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Pete Mourning
Barbara Glenn
Stephen A. Rubin
F. Floyd Shoemaker
Rob Soto

Solar Energy Research Institute
A Division of Midwest Research Institute

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Solar Energy

Technical Information Dissemination Plan for the U.S. Department of Energy, ETS/SOLAR Divisions

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TECHNICAL INFORMATION DISSEMINATION
PLAN FOR THE U.S. DEPARTMENT OF ENERGY,
ETS/SOLAR DIVISIONS

PETE MOURNING
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Solar Energy Research Institute

1536 Cole Boulevard
Golden, Colorado 80401

A Division of Midwest Research Institute

Prepared for the
U.S. Department of Energy
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PREFACE

This document was prepared by the Communications Branch of the SERI Technology Commercialization Division, Pete Mourning, Task Leader. A major contribution was made by James E. Freeman, Consultant, Fund, Inc.

Keith Haggard, Chief
Communications Branch

Approved for:

SOLAR ENERGY RESEARCH INSTITUTE

Joseph M. Carlson
Assistant Director
Technology Commercialization

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TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
	Abstract	1
1	INTRODUCTION	3
	Program Purpose and Approach	3
	Commercialization Support	3
	Policy Basis of This Program	3
	Definitions and Scope	4
2	PROGRAM OVERVIEW	5
	Overall TID Program Goals	5
	Implementation Strategy	5
	Potential Barriers to Implementation	6
	Anticipated Benefits	6
3	TECHNICAL INFORMATION DISSEMINATION PROJECTS IN FIVE SOLAR TECHNOLOGIES	9
	Solar R&D Target Audiences	9
	Principal Thrusts of the Program with These Target Audiences	9
	Year 1 Objectives of the Five TID Projects	11
	Information Resource Services Support	11
	Program Management	13
4	PROGRAM MANAGEMENT AND ORGANIZATION	15
	Level 1. Program Administration	15
	Level 2. Program Management	17
	Level 3. Program Operations	17
5	PROGRAM SCHEDULE	21
6	DETAILED DESCRIPTION OF THE FIVE TID PROJECTS	23
	The Photovoltaics (P/V) TID Project: Year 1	25
	The Solar Thermal Power (STP) TID Project: Year 1	31
	The Biomass TID Project: Year 1	37
	The Ocean Thermal (OTEC) TID Project: Year 1	43
	The Wind Energy (WECS) TID Project: Year 1	49
<u>Appendix</u>		
A	CURRENT AND PLANNED TID ACTIVITIES IN THE FIVE FIELDS OF SOLAR R&D	A-1
B	SOLAR R&D CONTRACTORS CONTACTED	B-1
C	SERI TECHNICAL INFORMATION DISSEMINATION (TID) INTERVIEW GUIDE	C-1

LIST OF EXHIBITS

<u>Exhibit</u>		<u>Page</u>
1	Four Target Audiences (TAs) for Solar R&D Results	10
2	Technical Information Dissemination Program: Functional Organization	16
3	Program Management Milestone Schedule	22
4	Milestone Schedule for Year 1 of P/V TID Project Tasks . .	28
5	Estimated Person-Months of Professional Effort for Year 1 of P/V TID Project Tasks	29
6	Milestone Schedule for Year 1 of STP TID Project Tasks . .	35
7	Estimated Person-Months of Professional Effort for Year 1 of STP TID Project Tasks	36
8	Milestone Schedule for Year 1 of Biomass TID Project Tasks	41
9	Estimated Person-Months of Professional Effort for Year 1 of Biomass TID Project Tasks	42
10	Milestone Schedule for Year 1 of OTEC TID Project Tasks . .	46
11	Estimated Person-Months of Professional Effort for Year 1 of OTEC TID Project Tasks	47
12	Milestone Schedule for Year 1 of WECS TID Project Tasks . .	53
13	Estimated Person-Months of Professional Effort for Year 1 of WECS TID Project Tasks	54
A-1	Current Photovoltaic Contractor TID Activities	A-4
A-2	Current Solar Thermal Power Contractor TID Activities . . .	A-5
A-3	Current Biomass Contractor TID Activities	A-6
A-4	Current Ocean Thermal Energy Conversion Contractor TID Activities	A-7
A-5	Current Wind Energy Contractor TID Activities	A-8
B-1	Organizations Contacted--Photovoltaics	B-3
B-2	Organizations Contacted--Solar Thermal Power	B-4

LIST OF EXHIBITS (Con't)

<u>Exhibit</u>		<u>Page</u>
B-3	Organizations Contacted--Biomass	B-5
B-4	Organizations Contacted--Ocean Thermal Energy Conversion . .	B-6
B-5	Organizations Contacted--Wind Energy Conversion Systems . .	B-7

ABSTRACT

The Solar Energy Research Institute prepared this plan for a technical information dissemination (TID) program for the U.S. Department of Energy ETS/Division of Resource Management.

This plan's purpose is to build the most effective information transfer mechanisms possible to support the earliest appropriate commercialization of solar research and development (R&D) results in five technologies: photo-voltaics, solar thermal power, biomass, ocean thermal energy conversion, and wind energy conversion.

This will be accomplished by strengthening existing TID activities of DOE contractors through coordination, evaluation, and maximum use of ongoing information support services. During Year 1 of the plan, new information activities will be initiated where the leverage effect appears reasonably high in meeting the goals of the TID program. DOE in-house and contractor personnel will be involved in planning, evaluating, and implementing these technical information dissemination activities.

Finally, the plan proposes to involve users of solar R&D results in external evaluation of technical information activities in each of the five solar technologies.

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SECTION 1.0

INTRODUCTION

The U.S. Department of Energy ETS/Division of Program Resource Management directed the Solar Energy Research Institute to develop a program for coordinating and strengthening technical information activities related to the commercialization of solar energy research and development results. This plan responds to that directive by establishing overall goals and first-year objectives, as well as administrative and budgetary elements of such a program.

PROGRAM PURPOSE AND APPROACH

The basic purpose of this program is to conduct the most effective technical information dissemination (TID) activities possible in support of the earliest appropriate commercialization of solar research and development (R&D) results.

Five projects will be undertaken in the first year of the TID program, with one project in each of five areas: photovoltaics, solar thermal power, biomass, ocean thermal energy conversion, and wind energy conversion.

This plan for a TID program evolved through SERI contacts with solar energy R&D program managers in DOE and with contractor firms actively involved in solar R&D. In preparing this plan, SERI also interviewed experts in a variety of solar-related information transfer services including the Solar Energy Information Data Bank under development by SERI; the DOE Technical Information Center at Oak Ridge, Tennessee; the Technology Transfer Program of DOE's Division of Conservation and Solar Applications; and the National Solar Heating and Cooling Information Center managed by the Franklin Institute. SERI appreciates the interest and cooperation of many individuals who helped shape this plan.

COMMERCIALIZATION SUPPORT

An essential, but not sufficient, condition for appropriate commercialization of solar R&D results is that persons in a position to influence the marketing and application of those results be informed on a timely basis of new and improved solar products and processes. Managers of solar R&D projects cannot solely rely on serendipity to help potential commercializers and users become well-informed. Instead, a directed program of technical information dissemination will provide the coordination of dissemination activities and a focus on specific target audiences and their knowledge requirements necessary for successful commercialization.

POLICY BASIS OF THIS PROGRAM

The program envisioned in this plan supports the information dissemination responsibilities of DOE set forth in the organization act of August 4, 1977

(Public Law 95-91). This act established the Department of Energy and charged it with responsibility to

. . . carry out the planning, coordination, support, and management of balanced and comprehensive energy research and development programs [and] disseminating information on the commercial feasibility and use of energy from fossil, nuclear, solar, geothermal, and other energy technologies.

Another federal law to which this program is responsive is the Freedom of Information Act (5 USC 552 et seq). This act requires federal agencies to make their unpatented and nonconfidential records, including most R&D results, promptly available to anyone requesting those records.

This program plan also reflects current U.S. patent policy to ensure the earliest possible domestic dissemination of R&D results having high commercial potential.

Other federal agencies require their contractors to develop and implement clearly identifiable information dissemination plans for the use of R&D results. The National Science Foundation and the National Institute of Education, to cite just two examples, require their grantees and contractors to include separate and formal information dissemination elements in R&D proposals and contracts.

A recent sampling of DOE contract language for solar R&D projects revealed that fewer than 10% contain even the most rudimentary formal commitment to the dissemination of R&D results. This program will assist solar R&D contractors in strengthening the technical information aspects of their projects.

Finally, this program will complement the current effort by the U.S. Government to implement the Federal Grant and Cooperative Agreement Act of 1977. This act establishes uniform, government-wide criteria for the use of grants, contracts, and cooperative agreements, placing particular emphasis on the ways that the federal government works with nonfederal parties to facilitate use of R&D results where the primary beneficiary of such use is some third party. It should be possible during the first or second year of this program, for example, to accelerate the commercialization and use of small wind energy R&D results by cooperative agreements between government and major distributors of small farm implements to produce appropriate TID packages.

DEFINITIONS AND SCOPE

For the purposes of this program, R&D results are the products and processes flowing from exploratory scientific and technical activity. Dissemination refers to the process of linking potential users of R&D results with the expanding body of scientific and technical knowledge related to solar energy.

The scope of this program is limited to the dissemination of solar R&D results in five areas: photovoltaics, solar thermal power, biomass, ocean thermal energy conversion, and wind energy. Priority dissemination emphasis is placed on results of research on specific applications and technology development.

