

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:

In July we planned to focus on the continuing effort to define and prioritize the top projects to be recommended for funding in Project 1.1. The final identification of such project sites needs to await the completion and approval of the Mini-Grid power flow analysis, but in the absence of those findings the team planned to identify project sites that meet the other RD&D Planning and Analysis objectives of the Program.

ZECO anticipated completing and submitting the Task 1.1.9b power flow analysis draft report to the CE Team for internal review.

What we actually accomplished this period:

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

- CH₂M Hill completed its efforts to respond to the Energy Commission comments on the draft Agricultural database and inventory report. Information was collected on dairies and food processing facilities in Southern California. This information was included in the revised report.
- Staff continued to provide limited support to efforts to refine the agricultural related biogas market potential evaluation being used in subsequent work of the Mini-Grid T&D impacts evaluation.

Task 1.1.7 Assess Market Potential within Min-grid:

- Itron completed the draft final Market Potential report and submitted it to the Commission Program Manager for review.

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

- ZECO completed the Task 1.1.9b power flow analysis using preliminary T&D cost & capital operating assumptions, and submitted the draft Task 1.1.9b to the CE team for internal review and comment.
- Received changes to renewable resource market penetration levels; revised Task 1.1.9b power flow analysis, and submitted revised draft Task 1.1.9b report.
- Prepared materials and made presentation of Task 1.1.9b results at the Commission SAFARI workshop on July 18th.
- ZECO received T&D equipment cost assumptions from SCE.

Task 1.1.10 Prepare Prioritized List of Projects for PV and Biogas Systems

- CH₂M Hill continued its analysis of projects, including information collected previously and new input received from prospective hosts of bioreactor projects. Information being developed as part of the ongoing work under Projects 2.1, 2.2, 3.1 and 3.3 was also considered within the draft Prioritization Report. Information from the Mini-Grid analysis became available in late July and that was being considered in the prioritization effort. Significant progress was made in completing this report, particularly on completing the biogas elements. It is anticipated that prioritization of the biogas projects will be completed in the next one to two months. In addition, initial efforts were undertaken to integrate the biogas and photovoltaic portions of the Prioritization Report. All of these elements were evaluated against the Program objectives in - light of the findings of the Mini-Grid T&D impacts analysis.

Task 1.1.11 Prepare Final Report

- Work continued on the Project 1.1 Final Report. This included compiling the key findings for each of the early tasks in this project and continued consultation with NIRAS on European technologies and practices. In general, much of the effort associated with preparing the final report has been completed and limited work was conducted this period. Finalization of the report awaits completion of the power flow studies and prioritization activities. As noted in the previous monthly reports, coordination of the preliminary key findings of this project with the initial activities of Projects 2.1, 2.2 and 3.1 was also undertaken, so that efforts on subsequent tasks would be aligned with the key findings of Project 1.1 to be presented in the final report. Some of these findings include:
 - Continue to work with leading landfill bioreactor host candidate site (Mid Valley Landfill owned by San Bernardino County) so that the landfill bioreactor project (Project 2.1) can be implemented in a way that takes advantage of an existing facility and builds on *lessons* learned from the Yolo County project.
 - Efforts related to increased energy production from enhanced anaerobic digestion at wastewater treatment plants (Project 2.2) should focus on the

development of pilot projects using ultrasound and thermal hydrolysis at the Riverside wastewater treatment plant. This plant has several characteristics including a favorable process configuration making it well suited for more detailed analysis.

- Efforts related to digester gas cleaning for microturbines should focus on potential projects at IEUA Regional Plant 1 (RP-1). This plant has experience using a variety of power generation equipment and gas cleaning.
- Focus dairy waste to energy projects (Project 3.1) on centralized dairy projects. Special focus should be on building on *lessons learned* at existing projects and placing special emphasis on defining environmental and other factors that drive project implementation and economics. Also, efforts in future projects should build on the analysis of what has been learned at other dairy waste to energy projects. Some of these findings are to be presented in the Digester Comparison Report prepared as part of Project 3.1.1a (1).

How we are doing compared to our plan:

Work continues to progress generally as anticipated. Although there have been challenges within a few of the tasks, the majority of these challenges have been resolved, and have not seriously affected revised project/task schedules or budgets for the project as a whole.

As reported in June, the Inventory Report under Task 1.1.2 was to have drawn on information provided by individual dairies and the Milk Producers Council in order to describe electrical loads at dairies in the Chino Basin. The challenge to collect such information continues, as the dairies remain reluctant to make such information available to others due to proprietary and other business considerations. Staff continued to analyze information collected from a variety of sources and are using it to provide the necessary information for the final report for this task.

Significant problems or changes:

There are no significant fiscal problems to report on during this period and work is proceeding within budget. There have been several interim task-level budget transfers to date under Project 1.1, however, progress and expenditures will result in project being completed on time under the revised schedule and within the original Project 1.1 budget.

