

## STATEMENT OF CONSIDERATIONS

PETITION FOR ADVANCE WAIVER OF PATENT RIGHTS BY SOLAREX  
UNDER NREL SUBCONTRACT NO. NREL-ZAX-7-17647-05 UNDER  
PRIME CONTRACT NO. DE-AC36-83CH10093; W(A)-98-010;  
CH-0968

The Petitioner, Solarex, has requested a waiver of domestic and foreign patent rights for all subject inventions arising from its participation under the above referenced subcontract and lower-tier subcontracts entered thereunder. The subcontract is entitled "PVMaT Improvements in Solarex PV Module Manufacturing Technology."

The Photovoltaic Manufacturing Technology (PVMaT) project was initiated in FY 1991 to assist U.S. industry in the improvement of module manufacturing processes and the substantial reduction of module manufacturing cost. During this particular subcontract, Petitioner will address the PVMaT goals of PV module cost reduction and improved PV module manufacturing process technology. Towards these goals, the Petitioner will focus on the following: developing a process to produce silicon feedstock from commercial grade  $H_2SiF_6$  that can be sold profitably and in large quantities; improving the control of the casting process to increase yields and improve material quality; reducing wire saw center-to-center cut distance; developing a glycol based slurry system that does not require organic cleaners; demonstrating a cost-effective robust cell process that produces a minimum average cell efficiency of 15%; developing an encapsulation system that meets technical and reliability requirements and can be laminated and cured in less than 6 minutes; and refining and improving other general production processes.

The total cost of the subcontract is expected to be \$6 million, with the Petitioner contributing \$3 million, for approximately fifty percent (50%) cost sharing. The cost-sharing is to be shared between the Petitioner and its lower-tier subcontractors, Springborn Testing and Research, Inc., SiNaF Products, Inc., and MV Systems, Inc. The period of performance of this subcontract is expected to be about three years. The waiver is contingent upon the Petitioner maintaining the above cost sharing percentage during the course of the subcontract.

As noted in its waiver petition, Petitioner has been a pioneer in the development of photovoltaic products since its founding in 1973. Petitioner invented, developed and commercialized solar cells manufactured from both semi-crystalline and thin film silicon and is currently one of the largest manufacturers of PV cells and modules throughout the world. As brought out in the waiver petition, based on 24 years of continued research in the development of crystalline and thin film PV cells and systems, Petitioner has significant technical expertise in the technology with an extensive portfolio of patents. Since 1995, when Amoco and ENRON created a joint venture in which Petitioner became a wholly owned subsidiary, it is estimated that the venture's investment in thin film PV technology has exceeded \$30 million. Considering Petitioner's technical expertise, established market position, and significant investment in this technology, including sizable cost sharing in this subcontract, it is reasonable to conclude that Petitioner will continue to develop and ultimately commercialize the technology and products which may arise from this subcontract.

As set out in the attached waiver petition, Petitioner has requested rights in the subject inventions of its employees and its lower-tier subcontractors not subject to Public Law 96-517. It is believed that this approach will facilitate timely commercialization of the technology by furthering the establishment of business and technical relationships between the parties and providing a mechanism for obtaining meaningful cost sharing between the parties. This waiver contemplates that the parties will allocate title or other rights to inventions among themselves as they deem appropriate during the course of their association consistent with the terms of this waiver. Accordingly, title may be waived directly to a lower-tier subcontractor upon mutual agreement of the Petitioner and the subcontractor. However, this waiver will only applies to such lower-tier subcontractor(s) who provide a letter to DOE acknowledging their right to ask for a waiver and agreeing to the terms of this waiver. There is no intention that this waiver should impact the rights of those parties subject to Public Law 96-517, and any subcontracts with such parties must include appropriate Bayh-Dole patent clauses.

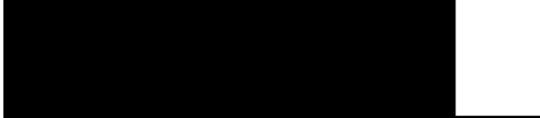
Petitioner has agreed that this waiver shall be subject to the march-in and preference for U.S. industry provisions, as well as the U.S. Government license, comparable to those set out in 35 U.S.C. 202-204. Further, Petitioner has agreed to the U.S. competitiveness provisions as attached to this Statement. In brief, Petitioner has agreed that products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States unless Petitioner can show to the satisfaction of the DOE that it is not commercially feasible to do so. Further, Petitioner has agreed that it will not license, assign or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements.

Referring to item 10 of the waiver petition, granting this waiver is not expected to have any adverse impact on competition. There are currently numerous designs, as well as competitors, in the field of PV modules and other PV applications. Further, there is a large number of foreign PV manufacturers, and the volume of PV modules manufactured in the United States represents only about 42% of the worldwide volume. The success of this subcontract can be expected to stimulate further investment and competition in this technology.

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

  
Thomas G. Anderson  
Assistant Chief Counsel  
Office of Intellectual  
Property Law

Date: 8/7/98

  
Daniel D. Park  
Patent Attorney  
Office of Intellectual  
Property Law

Date: 1/11

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 described above, and therefore the waiver is granted. This waiver shall not apply to any modification or extension of the subcontract, where through such modification or extension, the purpose, scope or cost of the subcontract has been substantially altered.

CONCURRENC

APPROVAL:

[REDACTED]  
James Rannells,  
Director, Office of  
Photovoltaics and Wind  
EE-11

[REDACTED]  
Paul A. Gottlieb  
Assistant General Counsel  
for Technology Transfer and  
Intellectual Property

Date:

October 8, 1998

Date:

11-23-98

(t) U. S. COMPETITIVENESS

The Contractor agrees that any products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States unless the Contractor can show to the satisfaction of the DOE that it is not commercially feasible to do so. In the event the DOE agrees to foreign manufacture, 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 agrees that it will not license, assign or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements. Should the Contractor or other such entity receiving rights in the invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in the waived invention is suspended until approved in writing by the DOE.

WAIVER ACTION - ABSTRACT  
W(A) -98-010

REQUESTOR

SUBCONTRACT SCOPE OF  
WORK

RATIONALE FOR DECISION

Solarex

Manufacturing  
Improvements in  
Solarex PV Module  
Manufacturing  
Technology

50% cost sharing