

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

PROJECT 1.1 – PROGRAM PLANNING AND ANALYSIS

REPORT PREPARED BY: COMMONWEALTH ENERGY TEAM

December 2002

Contractor Project Director:	Patrick Lilly (360) 906-0616
Contractor Project Manager:	David Hanna (858) 481-0081
Commission Project Manager:	Zhiqin Zhang (916) 654-4063

What we planned to accomplish this period:

During the next period, CH2MHill plans to complete the draft of the agricultural facilities database as well as the draft of the inventory report. They also plan to have these documents reviewed by internal reviewers so that they can be submitted to the Commission the following month. CH2M also anticipates working on the project prioritization process where individual projects will be conceptually defined, compared and then prioritized. Additionally, work will begin on 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. As noted above, there are several key items that should be reviewed with Commission staff, however, before commencing efforts on these projects and associated tasks. The CE Team scheduled such a meeting with the Commission for December to discuss these questions and chart the path forward.

ZECO planned to complete the PSLF local T&D database/model development in Task 1.1.9a, and planned to begin work on Task 1.1.9b. REDI anticipated that its input would be completed on Task 1.1.2.

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 work on the agricultural database gathering additional information on dairy and food processing operations. Data on the quantities of manure produced in the Chino Basin were collected and entered into a GIS based database and the Inventory Report was prepared. REDI discussed with Tetra Tech, an IEUA consultant, the potential for PV Direct applications at Dairy locations using the cattle shade structures as BI-PV mounts and the power

- generated going to pump ground water through a desalter for on-site water treatment. This PV Direct “distributed desalter” has a great potential for assisting in cleaning up the group water contaminated from dairy related wastes.
- CH₂M HILL initiated its internal review of the database and inventory report and assembled the findings into a form that could be used in the prioritization efforts (See Task 1.1.10).
 - Representatives of the Commonwealth Energy Team met with Commission staff in early December to discuss preliminary findings related to the agricultural waste and their implication on potential projects. This meeting provided guidance to the Team, which will be useful in completing the prioritization task and in beginning the implementation of Project 3.1.

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

- Having submitted the Landfill Bioreactor database and Inventory Report previously, The Commonwealth Energy Team had limited activities on this task during the month of December. There continued to be follow-up calls with landfill owners and operators as well as with regulators. Additionally, during December, feedback was received from the Commission on the Database and Inventory Report and the task was deemed to be complete and was approved by the Commission Manager for invoicing. Task closeout activities including reproducing the final report for team members, completing the invoicing process and other activities as requested.

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 in December. Follow-up phone communications were conducted with potential hosts for follow up projects at sewage treatment plants under project 2.2. Additionally, as indicated under Task 1.1.3’s report, a meeting to review preliminary findings, particularly as they impact the start of Project 2.2 was held with Commission staff in order to facilitate the effective start up of that project.
- During December, feedback was received from the Commission on the Database and Inventory Report and efforts were undertaken to clarify the source of information on the number of treatment plants in California. CH₂M HILL staff compared the background information on the wastewater treatment plants included in the State Water Resources Board and the California Energy Commission databases.
- Task closeout activities, including preparing for reproducing the final report for team members, completing the invoicing process and other such activities were undertaken. In general, this task is nearly complete.

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

- RER and REDI continued to respond to comments received on the draft BI-PV technical potential report and database.
- REDI is revising the Public Facility data to adjust for the number of buildings per category using data from a Southern California Commercial End-Use Survey. The Revised information will be forwarded to RER in January.

Task 1.1.6 Collect Information on Transmission/Distribution System:

- ZECO has completed developing the representative local electrical T&D database/PSLF model for seven local distribution systems in the mini-grid containing 67 12 kV feeders.

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

- As reported under Task 1.1.6, ZECO has completed developing the representative local electrical T&D database/PSLF model for seven local distribution systems in the mini-grid containing 67 12 kV feeders.
- Work on 1.1.9b will start as soon as PV and distributed biogas peak and light load electrical performance models and penetration levels are obtained.

Task 1.1.10 Prepare Prioritized List of Pilot Project for PV and Biogas Systems

- CH₂M HILL undertook activities related to prioritization of the biogas projects. The initial phase of this effort was reflected in the Inventory Reports, which identified some of the higher priority projects. In December, CH₂M HILL assembled technical and other information related to the technologies and specific projects being considered. An analytical framework was developed for comparing potential projects.

Task 1.1.11 Prepare Draft and Final Report for Project 1.1:

- CH₂M HILL began work on the outline for the Final Report. This outline was structured to incorporate the previous findings in the earlier tasks as well as provide a concise, but complete record of activities undertaken on this Project

How we are doing compared to our plan:

Work is generally proceeding as anticipated. An important challenge is gaining regulatory acceptance of the bioreactor landfill project. CH₂M HILL has contacted state and regional regulatory officials as well as landfill owners and operators about plans to develop such a project. In general, all involved are supportive, but it is clear that it would be beneficial if a representative of the Commission would work with representatives of other State agencies to implement a coordinated approach to develop a bioreactor under the Commonwealth Energy

project. In order to help achieve this objective, a meeting is being set up for early January to coordinate efforts to involve key State officials in developing and implementing a game plan to get approval of a landfill bioreactor in as timely a manner as possible while meeting all the regulatory requirements efficiently.

