Solar Electric Power Association

Energy Service Providers Bringing PV into the Mainstream

November 14, 2002

Policy Statement
Of The
Solar Electric Power Association

Approved by the Membership at the 2002 Annual Corporation Meeting

The Solar Electric Power Association is an organization over 100 companies and organizations that support the development of commercial markets for solar electric power, or photovoltaic (PV) energy systems. Approximately 2/3 of SEPA members are electric utilities and energy service providers. SEPA's role is to assist these companies and the broader electric industry in finding and developing sustainable business models for the use of solar electric power for the benefit of their customers.

Depending upon the framework for electricity generation, transmission and distribution, the energy provider is a critical player in PV deployment. A utility brings some key assets to the table, including a conduit for communication to the end users, a position as the traditional and reliable provider of energy, and the infrastructure and expertise for PV financing, installation and maintenance of PV systems. The energy provider also sets or responds to many of the issues affecting PV, including interconnection, time-of-use pricing and net metering.

SEPA's mission is to help create markets for solar electric power for electric service providers and their customers, and to do this requires progress in business practices, regulatory issues, research, and tax and related market incentives, and the removal of market barriers. SEPA understands the variety of business circumstances that generation, distribution and energy service companies are in, and is particularly mindful of business and safety issues that confront the management of these companies. With the mission of our Association, SEPA is also aware of the market challenges that face many of our PV Industry members and wishes to serve our combined member interests by making a difference in favor of solar electric power.

The PV Value Proposition

In SEPA's April 22, 2002 report to the U.S. Department of Energy, "Solar Power Solutions: *A Business Case for Capturing Total Value"*, we described the value

proposition behind SEPA's mission. Solar photovoltaics (PV) offers the U.S. a material source of high-value energy. It is an attractive part of the U.S. energy portfolio for an array of reasons which include customer value, as well as benefits from an environmental, reliability and energy security perspective. The U.S. has pioneered and developed the technology, and public opinion of solar power is extremely favorable. Findings from market research indicate that the American people *want* solar energy, consistently giving solar energy a 90+% positive rating, the highest rating for any energy option.

Further, the United States has considerable energy demand and the manufacturing infrastructure to produce PV systems. The hallmarks of PV's unique value proposition include the following:

- **Economic Value:** The generation of solar electricity coincides with the normal peak demand during daylight hours in most communities. It therefore mitigates peak energy costs, brings total energy bills down, and can in some cases obviate the need to build as much additional generation and transmission capacity as would be the case without PV. PV combined with efficiency can realize significant economic benefits and contribute to the goal of zero-energy buildings.
- **Environment:** PV-based electricity is produced in a clean and silent manner;
- **Resource Economics:** PV harvests a free and abundant energy source and puts it to work, reducing the rate at which society is depleting the world's increasingly scarce fossil fuel resources;
- **Inflation-Proof Fuel:** PV systems provide an energy resource with costs that are fixed at the time of installation. Customers of solar electric power can be assured that the costs of their energy will not change as a result of fuel increases.
- **Building Materials Offset:** Building-integrated PV can reduce the costs of roofing or facade building components, providing a reduction in overall building costs.
- **Infrastructure Reliability and Efficiency:** PV can be sited at or near the point of load, thereby freeing up utility investment in distribution systems and enhancing the reliability and cost-effectiveness of the grid. PV can increase grid reliability, resulting in increasing value in the future as reliable high-quality power becomes more valuable;
- **Energy Security – Infrastructure:** Distributed power generally offers security benefits due to multiple generating sources, less transmission and distribution to disrupt, and greater security because on-site PV generation is harder to disrupt, more stable, and less brittle than full reliance on centrally generated power;
- **Energy Security – Economic:** A renewable resource such as PV reduces dependence on all traditional sources of energy inputs and creates a source of energy secure against any external supply interruption or price manipulation;
- **Choice:** PV gives consumers the power to choose the source of the electricity they use and to act on their stated preference for renewable energy;
- **High-Value Jobs**: As a sophisticated semiconductor technology, PV offers the opportunity to build an industry of high-technology companies and jobs in science, engineering, manufacturing, and services.

