democrats scrapped for 161 delegates in the night's contests.

In initial allocations, Obama won 59, Clinton 29.

In overall totals in The Associated Press count, Clinton had 1,084 delegates to 1,057 for Obama. A total of 2,025 is required to win the nomination at the national convention in Denver.

The Democratic race moved into a new, post-Super Tuesday phase as McCain flunked his first ballot test since becoming the Republican nominee-in-waiting. He lost Kansas caucuses to Mike Huckabee, gaining less than 24 percent of the vote.

Huckabee, the former Arkansas governor, got nearly 60 percent of the vote a few hours after telling conservatives in Washington, "I majored in miracles, and I still believe in them." He won all 36 delegates at stake.

McCain led Washington's caucuses, with returns counted from more than three-quarters of the precincts. In Louisiana, the two men were

SOLAR: Industry seeks ways to continue demand

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sales. "It is hard to find installers," said Lyndon Rive, the chief executive. "We're at the stage where if we continue to grow at this pace, we won't be able to sustain the growth."

SunPower, which makes the silicon-based cells that turn sunlight into electricity, reported 2007 revenue of more than \$775 million, more than triple its 2006 revenue. The company expects sales to top \$1 billion this year. SunPower, based in San Jose, said its stock price grew 251 percent in 2007, faster than any other Silicon Valley company, including Apple and Google.

Not coincidentally, three-quarters of the nation's demand for solar comes from residents and companies in California. "There is a real economy — multiple companies, all of which have the chance to be billion-dollar operators," said Daniel M. Kammen, a professor in the energy and resources group at UC Berkeley. California, he says, is poised to be both the world's next big solar market and its entrepreneurial center.

The question, Kammen says, is: "How can we make sure it's not just green elite or green chic, and make it the basis for the economy?"

There also are huge challenges ahead, not the least of which is the continued dominance of fossil fuels. Solar represents less than one-tenth of 1 percent of the \$3 trillion global energy market, leading some critics to suggest that the state is getting ahead of itself, as it did during the 1970s.

The optimists say a crucial difference this time is the participation of private-sector investors and innovators and emerging technologies. Eight of more than a dozen of the nation's companies developing photovoltaic cells are based in California, and seven of those are in Silicon Valley.

Among the companies that academics and entrepreneurs believe could take the industry to a new level is Nanosolar, which recently started making photovoltaic cells in a 200,000-square-foot factory in

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San Jose. The company said the first 18 months of its capacity has already been booked for sales in Germany.

"They could absolutely transform the market if they make good on even a fraction of their goal for next year," Kammen said. "They're not just a new entrant, but one of the biggest producers in the world."

Many of the California companies are start-ups exploring exotic materials like copper indium gallium selenide, or CIGS, an alternative to the conventional crystalline silicon that is now the dominant technology.

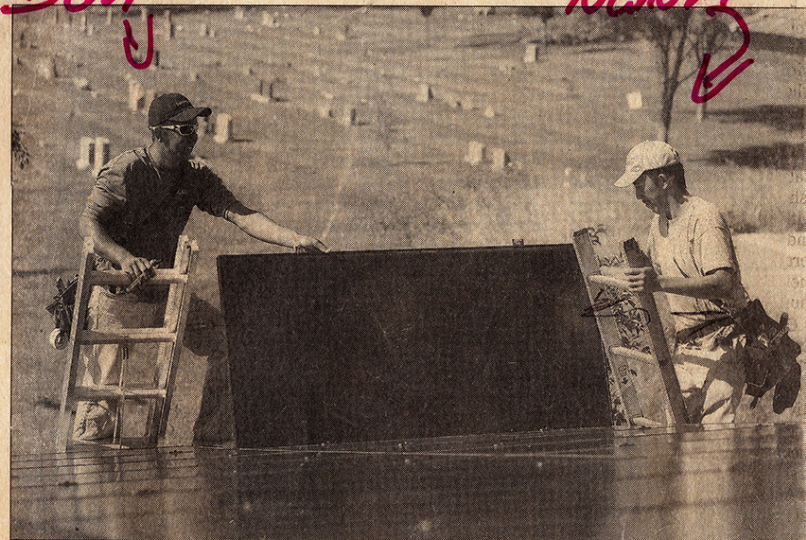
The newcomers hope that CIGS, while less efficient than silicon, can be made far more cheaply than silicon-based cells. Indeed, the Nanosolar factory looks more like a newspaper plant than a chip-making factory. The CIGS material is sprayed onto giant rolls of aluminum foil and then cut into pieces the size of solar panels.

Another example is Integrated Solar, based in Los Angeles, which has developed a low-cost approach to integrating photovoltaic panels directly into the roofs of commercial buildings.

In 2007, 100 megawatts of solar generating capacity was installed in California, about a 50 percent increase over 2006, according to the Solar Energy Industries Association, a trade group.

That growth rate is likely to increase, in part because of ambitious new projects like the 177-megawatt solar thermal plant that Pacific Gas and Electric said last November it would build in San Luis Obispo.

The plant, which will generate



WAYNE TILCOCK/ENTERPRISE FILE PHOTO

Daniel and Nahum Navarrete of Talbot Solar fit the last panel for a project at the Davis Cemetery in June. Solar installation is becoming a booming industry statewide.

power for more than 120,000 homes beginning in 2010, will be built by Ausra, a Palo Alto start-up backed by the investor Vinod Khosla and his former venture capital firm, Kleiner Perkins Caufield & Byers.

The industry in California is also helped by state and local governments' substantial subsidies to stimulate demand. The state has earmarked \$3.2 billion to subsidize solar installation, with the goal of putting solar cells on one million rooftops. The state Assembly passed a law to reduce greenhouse gas emissions by 25 percent by 2020, which could spur alternatives like solar.

Additional incentives have come from a small but growing number of municipalities. The city of Berkeley will pay the upfront costs for a resident's solar installation and recoup the money over 20 years through additional property taxes on a resident's home. San Francisco is preparing to adopt its own subsidy that would range from \$3,000 for a home installation to as much as \$10,000 for a business.

The subsidies have prompted a surge in private investment, led

by venture capitalists. In 2007, these seed investors put \$654 million in 33 solar-related deals in California, up from \$253 million in 16 deals in 2006, according to the Cleantech Group, which tracks investments in alternative energy. California received roughly half of all solar power venture investments made in 2007 in the United States.

"We're just starting to see successful companies come out through the other end of that process," said Nancy C. Floyd, managing director at Nth Power, a venture capital firm that focuses on alternative energy. "And through innovation and volume, prices are coming down."

Whether any of this investment pays off depends, as it did in previous eras, on reaching the point at which solar cells produce electricity as inexpensively as fossil fuels. The cost of solar energy is projected to fall steeply as cheaper new technology reaches economies of scale. Optimists believe that some regions in California could reach that point in half a decade.

At present, solar power is three to five times as expensive as coal,

depending on the technology used, said Dan Reicher, director for climate change and energy initiatives at Google.org, the philanthropic division of the Internet company. Among its investments, Google says, is \$10 million in financing for eSolar, a company in Pasadena that builds systems that concentrate sunlight from reflecting mirrors.

"We're at the dawn of a revolution that could be as powerful as the Internet revolution," Reicher said. The problem is, he said, "renewable energy simply costs too much."

At a conference of alternative energy companies in San Francisco last month, to discuss how to encourage the industry's growth, Brown, the former governor, joked that if the participants wanted to make real headway selling alternative energy, they should try not to come off as flaky.

"Don't get too far ahead of yourselves," said Brown, now the state's attorney general. "You will be stigmatized. Don't use too many big words and make it all sound like yesterday."