

MONTHLY PROGRESS REPORT FOR CONTRACT NO. 500-00-036

PROJECT 1.1 – PROGRAM PLANNING AND ANALYSIS

REPORT PREPARED BY: COMMONWEALTH ENERGY TEAM

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What we planned to accomplish this period:

RER plans to complete the final versions of the renewable resource assessment review report and the initial mini-grid definition and map.

CH₂MHill plans to complete and submit the Sewage Treatment Plant and Landfill Facilities, which will serve as host for bioreactor Database(s), and associated Inventory Reports, under Tasks 1.1.3 and 1.1.4. Additionally, we plan to resolve the current problem of the lack of detailed facility and electric load information from selected individual “representative” dairies by working through the California Milk Producers Council. We will also continue analyzing the existing data collected, focusing on prioritizing the potential sites for demonstration projects. As part of this effort, we plan to meet with RER to review our planned approach for prioritizing potential projects and commencing work in the subsequent emphasis areas.

RER and REDI plan to complete the BI-PV data collection and database development under Task 1.1.5. We anticipate that work will begin on developing the BI-PV technical potential for the mini-grid area. The results of the technical potential will be used in Task 1.1.7 and feed into the power flow modeling effort under Task 1.1.9.

Work on Task 1.1.7 mini-grid market potential assessment is expected to continue next month. This work will involve collecting cost information on the various biogas and PV technologies as well as starting to develop the business models that will be used in assessing the mini-grid market potential.

The CE Team plans to develop a report on the process used to develop the PV generation profiles and the Waste Water Treatment, landfill and dairy waste to energy generation profiles under Task 1.1.8.

Team member ZECO plans to complete much of the local T&D power flow model development under Task 1.1.9a.

What we actually accomplished this period:

Task 1.1.1- Review Previous Statewide/Southern CA Renewable Resource Technical & Market Potential Assessments and Transmission/Distribution Mini-Grid Definition:

- RER completed the revisions on the draft renewable resource assessment review report and submitted the finalized report to the Commission. We also addressed comments received from the Commission Project Manager on the initial mini-grid definition and map and submitted these final documents to the Commission.

Task 1.1.2 Develop Database of Agricultural Facilities in So. California, targeting the Chino Basin:

- CH₂MHill continued its work with the database being updated and reviewed. In general, they were successful in populating the database with information collated in the previous month. CH₂MHill also continued to receive revised and updated information on the number of head and location of dairy operations in the study area. They continued having difficulty collecting site-specific information on electrical loads at representative dairies. They did, however, with assistance from the Milk Producer's Council, make progress in this area. The challenge remains regarding how best to use this data collected from several "representative dairies" to characterize the loads of all the dairies in the study area. REDI continued to participate in conference calls regarding data collection needs for this task.

Task 1.1.3 Inventory Landfill Facilities which Serve as Host for Bioreactor Demonstration Project:

- CH₂MHill continued to receive previously requested information from landfill operators to populate the database. By the end of the month, they had received all the data that was needed to complete and submit the database and inventory report. Any new information that is collected in the future will be incorporated into the database, as appropriate. In general, however, CH₂MHill made the determination that there were no significant data or information outstanding, and that the database and reports were ready to submit to the Commission. Additionally, it was determined that there will be no need for BI-PV directly at the landfill facilities and that REDI will complete their work under budget for this task. The database and inventory report were submitted during this period. RER reviewed the landfill database that had been developed for completeness and reviewed/provided comments on the landfill inventory report. This draft inventory report was then submitted to the Commission for review.
- In general we have received data for most of the facilities from which we requested data. We have determined that most of the other facilities, which did not

submit data, will not be doing so. The task deliverables will be finalized once we receive comments from the Commission on the submittals.