What we expect to accomplish during the next period:

Activity in August will focus on the continuing effort to define and prioritize the top projects to be recommended for funding in Project 1.1. The final identification of such projects will draw on the results of the power flow analysis of the Mini-Grid and incorporate these with other ongoing activity. Of particular importance are the availability and the viewpoints of

“Project Champions” for each of these projects. For this reason, dialogs will continue with the various project sponsors.

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	01/17/03	07/31/03	95%
1.1.2b	Develop Ag GIS report.	6/19/02	8/12/02	01/17/03	07/31/03	95%
1.1.3a	Develop Landfill DB.	6/19/02	6/19/02	10/25/02	12/15/02	100%
1.1.3b	Develop Landfill GIS report.	6/19/02	6/19/02	10/25/03	12/15/02	100%
1.1.4a	Develop WWT facility DB.	6/19/02	6/19/02	10/31/02	12/15/02	100%
1.1.4b	Develop WWT GIS report.	6/19/02	6/19/02	10/31/03	12/15/02	100%
1.1.5	Develop BIPV systems DB	8/5/02	8/5/02	12/03/02	2/5/03	100%
1.1.6	Develop T&D System DB	6/5/02	6/26/02	02/16/03	06/10/03	100%
1.1.7	Market Potential Assessment	11/10/02	9/13/02	08/01/03	07/31/03	98%
1.1.8	Develop Generation Profiles	12/11/02	8/15/02	09/15/03		90%
1.1.9 a	Conduct Power Flow Analysis (T&D Model)	10/14/02	09/23/02	02/16/03	06/10/03	100%
1.1.9 b	Conduct Power Flow Analysis (Summary Reports)	11/15/02	09/02/03	09/11/03		95%
1.1.10	Prepare Prioritized List of Projects for PV and Biogas Systems	12/03/02	11/04/02	09/12/03		65%
1.1.11a	Prepare Draft Report Outline for Project 1.1	1/17/03	02/10/03	02/21/03	7/13/03	100%
1.1.11b	Prepare Draft Report for Project 1.1	08/19/02	04/18/03	09/26/03		30%
1.1.13	Develop M&E Plans	6/5/02	7/15/03	05/29/03		12%

Explanation of any Difference(s) in Project 1.1 Schedule

The following listing 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 and the Inventory Report. Information has been collected and the draft document submitted. The anticipated completion of this document in August will not impact the overall schedule.

Task 1.1.7 Assess Market Potential within Mini-Grid – Task 1.1.7 Assess Market Potential within Mini-Grid – The level of effort required to obtain BI-PV and biogas technology data on capital and O&M costs, Mini-Grid specific load growth forecasts, energy price information, and the estimated value of non-energy environmental benefits was not anticipated. In addition, the effort to incorporate all of these elements into the cash flow models and to perform the necessary expanded economic assessment scenarios was not anticipated. Consequently, this task is currently over budget relative to the amount of progress towards its completion and has been re-budgeted for completion using funds from other Tasks under Project 1.1.

Task 1.1.9b Mini-Grid T&D Power Flow Impacts Analysis – ZECO awaited input on the revised market potential and the mapping to the electric system load points for biogas and PV resources in addition to receiving the cost basis of the T&D facilities from SCE.