SECTION 2.0

PROGRAM OVERVIEW

OVERALL TID PROGRAM GOALS

Dissemination mechanisms of this program will be designed, implemented, and evaluated to achieve four overall goals:

1. To support timely and accurate exchange of solar R&D results among solar energy researchers within DOE and under contract to DOE;
2. To provide information on solar R&D results to decisionmakers outside DOE who are, or soon will be, in a position to commercialize those results;
3. To provide information on solar R&D results to lawmakers and their aides, investors, educators, realtors, citizen advocates, and other interested individuals seeking to develop incentives for the adoption and use of solar technologies; and
4. To ensure that the larger interested public is informed of important advances in the five relevant areas of solar R&D.

Specific operational objectives for the first year of the program are presented in Sections 3 and 6, the sections that detail what is to be done in each of the five major projects to be undertaken.

IMPLEMENTATION STRATEGY

A step-by-step approach to achieve overall goals of the TID program is planned. Year 1 basically will use well-understood marketing research techniques to segment the major potential commercializers and users of solar R&D results in photovoltaics, solar thermal power, biomass, ocean thermal energy conversion, and wind energy and to generate information on their knowledge requirements; in addition, the costs and impacts of current dissemination techniques and processes will be calculated. From these activities will emerge a much clearer understanding of how best to coordinate and improve the cost-effectiveness of technical information dissemination activities in the five fields of solar R&D in Year 2 and the years that follow.

Underpinning specific program activities in the first year, TID program management will make continuing reference to the following criteria as a means of ensuring that overall program goals are achieved.

1. Does the activity develop the capacity within DOE and SERI to manage technical information flows from solar R&D into commercialization?
2. Does the activity strengthen existing solar information activities of DOE contractors through coordination, evaluation, and use of ongoing information support services?

3. Does the proposed activity have a reasonable potential of meeting one or more of the overall goals of this program?
4. Does the activity ensure the involvement of DOE in-house contractor personnel in planning, evaluating, and implementing solar technical information activities?
5. Does the activity enhance the commercialization of solar R&D results by using appropriate language levels and media to communicate those results beyond the R&D community to commercializers, citizen advocates, and the larger interested public?
6. Does the activity contribute to the achievement of DOE's energy conservation and solar application goals for the United States?
7. Does the activity permit identification of specific ways to determine the costs and impacts of similar activities, as well as ways of making them more cost-effective?
8. Does the activity involve representative users in all major target audiences in external evaluation of its costs and impacts?

POTENTIAL BARRIERS TO IMPLEMENTATION

The implementation strategies presented above imply close coordination among all persons involved in the transfer of solar R&D results into commercialization. At the heart of this cooperative effort are voluntary contributions to the achievement of the five technology-specific project objectives described in Sections 3 and 6 of this plan. Persons and organizations within each of the five areas of solar R&D who voluntarily undertake specific initiatives will have a major impact on the overall effectiveness of the plan.

Not all is left to voluntary cooperation in this plan, however. A significant number of TID initiatives (to be managed and funded through a program management unit described in Section 4 of this plan) are planned for each of the five technology areas. These initiatives will contribute substantially to the accomplishment of Year 1 objectives (see Sections 3 and 6). Additional contributions will come from voluntary strengthening of existing solar technical information activities in each of the five R&D areas.

ANTICIPATED BENEFITS

The major benefits to the solar research community and to the U.S. economy from the successful implementation of activities proposed in this TID program plan include:

- Earlier use of solar R&D results by larger numbers of potential beneficiaries (relates to all four overall goals);

- A strengthened basis for solar use decisions by lawmakers, investors, and citizen advocates (relates to overall goals 2 and 3); and
- Feedback from commercializers to researchers that will improve future solar technical information flows (relates to overall goals 2 and 3).

An additional benefit, not tied directly to specific program goals, will be contributions to the accomplishment of domestic U.S. efforts in energy conservation and the use of alternative energy resources.

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SECTION 3.0

TECHNICAL INFORMATION DISSEMINATION PROJECTS IN FIVE SOLAR TECHNOLOGIES

Five TID projects are proposed to meet the overall goals of this program:

- Project 1. Photovoltaics (P/V);
- Project 2. Solar Thermal Power (STP);
- Project 3. Biomass;
- Project 4. Ocean Thermal Energy Conversion (OTEC); and
- Project 5. Wind Energy Conversion Systems (WECS).

Following a general description of solar R&D target audiences, this section briefly explores the principal thrust of the TID program in each of the five projects. Details concerning overall program administration are presented in Sections 4 and 5. The goals, tasks, and schedules for each of the five TID projects are described in Section 6.

SOLAR R&D TARGET AUDIENCES

Four target audiences, shown in Exhibit 1, exist for communication of solar R&D results: (1) organizations and individuals very interested in solar development who are involved directly in DOE-sponsored solar R&D programs; (2) organizations and individuals who manufacture, install, service, and buy solar technologies but who are not directly involved in DOE-sponsored solar R&D programs; (3) organizations and individuals interested in fostering solar technology use via legislation, financing, citizen advocacy, and construction activities, etc.; and (4) the larger interested public, including students, homemakers, and others who are or may become involved as users of solar technologies as a result of R&D.

These target audiences obviously will play different roles in the commercialization of solar R&D results. Target audiences 1 and 2 will be responsible for the production and marketing functions. All four target audiences will act as information disseminators. Target audience 3 will be responsible primarily for influencing commercialization by removing barriers and providing incentives. Finally, target audience 4 will be the users of solar technology.

PRINCIPAL THRUSTS OF THE PROGRAM WITH THESE TARGET AUDIENCES

This program is aimed at strengthening existing technical information flows between and among members of these four target audiences via assistance in target audience analysis to define their information needs, TID impact evaluation, and TID cost analysis.

Standard market research and information needs assessment techniques will be used to determine the knowledge requirements necessary for these target audiences to fulfill their roles in the commercialization of solar R&D

EXHIBIT 1. FOUR TARGET AUDIENCES (TAs) FOR SOLAR R&D RESULTS

results. The techniques that will be used include market segmentation analysis and knowledge discrepancy analysis (i.e., determining gaps between what potential users know about solar and what they should know).

In Year 1, all four target audiences will be provided with new TID products via this program. Selected R&D results in wind energy conversion and biomass, for example, will be repackaged for distribution to target audiences 3 and 4. It is planned that opportunities will arise for development of many other TID activities during Year 1 and subsequent years of this program.

YEAR 1 OBJECTIVES OF THE FIVE TID PROJECTS

To facilitate DOE contractors' understanding of the structure of the DOE/TID program and their individual responsibilities for its implementation, the work to be done in Year 1 is organized according to the following five fields of solar R&D: photovoltaics, solar thermal power, biomass, ocean thermal energy conversion, and wind energy conversion systems. A general administration unit completes the overall organization of the DOE/TID program.

During Year 1, each of the five projects will have four comparable objectives:

- Identify individuals, groups, and organizations comprising each target audience, and their informational needs;
- Develop Year 1 baseline data on the costs and impacts of TID activities within each of the five solar R&D fields;
- Involve users of R&D results in each of the five fields in planning, implementing, and evaluating solar R&D TID activities; and
- Increase significantly the amount of information generated from the R&D programs conducted in this technology.

In addition to these common objectives, a few unique TID objectives are included for most of the projects.

Details concerning specific Year 1 objectives, tasks, and schedules for each project are presented in Section 6.

INFORMATION RESOURCE SERVICES SUPPORT

The principal purpose of this TID program is the commercialization of R&D results. Ongoing information support services will be heavily involved in achieving this purpose by (a) providing referral and question-answering services across the five solar technologies, (b) assisting in the distribution of repackaged contractor reports, and (c) participating in the semiannual meetings of TID project user review panels.

A major commitment of this program is to coordinate TID project activities with ongoing solar information resource services. Those services include, but are not limited to:

- The Solar Energy Information Data Bank (SEIDB), being developed by SERI to provide a comprehensive resource for DOE and its contractors and other audiences of the solar community. The SEIDB will contain four elements in FY79:
 - * A Solar Energy Data Bank (SEDB), of nonbibliographic data bases, encompassing all types of solar energy data. For example, a solar equipment manufacturers' data base will contain data on more than 1,000 manufacturers. Data from this resource will be used in the TID program to develop tailored distribution lists and solar locators, to develop leads for case studies of solar technology economic benefits to industry, and for data on the impacts of TID activities.
 - * A National Solar Energy Library with 50,000 items of solar energy information by the end of calendar year 1979. Using computerized search systems, the library will routinely provide reference assistance to DOE and its contractors.
 - * A Solar Energy Information Dissemination Service which will acquaint prospective users with available sources of solar information. This will be a valuable resource in meeting the information needs of target audience 4, the larger interested public.
 - * A Solar Energy Computer Service to provide access to computerized economic models and technical programs. These services will be linked to DOE computer facilities in Richland, Washington, and the Lawrence Berkeley Laboratories. It is expected that DOE, its contractors, and organizations who manufacture, install, service, and buy solar technologies will be served by these services.
- The DOE Technical Information Center (TIC), the collection, processing, and distribution center for scientific and technical information generated by DOE programs. It disseminates technical reports within DOE and to its contractors and, when suitable, to the general public. TIC also has a computer readable Energy Information Data Base (EDB) containing more than 1 million items, some of which are specific to solar technology. During Year 1, the TID program will devise strategies for using TIC resources to respond to the knowledge requirements of the four target audiences. The results of the TID target audience analyses and cost and impact evaluations will be made available to TIC for its use in refining its information dissemination program.

The TIC also disseminates a limited number of articles describing specific energy technology "state-of-the-art" studies in a Critical Review Series. The TID program will seek assistance from TIC in repackaging and distributing solar program contractor reports in similar fashion. Solar Program Summaries published by the DOE/ET Solar Division Research and Development Program Offices will be reviewed carefully to take advantage of repackaging and dissemination opportunities for appropriate target audiences.

- The National Solar Heating and Cooling Information Center (NSHCIC), established by the Department of Housing and Urban Development (HUD) in cooperation with DOE to encourage the public and industry to consider solar energy for homes and commercial buildings.

