



solar electric power association

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Electric Utilities Rise to Meet Solar Call-to-Action

"2008 Top Ten Utility Solar Integration Rankings" Reports on Power Industry Adoption of Solar Electricity

Washington, DC – As financial markets deteriorated in October 2008, Solar Electric Power Association Executive Director Julia Hamm challenged the solar and utility industries to deploy solar power on a massive scale despite new economic barriers. She issued the challenge in a speech at Solar Power International, the nation's largest solar conference and trade show. Today, the Solar Electric Power Association (SEPA) issued a report demonstrating that the industry has responded even amidst a tough economic climate.

SEPA's "[2008 Top Ten Utility Solar Integration Rankings](#)" report identifies the utilities in the U.S. that have the most significant amounts of solar electricity integrated into their portfolio, and records the increased collaboration of the U.S. electric utility and solar energy industries. The report demonstrates that the utility segment is making a major investment to increase the amount of solar energy in power portfolios, with many utilities doubling the amount of solar power in their portfolio in just one year. The overall installed solar capacity of the top ten ranked utilities rose from 711 megawatts to 882 megawatts, reflecting 25 percent growth. Ninety-two utilities participated in this year's survey, an increase of more than 80 percent over last year, showing that the utility industry's interest in solar power is stronger than ever.

"This year's report demonstrates that solar electricity is finally on the radar screen of utilities across the country," said Julia Hamm, executive director of the [Solar Electric Power Association](#). "Solar plants large and small are ready for significant build-out, and the utility industry is moving quickly toward mass adoption to meet a variety of business needs." Renewable portfolio standards, impending carbon policy, and fluctuating costs of power generation and fuel resources top the list of drivers towards improved utility perception of solar electric options.

The report also documents a wave of utility-driven installations, pointing to the growing importance of utilities in the solar power market, and the growing importance of solar power to the business of utilities. Historically, the solar power market has been dominated by customer-driven installations.

"Residential and commercial photovoltaic projects will continue to be important stimulants for job creation and small business growth, but they will be complemented by large-scale photovoltaic and concentrating solar power projects," said Mike Taylor, director of research and education at SEPA. "The variety of ways solar power is being implemented signals an increased maturity in the market."

The Challenge

At Solar Power International in October 2008, Julia Hamm challenged electric utilities and solar power providers to meet aggressive growth forecasts for the industry. Prior to the economic downturn, analysts had predicted a thirty-fold increase in solar capacity between 2009 and 2016, which would create 440,000 permanent jobs, and over \$230 billion in investments and associated economic development benefits.

More specifically, the challenge called for a wider range of utilities to participate in solar adoption. "We must move beyond having 97 percent of all grid-connected solar installations in just 10 utilities' service territories," said Hamm at the time. This year's "Top Ten Utility Solar Integration Rankings" report shows that 88% of new annual growth was in the Top Ten service territories. The distribution of solar power is also spreading geographically. Twelve utilities in eight different states topped the annual and cumulative solar megawatts categories.

To foster an economically-driven solar business that benefits utilities, solar companies and electricity consumers, SEPA also called for increased collaboration on new business models and "bold new ideas developed in tandem for the mutual benefit of both industries, and society at large." The 2008 Top Ten Utility Solar Integration Rankings report documents that utilities have continued to develop renewable energy in innovative ways. For example, Arizona Public Service, Duke Energy, Pacific Gas and Electric, Public Service Electric & Gas, San Diego Gas and Electric, and Southern California Edison have all recently announced individual but similar PV programs that will provide more than the equivalent of an

entire year's worth of past solar installations in the U.S. These specific programs provide for the utility to own the panels at utility and customer sites in a "distributed power plant" design. Through SEPA's [Utility Solar Business Model](#) initiative, electric utilities are collaborating around innovative business models to encourage solar power deployment.

"We are working with many creative companies to find utility business models that provide solid financial returns, increased renewable energy adoption, and customer benefits," said Mike Taylor, SEPA's lead on the Utility Solar Business Models initiative.

Report Reveals Major Trends

This year's report shows that 2008 solar power growth came almost entirely from thousands of distributed generation projects, which grow more steadily and consistently than centralized plants. However, SEPA anticipates that in future years centralized solar electric plants will play an equal or larger role.

"Traditional fossil-fuel power plants come in two sizes, large and larger," said report author Mike Taylor. "The solar market is more vigorous, complex and democratic because of the combination of distributed generation and large-scale projects." Large-scale centralized solar plants will allow utilities to jump up in the rankings quickly, but are currently at an earlier stage of development with most large-scale projects in the contract or construction phase. The solar industry is developing a robust foundation for the future by using a diversified approach of distributed and centralized projects owned by a variety of market players.

