

APPLICATION OF BATTERIES FOR SOLAR ENERGY STORAGE

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The objective of this project is to determine the battery storage requirements of future solar photovoltaic systems and to define the battery system R&D program needed to ensure timely commercial availability of the most suitable battery systems. This project is in support of the DOE National Photovoltaic Program Plan which was instituted in March, 1978. This plan is directed toward assuring that photovoltaic conversion systems have a significant role in meeting the nation's future energy needs, with the goal of producing approximately 50 GW(e) of electrical power by the year 2000. The photovoltaic program will be successful only if cost effective batteries and power conversion and control equipment are available.

To assist the DOE in defining the role of batteries in various photovoltaic applications a workshop was held in which 80 government and industrial representatives discussed problems related to the development and commercialization of photovoltaic systems. The workshop focused on three principal applications for battery/photovoltaic energy systems: energy sources for private residences and remote sites, institutions (*e.g.*, shopping center, school facilities), and central power stations. The proceedings of the workshop have been published as a formal DOE report.

An assessment study was made to compare and contrast the results of various DOE-sponsored studies which projected the economics and performance of future photovoltaic systems in residential, commercial and utility applications with the residential applications offering greatest promise. ANL's comparative assessments of these studies showed that the economic viability of battery storage in residential applications primarily is sensitive to the utility rate structure and the battery life-cycle cost, which varied widely in the DOE-sponsored studies.

The information collected at the workshop, along with the results of other DOE studies, provided the basis for a Program Plan covering battery storage systems for solar photovoltaic applications, which was submitted to DOE in September, 1978.

This project was not funded in 1979.

Recent publication

- 1 N. P. Yao and J. J. Barghusen (eds.), *Proceedings of the Workshop on Battery Storage for Solar Photovoltaic Energy Systems*, ANL/OEPM-78-3, 1978.