Although the NSHCIC specializes in information related to heating and cooling of buildings, it has information on general solar topics (e.g., state solar legislation) that could be adapted for use by target audiences 3 and 4. The NSHCIC also maintains mailing lists of solar information requestors which will be useful to the TID Program in identifying and characterizing the four target audiences.

- The DOE Assistant Secretary for Conservation and Solar Applications conducts a Solar Technology Transfer Program (STTP) to provide assistance in transferring to industry those solar technologies with a potential for early impact application. The TID Program will avoid duplication of STTP information dissemination activities but will seek to use its products. For example, the STTP has well-established contacts with solar equipment installers, manufacturers, and consumer organizations. Each of these groups can provide data for the TID target audience identification and analysis and for the development of tailored distribution lists and solar locators.

A plan for coordinating the activities of TID projects with information support services is presented in Section 4, Program Management and Organization.

PROGRAM MANAGEMENT

This program will be coordinated by SERI under the direction of DOE. Principal responsibilities of the program manager will be to:

- Set annual program goals, schedules, levels of effort, and reporting requirements;
- Coordinate the cost and impact evaluation of solar R&D TID activities;
- Manage the budget;
- Establish and manage five TID project user review panels;
- Plan DOE/TID project objectives for Year 2; and
- Assure timely and accurate communication among key persons involved in the five TID projects and in the operation of other energy information resource services.

Sections 4 and 5 present details of the overall program organization and management and schedule for Year 1.

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SECTION 4.0

PROGRAM MANAGEMENT AND ORGANIZATION

The management approach and organization structure developed for this program reflect the essentially cooperative character of most activities to be undertaken in each of the five projects during Year 1.

A federated type of organization structure is planned. This structure consists of three levels of responsibility, as shown in Exhibit 2.

LEVEL 1: PROGRAM ADMINISTRATION

The purpose of this level is to ensure that the program plan is appropriately conceived, funded, and implemented. Authority at this level lies within the ETS/Division of Program Resource Management.

The responsibilities of this level are to:

- Set program policy;
- Approve annual goals, time schedules, levels of professional effort, program evaluation and redesign plans, implementation strategies, and TID project user review panel members;
- Assure intra- and interagency coordination;
- Review progress in implementing the plan and make changes in implementation strategies as required;
- Specify program reporting requirements and approve TID materials for the five solar technologies and for the TID program;
- Review and approve program management, design, and implementation;
- Review and approve techniques for evaluation and the internal organization efficiency of communication flow;
- Review and approve the plan's organizational structure, its manpower utilization, the techniques for its evaluation, and reorganizational needs and goals;
- Review and approve the plan's external information dissemination;
- Review and approve all exploratory, field, survey, experimental, analytical, or historical investigations;
- Design and approve implementation of educational program components of the TID program, including crosscultural aspects; and
- Design and approve implementation of international components through a definition of international communication needs and goals, including, as necessary, workshops on intercultural awareness, and

EXHIBIT 2. TECHNICAL INFORMATION DISSEMINATION PROGRAM:

crosscultural and international needs and goals as they relate to this program.

LEVEL 2: PROGRAM MANAGEMENT

The purposes of this level are to plan and coordinate the implementation of the program. Authority at this level lies within SERI's Technology Commercialization Division, with consultation and support from SERI's Information Systems and Research Divisions. The Assistant Director of Technology Commercialization will appoint a person within SERI to function as program manager.

The responsibilities of this level are to:

- Set annual program goals, schedules, levels of effort, and reporting requirements;
- Establish and implement a program evaluation and redesign plan;
- Establish SERI-wide operational procedures for this program;
- Establish and operate the five TID project user review panels;
- Attend the semiannual meetings of the user review panels;
- Monitor the production of TID materials on the five projects; and
- Prepare reports specified by Level 1 program administration.

LEVEL 3: PROGRAM OPERATIONS

This level is the heart of the program. The purpose of this level is to conduct the daily operations of the five TID projects. It consists of five technical information dissemination projects--one project for each of these fields of solar R&D: photovoltaics, solar thermal power, biomass, ocean thermal, and wind energy. Each project will be advised in its development and operations by an external user review panel (described below). In support of the five TID projects, Level 3 also involves the four major solar information resource services identified in Exhibit 2. Those services clearly are in a position to provide much of the daily support of information dissemination activities in each of the five project areas. As such, this program is committed to strengthening their roles and responsibilities in the more rapid commercialization of solar R&D results.

Each TID project will involve representatives of the main DOE contractor organizations conducting solar R&D programs and projects. Each TID project will be led by SERI Technology Commercialization Division staff members who will provide year-to-year continuity on each project as well as coordination between SERI and other solar R&D contractors at the TID project level.

A principal characteristic of each TID project will be flexibility. Each project leader will rapidly develop a thorough knowledge of the solar

technology. The project leader will be familiar with each program element and its relative significance and relationship to the overall R&D program for the technology. Each project leader will also establish and maintain contact with the principal investigators and information dissemination staff of the prime contractor organizations.

The purpose of establishing the above posture is to enable the project leader to keep abreast of the current and near-term events occurring in the R&D program area for the solar technology assigned. The project leader will then be prepared to take maximum advantage of new opportunities for effective information production and dissemination.

Using the information from the user review panels, the program managers, and the contractors, the project leader will be able to create a timely, coordinated, and wide ranging program of information dissemination that will be highly responsive to the information needs of the target audiences.

The specific responsibilities of each TID project leader will be to:

- Schedule and report the results of the project user review panel meetings;
- Recommend project-level annual goals;
- Identify, implement, and coordinate selected TID initiatives;
- Coordinate project-level TID activities with the activities of solar energy information resource services;
- Collect and report TID project-level evaluation data and information; and
- Prepare reports specified by Level 2 program management.

Each TID project, as previously noted, will establish and operate a user review panel whose purpose will be to provide project participants with objective assistance in implementing and evaluating each project.

Membership of each panel will be guided by four criteria: (1) members will be drawn from each of the four target audiences (see definitions of these target audiences in Section 3); (2) members cannot be involved in the operations-level of responsibility of TID projects (this bolsters objectivity); (3) no panel will have more than eight members; (4) members must make two-year commitments (this helps insure the continuity and longevity of the panels).

The responsibilities of the user review panels are to:

- Elect a chairperson and chairperson-elect for one-year terms during the first semiannual meeting each year;
- Review and assess TID project outputs (i.e., information activities, products, and services);

- Review project evaluation plans, procedures, and results;
- Nominate and select membership replacements as necessary; and
- Meet semiannually.

Administrative support for each panel will be provided by the SERI Technology Commercialization Division. This Division also will prepare and distribute transcripts of panel meetings. The meetings will be held for one day each time, with the first meeting to be approximately 60 days after the implementation date of this plan.

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SECTION 5.0

PROGRAM SCHEDULE

Major milestones for the management level of this program are shown in Exhibit 3. Milestone schedules for the five individual TID projects are presented in Section 6.

Milestone Schedule	Year 1											
	1	2	3	4	5	6	7	8	9	10	11	12
1. Set Year 2 project objectives, schedules, levels of effort, and reporting requirements							△				△	
2. Establish and implement a program evaluation and redesign plan						△						△
3. Identify and locate target audiences and define their informational needs				○							○	
4. Establish SERI-wide operational procedures for this program		△										
5. Establish and operate the five TID project user review panels		□				□						
6. Monitor the production of TID materials on the five projects												
7. Prepare reports specified by DOE												○

△ = Data Due

□ = Meeting

○ = Technical Report Due

SECTION 6.0

DETAILED DESCRIPTION OF THE FIVE TID PROJECTS

Each of the five major TID projects summarized in Section 3 is amplified in this section. Details concerning Year 1 objectives, tasks, and schedules, along with those of the program management level, form the basis of Section 5. Required progress reports, data submissions, and meetings are described in the task statements.

DOE contractors involved in solar R&D will recognize that the project objectives and tasks identified do not require significant changes in the character or levels of effort of their ongoing information dissemination activities. This approach is being taken because it was learned in preparing this plan that contractors apparently do not have adequate data on the costs and effectiveness of the TID activities they direct toward different target audiences. Year 1 of this program will provide them with some data which can be used to develop more informed TID efforts in terms of target audience characteristics and options for reaching these audiences in a more cost-effective way.

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THE PHOTOVOLTAICS (P/V) TID PROJECT: YEAR 1

Objectives

1. Identify and locate individuals and organizations comprising each of the four P/V target audiences, and define their informational needs;
2. Develop and analyze baseline data on the costs and impacts of P/V TID activities, and prepare case studies (2-5 pages) of attempts to commercialize P/V R&D results;
3. Involve users of photovoltaics R&D results--particularly users in target audience 2*--in planning, implementing, and evaluating P/V TID activities; and
4. Increase significantly the amount of information generated from the R&D programs conducted in this technology.

In combination, achieving these Year 1 objectives for the P/V TID project will strengthen current P/V contractor TID activities, a brief summary of which is presented in Appendix A.

The cost and impact baseline data will provide P/V managers with some of the information necessary to increase the effectiveness and reduce the costs of current P/V TID activities.

Objective 4 is a high visibility objective which will make available to all target audiences a variety of meaningful and useful information that will allow them to make assessments, decisions, and plans for commercialization of the technology. Early information gathered from DOE program managers and contractors and other users of the R&D results will be incorporated with SERI's present knowledge to produce some of this information very early in Year 1.

Tasks

Regarding the achievement of objective 1, four tasks are planned. The TID program manager will be responsible for:

1. Determining the special characteristics (e.g., size, location, length of involvement in P/V field, and knowledge requirements) of different target audiences and the best means of meeting these knowledge requirements from existing data sources;** and

*Target audience 2 consists of non-DOE contractors very interested in commercializing P/V technologies.