Task 1.1.4 Collect Information on Sewage Treatment Plants:

- REDI provided information regarding deploying PV systems at Wastewater facilities, which were added to the CH₂M Hill reports. A database of PV system specifications and Technical Potential was added to the CH₂M Hill database of biogas resources. Internal review comments made on the sewage treatment plant database and inventory report were incorporated and submitted. RER reviewed the database that had been developed for completeness and reviewed/provided comments on the associated inventory report. The report was then forwarded to the Commission for review and comments. This task is essentially complete, awaiting any comments on the database or inventory report from the Commission.

Task 1.1.5 Collect information on PV system siting requirements and Identify Potential Candidate Sites for Commercial Photovoltaic Systems:

- RER continued development of an estimate of the technical potential for photovoltaic power systems within the target area for existing non-public commercial/industrial buildings,
- The methodology for determining the BI-PV technical potential was finalized between REDI and RER.
- REDI and RER continued developing the technical potential report for the for nonresidential building integrated photovoltaic power systems within the target area for existing public agency buildings and non-public commercial/industrial buildings,
- REDI refined the public sector database in Excel format to list only the facilities-related information.

Task 1.1.6 Collect Information on Transmission/Distribution System:

- Zaininger Engineering (ZECO) reviewed data collected from SCE with appropriate Southern California Edison personnel. ZECO has begun preparing a memo that summarized the T&D data collected for this project.

Task 1.1.7 Assess Electricity Market Potential (MW's) of biogas and commercial PV within the mini-grid region

- RER continued collecting cost information on biogas technology systems.

Task 1.1.8 Develop Generation Profiles of the combined biogas resources and PV based upon 1) proposed program; and 2) fully realized mini-grid market potential:

- No work was performed on this task this month.

Task 1.1.9 a Conduct Power Flow Analysis within Mini-Grid Target Area:

- ZECO continued developing the representative T&D power flow model. ZECO developed appropriate electrical assumptions for the 66/12 kV transformers, 21 kV overhead and underground feeders for various conductor sizes and types used by Southern California Edison. Additionally, ZECO incorporated preliminary 66 kV sub-transmission systems into initial load flow cases.

Task 1.1.13a Preparation of Measurement and Evaluation Plan:

- No work was performed on this task this month.

How we are doing compared to our plan:

- Several tasks have fallen behind schedule. Task 1.1.1 had fallen behind as a result of the need to address questions and comments raised by the Commission Project Manager, additionally the delay in the receipt of the load information affected the completion of Task 1.1.1. Tasks 1.1.2a, 1.1.3b and 1.1.4b, were delayed as a result of not receiving all the required information requested for the associated databases, as reported earlier, and as such, CH₂MHill was unable to complete the databases and the inventory reports as originally planned. The Project schedule is behind by approximately one month. These delays should not impact the overall plan for Project 1.1, as the information being collected will be readily usable for prioritizing projects in subsequent phases.

Significant problems or changes:

The most significant challenge, which was noted in last month's report, was the unavailability of data on the loads at individual dairies, this issue continued to be a concern this month. Progress, however, continued to be made in this area and it is anticipated that we will be able to collect and present representative data that both describes dairy loads in the mini-grid and provides information on typical loads at various size and types of dairies. There are no significant fiscal problems to report during this period and work is proceeding within budget. Progress and expenditures will result in project being completed on time and within budget.

Approval Requests for Significant Changes:

RER has received a request for reallocation of funds between tasks within Project 1.1. from a CE Team member, and will be addressing this request.

What we expect to accomplish during the next period:

During the next reporting period CH₂MHill plans to complete much of the initial effort on the agricultural facilities database, as well as the initial draft of the inventory report. They also plan to have this document reviewed by internal reviewers so that it can be submitted to

the Commission the following month. CH₂MHill also anticipates starting the project prioritization process where individual projects will be conceptually defined, compared and then prioritized. Additionally, they plan to start work on portions of the Project Final Report Outline.

