

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:

CH₂M Hill's activity was expected 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 projects will await the completion of the power flow analysis of the Mini-Grid, but in the absence of those findings the team will identify projects that meet the other objectives of the Project.

Additionally, CH₂M Hill anticipates that the agricultural database and draft report will be submitted in final format to the Commission in March.

Itron/RER will finalize the three biogas and BI-PV prototypes for the market assessment and develop high, low and expected case market potential analyses.

ZECO will complete the expansion of the mini-grid to 2007 and 2012 from basecase PSLF model.

What we actually accomplished this period:

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

- CH₂M Hill started its work to respond to the Energy Commission comments on the draft Agricultural database and inventory report. Efforts focused on collecting additional information on food processing facilities and clarifying and supplementing electric end-use consumption characteristics and other information previously collected from dairies in the Chino Basin.

Task 1.1.3 Landfill Bioreactor Database and Inventory Report:

- With the Landfill Bioreactor database and Inventory Report having been previously completed only minor follow on work related to subsequent tasks was completed. This type of work included follow up calls with landfill owners and operators as well as with regulators to facilitate the completion of the prioritization report and the initiation of projects in Project 2.1.

Task 1.1.4 Collect Information on Sewage Treatment Plants:

- Having submitted the Sewage Treatment Plant database and Inventory Report previously, the Commonwealth Energy Team had limited activities on this task. Phone communications were conducted with potential hosts for follow up projects at sewage treatment plants under project 2.2.
- Staff also provided ongoing support to efforts to refine the technical and market potential evaluations using inventory data developed as a part of this task. This work is in support of efforts on subsequent tasks.

Task 1.1.6 Collect Information on Transmission/Distribution System:

- Itron/RER and ZECO awaited comments on the draft Mini-grid Characteristics and Inventory Report following the Project 1.1 CPR meeting on February 27th.

Task 1.1.7 Assess Market Potential within Min-grid:

- Itron/RER completed the development of technology cost data. The team also continued to refine the specification of biogas and BI-PV prototypes and the economic and market scenarios for the assessment analysis; and began running cash flow analyses for the *Expected Case* scenario for each of the four renewable technologies.

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

- ZECO continued their work and completed the expansion of the Commonwealth Mini-Grid characterization out to 2007 and 2012 (5 and 10 years respectively).

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

- CH2M HILL continued to work on the biogas project aspects for the preliminary working draft of the prioritization report. Much of the technical work on this report has been completed, although finalization will await completion of the Mini-Grid analysis. Work on this report will continue at a low level until the Mini-Grid power flow analysis is completed and these results are factored into the demonstration project prioritization effort.

Task 1.1.11 Prepare Final Report

- Work continued on the Final Report. This included receiving input from NIRAS on European technologies and practices. This also included continued communication with NIRAS staff, and in conjunction with meetings held in the Chino Basin and in Sacramento, as related to drawing on the European experience in helping to define projects to recommend for further analysis in Project 3.1. 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 preliminary 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 (San Bernardino County) so that the landfill bioreactor project (Project 2.1) can be implemented in a way that takes advantage of existing facility and builds on lessons learned under the recent 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.
 - Focus dairy waste to energy projects (Project 3.1) on dairy cluster projects. Special focus should include building on lessons learned at existing projects and placing special emphasis on defining environmental and other factors that drive project implementation and economics.

How we are doing compared to our plan:

Work is generally continuing as anticipated. An important challenge is gaining regulatory acceptance of the bioreactor landfill project. As part of this activity EPA is expected to implement an R&D exemption for bioreactors which is being closely followed by the team. The most recent contacts with EPA suggest that the R&D exemption will be finalized this summer. This regulation will be very important in the successful permitting of the bioreactor projects.

ZECO is awaiting Commission comments on the draft Task 1.1.6 and Task 1.1.9(a) reports. Once comments are received, revisions will be made and the final reports will be submitted to the Commission.

Significant problems or changes:

There are no significant fiscal problems to report on during this period and work is proceeding within budget for the project as a whole. There have been several task-level

budget transfers under Project 1.1, however progress and expenditures will result in the project being completed on time under the revised schedule and within the original project budget.

What we expect to accomplish during the next period:

Activity next period 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 await the completion of the power flow analysis of the Mini-Grid, but in the absence of those findings the team will identify projects that meet the other objectives of the Project.

ZECO will begin the Task 1.1.9b power flow analysis with and without (baseline) the projected renewable generation capacity.

Iron/ RER will continue work on the market potential under Task 1.1.7.