**Subcontractors will assist in completing this task. All P/V subcontracts will be funded by and coordinated with the DOE P/V program manager.

2. Providing DOE and SERI P/V program managers with access to members of P/V target audiences via tailored distribution lists and solar locators containing names, positions, organizations, addresses, and telephone numbers.

Each major P/V R&D contractor will appoint a TID project representative. The person appointed should be very knowledgeable about the contractor's R&D programs, should have a major interest in helping to commercialize the results of those programs, and should have R&D project management or program administration experience.

Each P/V TID project representative will be responsible for the following tasks related to objective 1:

3. Furnishing available materials that would be useful in developing the tailored distribution lists and solar locators of P/V target audience members; and
4. Reviewing the tailored distribution lists and solar locators to determine their completeness and to help minimize unnecessary duplication of contacts with P/V target audiences.

Regarding the achievement of objective 2, the TID program manager will be responsible for:

5. Preparing and distributing the evaluation instruments necessary to acquire baseline cost and impact data related to the dissemination of P/V R&D results;*
6. Analyzing and interpreting the P/V TID cost and impact data collected;*
7. Assisting P/V contractors in the process of redesigning TID activities to make them more cost-effective; and
8. Preparing case studies (2-5 pages) demonstrating the commercialization of P/V R&D results.*

Each major P/V contractor representative will be responsible for:

9. Attending user review panel meetings to assist the TID program manager in planning, implementing, and evaluating the P/V part of the TID program;
10. Furnishing cost and impact data as requested by the TID program manager; and.

*Subcontractors will assist in completing this task.

11. Attending a meeting to review the cost and impact data and applying the results to his organization's P/V TID activities.

Regarding the achievement of objective 3, the TID program manager will be responsible for:

12. Establishing a P/V TID user review panel whose members have special interests in the P/V field; and
13. Scheduling, preparing the agenda for, conducting, and disseminating the results of TID user review panel meetings.

Each major P/V contractor will be responsible for:

14. Recommending individuals who might serve on the P/V TID user review panel; and
15. Identifying options for involving the suppliers of products that might incorporate P/V devices and systems.

Regarding the achievement of objective 4, the TID program manager will be responsible for:

16. Publishing a semiannual newsletter to report research in progress in P/V R&D by DOE contractors;
17. Arranging and hosting semiannual program reviews in P/V; and
18. Producing and disseminating a significant amount of new information materials and conducting information activities in direct support of the R&D program elements for this technology.

Administration

To administer these P/V tasks, the TID program manager will be responsible for appointing a P/V project manager.*

Schedule

Exhibit 4 shows the schedule for the P/V TID project tasks. Deliverable due dates and meeting times are also indicated.

Levels of Professional Effort

As Exhibit 5 shows, 47.5 months of professional effort will be spent carrying out the P/V TID project tasks in Year 1.

* All TID activities in the P/V project will be coordinated through Robert Forney of the Jet Propulsion Lab and Dr. Donald Feucht of SERI.

EXHIBIT 4. MILESTONE SCHEDULE FOR YEAR 1 OF P/V TID PROJECT TASKS

Milestone Schedule	Year 1											
	1	2	3	4	5	6	7	8	9	10	11	12
1. Determine characteristics of target audiences and define their informational needs											○	
2. Provide tailored distribution lists and solar locators				○								
3. Furnish materials for tailored distribution lists and solar locators		○										
4. Review tailored distribution lists and solar locators			○									
5. Prepare evaluation instruments and collect evaluation data											△	
6. Analyze and interpret evaluation data						○						○
7. Assist P/V contractors in redesigning TID activities												
8. Prepare case studies												
9. Attend TID user review panel meetings		□				□						
10. Furnish cost and impact data										△		
11. Attend cost and impact evaluation meeting												□
12. Establish TID user review panel												
13. Schedule and conduct TID user review panel meetings		□				□						
14. Recommend persons for user review panel membership												
15. Identify options for involving P/V user firms												
16. Publish newsletters							○					○
17. Arrange and host program reviews						□					□	
18. Produce selected informational materials												
Manage the P/V project												

△ = Data Due

□ = Meeting

○ = Technical Report Due

EXHIBIT 5. ESTIMATED PERSON-MONTHS OF PROFESSIONAL EFFORT
FOR YEAR 1 OF P/V TID PROJECT TASKS

TASK	SERI	DOE SUBCONTRACTS	P/V CONTRACTORS
1. Determine characteristics of target audiences and define their informational needs	2.2	2.4	---
2. Provide tailored distribution lists and solar locators	2.1	2.4	---
3. Furnish materials for tailored distribution lists and solar locators	---	---	.1
4. Review tailored distribution lists and solar locators	---	---	.1
5. Prepare evaluation instruments and collect data	2.0	3.0	---
6. Analyze and interpret evaluation data	2.4	1.6	---
7. Assist P/V contractors in redesigning TID activities	.3	---	---
8. Prepare case studies	5.0	---	---
9. Attend TID user review panel meetings	---	---	.5
10. Furnish cost and impact data	---	---	.5
11. Attend cost and impact data evaluation meeting	---	---	.1
12. Establish P/V TID user review panel	.5	---	---
13. Schedule and conduct TID user review panel meetings	1.0	---	---
14. Recommend persons for user review panel membership	---	---	.3
15. Identify options for involving P/V user firms	---	---	.5
16. Publish semiannual newsletter	2.0	---	---
17. Arrange and host program reviews	1.0	---	---
18. Produce selected informational materials	8.7	2.8	2.0
Manage P/V project	<u>4.0</u>	<u>---</u>	<u>---</u>
TOTALS	31.2	12.2	4.1

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THE SOLAR THERMAL POWER (STP) TID PROJECT: YEAR 1

Objectives

1. Identify and locate individuals and organizations comprising each of the four solar thermal power target audiences and define their informational needs;
2. Develop and analyze baseline data on the costs of solar thermal power TID activities and prepare case studies (2-5 pages) of attempts to commercialize STP R&D results;
3. Involve users of solar thermal power R&D results--particularly users in target audiences 2 and 3*--in planning, implementing, and evaluating TID activities;
4. Develop solar thermal power technology courses, training curricula, and audiovisual materials for solar scientists, engineers, and students; and
5. Increase significantly the amount of information generated from the R&D programs conducted in this technology.

In combination, achieving these Year 1 objectives for the STP TID project will strengthen current solar thermal power contractor TID activities, a brief summary of which is presented in Appendix A.

The cost and impact baseline data will provide STP managers with the information necessary to increase the effectiveness and reduce the costs of current solar thermal power TID activities. Finally, developing course materials and curricula and specialized information materials for STP will satisfy a widely recognized need within the field.

Objective 5 is a high visibility objective which will make available to all target audiences a variety of meaningful and useful information that will allow them to make assessments, decisions, and plans for commercialization of the technology. Early information gathered from DOE program managers and contractors and other users of the R&D results will be incorporated with SERI's present knowledge to produce some of this information very early in Year 1.

Tasks

Regarding the achievement of objective 1, four tasks are planned. The TID program manager will be responsible for:

*Target audience 2 consists of non-DOE contractors very interested in commercializing solar thermal power technologies; target audience 3 is comprised of educators, financial officers, and others in a position to influence commercialization of STP.

1. Determining the special characteristics (e.g., size, location, length of involvement in the STP field, and knowledge requirements) of different target audiences and the best means of meeting these knowledge requirements from existing data sources;* and
2. Providing DOE and SERI program managers with access to members of STP target audiences via tailored distribution lists and solar locators containing names, positions, organizations, addresses, and telephone numbers.*

Each major solar thermal power R&D contractor will appoint a TID project representative. The person appointed should be very knowledgeable about the contractor's R&D programs, should have a major interest in helping commercialize the results of those programs, and should have R&D project management or program administration experience.

Each TID project representative will be responsible for the following tasks related to objective 1:

3. Furnishing available materials that would be useful in developing the tailored distribution lists and solar locators of STP target audience members; and
4. Reviewing the tailored distribution lists and solar locators to determine their completeness and to help minimize unnecessary duplication of contacts with STP target audiences.

Regarding the achievement of objective 2, the TID program manager will be responsible for:

5. Preparing and distributing the evaluation instruments necessary to acquire baseline cost and impact data related to the dissemination of solar thermal power R&D results;*
6. Analyzing and interpreting the solar thermal power TID cost and impact data collected;*
7. Assisting solar thermal contractors in the process of redesigning TID activities to make them more cost-effective; and
8. Preparing case studies (2-5 pages) demonstrating the commercialization of STP R&D results.*

Each major STP contract representative will be responsible for:

9. Attending user review panel meetings to assist the TID program manager in planning, implementing, and evaluating the solar thermal power portion of the TID program;

*Subcontractors to SERI will assist in completing this task.

10. Furnishing cost and impact data as requested by the TID program manager; and
11. Attending a meeting to review the cost and impact data and applying the results to his own organization's STP TID activities.

Regarding the achievement of objective 3, the TID program manager will be responsible for:

12. Establishing an STP TID user review panel whose members have special interests in the solar thermal power field; and
13. Scheduling, preparing the agenda for, conducting, and disseminating the results of the TID user review panel meetings.

Each major solar thermal power contractor will be responsible for:

14. Recommending individuals who might serve on the TID user review panel; and
15. Identifying options for involving the suppliers of products that might incorporate solar thermal power devices and systems.

Regarding the achievement of objective 4, the TID program manager will be responsible for:

16. Developing and conducting one experimental refresher course for approximately 20 scientists and engineers in the solar thermal power field, emphasizing "real world" applications of current technical concepts;* and
17. Developing training and audiovisual materials on basic solar thermal power principles for use in high schools and universities.*

Regarding the achievement of objective 5, the TID program manager will be responsible for:

18. Publishing a semiannual newsletter to report research in progress in STP by DOE contractors;
19. Arranging and hosting semiannual program reviews of DOE solar thermal power contractors; and
20. Producing and disseminating a significant amount of new information materials and conducting information activities in direct support of the R&D program elements for this technology.