Three other projects, Projects 2.1, 2.2 and 3.1 are also at the point where they could be initiated. There are several key items that should be reviewed with Commission staff, however, before commencing efforts on these projects and associated tasks. These issues include tradeoffs between employing certain technologies outside the mini-grid versus others within the mini-grid. It will also be appropriate to review other potential projects in light of findings reached during the data collection tasks. The CE Team will schedule such a meeting with the Commission, and will also continue analyzing the data collected, focusing on prioritizing the potential sites for demonstration projects. As part of this effort, CH₂MHill plans to meet with RER to review their planned approach for prioritizing potential projects and commencing work in the subsequent emphasis areas.

REDI will complete its work on Task 1.1.2. Additionally, REDI anticipates that the completion and submittal of the final deliverable will be made to RER for Task 1.1.5.

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Status of Milestones and Deliverables:

Table 1 below summarizes the status of Project 1.1 task deliverables as of the end of the current reporting period.

Table 1: Summary of Project Status and Deliverables – Project 1.1

Task No.	Description	Start Date		Due Date		Status (%)
		Planned	Actual	Planned	Actual	
1.1.1	Review previous CA technical and market potential assessments.	6/5/02	6/5/02	8/4/02	10/31/02	100%
1.1.1	“Preliminary definition” of Program mini-grid region	6/5/02	6/5/02	8/4/02	10/31/02	100%
1.1.2a	Develop DB of Agricultural Facilities.	6/19/02	7/20/02	10/18/02		40%
1.1.2b	Develop Ag GIS report.	6/19/02	8/12/02	11/18/02		30%
1.1.3a	Develop Landfill DB.	6/19/02	6/19/02	8/19/02		95%
1.1.3b	Develop Landfill GIS report.	6/19/02	6/19/02	9/3/02		95%
1.1.4a	Develop WWT facility DB.	6/19/02	6/19/02	8/19/02		95%
1.1.4b	Develop WWT GIS report.	6/19/02	6/19/02	9/3/02		95%
1.1.5	Develop BIPV systems DB	8/5/02	8/5/02	10/18/02		70%
1.1.6	Develop T&D System DB	6/5/02	6/26/02	9/19/02		90%
1.1.7	Market Potential Assessment	9/13/02	9/13/02	12/13/02		20%
1.1.8	Develop Generation Profiles	10/14/02	8/15/02	12/27/02		85%
1.1.9 a	Conduct Power Flow Analysis (T&D Model)	09/04/02		11/03/02		40%
1.1.13	Develop M&E Plans	6/5/02	7/15/03	6/07/03		1%

Explanation of any Difference(s) in Schedule

The following provides the explanation for the reported changes in the schedule at the project task/deliverable level.

Task 1.1.2 Develop Database of Agricultural Facilities – The difficulties in obtaining information on the representative dairy loads delayed completion of this database. It delayed completion of the Inventory Report scheduled for October 18. We are

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continuing to work with the Milk Producers Council to remedy this situation. Representative data has been collected and the database and report should be completed over the next two periods.

Task 1.1.3 Inventory Landfill Facilities – The schedule for this task has changed because data requests were not responded to in as timely a manner as anticipated as reported last month. This delayed the completion of the Inventory Report as well. This should not affect the overall Project’s schedule

Task 1.1.4 Collect Information on Sewage Treatment Plants – The schedule for this task has changed because data requests were not responded to in as timely a manner as anticipated as reported last month. This delayed the completion of the Inventory Report as well. This should not affect the overall Project’s schedule.

Task 1.1.5 Collect information on PV Siting Requirements – The difficulties in conducting a census of public buildings within the minigrd has delayed the progress of this task. It has delayed the completion of the BI-PV database and inventory report. Both the database and the inventory report should be completed by the end of November.