The report also serves as a valuable tool to indicate the future direction of solar power markets. Solar power is entering a similar growth phase as wind power did a few years ago, with a dramatic increase in capacity expected. Large-scale solar projects could face some of the same challenges wind projects faced, but will also benefit from the experience and impact of the wind industry on grid integration. The last six months have seen a significant increase in the national conversation about increasing electricity transmission resources as well as changes to the grid that will allow it to manage integration of intermittent wind and solar power.

Key Findings and Methodology

This year's report is based on the *2008 Utility Solar Electricity Survey* completed by utilities in April 2009. The report catalogs how much solar electricity was interconnected by surveyed utilities in calendar year 2008 and what was installed cumulatively up through the end of 2008, including both photovoltaics and concentrating solar power. It includes all solar electricity generation integrated into the utility's portfolio regardless of whether it was owned by the utility, their customer, or a third-party company, and regardless of whether it was installed on the utility or customer side of the meter. The participating utilities are generally self-selecting for having more active solar programs and projects, so results are not necessarily representative of a typical utility in the United States.

The "2008 Top Ten Utility Solar Integration Rankings" report shows an average increase of 2 megawatts per participating utility over the twelve months of 2008. Two megawatts is enough to offset the use of over 300 homes on an annual basis. In the total solar-watts-per-customer category, utilities added an average of 33 watts per customer, or the equivalent of one residential-sized system for every 90 customers. However, the median utility added about one watt per customer, showing that watt-per-customer growth is still concentrated in certain utility markets.

Pacific Gas and Electric Company, based in San Francisco, California, was the most solar integrated utility for the year 2008, interconnecting 85 MW of new capacity. This number represented over 44 percent of the survey total. Ranked second and third were Southern California Edison and San Diego Gas & Electric, rounding out a sweep of the top three spots by California investor owned utilities. For the solar watts-per-customer category in 2008, the San Francisco Public Utilities Commission (SFPUC), a water utility that provides electrical generation to its municipal buildings, ranked first with almost 2700 watts per customer for its 340 customer sites. SFPUC has invested in many PV projects with the assistance of state incentive programs to achieve this coverage for its city buildings. Second and third were Kauai Island Utility Cooperative in Hawaii and Palo Alto Utilities in Northern California. On a cumulative solar megawatt basis, Southern California Edison was ranked first, followed by Pacific Gas & Electric and NV Energy, a Nevada utility. Cumulatively in watts per customer, SFPUC ranked first again, followed by the Port of Oakland, and Southern California Edison. Both the SFPUC and the Port of Oakland are not electrical utilities in the traditional sense, serving residential and commercial customers, but entities that procure electricity for their municipal and port accounts.

For the first time this year, the report provided separate rankings for what was installed in calendar year 2008 and what was installed cumulatively up through the end of 2008. Participating utilities had an average of 11 megawatts in their cumulative portfolio, and the Top Ten utilities represented 93 percent of all solar capacity. Because of their head-start, the large investor-owned utilities in California are likely to retain a lead in the overall cumulative rankings even as the year-to-year rankings shift.

Overall Rankings – Fast-Facts

New Projects in 2008

Total Solar Megawatts

- Participating utilities saw an average increase of 2 megawatts and a median of 0.1 megawatts of solar added to their portfolio in 2008.
- The Top Ten utilities represented 88% of the survey megawatt total.
- Utilities in seven different states placed in the Top Ten.

Total Solar Watts per Customer

- Participating utilities saw an average increase of 33 watts per customer and a median of 1 watt per customer of solar added to their portfolio in 2008.
- Nine of the Top Ten utilities are from California and Hawaii.

Cumulative

Total Solar Megawatts

- Participating utilities had an average of 11 megawatts and a median of 0.2 megawatts of solar in their cumulative portfolio.
- The Top Ten utilities represented 93% of the survey megawatt total.
- Utilities in six different states placed in the Top Ten.

Total Solar Watts per Customer

- Participating utilities had an average of 97 watts per customer and a median of 2 watts per customer of solar in their cumulative portfolio.
- Nine of the Top Ten utilities are from California and Hawaii.

About the Solar Electric Power Association: SEPA is comprised of over 550 utilities and solar industry members. From national events to one-on-one counseling, SEPA is the go-to resource for unbiased and actionable solar intelligence. Breaking down information overload into business reality, SEPA takes the time and risk out of implementing solar business plans and helps turn new technologies into new opportunities. www.solarelectricpower.org