Behind the SEPA mission to bring PV into the mainstream is the assurance that the public prefers this form of energy. Poll after poll has proven this.

With this backdrop, SEPA has adopted the policy positions presented below.

SEPA Policy Agenda

1. Adoption of Business Case by Utilities

Utility planners are encouraged to adopt the value propositions listed above in their economic evaluation of solar electric power business options.

2. Building Code Changes

Local, state and national building code officials are encouraged to adopt building codes, standards and sitting regulations that take the sitting and installation of solar into consideration. These changes would allow building-integrated solar systems to be incorporated more economically into building design and construction.

3. Interconnection Standards and Policies

"The electric services company or utility needs to open up to customer-friendly, yet safe, interconnection procedures for small PV systems in order for solar electricity to become a mainstream option for customers," wrote the Solar Electric Power Association in October, 2000. Therefore, SEPA adopted at that time its first policy statement, "A Position Statement on Photovoltaic Interconnection" in which it recommends that all electric utilities and other electric service providers implement uniform, simplified interconnection procedures for PV systems. "The Association finds that three national standards – the Institute for Electrical and Electronic Engineers Recommended Practice 929-2000, the Underwriters Laboratories Test Procedure 1741, and the National Electrical Code Article 690 – are sufficient to form a basis for uniform, simplified technical interconnection guidelines."

The Solar Electric Power Association also encourages all utilities to methodically simplify and streamline the contractual aspects of small PV system interconnection. Reducing costs associated with contractual aspects of PV interconnection is in the best interest of both customers and utilities. Therefore, items such as insurance and indemnification, processing of interconnection agreements, access to customer premises, conflict resolution and fees should all be handled in a manner which recognizes that even modest fees and abbreviated processing of agreements can be "deal killers" for small PV systems.

About 20 states now have state laws setting interconnection requirements. SEPA supports the adoption of minimum federal guidelines and the adoption of state standards that are consistent with the SEPA policy.

4. Net Metering and Time-Of-Use Pricing

Net metering is a concept that allows customers who install photovoltaic systems to obtain appropriate credit for energy being produced (beyond their instantaneous needs) and provided to the local electric utility at the same rate that the customer would be paying. SEPA supports net metering as an appropriate mechanism to encourage customer investments in solar generation systems.

Net metering understates the value of PV energy at peak periods of energy delivery by the retail energy provider. SEPA encourages time-of-use pricing, instead of net metering, for larger customers where the extra cost of time-of-use metering can be justified, and net metering for smaller residential and commercial systems, with eventual movement to time-of-use pricing for all customers.

5. Tax Credits and Other Incentive Programs

A 15% residential solar energy tax credit has been in both House and Senate Energy Bills, capped at $2,000, and the Administration's 2003 budget accounts for such expenditures. SEPA supports this 15% residential tax credit with eligibility that includes utilities and energy service companies who may make such investments.

SEPA supports extending the production tax credit to include solar electric power.

SEPA supports creative approaches to state, local government and utility-supported buydown programs for PV systems until the installed system costs decline to the point that the costs match the customer value for grid-connected applications.

SEPA supports a 20% investment tax credit for solar electric systems that would stimulate business investments in solar and in solar manufacturing capacity.

6. Department of Energy Solar R&D

The Solar Electric Power Association supports a strong federal R&D program to improve solar system efficiency and reliability, with continued emphasis to develop new lower cost PV materials, to reduce the manufacturing costs of system components, and to develop manufacturing techniques that will lead to new building-integrated solar products. SEPA supports a 2003 Department of Energy budget for solar of at least $100 million, with funding to include Solar Power Solutions deployment efforts and leadership in the Federal procurement of PV systems as discussed below.