*Subcontractors to SERI will assist in completing this task.

Administration

To administer these STP tasks, the TID program manager will be responsible for appointing an STP project manager.

Schedule

Exhibit 6 shows the schedule for STP project tasks. Deliverable due dates and meeting times also are indicated.

Levels of Professional Effort

As Exhibit 7 shows, 52.5 months of professional effort will be required to complete the solar thermal power TID project tasks.

EXHIBIT 6. MILESTONE SCHEDULE FOR YEAR 1 OF STP TID PROJECT TASKS

△ = Data Due

□ = Meeting

○ = Technical Report Due

EXHIBIT 7. ESTIMATED PERSON-MONTHS OF PROFESSIONAL EFFORT
FOR YEAR 1 OF STP TID PROJECT TASKS

TASK	SERI	SERI SUBCONTRACTS	STP CONTRACTORS
1. Determine characteristics of target audiences and define their informational needs	2.2	2.4	---
2. Provide tailored distribution lists and solar locators	2.1	2.4	---
3. Furnish materials for tailored distribution lists and solar locators	---	---	.1
4. Review tailored distribution lists and solar locators	---	---	.1
5. Prepare evaluation instruments and collect data	2.0	3.0	---
6. Analyze and interpret evaluation data	2.4	1.6	---
7. Assist STP contractors in redesigning TID activities	.3	---	---
8. Prepare case studies	2.4	---	---
9. Attend TID user review panel meetings	---	---	.5
10. Furnish cost and impact data	---	---	.5
11. Attend cost and impact data evaluation meeting	---	---	.1
12. Establish STP TID user review panel	.5	---	---
13. Schedule and conduct TID user review panel meetings	1.0	---	---
14. Recommend persons for user review panel membership	---	---	.3
15. Identify options for involving STP user firms	---	---	.5
16. Develop and conduct refresher course	---	5.0	---
17. Develop training and audiovisual materials	.5	3.0	.5
18. Publish semiannual newsletter	2.0	---	---
19. Arrange and host program reviews	1.0	---	---
20. Produce selected informational materials	7.3	2.8	2.0
Manage STP project	<u>4.0</u>	<u>---</u>	<u>---</u>
TOTALS	27.7	20.2	4.6

THE BIOMASS TID PROJECT: YEAR 1

Objectives

1. Identify and locate individuals and organizations comprising each of the four biomass target audiences and define their informational needs;
2. Develop and analyze baseline data on the costs and impacts of biomass TID activities and prepare case studies (2-5 pages) of attempts to commercialize biomass R&D results;
3. Involve users and potential users of biomass R&D results--particularly in target audiences 2, 3, and 4*--in planning, implementing, and evaluating TID activities; and
4. Increase significantly the amount of information generated from the R&D programs conducted in this technology.

In combination, achieving these Year 1 objectives for the biomass TID project will strengthen current biomass contractor TID activities, a brief summary of which is presented in Appendix A. The implementation of this project will concentrate on wood combustion and gasification from residues and standing forests, and anaerobic digestion and fermentation of agricultural residues as the first priority in Year 1.

The cost and impact baseline data will provide biomass TID managers with the information necessary to increase the effectiveness and reduce the costs of current biomass TID activities. Finally, the research summary reports and proposed user review panel meetings will satisfy a widely recognized need in the biomass community for accurate, up-to-date information on ongoing research and the development of effective methods for distributing that information.

Objective 4 is a high visibility objective which will make available to all target audiences a variety of meaningful and useful information that will allow them to make assessments, decisions, and plans for commercialization of the technology. Early information gathered from DOE program managers and contractors and other users of the R&D results will be incorporated with SERI's present knowledge to produce some of this information very early in Year 1.

*Target audience 2 consists of non-DOE contractors very interested in commercializing biomass technologies; target audience 3 is made up of educators, financial officers, and others in a position to influence commercialization of biomass technology; and target audience 4 consists of the larger interested public, including homemakers, students, and others who are, or may become, involved as users of solar technologies resulting from R&D.

Tasks

Regarding the achievement of objective 1, four tasks are planned. The TID program manager will be responsible for:

1. Determining the special characteristics (e.g., size, location, length of involvement in the biomass field, and knowledge requirements) of the four different target audiences;* and
2. Determining the best means of meeting these knowledge requirements from existing data.

Each major biomass R&D contractor from the various biomass program areas will appoint a TID project representative. The appointed representative should be very knowledgeable about the contractor's R&D programs, should have a major interest in helping commercialize the results of those programs, and should have R&D project management or program administration experience.

Each biomass project representative will be responsible for the following tasks related to objective 1:

3. Furnishing available materials that would be useful in revising or updating the presently available lists of current and potential biomass target audience members;** and
4. Reviewing the tailored distribution lists and solar locators to determine their completeness across all biomass program areas and to help minimize unnecessary duplication of contacts with biomass target audiences.

Regarding the achievement of objective 2, the TID program manager will be responsible for:

5. Preparing and distributing the evaluation instruments necessary to acquire baseline cost and impact data related to the dissemination of biomass results;*
6. Analyzing and interpreting the biomass TID cost and impact data collected;*
7. Assisting biomass contractors in the process of redesigning TID activities to make them more cost-effective; and

*Subcontractors to SERI will assist in completing this task.

**An excellent example of presently available data is Reference Information on Biomass Fuel Systems: Directory of Sources and Potential Users, MITRE Corporation, METREK Division, 1978.

8. Preparing case studies (2-5 pages) demonstrating the commercialization of biomass R&D results.

Each major biomass contractor representative will be responsible for:

9. Attending user review panel meetings to assist the TID program manager in planning, implementing, and evaluating the biomass portion of the TID program;
10. Furnishing cost and impact data as requested by the TID program manager; and
11. Attending a meeting to review the cost and impact data and applying the results to his organization's biomass TID activities.

Regarding the achievement of objective 3, the TID program manager will be responsible for:

12. Establishing a biomass TID user review panel whose members have special interests in the biomass field and represent selected biomass program areas; and
13. Scheduling, preparing the agenda for, conducting, and disseminating the results of TID user review panel meetings.

Each major biomass contractor within selected biomass program areas will be responsible for:

14. Recommending individuals who might serve on the biomass TID user review panel with representation from selected biomass program areas; and
15. Identifying options for involving the suppliers and potential users of biomass products, devices, and systems.

Regarding the achievement of objective 4, the Technology Commercialization Division of SERI will be responsible for:

16. Producing a biomass R&D research summary report for selected biomass program areas on an annual basis;*
17. Distributing the annual research summary reports using the tailored distribution lists;
18. Publishing a semiannual newsletter to report research in progress in biomass by DOE contractors;
19. Arranging and hosting semiannual program reviews of DOE biomass contractors; and

*Subcontractors to SERI will assist in completing this task.

20. Producing and disseminating a significant amount of new information materials and conducting information activities in direct support of the R&D program elements for this technology.

Administration

To administer these biomass tasks, the TID program manager will be responsible for appointing a biomass project manager.

Schedule

Exhibit 8 shows the schedule for the biomass TID project tasks. Deliverable due dates and meeting times also are indicated.

Levels of Professional Effort

As Exhibit 9 illustrates, 50.9 months of professional effort will be spent carrying out the biomass TID project tasks in Year 1.

EXHIBIT 8. MILESTONE SCHEDULE FOR YEAR 1 OF BIOMASS TID PROJECT TASKS

EXHIBIT 9. ESTIMATED PERSON-MONTHS OF PROFESSIONAL EFFORT
FOR YEAR 1 OF BIOMASS TID PROJECT TASKS

TASK	SERI	SERI SUBCONTRACTS	BIOMASS CONTRACTORS
1. Determine characteristics of target audiences and define their informational needs	2.2	2.4	---
2. Determine means for meeting knowledge requirements	2.0	---	---
3. Furnish materials for revising or updating existing tailored distribution lists	1.7	---	---
4. Review tailored distribution lists for completeness	---	---	.1
5. Prepare evaluation instruments and collect data	2.0	3.0	---
6. Analyze and interpret evaluation data	2.4	1.6	---
7. Assist biomass contractors in redesigning TID activities	.3	---	---
8. Prepare case studies	5.0	---	---
9. Attend biomass TID user review panel meetings	---	---	.5
10. Furnish cost and impact data	---	---	.5
11. Attend cost and impact data evaluation meeting	---	---	.1
12. Establish TID user review panel	.5	---	---
13. Schedule and conduct TID user review panel meetings	1.0	---	---
14. Recommend persons for user review panel membership	---	---	.3
15. Identify options for involving biomass suppliers and potential users	---	---	.5
16. Produce research summary report for selected biomass program areas	3.0	---	3.0
17. Distribute research summary reports	.5	---	---
18. Publish semiannual newsletter	2.0	---	---
19. Arrange and host program reviews	1.0	---	---
20. Produce selected informational materials	6.5	2.8	2.0
Manage biomass project	4.0	---	---
TOTALS	34.1	9.8	7.0

THE OCEAN THERMAL (OTEC) TID PROJECT: YEAR 1

Objectives

1. Identify and locate the individuals and organizations who comprise each of the four OTEC target audiences and define their informational needs;
2. Develop and analyze baseline data on the costs and impacts of TID activities in OTEC R&D and prepare case studies (2-5 pages) of attempts to commercialize OTEC R&D results;
3. Involve users of OTEC R&D results--particularly users in target audience 2*--in planning, implementing, and evaluating TID activities in OTEC; and
4. Increase significantly the amount of information generated from the R&D programs conducted in this technology.

In combination, achieving these Year 1 objectives for the OTEC TID project will strengthen current ocean thermal contractor TID activities, a brief summary of which is presented in Appendix A.

