

## STATEMENT OF CONSIDERATIONS

REQUEST BY THE DOW CHEMICAL COMPANY (DOW) FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN PATENT RIGHTS UNDER DOE AWARD NO. DE-EE0005434; W(A) 2011-071

DOW has requested a waiver of domestic and foreign patent rights of the United States of America in all subject inventions arising from its participation under the above referenced cooperative agreement entitled "Transformational Approach to Reducing the Total System Costs of Building Integrated Photovoltaics."

According to DOW's petition, the objective of the project funded by the cooperative agreement is to "developed new methods to integrate PV cells within a [Building Integrated Photovoltaic (BIPV)] application that will result in a breakthrough low installed cost and increased power supply to the residential consumer." DOW will (i) integrate the highest efficiency and lowest cost single-junction PV materials available into a shingle form factor, and utilize "onboard" microelectronics to optimize power harvest; (ii) conduct FEA modeling to determine the critical material property requirements required to integrate the various electrical, semiconductor, and functional properties; and (iii) develop new polymeric materials to enable the integration of lightweight and robust BIPV shingles and novel and reliable "quick disconnect" electrical connections into a BIPV product that can be installed using common roofing nails by existing roofing contractors. This project supports the Solar Energy Technology Program objective, under the of Extreme Balance of System Hardware (BOS-X) Funding Opportunity Announcement (DE-FOA-0000493), to develop "new methods to integrate PV cells or modules within a BIPV application that will result in lower installed cost as well as higher efficiencies of the encapsulated/embedded PV module."

The cooperative agreement has three phases. The total anticipated cost of the cooperative agreement, including the three phases is \$23,500,000. The total cost for phase I is \$3,500,006 with DOW providing \$700,000 as cost share for a cost percentage of 20%. Although the total cost and cost share amounts for phases II and III are still under review and subject to DOE's approval, the total anticipated cost for phase II is \$10,000,000 with DOW providing \$5,000,000 as cost share for a cost share percentage of 50% and the total anticipated cost for phase III is \$10,000,000 with DOW providing \$5,000,000 of cost share for a cost share percentage of 50%. This waiver is contingent upon DOW maintaining at least a 20% cost share for Phase I and, to extent Phases II and III are approved, at least a 50% cost share for each of Phases II and III.

As set forth in its petition, "Dow is a diversified manufacturer with an industry-leading portfolio of special chemical, advanced materials, agrosiences, and plastic businesses delivers a broad range of technology-based products and solutions to customers in approximately 160 countries and in high growth sections such as electronics, water, energy, coatings and agriculture. In 2010, Dow had annual sales of \$53.7 billion and employed approximately 50,000 people worldwide. The Company's more than 5,000 products are manufactured at 188 sites in 35 countries across the globe." DOW offers extensive lines of industry-leading insulation, housewrap, sealant and adhesive products and systems, as well as construction chemical

solutions and BIPV products.

DOW has been focused on developing the next generation of solar energy products including its award-winning POWERHOUSE™ solar shingle (see attached brochure). DOW has invested more than \$100 million dollars in R&D related to the work under this project over the last three years. Furthermore, DOW is planning on investing an additional \$50 million outside of the cooperative agreement for product development, scale-up and evaluation related to this project.

DOW has agreed that this waiver shall be subject to the march-in and preference for U.S. industry provisions, as well as the U.S. Government license, comparable to those set out in 35 U.S.C. 202-204. Further, DOW has agreed to the modified U.S. competitiveness provision as attached to this Statement. In brief, DOW has agreed that the integration or assembly of the components for BIPV modules that are intended for the U.S. market and embody or are made through the use of a waived invention shall be conducted in the U.S.

Referring to item 10 of the waiver petition, DOW does not expect that the granting of the waiver will have an anti-competitive effect. There is significant amount of research underway in this area based on a review of pending patent applications and announcements made by several of DOW competitors. Therefore, it is likely that several of DOW competitors will be offering their own solutions and products in this field. The waiver should help further competition by encouraging DOW to offer its own solutions and products as alternatives to the solutions and products that will be offered by DOW competitors.

Considering the foregoing, it is believed that granting this waiver will provide DOW with the necessary incentive to invest its resources in commercializing the results of the cooperative agreement in a manner that will make the above technology available to the public in the shortest time. Therefore, upon evaluation of the waiver petition and in view of the objectives and considerations set forth in 10 CFR 784, all of which have been considered, it is recommended that the requested waiver be granted.

  
Glen R. Drysdale  
Patent Attorney  
Golden Field Office

Date: \_\_\_\_\_

1/11/12

Based upon the foregoing Statement of Considerations and representations in the attached waiver petition, it is determined that the interests of the United States and the general public will best be served by a waiver of patent rights of the scope determined above, and therefore the waiver is granted. This waiver shall not apply to any modification or extension of the cooperative agreement, where through such modification or extension, the purpose, scope, or cost of the agreement has been substantially altered.

CONCURRENCE:

APPROVAL:



Ramamoorthy Ramesh  
Program Manager  
Solar Energy Technology

*John T. Lucas*  
Assistant General Counsel for Technology  
Transfer and Intellectual Property

Date: 2/16/12

Date: 2/22/2012

## U.S. COMPETITIVENESS

DOE and the Contractor acknowledge that the project being funded, at least in part, by this agreement is to develop and integrate high value components, including a photovoltaic cell, into a building integrated photovoltaic (BIPV) module that will serve both as a roofing shingle and a photovoltaic cell. The Recipient agrees, as a condition of DOE waiving certain rights to any subject invention under this agreement pursuant to this patent rights clause, that the integration or assembly of the components for the BIPV module, including the integration of the photovoltaic cell into the module, and any packaging activities shall be conducted in the United States for any BIPV module that (i) embodies or is made through the use of a subject invention and (ii) is intended for the United States market.

The Contractor may ask for a waiver or modification to this U.S. competitiveness provision by demonstrating to the satisfaction of DOE that compliance with the U.S. competitiveness provision is no longer commercially feasible. In the event DOE agrees to a waiver or modification, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, *e.g.*, recoupment of the Government's investment, etc. The Contractor further agrees to make the above condition binding on any assignee or licensee or any entity otherwise acquiring rights to any waived invention, including subsequent assignees or licensees. Should the Contractor or other such entity receiving rights in any waived invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license or other transfer of rights in any waived invention is suspended until approved in writing by DOE.