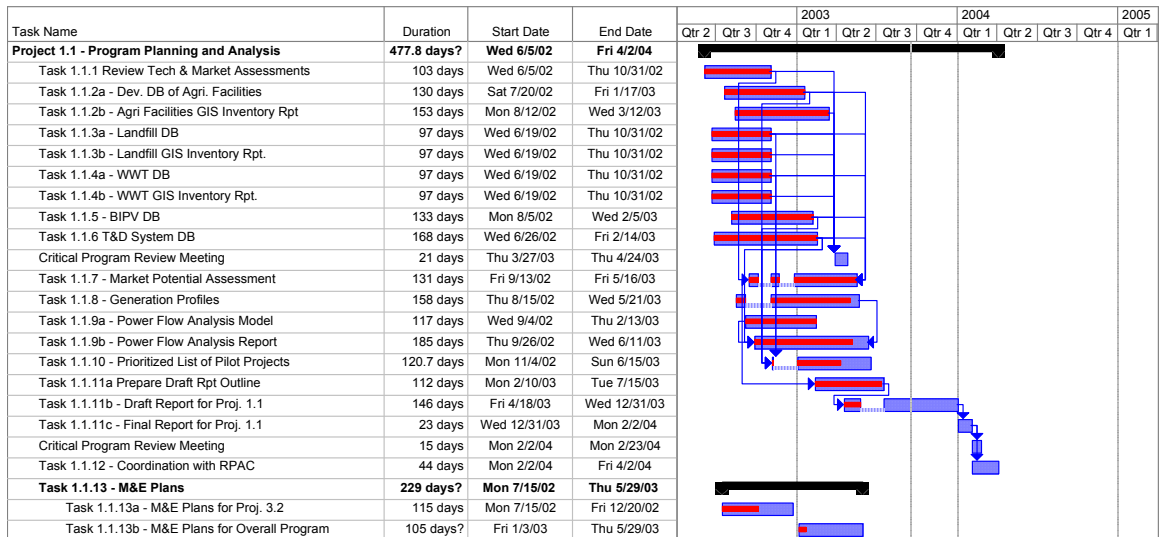
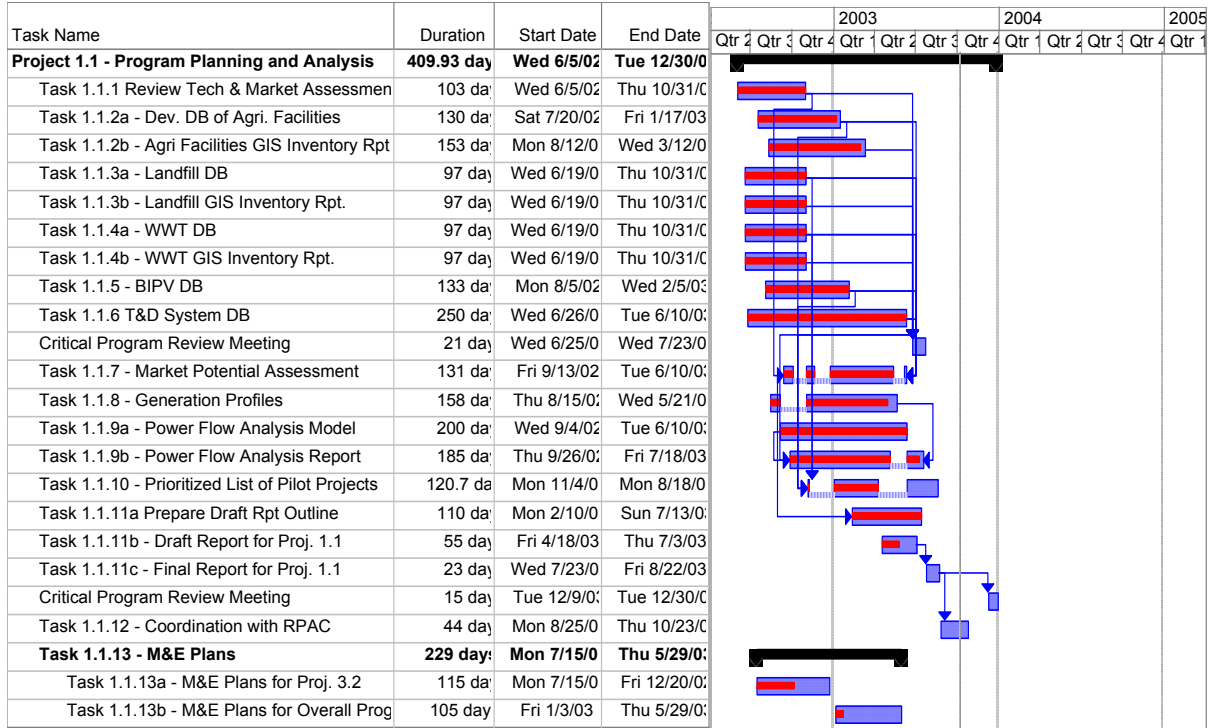
Task 1.1.10 Prepare Prioritized List of Projects for PV and Biogas Systems – This task started on schedule. Its completion will be delayed by approximately two to three months. This will allow for incorporation of the findings of the expanded Mini-Grid analysis within the prioritized list of projects.

Task 1.1.11 – Prepare Final report - The start of this task has been slightly delayed. This change was made to accommodate the completion of the tasks related to the agricultural waste database and inventory report, as well as to allow for incorporation of the Mini-Grid analysis and the guidance of the Project 1.1 TAC and the RPAC. These changes however, are consistent with other aspects of the program, which needed to await incorporation of the key findings of the Mini-Grid T&D Impacts Analysis.

Overall Schedule for Project 1.1:

The Project schedule defined by task number and deliverable is presented in Figure 1 below.

Figure 1: Program Planning and Analysis Project Schedule



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	\$18,902.00	OB
1.1.2a	\$ 85,562.00	\$0	OT
1.1.2b	\$ 100,562.00	\$0	OT
1.1.3a	\$ 66,865.00	\$66,865.00	OT
1.1.3b	\$ 66,865.00	\$66,865.00	OT
1.1.4a	\$ 93,136.00	\$93,136.00	OT
1.1.4b	\$ 96,136.00	\$93,136.00	OT
1.1.5	\$ 87,177.00	\$85,780.00	OT
1.1.6	\$ 98,840.00	\$0	OT
1.1.7	\$ 96,896.00	\$0	OB
1.1.8	\$ 15,363.00	\$0	OT
1.1.9	\$114,174.00	\$0	OT
1.1.10	\$172,132.00	\$0	OT
1.1.11a	\$ 18,540.00		OT
1.1.11b	\$ 114,046.00	\$0	OT
1.1.12	\$ 0.00	\$0	OT
1.1.13	\$ 25,251.00	\$0	OT

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