Objective 4 is a high visibility objective which will make available to all target audiences a variety of meaningful and useful information that will allow them to make assessments, decisions, and plans for commercialization of the technology. Early information gathered from DOE program managers and contractors and other users of the R&D results will be incorporated with SERI's present knowledge to produce some of this information very early in Year 1.

Tasks

Regarding the achievement of objective 1, four tasks are planned. The TID program manager will be responsible for:

1. Determining the special characteristics (e.g., size, location, length of involvement in the OTEC field, and knowledge requirements) of the four different OTEC target audiences and the best means of meeting these knowledge requirements from existing data sources;** and
2. Providing DOE and SERI OTEC program managers with access to members of OTEC target audiences via tailored distribution lists and solar

*Target audience 2 consists of non-DOE contractors who are very interested in commercializing OTEC technologies, including public utilities favorably located relative to potential OTEC sites.

**Subcontractors to SERI will assist in completing this task.

locators containing names, positions, organizations, addresses, and telephone numbers.

Each major OTEC R&D contractor will appoint a TID project representative. The person appointed should be very knowledgeable about the contractor's R&D programs, should have a major interest in helping commercialize the results of those programs, and should have R&D project management or program administration experience.

Each OTEC TID project representative will be responsible for the following tasks related to objective 1:

3. Furnishing available materials that would be useful in developing tailored distribution lists and solar locators of OTEC target audience members; and
4. Reviewing the tailored distribution lists and solar locators to determine their completeness and to help minimize unnecessary duplication of contacts with OTEC target audiences.

Regarding the achievement of objective 2, the TID program manager will be responsible for:

5. Preparing and distributing the evaluation instruments necessary to acquire baseline cost and impact data related to the dissemination of OTEC R&D results;*
6. Analyzing and interpreting the OTEC TID cost and impact data collected;*
7. Assisting OTEC contractors in the process of redesigning TID activities to make them more cost-effective; and
8. Preparing case studies (2-5 pages) demonstrating the commercialization of OTEC R&D results.

Each major OTEC contractor representative will be responsible for:

9. Attending user review panel meetings to assist the TID program manager in planning, implementing, and evaluating the OTEC portion of the TID program;
10. Furnishing cost and impact data as requested by the TID program manager; and
11. Attending a meeting to review the cost and impact data and applying the results to his own organization's OTEC TID activities.

Regarding the achievement of objective 3, the TID program manager will be responsible for:

*Subcontractors to SERI will assist in completing this task.

12. Establishing an OTEC TID user review panel whose members have special interests in the OTEC field; and
13. Scheduling, preparing the agenda for, conducting, and disseminating the results of TID user review panel meetings.

Each major OTEC contractor will be responsible for:

14. Recommending individuals who might serve on the OTEC TID user review panels; and
15. Identifying options for involving the suppliers of products that might incorporate OTEC devices and systems, including public utilities favorably located relative to potential OTEC sites.

Regarding the achievement of objective 4, the TID program manager will be responsible for:

16. Publishing a semiannual newsletter to report OTEC research in progress by DOE contractors;
17. Arranging and hosting semiannual program reviews of DOE OTEC contractors; and
18. Producing and disseminating a significant amount of new information materials and conducting information activities in direct support of the R&D program elements for this technology.

Administration

To administer these OTEC tasks, the TID program manager will be responsible for appointing an OTEC project manager.

Schedule

Exhibit 10 shows the schedule for OTEC TID project tasks. Deliverable due dates and meeting times are also indicated.

Levels of Professional Effort

As Exhibit 11 shows, 46.5 months of professional effort will be spent carrying out the OTEC TID project tasks in Year 1.

EXHIBIT 10. MILESTONE SCHEDULE FOR YEAR 1 OF OTEC TID PROJECT TASKS

Milestone Schedule	Year 1											
	1	2	3	4	5	6	7	8	9	10	11	12
1. Determine characteristics of target audiences and define their informational needs											○	
2. Provide tailored distribution lists and solar locators				○								
3. Furnish materials for tailored distribution lists and solar locators		○										
4. Review tailored distribution lists and solar locators			○									
5. Prepare evaluation instruments and collect data											△	
6. Analyze and interpret evaluation data						○						○
7. Assist OTEC contractors in redesigning TID activities												
8. Prepare case studies												
9. Attend TID user review panel meetings		□				□						
10. Furnish cost and impact data										△		
11. Attend cost and impact evaluation meeting												□
12. Establish TID user review panel												
13. Schedule and conduct TID user review panel meetings		□				□						
14. Recommend persons for user review panel membership												
15. Identify options for involving OTEC user firms												
16. Publish newsletters							○					○
17. Arrange and host program reviews						□					□	
18. Produce collected informational materials												
Manage the OTEC project												

○ = Data Due

□ = Meeting

△ = Technical Report Due

EXHIBIT 11. ESTIMATED PERSON-MONTHS OF PROFESSIONAL EFFORT
FOR YEAR 1 OF OTEC TID PROJECT TASKS

TASK	SERI	SERI SUBCONTRACTS	OTEC CONTRACTORS
1. Determine characteristics of target audiences and define their informational needs	2.2	2.4	---
2. Provide tailored distribution lists and solar locators	2.1	2.4	---
3. Furnish materials for tailored distribution lists and solar locators	---	---	.1
4. Review tailored distribution lists and solar locators	---	---	.1
5. Prepare evaluation instruments and collect data	2.0	3.0	---
6. Analyze and interpret evaluation data	2.4	1.6	---
7. Assist OTEC contractors in redesigning TID activities	.3	---	---
8. Prepare case studies	3.0	---	---
9. Attend TID user review panel meetings	---	---	.5
10. Furnish cost and impact data	---	---	.5
11. Attend cost and impact data evaluation meeting	---	---	.1
12. Establish OTEC TID user review panel	.5	---	---
13. Schedule and conduct TID user review panel meetings	1.0	---	---
14. Recommend persons for user review panel membership	---	---	.3
15. Identify options for involving OTEC user firms	---	---	.5
16. Publish semiannual newsletter	2.0	---	---
17. Arrange and host program reviews	1.0	---	---
18. Produce selected informational materials	9.7	2.8	2.0
Manage OTEC project	<u>4.0</u>	<u>---</u>	<u>---</u>
TOTALS	30.2	12.2	4.1

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THE WIND ENERGY (WECS) TID PROJECT: YEAR 1

Objectives

1. Identify and locate individuals and organizations comprising each of the four wind energy target audiences and define their informational needs;
2. Develop and analyze baseline data on the costs and impacts of WECS TID activities and prepare case studies (2-5 pages) of attempts to commercialize WECS R&D results;
3. Involve users of WECS R&D results--particularly users in target audiences 2 and 3*--in planning, implementing, and evaluating TID activities; and
4. Increase significantly the amount of information generated from the R&D program conducted in this technology.

In combination, achieving these Year 1 objectives for the wind energy TID project will strengthen current wind energy contractor TID activities, a brief summary of which is presented in Appendix A.

The cost and impact baseline data will provide wind energy program managers with the information necessary to increase the effectiveness and reduce the costs of current WECS TID activities. Finally, producing information materials and conducting other activities will provide timely support to organizations ready to become more involved in the commercialization of WECS.

Objective 4 is a high visibility objective which will make available to all target audiences a variety of meaningful and useful information that will allow them to make assessments, decisions, and plans for commercialization of the technology. Early information gathered from DOE program managers and contractors and other users of the R&D results will be incorporated with SERI's present knowledge to produce some of this information very early in Year 1.

Tasks

Regarding the achievement of objective 1, four tasks are planned. The TID program manager will be responsible for:

1. Determining the special characteristics (e.g., size, location, length of involvement in wind energy, and knowledge requirements) of

*Target audience 2 consists of non-DOE contractors very interested in commercializing wind energy technologies; target audience 3 is made up of educators, financial officers, and others in a position to influence commercialization of wind energy technology.

different WECS target audiences and the best means of meeting these knowledge requirements from existing data;* and

2. Providing DOE and SERI wind energy program managers with access to members of WECS target audiences via tailored distribution lists and solar locators containing names, positions, organizations, addresses, and telephone numbers.*

Each wind energy R&D contractor will appoint a TID project representative. The person appointed should be very knowledgeable about the contractor's R&D programs, should have a major interest in helping commercialize the results of those programs, and should have R&D project management or program administration experience.

Each TID project representative will be responsible for the following tasks related to objective 1:

3. Furnishing available materials that would be useful in developing the tailored distribution lists and solar locators of WECS target audience members; and
4. Reviewing the tailored distribution lists and solar locators to determine their completeness and to help minimize unnecessary duplication of contacts with WECS target audiences.

Regarding the achievement of objective 2, the TID program manager will be responsible for:

5. Preparing and distributing the evaluation instruments necessary to acquire baseline cost and impact data related to the dissemination of wind energy R&D results;*
6. Analyzing and interpreting the wind energy TID cost and impact data collected;*
7. Assisting wind energy contractors in the process of redesigning TID activities to make them more cost-effective; and
8. Preparing case studies demonstrating the commercialization of wind energy R&D results.*

Each wind energy project representative will be responsible for:

9. Attending user review panel meetings to assist the TID program manager in planning, implementing, and evaluating the wind energy portion of the TID program;
10. Furnishing cost and impact data as requested by the TID program manager; and

*Subcontractors to SERI will assist in completing this task.

11. Attending a meeting to review the cost and impact data and applying the results to his own organization's wind energy TID activities.

Regarding the achievement of objective 3, the TID program manager will be responsible for:

12. Establishing a WECS TID user review panel whose members have special interests in the wind energy field; and
13. Scheduling, preparing the agenda for, conducting, and disseminating the results of the TID user review panel meetings.