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		98%
1.1.2b	Develop Ag GIS report.	6/19/02	8/12/02	01/17/03		98%
1.1.3a	Develop Landfill DB.	6/19/02	6/19/02	10/25/02	10/31/02	100%
1.1.3b	Develop Landfill GIS report.	6/19/02	6/19/02	10/25/03	10/31/02	100%
1.1.4a	Develop WWT facility DB.	6/19/02	6/19/02	10/31/02	10/31/02	100%
1.1.4b	Develop WWT GIS report.	6/19/02	6/19/02	10/31/03	10/31/02	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	02/14/03	100%
1.1.7	Market Assessment	9/13/02	9/13/02	05/16/03		70%
1.1.8	Develop Generation Profiles	10/14/02	8/15/02	05/21/03		85%
1.1.9 a	Conduct Power Flow Analysis (T&D Model)	09/04/02		02/16/03	02/13/03	100%
1.1.9 b	Conduct Power Flow Analysis (Summary Reports)	09/26/02		06/11/03		65%
1.1.10	Prepare Prioritized List of Projects for PV and Biogas Systems	10/19/02	11/04/02	06/15/03		43%
1.1.11a	Prepare Draft Rpt Outline	9/19/02		02/21/03		28%
1.1.13	Develop M&E Plans	6/5/02	7/15/03	05/29/03		12%

Explanation of any Difference(s) in 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 the database and the Inventory Report. Information has been collected and the draft document submitted. Comments were received from the Commission and the appropriate responses are being prepared. The anticipated completion of this document in May will not impact the overall scheduled as other tasks, not Task 1.1.2, are on the critical path for completion of Project 1.1.

Task 1.1.7 Assess Market Potential within Mini-Grid – {Dave Hanna???

Task 1.1.9b – Conduct Mini-Grid Power Flow Analysis (T&D Model) – Progress and expenditures will likely result in this task being completed in May 2003, rather than February 2003, however, the task remains on budget.

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 one to two months. This will allow for incorporation of the findings of the Mini-Grid power flow analyses within the prioritization of biogas and BI-PV projects.

Task 1.1.11 – Prepare Final report - The start of this task has been delayed by approximately six weeks. This change was made to accommodate the completion of the tasks related to the agricultural waste database and inventory report and the results of the delays in completing the market potential assessment. These changes should not, however, affect the scheduled completion date of the overall project by more than a month as that is dictated by the timeframe needed to incorporate the findings of the Mini-Grid Analysis. The Draft Outline was submitted to the Commission in early February, comments have been received, and a revised Draft Outline of the Final Report will be resubmitted to the Commission.

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	Qtr 2	Qtr 3
Project 1.1 - Program Planning and Analysis	346 days	Thu 5/30/02	Thu 9/25/03	\$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	97 days	Wed 6/19/02	Thu 10/31/02	\$66,865.00										
Task 1.1.3b - Landfill GIS Inventory Rpt.	97 days	Wed 6/19/02	Thu 10/31/02	\$66,865.00										
Task 1.1.4a - WWT DB	97 days	Wed 6/19/02	Thu 10/31/02	\$93,136.00										
Task 1.1.4b - WWT GIS Inventory Rpt.	97 days	Wed 6/19/02	Thu 10/31/02	\$93,136.00										
Task 1.1.5 - BIPV DB	133 days	Mon 8/5/02	Wed 2/5/03	\$78,177.00										
Task 1.1.6 T&D System DB	168 days	Wed 6/26/02	Fri 2/14/03	\$63,391.00										
Critical Program Review Meeting	21 days	Mon 3/3/03	Mon 3/31/03	\$20,678.00										
Task 1.1.7 - Market Potential Assessment	66 days	Fri 9/13/02	Fri 2/14/03	\$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	117 days	Wed 9/4/02	Thu 2/13/03	\$29,000.00										
Task 1.1.9b - Power Flow Analysis Report	185 days	Thu 9/26/02	Wed 6/11/03	\$165,623.00										
Task 1.1.10 - Prioritized List of Pilot Projects	120.7 days	Mon 11/4/02	Sun 6/15/03	\$172,132.00										
Task 1.1.11a Prepare Draft Rpt Outline	112 days	Thu 9/19/02	Fri 2/21/03	\$18,540.00										
Task 1.1.11b - Draft Report for Proj. 1.1	54 days	Mon 3/24/03	Thu 6/5/03	\$139,046.00										
Task 1.1.11c - Final Report for Proj. 1.1	21 days	Fri 6/27/03	Fri 7/25/03	\$157,586.00										
Critical Program Review Meeting	15 days	Fri 8/8/03	Thu 8/28/03	\$20,679.00										
Task 1.1.12 - Coordination with RPAC	44 days	Mon 7/28/03	Thu 9/25/03	\$0.00										
Task 1.1.13a - M&E Plans for Proj. 3.2	86 days	Mon 7/15/02	Fri 12/20/02	\$0.00										
Task 1.1.13b - M&E Plans for Overall Program	111 days	Fri 1/3/03	Wed 8/6/03	\$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	\$18,902.00	OB
1.1.2a	\$ 85,562.00	\$0	OT
1.1.2b	\$ 85,562.00	\$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	\$ 78,177.00	\$85,780.00	OT
1.1.6	\$ 63,391.00	\$0	OT
1.1.7	\$ 44,896.00	\$0	OB
1.1.8	\$ 11,363.00	\$0	OT
1.1.9	\$194,623.00	\$0	OT
1.1.10	\$172,132.00	\$0	OT
1.1.11a	\$ 18,540.00		OT
1.1.13	\$ 35,251.00	\$0	OT

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

In Task 1.1.7 - The effort required to obtain PV and biogas technology data on capital and O&M costs, mini-grid specific growth forecasts, and energy price information was not anticipated to be as great as it has been. Consequently, this task is currently over budget relative to the amount of progress towards its completion.