7. Department of Energy Solar Deployment

While federal research is developing new technology for solar electric systems, the Department of Energy must also stimulate the development of local infrastructure and customer, builder, local regulator and others' experience to more rapidly expand the market base. Building upon the recommendations of the Solar Power Solutions initiative, the Department of Energy should provide targeted funding to community initiatives that build on successes in the market and emphasize participation by industry, government,

energy providers and financial institutions. The following are the goals, strategy and features of a proposed new "Community Solar Solutions Project".

- **Program Goal** – Encourage the implementation of numerous sustainable solar power programs operating at state and community levels that lead to rapidly growing markets. Sustainable programs are those that address all of the critical success factors identified as leading to long term success in SEPA's Solar Power Solutions report.
- **Project Goal** – Place PV systems in the marketplace, catalogue and address all issues necessary to progress, including utility regulation, interconnection, net metering, infrastructure, etc.
- **Strategy** – Provide funding to expand projects that include many or all of the critical success factors to identify and address barriers to progress, develop success metrics, and to have these projects serve as resources for other states and communities. Project cost-shared funding of $250,000 per year for two years per project should be provided for ten high-potential communities, with a metrics-driven approach to funding beyond the initial seed stage. Five million dollars should be allocated to this cost-shared initiative, carried out in partnership with SEPA, in each of the next four fiscal years.
- **Important Role of Education and Outreach** – At the national, state and local levels, efforts should be initiated to encourage strong community programs to come forward, to serve market development needs, and to increase the understanding of all stakeholders.

8. Federal Procurement

As the largest U.S. consumer of electricity, the federal government, as a consumer, can and should procure solar power systems for its own needs. Federal installations of PV increase end-user confidence in the technology to a greater extent than Federal R&D or demand-side support. While investors are leery of any technology that the government supports for political reasons, they are more comfortable with technology that the government uses for its own needs based on its total value proposition. Federal installation of PV also provides high visibility of PV systems and an opportunity to educate the public about the benefits of solar power.

A successful Federal procurement initiative would have the following characteristics:

- Expand the existing guidance of FEMP, GSA and DOE and increase outreach and education to alert facilities managers to the cost-effective and leadership opportunities.
- Install PV in all applications where it is the best-value option.
- Require Federal agencies to perform power procurement based on life cycle cost analysis.
- Create concrete program targets such as .5% energy demand met by PV by 2005, 1% by 2010, with 20,000 Federal solar energy systems by 2010 at an average of 5 kW each.
- Aggregate purchases into high-volume long-term contracts, like 10 MW per year for 5 years.

- Demonstrate emerging building-integrated PV products and components of zero-energy buildings
- Look for tie-ins to high potential community and utility programs such that federal procurements leverage broader investments in solar power.
- Led by FEMP, GSA, and Departments of Interior, Agriculture, Defense and Energy, in cooperation with SEPA, SEIA and other industry stakeholders

9. Renewable Portfolio Standard

A Renewable Portfolio Standard (RPS) requires that a certain portion of the electricity sold by local utilities and energy service companies be derived from renewable resources. About a dozen states have adopted RPSs, and several more are considering this initiative. The approaches and details of RPSs vary significantly from state to state, and among initiatives considered at the national level, and the details can make all the difference.

When an RPS is being considered, it should carve out a portfolio within the portfolio for a diversified renewable energy portfolio. It should account for existing renewables and it should account for both distributed generation and central generation. One way to do this is provide a credit, through introduction of a ratio, e.g. 5:1, for PV systems connected into the distribution system, as opposed to the higher voltage subtransmission and transmission systems. There are various mechanisms for achieving the balance, but without such a mechanism an RPS can favor central generation and certain technologies over others. A balanced portfolio that recognizes the system and cost advantages of renewables sited close to customer loads is appropriate and gets closer to the appropriate value equation. Then, a higher percentage requirement for the RPS is appropriate.

In some circumstances, renewable energy may not fit the utility's resource plans due to economic or resource availability reasons. SEPA supports a creative approach to RPS legislation that would allow the local utility, in lieu of payment of a penalty, to fund a buy-down solar program that would encourage their customers to invest in solar systems. Thus, even in this situation, the market for solar power would expand.