There are no significant fiscal problems to report on during this period and work is proceeding within budget. Progress and expenditures will result in project being completed on time and within budget.

Significant problems or changes:

As indicated above, CH2M has encountered a challenge with gaining regulatory acceptance of the landfill project. We feel however, that after the meeting which is to be held in January occurs, these issues will be addressed and the team will be able to move forward effectively and efficiently.

ZECO reports one change has occurred which will impact both Task 1.1.6 and Task 1.1.9a. Additional distribution data is being developed and added to the local T&D database/PCLF model as follows: 1) A distribution sub outside the local area containing 12 kV feeders serving loads in the area north of Pine Street and east of Rt. 71 not served by the seven local distribution systems which contains RP-5 and RP-2 loads; and, 2) a distribution sub outside the local area containing 12kV feeders serving loads in the NE area of the mini-grid north of Rt. 10 and east of Rt. 15 to Etiwanda Avenue which contains RP-4 and an Ikean warehouse. This change, will likely result in Task 1.1.9 being completed in April 2003, rather than February 2003, however, both tasks will remain within budget.

Progress on the Task 1.1.7 mini-grid market assessment has not been as swift as planned. Completion of other critical path tasks has not happened as planned. In addition, 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.

There are no significant fiscal problems to report on during this period and work is proceeding within budget. Progress and expenditures will result in project being completed on time and within budget.

What we expect to accomplish during the next period:

During the next reporting period, CH₂M plans to submit the agricultural waste database as well as the Inventory Report. CH₂M also anticipates working on the project prioritization process seeking to identify projects, which meet the project objectives contributing to the

goal of making renewable energy more affordable. Additionally, they plan to continue working on the Project Final Report outline.

It is further anticipated that work on Project 2.1, 2.2 and 3.1, will be initiated in January. The completion of database and inventory report work for the landfill bioreactor, sewage treatment plant and agricultural waste elements of the project, together with initial prioritization activity work completed to date all allow this work to be initiated at the time.

ZECO plans to complete and deliver the PSLF local T&D database/model development in Tasks 1.1.6 and 1.1.9a.

RER and REDI anticipate the Final report under Task 1.1.5 will be submitted for review and approval to the Commission Contract Manager.

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		90%
1.1.2b	Develop Ag GIS report.	6/19/02	8/12/02	11/18/02		90%
1.1.3a	Develop Landfill DB.	6/19/02	6/19/02	8/19/02		100%
1.1.3b	Develop Landfill GIS report.	6/19/02	6/19/02	9/3/02		100%
1.1.4a	Develop WWT facility DB.	6/19/02	6/19/02	8/19/02		99%
1.1.4b	Develop WWT GIS report.	6/19/02	6/19/02	9/3/02		99%
1.1.5	Develop BIPV systems DB	8/5/02	8/5/02	10/18/02		99%
1.1.6	Develop T&D System DB	6/5/02	6/26/02	9/19/02		90%

Task No.	Description	Start Date		Due Date		Status (%)
1.1.7	Market Assessment	9/13/02	9/13/02	12/13/02		22%
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		75%
1.1.10	Prepare Prioritized List of Projects for PV and Biogas Systems	10/19/02	11/04/02	10/19/02		15%
1.1.11a	Prepare Draft Rpt Outline	9/19/02		11/1/02		5%
1.1.13	Develop M&E Plans	6/5/02	7/15/03	6/07/03		10%

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 this database. It delayed completion of the Inventory Report. Information has now been collected and we anticipate submitting the database and inventory report for this task in late December or early January.

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. This delayed the completion of the Inventory Report until October. 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. This delayed the completion of the Inventory Report until October. 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 minigrid has delayed the progress of this task. It has delayed the completion of the BI-PV database and inventory report.

Task 1.1.7 Assess Market Potential within Mini-Grid – This task has been delayed as a consequence of delays in Tasks 1.1.2, 1.1.5, and 1.1.6. This will delay the overall Project schedule.

Task 1.1.10 Prepare Prioritized List of Projects for PV and Biogas Systems – Although this task started on schedule, its completion will be delayed by approximately one month. This will allow for incorporation of the findings of Task 1.1.2. as well as

input from the Commission staff and representatives of Inland Empire who will likely be the potential owner of several of the demonstration 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. These changes should not, however, affect the scheduled completion date.

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	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	140 days	Wed 6/19/02	Tue 12/31/02	\$66,865.00										
Task 1.1.3b - Landfill GIS Inventory Rpt.	140 days	Wed 6/19/02	Tue 12/31/02	\$66,865.00										
Task 1.1.4a - WWTP DB	43 days	Wed 6/19/02	Mon 8/19/02	\$93,136.00										
Task 1.1.4b - WWTP 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	Wed 1/15/03	Wed 2/12/03	\$20,678.00										
Task 1.1.7 - Market Potential Assessment	66 days	Fri 9/13/02	Tue 1/14/03	\$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	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 11/4/02	Thu 3/13/03	\$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	\$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	\$0	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
1.1.13	\$ 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 over budget relative to the amount of progress towards its completion.