

## Solar Technology Roadmap Act

November 6, 2009

On October 22, 2009, the U.S. House of Representatives passed H.R. 3585, the Solar Technology Roadmap Act (the "Solar Roadmap Bill"). Modeled on policies developed for the semiconductor sector, the Solar Roadmap Bill would authorize and mandate a comprehensive research, development and demonstration program to advance solar energy technologies. The legislation would:

- Direct the Secretary of Energy to conduct a research, development and demonstration program for solar technology;
- Provide for creation of a government-industry committee to establish a "roadmap" for development of technology in the solar energy sector; and
- Instruct the Secretary of Energy to provide grants for demonstration projects to support development of solar energy production in accordance with the roadmap.

It is likely that the Solar Roadmap Bill or similar legislation will become law during the 2009 congressional session or soon afterward. The Obama administration strongly supports passage of legislation along these lines to promote solar technology in the United States and Senate action on a companion proposal is expected soon.

To help facilitate strategic planning, it is useful for companies that are interested in solar technology development to focus on this initiative before legislation is enacted. Companies can assess the directions in which technology development is likely to proceed and evaluate opportunities to participate in government-funded programs, individually or collectively, with other industry members. In addition, there may be opportunities to shape legislative and administrative policy during the congressional process.

### Overview of Proposal

The Solar Roadmap Bill is designed to renew, consolidate and expand statutory authorizations to promote solar power technology research, development and demonstration (RD&D).

First, the bill would require the Department of Energy (DOE) to conduct a RD&D program for various solar technologies, including photovoltaics, solar thermal systems, lighting systems that integrate sunlight and electrical lighting, manufacturing of low-cost solar energy systems, water-efficient solar technology, and storage technologies that "can be used to increase the usefulness and value of solar

technologies." Awards under the program would be made on a merit-reviewed competitive basis and could go to:

- Universities, national laboratories, profit and not-for-profit entities and others, along with consortia of such entities; and
- Industry-led consortia to pursue "advanced techniques for manufacturing a variety of solar energy products."

For this program, the statute would authorize \$350 million in 2011 with funding rising each year until it reaches \$550 million in 2015.

Second, the bill would direct the Secretary of Energy to appoint an 11-member "Solar Technology Roadmap Committee" to establish a Solar Technology Roadmap. The committee and the roadmap are important because they may direct 75 percent or more of all DOE funding for solar RD&D after 2014. The roadmap would 1) identify RD&D needs for "a diversity of solar technologies;" 2) identify opportunities for coordination with partner industries, such as the semiconductor sector; and 3) establish RD&D goals, with recommended timeframes for improving performance, reducing cost, reducing environmental impacts, maximizing environmental benefits and improving reliability.

Solar Technology Roadmap Committee members would be from government and industry, with at least one-third but no more than one-half coming from industry. Notably, the Solar Technology Roadmap Committee would be exempt from the Federal Advisory Committee Act (FACA). The FACA normally imposes a variety of restrictions on committees that advise the federal government.

Third, the Solar Roadmap Bill would require DOE to "provide grants for demonstration projects to support the development of solar energy production, consistent with the Solar Technology Roadmap." The DOE awards should, to the extent practicable:

- Include at least ten photovoltaic technology projects that generate one to three megawatts;
- Include three to five solar technology projects that generate greater than 30 megawatts;
- Include at least two solar thermal projects that generate one to three megawatts continuously for 24 hours from energy from the sun;
- Evaluate the potential to establish large photovoltaic facilities that produce at least 100 gigawatts; and
- Observe a variety of criteria, including improvement of US competitiveness.

Demonstration project grants could be used for the gamut of project expenses including feasibility studies, engineering and equipment

installation, and could cover up to 50 percent of project costs. Grants would be limited to \$300 million in the aggregate from 2011 through 2015.

The Solar Roadmap Bill would repeal similar existing legislation, and programs under the statute would supersede duplicative programs.

In reporting the bill, a House of Representatives committee observed that the bill is intended to address US solar companies' inability individually "to support long-term research, development and commercial application of new solar technologies while sustaining rapid growth and expanding production capacity." As emphasized by the bill's chief sponsor, Rep. Gabrielle Giffords (D-AZ), the Solar Technology Roadmap Act is modeled on policies developed over the last three decades to mitigate challenges encountered by the US semiconductor industry vis-à-vis other national industries. These policies led to a semiconductor national technology roadmap and to the SEMATECH manufacturing technology research consortium.

Supporters in the Senate hope to begin consideration of a companion bill this year.

### **Financing and Industry Consortium Opportunities**

The Solar Roadmap Bill would provide extensive opportunities for companies to participate in technology-advancement projects that enjoy up to 50 percent government funding. Through its focus on development and implementation of US solar technologies in projects of all scales, the Solar Roadmap Bill presents opportunities for solar companies of all sizes to participate in the program.

Beyond spurring action by individual companies, congressional leaders are seeking through the Solar Roadmap Bill to replicate industry-government partnerships that are considered to have advanced US interests in semiconductor manufacturing and technology development. To this end, the Solar Roadmap Bill provides for grant awards to "industry-led consortia for research, development and demonstration of advanced techniques for manufacturing a variety of solar energy products." Furthermore, companies that are successful in having a representative appointed to the Solar Technology Roadmap Committee would have the opportunity to leverage their knowledge of the US solar industry to assist the government in setting policies that would encourage domestic expansion and competitiveness of US solar companies abroad.

### **US Competitiveness Policies**

The Solar Roadmap Bill would require DOE to provide awards for "solar technologies and solar manufacturing in the United States." Other provisions are likewise intended to ensure that benefits from

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