Each major wind energy contractor will be responsible for:

14. Recommending individuals who might serve on the TID user review panel; and
15. Identifying options for involving the suppliers of products that might incorporate wind energy devices and systems.

Regarding the achievement of objective 4, the TID program manager will be responsible for:

16. Developing a plan to provide information dissemination materials and visitor handling support to the operators of the MOD-A test site (Clayton, New Mexico) and the two MOD-1 test sites (Culebra, Puerto Rico, and Boone, North Carolina);
17. Planning and conducting four workshops covering areas of concern for selected members of target audiences 2, 3, and 4 (The American Wind Energy Association will do this task);*
18. Publishing a semiannual newsletter to report research in progress in wind energy conversion by DOE contractors;
19. Arranging and hosting semiannual program reviews of DOE wind energy contractors; and
20. Producing and disseminating a significant amount of new information materials and conducting information activities in direct support of the R&D program elements for this technology.

Administration

To administer these WECS tasks, the TID program manager will be responsible for appointing a WECS project manager.

*Subcontractors to SERI will assist in completing this task.

Schedule

Exhibit 12 shows the schedule for the wind energy project tasks. Deliverable due dates and meeting times are also indicated.

Levels of Professional Effort

As Exhibit 13 shows, 62.0 months of professional effort will be required to complete the wind energy TID project tasks.

EXHIBIT 12. MILESTONE SCHEDULE FOR YEAR 1 OF WECS TID PROJECT TASKS

Milestone Schedule	Year 1											
	1	2	3	4	5	6	7	8	9	10	11	12
1. Determine characteristics of target audiences and define their informational needs											○	
2. Provide tailored distribution lists and solar locators				○								
3. Furnish materials for tailored distribution lists and solar locators		○										
4. Review tailored distribution lists and solar locators				○								
5. Prepare evaluation instruments and collect data											△	
6. Analyze and interpret evaluation data						○						○
7. Assist WECS contractors in redesigning TID activities												
8. Prepare case studies												
9. Attend TID user review panel meetings		□				□						
10. Furnish cost and impact data										△		
11. Attend cost and impact evaluation meeting												□
12. Establish TID user review panel												
13. Schedule and conduct TID user review panel meetings		□				□						
14. Recommend persons for user review panel membership												
15. Identify options for involving WECS user firms												
16. Develop support plans for test sites						○						
17. Plan and conduct workshops				□		□			□			
18. Publish newsletters							○					○
19. Arrange and host program reviews						□					□	
20. Produce selected informational materials												
Manage the WECS project												

△ = Data Due

□ = Meeting

○ = Technical Report Due

EXHIBIT 13. ESTIMATED PERSON-MONTHS OF PROFESSIONAL EFFORT
FOR YEAR 1 OF WECS TID PROJECT TASKS

TASK	SERI	SERI SUBCONTRACTS	WECS CONTRACTORS
1. Determine characteristics of target audiences and define their informational needs	2.2	2.4	---
2. Provide tailored distribution lists and solar locators	2.1	2.4	---
3. Furnish materials for tailored distribution lists and solar locators	---	---	.1
4. Review tailored distribution lists and solar locators	---	---	.1
5. Prepare evaluation instruments and collect data	2.0	3.0	---
6. Analyze and interpret evaluation data	2.4	1.6	---
7. Assist WECS contractors in redesigning TID activities	.3	---	---
8. Prepare case studies	5.8	---	---
9. Attend TID user review panel meetings	---	---	.5
10. Furnish cost and impact data	---	---	.5
11. Attend cost and impact data evaluation meeting	---	---	.1
12. Establish WECS TID user review panel	.5	---	---
13. Schedule and conduct TID user review panel meetings	1.0	---	---
14. Recommend persons for user review panel membership	---	---	.3
15. Identify options for involving WECS user firms	---	---	.5
16. Develop support plans for test sites	.5	.5	1.0
17. Plan and conduct workshops	.5	12.0	.5
18. Publish semiannual newsletter	2.0	---	---
19. Arrange and host program reviews	1.0	---	---
20. Produce selected informational materials	7.4	2.8	2.0
Manage WECS project	<u>4.0</u>	<u>---</u>	<u>---</u>
TOTALS	31.7	24.7	5.6

APPENDIX A

CURRENT AND PLANNED TID ACTIVITIES IN THE
FIVE FIELDS OF SOLAR R&D

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APPENDIX A

CURRENT AND PLANNED TID ACTIVITIES

The prime contractors participating in DOE's solar R&D programs have similar TID activities using print-media. They produce technical and management reports as required by their contracts, as well as topical reports and pamphlets. These documents describe the various research or testing facilities, their characteristics, interpretations of test results, and the objectives and goals of the R&D programs. Some contractors have plans for quarterly newsletters which will be disseminated to potential R&D users. A recent activity has been the creation of user associations which review contractor activities and advise on program approaches and directives.

Papers are prepared and presented at symposia, user groups, conferences, and workshops. In the small power programs area of solar thermal R&D, for example, local public assemblies and town meetings have been held in some cases to transfer information directly to concerned citizens.

Visitor centers and group tours have been established by some of the contractors. Georgia Tech expects 100,000 visitors during FY79. Georgia Tech also is in the process of developing an Energy Trails viewing stand which will contain communication voice boxes along with visual aids.

Each solar R&D program area has periodic contractor and subcontractor reviews with DOE. In some cases, these reviews are open to industry and other government agencies.

Although not all the major contractors have facilities to support conferences, all do participate in the myriad of end-use conferences sponsored by either DOE or private industry.

The quality of technical library or information science support varies widely from contractor to contractor. The parent organizations have large and comprehensive library collections with numerous supporting facilities. Most program offices have small bookshelf collections containing useful reference material.

Films are not used to any large extent in any of the five areas of solar technology in the DOE/TID program. Slide and viewgraph presentations are more flexible and portable and are used extensively for briefings.

Exhibits A-1 through A-5 identify current and, in some cases, planned contractor TID activities in photovoltaics, solar thermal power, biomass, OTEC, and wind technologies.

EXHIBIT A-1. CURRENT PHOTOVOLTAIC CONTRACTOR TID ACTIVITIES

Activity	<u>Responsible Organization</u>					
	JPL	Sandia	NASA	MIT-EL	MIT-LL	SERI
Dissemination of technical reports and proceedings of technical meetings	X	X	X	X	X	X
Conferences and workshops as required	X	X	X	X	X	X
Journal articles and presentations to technical associations	X	X	X	X	X	X
Issue specialized brochures for the project area	X	X	X	X	X	X
Maintain and provide displays and exhibits as requested	X	X	X		X	
Produce and disseminate audiovisuals highlighting project's activities			X		X	

EXHIBIT A-2. CURRENT SOLAR THERMAL POWER CONTRACTOR TID ACTIVITIES

Activity	<u>Responsible Organization</u>				
	JPL	Sandia	SF*	GIT**	SERI
Dissemination of technical reports and proceedings of technical meetings	X	X	X	X	X
Conferences and workshops as required	X	X	X	X	
Journal articles and presentations to technical associations	X	X		X	X
Issue specialized brochures for the project area	X	X	X	X	
Maintain and provide displays and exhibits as requested	X	X	X		
Produce and disseminate audiovisuals highlighting project's activities			X		

* DOE San Francisco Operations Office

** Georgia Institute of Technology

EXHIBIT A-3. CURRENT BIOMASS CONTRACTOR TID ACTIVITIES

Activity	Responsible Organization*									
	1	2	3	4	5	6	7	8	9	10
Project reports and program summaries	X	X	X	X	X	X	X	X	X	X
Journal and professional articles	X	X	X	X	X	X	X	X	X	X
Presentations to technical associations	X	X	X	X	X	X	X	X	X	X
Specialized brochures for project area	X	X	X	X	X	X	X	X	X	X
Audiovisual presentations	X			X			X			X
Conferences, meetings, workshops, seminars	X	X	X	X	X	X	X	X	X	X
Open public meetings	O					X	O			X
Information center, site visits and tours	X	X	X	X	X		O	X	X	X
Monthly newsletter-project area						X				
Public media	O	X	X	X	O		O	X		X
General information, brochures	X	X	X	X	O	X	X	X	X	X
Repackaged technical reports			O	X	O		X			O

X = Activities presently being conducted

O = Activities being planned

*Key

1. Battelle-Columbus Laboratory
2. Battelle-Pacific Northwest Laboratories
3. California Institute of Technology
4. Stanford Research Institute International
5. Dynatech R/D Company
6. Rensselaer Polytechnic Institute
7. Department of Agricultural Engineering, Cornell University
8. Wheelabrator Cleanfuel Corp.
9. Catalytica Associates, Inc.
10. U.S. Forest Service, Institute of Forest Genetics, North Central Forest Experiment Station

EXHIBIT A-4. CURRENT OCEAN THERMAL ENERGY CONVERSION CONTRACTOR TID ACTIVITIES

Activity	<u>Responsible Organization</u>						
	APL	Lockheed	TRW	Westinghouse	Gibbs	Rosenblatt	Simplex
Operate formal program to disseminate solar R&D results	X		X				
Involve potential users in planning, evaluation, and implementation of TID activities	X	X					
Disseminate technical reports and proceedings of technical meetings	X	X	X	X	X	X	X
Maintain and provide displays and exhibits	X	X	X	X			
Journal articles and presentations to professional associations	X	X	X	X	X	X	X

EXHIBIT A-5. CURRENT WIND ENERGY CONTRACTOR TID ACTIVITIES

Activity	<u>Respcnsible Organization</u>				
	Rocky Flats	Draper Lab	NASA	USDA	Battelle
Dissemination of technical reports and proceedings of technical meetings	X	X	X	X	X
Conferences and workshops as required	X	X	X	X	X
Journal articles and presentations to technical associations	X		X	X	
Issue specialized brochures for the project area	X		X	X	X
Maintain and provide displays and exhibits as requested	X		X	X	X
Produce and disseminate audiovisuals highlighting project's activities	X				