Overall Schedule for Project 1.1:

Task Name	Duration	Start Date	End Date	Cost	2003				2004			
					Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
Project 1.1 - Program Planning and Analysis	267.5 days	Thu 5/30/02	Mon 6/9/03	\$0.00								
Task 1.1.1 Review Tech & Market Assessments	107 days	Thu 5/30/02	Thu 10/31/02	\$18,902.00								
Task 1.1.2a - Dev. DB of Agri. Facilities	66 days	Wed 6/19/02	Wed 9/18/02	\$85,561.50								
Task 1.1.2b - Agri Facilities GIS Inventory Rpt	88 days	Wed 6/19/02	Fri 10/18/02	\$85,561.50								
Task 1.1.3a - Landfill DB	43 days	Wed 6/19/02	Mon 8/19/02	\$66,865.00								
Task 1.1.3b - Landfill GIS Inventory Rpt.	54 days	Wed 6/19/02	Tue 9/3/02	\$66,865.00								
Task 1.1.4a - WWT DB	43 days	Wed 6/19/02	Mon 8/19/02	\$93,136.00								
Task 1.1.4b - WWT GIS Inventory Rpt.	54 days	Wed 6/19/02	Tue 9/3/02	\$93,136.00								
Task 1.1.5 - BIPV DB	55 days	Mon 8/5/02	Fri 10/18/02	\$78,177.00								
Task 1.1.6 T&D System DB	77 days	Wed 6/26/02	Thu 10/10/02	\$63,391.00								
Critical Program Review Meeting	21 days	Mon 11/4/02	Tue 12/3/02	\$20,678.00								
Task 1.1.7 - Market Potential Assessment	66 days	Fri 9/13/02	Thu 1/23/03	\$44,896.00								
Task 1.1.8 - Generation Profiles	55 days	Thu 8/15/02	Fri 12/27/02	\$11,363.00								
Task 1.1.9a - Power Flow Analysis Model	44 days	Wed 9/4/02	Mon 11/4/02	\$29,000.00								
Task 1.1.9b - Power Flow Analysis Report	99 days	Fri 10/11/02	Wed 2/26/03	\$165,623.00								
Task 1.1.10 - Prioritized List of Pilot Projects	54 days	Mon 10/21/02	Fri 1/3/03	\$172,132.00								
Task 1.1.11a Prepare Draft Rpt Outline	32 days	Thu 9/19/02	Fri 11/1/02	\$18,540.00								
Task 1.1.11b - Draft Report for Proj. 1.1	54 days	Tue 12/3/02	Mon 2/17/03	\$139,046.00								
Task 1.1.11c - Final Report for Proj. 1.1	21 days	Mon 3/10/03	Tue 4/8/03	\$157,586.00								
Critical Program Review Meeting	15 days	Tue 4/8/03	Tue 4/29/03	\$20,679.00								
Task 1.1.12 - Coordination with RPAC	44 days	Tue 4/8/03	Mon 6/9/03	\$0.00								
Task 1.1.13a - M&E Plans for Proj. 3.2	86 days	Mon 7/15/02	Mon 11/11/02	\$0.00								
Task 1.1.13b - M&E Plans for Overall Program	111 days	Fri 1/3/03	Fri 6/6/03	\$35,251.00								

Overview of Fiscal Status:

Table 2 below summarizes the fiscal status of Project 1.1 by task as of the end of the current reporting period.

Table 2: Fiscal Status By Task – Project 1.1

Task Number	Budget	Invoiced To-Date	Fiscal Status *
1.1.1	\$18,902.00	\$0	OB
1.1.2a	\$85,562.00	\$0	OT
1.1.2b	\$85,562.00	\$0	OT
1.1.3a	\$66,865.00	\$0	OT
1.1.3b	\$66,865.00	\$0	OT
1.1.4a	\$93,136.00	\$0	OT
1.1.4b	\$96,136.00	\$0	OT
1.1.5	\$78,177.00	\$0	OT
1.1.6	\$63,391.00	\$0	OT
1.1.8	\$11,363.00	\$0	OT
1.1.13	\$35,251.00	\$0	OT

*Fiscal Status – Please indicate if you are “On Track” (OT), OverBudget (OB), or UnderBudget (UB)