A-8

APPENDIX B

SOLAR R&D CONTRACTORS CONTACTED

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EXHIBIT B-1. ORGANIZATIONS CONTACTED--PHOTOVOLTAICS

Field	Organization	Person	Date 1978
Photovoltaics	Sandia Laboratories	Donald Schueler	May 10
	Jet Propulsion Laboratory	Irene Mallock	May 23
	Solar Energy Research Institute	Larry Kazmerski	May 26
	Massachusetts Institute of Technology- Energy Laboratory	Ross Peatfield	June 8
	NASA-Lewis	Jerry Hein	June 13
	Massachusetts Institute of Technology- Lincoln Laboratory	Susan K. Raskin	June 16

EXHIBIT B-2. ORGANIZATIONS CONTACTED--SOLAR THERMAL POWER

Field	Organization	Person	Date 1978
Solar Thermal Power	Jet Propulsion Laboratory	Tom Kuehn	May 10
	Department of Energy- San Francisco Operations Office	Robert Hughes	May 23
	Sandia Laboratories	Bob Stromberg	May 25
	Georgia Institute of Technology	Nick Polus	June 13
	Edison Electric Company California	Annette Meyers	June 16

EXHIBIT B-3. ORGANIZATIONS CONTACTED--BIOMASS

Project Area	Organization	Person	Date 1978
Anaerobic Digestion	Dynatech R/D Company	Donald L. Wise	August 18
	Cornell University	Tom Hayes	September 5
Fermentation	Battelle-Columbus Labs.	Ed Lipinsky	August 17
	Rensselaer Polytechnic Institute	Henry Bungay	August 21
Production of Biomass and Collection	U.S. Forest Service, North Central	George Moeller	August 21
	Catalytica Associates, Inc.	Robert Gorten	August 21
	California Institute of Technology	Wheeler J. North	August 22
	Stanford Research Institute International	Steven Kohan	August 29
Thermochemical and Direct Burning	Battelle-Pacific Northwest Labs.	Paul C. Walkup	August 18
	Wheelabrator Cleanfuel Corp.	Brown Milligan	August 25
Support and Other	Solar Energy Research Institute	Bob Inman	August 29

EXHIBIT B-4. ORGANIZATIONS CONTACTED--OCEAN THERMAL ENERGY CONVERSION

Field	Organization	Person	Date 1978
Ocean Thermal Energy Conversion	Lockheed Missiles and Space Company, Inc.	R. L. Waid	August 17
	TRW, Inc.	Herbert Rosen	August 17
	Rosenblatt, M. and Sons, Inc.	Ned Basar	August 17
	Gibbs and Cox, Inc.	Robert Fulton	August 18
	Simplex Wire and Cable Co.	Charles Pieroni	August 21
	Westinghouse Electric Corp.	Eugene Barsness	August 22
	Applied Physics Laboratory- Johns Hopkins University	Jim George	August 30

EXHIBIT B-5. ORGANIZATIONS CONTACTED--WIND ENERGY CONVERSION SYSTEMS

Program Subelement or Interest in Wind Program	Organization	Person	Date 1978
Farm, Remote, and Rural Tests and Applications (Small Systems)	Rockwell International Rocky Flats	Terry Healy	July 27
Management Support for Mission Analysis	Draper Lab.	Arthur Parthe'	August 14
Advanced Research, Wind Systems	Northeast Utilities Co.	Bob Goodrich	August 14
Wind Energy System Trade Association	American Wind Energy Asso.	Ben Wolff	August 15
Wind Systems Evaluation and Planning Studies	JBF Scientific Corporation	Ted Kornreich	August 15
Development of Rural Applications of Wind Energy	U.S. Dept. of Agriculture	L. A. Liljedahl	August 16
Supporting Research and Technology Program	NASA-Lewis Research Center	Ron Thomas	August 18
Wind Characteristics Program	Battelle-Pacific Northwest Laboratories	Larry Wendell	August 18
Operator of 200 kW Wind Machine	City of Clayton, N. Mex.	Rob Johnston	August 22
Farm, Remote, and Rural Tests and Applications (Small Systems)	Rockwell International Rocky Flats	Darrell Dodge	August 27

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APPENDIX C

SERI TECHNICAL INFORMATION DISSEMINATION (TID)

INTERVIEW GUIDE

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SERI TECHNICAL INFORMATION DISSEMINATION (TID) INTERVIEW GUIDE

Name of Interviewer _____ Time Interview Began _____ Ended _____ Date _____

Solar Technology _____ Program Element _____

Organization Contacted _____ Address _____ Phone _____

Person Interviewed _____ Position _____

Principal Areas of Organization's Solar R&D _____

Mode of Interview Contact _____ Disposition _____

Hello, I'm _____ of the Solar Energy Research Institute of Golden, Colorado. I would like to talk with you for a few minutes about the ways in which your organization disseminates the results of research and development projects which you have under contract to the Department of Energy.

SERI TECHNICAL INFORMATION DISSEMINATION (TID) INTERVIEW GUIDE

1. R&D results can be grouped into three categories: (1) major breakthroughs in the state of the art; (2) smaller incremental changes in the state of the art; and (3) consolidations in the state of the art (e.g., handbooks, literature reviews, etc.)

1a) Type of actual R&D results	1b) Dissemination to date	1c) Future dissemination plans
<p>"Breakthroughs"</p> <p>(Examples of solar R&D results by your organization that may be classified as major discoveries that significantly affect the state of the art for solar technology)</p>	<p>(Information dissemination activities of your organization for the major "breakthroughs" listed to the left)</p>	<p>(Future dissemination plans of your organization to get out the word on breakthroughs)</p>
<p>"Incrementals"</p> <p>(Examples of solar R&D results from your organization that effect stepwise changes in the state of the art, including new applications or process improvements)</p>	<p>(same as above)</p>	<p>(same as above)</p>
<p>"Consolidations"</p> <p>(Examples of solar R&D results that help consolidate the technology, including any literature reviews, handbooks, etc., your organization has compiled)</p>	<p>(same as above)</p>	<p>(same as above)</p>

SERI TECHNICAL INFORMATION DISSEMINATION (TID) INTERVIEW GUIDE

2. Does your organization have a formal program to disseminate R&D results?

Yes _____ (Ask Q 2a thru 2d) No _____ (Skip to Q 3)

2a. What division or person in your organization has primary responsibility for this dissemination activity?

2b. What are the 1979 commercialization goals of this dissemination activity?

2c. About how many persons in your organization have been specifically involved in this dissemination program during the past year?

☐

1-2

☐

3-5

☐

6-9

☐

10 plus

About how many will be involved in the coming year?

☐

1-2

☐

3-5

☐

6-9

☐

10 plus

2d. How much do you estimate this dissemination program will cost your organization for fiscal 1978?

☐

under
\$10,000

☐

\$11,000-
\$49,000

☐

\$50,000-
\$124,000

☐

\$125,000-
\$200,000+

☐

Cannot estimate
at this time

How much will it cost next year?

☐

under
\$10,000

☐

\$11,000-
\$49,000

☐

\$50,000-
\$124,000

☐

\$125,000-
\$200,000+

☐

Cannot estimate
at this time

3. Let's say that four types of target audiences might be interested in your organization's R&D results: (1) DOE contractors and in-house people; (2) firms that could manufacture, install, service, or buy the technologies but are not DOE contractors; (3) individuals and groups such as lawmakers, financial institutions, and citizen advocates; and (4) the larger interested public.

Who are the specific groups you hope to reach with your dissemination activities? (PROBE name of group, size, etc.)

SERI TECHNICAL INFORMATION DISSEMINATION (TID) INTERVIEW GUIDE

4. What research reports do you expect to publish between now and the end of September 1979?
5. What program conferences, seminars, or meetings do you plan to hold between now and the end of September 1979? (PROBE groups involved, numbers of persons etc.)
6. What general criteria do you use to determine the number of research reports to publish on a specific project? (PROBE definition of target groups, contact persons, etc.)
7. In general, what criteria do you use to measure the impact of your organization's dissemination activities?
8. What communication channels do you use to achieve your organization's dissemination goals? (PROBE specific channels, articles, books, etc.)
9. Does your organization have a: (Check ones that apply)
 - a. Publications section _____
 - b. Public information officer _____
 - c. Visitors' center _____
 - d. Conference center _____
 - e. Mobile exhibits _____
10. How does your organization get feedback from individuals or groups who obtain R&D results on your projects? (PROBE specific procedures, channels, etc.)

For instance, does someone keep records of persons requesting research reports?

Yes _____ No _____

10a. Keep records of those who you call for technical assistance?

Yes _____ No _____

SERI TECHNICAL INFORMATION DISSEMINATION (TID) INTERVIEW GUIDE

10b. Keep records of persons who visit your organization?

Yes _____ No _____

10c. What attempts do you make to determine how people use the R&D information they obtain?

11. Do your researchers commonly write executive summaries for research reports published by your organization?

Yes, always _____ Yes, sometimes _____ No _____

12. What professional journals does your research staff use to publish the results of its work? What about books authored by your research staff?

13. Has your organization published any handbooks on solar technology?

Yes _____ (PROBE titles) No _____

13a. How about literature reviews on solar energy?

14. Does your organization have ways of involving potential users of results in the planning, evaluation, and implementation of your dissemination activities?

15. Let's say your organization decided to increase next year's formal budget for R&D dissemination activities by 50%. How would you use the additional dissemination funds? (PROBE priorities, new activities, goals, etc.)

Thank you for your assistance!

Follow-up comments of interviewer on this case _____

No. of CopiesDistribution

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1	Chicago Operations Office Interim Program Division Attn: M. E. Jackson
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