

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:**

Activity planned for November was to focus on the completion of the outstanding tasks related to the Final Report for Task 1.1. Additionally, it was anticipated that the CE Team's response to the Commission's comments on the Agricultural Waste Database and Inventory Report would have been completed and submitted to the Commission for final approval. The finalization of Task 1.1.2 will mark the completion of all inventory tasks under Project 1.1. It was also anticipated that the prioritization work under Project 1.1.10, would largely be completed in November. The CE team planned to incorporate comments received on the earlier draft report from Commission staff and the RPAC, and submit for internal project team review, prior to submittal to the Commission - once the plan for Project 3.1 has been submitted and approved. Work on the Project 1.1 Final Report was to continue with its completion expected once the Prioritization Report and other remaining Project 1.1 tasks are finalized.

Itron and ZECO anticipated reviewing comments received from the Commission on November 7th, and after incorporating these comments into the deliverable, planned to resubmit the Task 1.1.9b Final Report to the Commission for final approval.

**What we actually accomplished this period:**

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

- The CE team completed the re-submittal of the Agricultural Waste Inventory Report, incorporating changes made in response to comments from the Commission on the earlier submitted Task 1.1.2 Database and Report. CH<sub>2</sub> and Itron will incorporate the results of this task into the finalization of the Task 1.1.10

Prioritization Report and the Task 1.1.11b Draft Project 1.1 Program Planning and Analysis Report.

*Task 1.1.7 Assess Market Potential within Mini-Grid:*

- Itron developed and submitted a memo outlining its response to comments received from the Commission. The Commission Program Manager reviewed the memo and accepted Itron's responses. Itron began incorporating the accepted responses into the Task 1.1.7 Final Report.

*Task 1.1.8 Development of Generation Profiles:*

- Itron held a conference call with the Commission Program Manager to discuss the second round of comments received from the Commission. Based on this conversation, Itron began working on incorporating generation profiles that summarized the anticipated Commonwealth Program RD&D generation that is expected to be developed under this Program, as well as the generation profiles for the fully realized market potential within the mini-grid (developed under Task 1.1.7).

*Task 1.1.9b Power Flow Analysis Results:*

- As anticipated, Itron and ZECO reviewed comments received in early November and made revisions to Sections 4 and 5 (and updated the Table of Contents) of the Task 1.1.9b Final Report. The revised report sections were resubmitted to the Commission. The Final Deliverable was approved by the Commission on 11/29/03.

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

- The CE Team developed additional information for the revised Prioritization Report. Changes were made in light of comments received from the RPAC and Commission staff directed at eliminating modification to existing projects proposed at IEUA Regional Plant 5 (RP-5). The Team has identified projects that could be completed at RP-1 in order to achieve effective centralized dairy digester projects. The primary focus was to foster the development of centralized facilities at POTW's in order to take advantage of existing infrastructure and other available resources on a cost-effective basis as centralized facilities are developed elsewhere in the State. Information developed as part of the ongoing work in Project 3.1 was also considered. The draft revision of the Prioritization Report was prepared, although it was not finalized as it is pending completion of the revised Project 3.1 Implementation Plan.

*Task 1.1.11 Prepare Final Report*

- Work continued on the Project 1.1 Final Report. The focus included assembling key findings for each of the early completed tasks. In general, much of the effort associated with preparing the Final Report has been completed and limited work

was conducted during this period. Finalization of the report awaits completion of the revised prioritization list and completion of the revised plan for Project 3.1. As noted in the previous monthly reports, coordination of the key findings of this project with the initial activities of Projects 2.1, 2.2, 3.1 and 3.3 was also undertaken so that efforts on subsequent tasks would be aligned with the key findings of Project 1.1. Some of these findings include:

- Continuing to work with the 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 on the Yolo County project, as well as advancing the bioreactor concept toward commercialization in California.
- 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 two ultrasound technologies (instead of one ultrasound technology and one thermal hydrolysis technology) at the Riverside wastewater treatment plant. This plant has several characteristics including a favorable process configuration that is representative of other treatment plants in the State making it well suited for more detailed analysis.
- Efforts related to digester gas cleaning for microturbines should focus on potential projects at the IEUA Regional Plant 1 (RP-1). This plant has experience using a variety of power generation equipment and gas cleaning, and is well suited to future projects.
- Focus *Dairy Waste to Energy Projects (Project 3.1)* on centralized dairy projects. Focus should be on building upon lessons learned at existing projects and placing special emphasis on defining environmental and other key 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 will be presented in the Digester Comparison Report and in the Test Plans and Protocols prepared as part of Project 3.1. Overall, the direction of the program should be to develop projects that advance the state of knowledge and demonstrate affordability related to centralized dairy projects, with particular emphasis on projects that will support the use of existing and new facilities at POTW's for centralized anaerobic digester projects.

### **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 the revised project schedule or overall project budget as a whole.

**Significant problems or changes:**

There are no significant fiscal problems to report on during this period and work is proceeding within the Project 1.1 budget. As reported previously, there have been several task-level budget transfers to date, 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 in December will focus on completing the outstanding tasks on Project 1.1 so that the Project 1.1 Draft Final Report can be completed. It is also anticipated that the Agricultural Waste Database and Inventory Report will be approved and invoiced. Prioritization work under Project 1.1.10, will be largely completed, and submitted for an internal project team review prior to submission to Commission staff. The CE Team will continue to integrate the final key results from Task 1.1.2, Task 1.1.7, Task 1.1.8 and Task 1.1.10 into the draft final report. The Team anticipates that the Draft Final Report will be ready for internal review in December, with completion expected after comments on the Project 3.1 Implementation Plan have been received.

Additionally, the CE Team anticipates making final revisions to the Task 1.1.8 final reports and submitting them to the Commission for final approval.

**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 <sup>1</sup>	Actual <sup>1</sup>	
1.1.1	Review previous CA technical & 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	11/04/03	100%
1.1.2b	Develop Ag GIS report	6/19/02	8/12/02	01/17/03	11/04/03	100%
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%

Task No.	Description	Start Date		Due Date		Status (%)
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	99%
1.1.8	Develop Generation Profiles	12/11/02	8/15/02	09/08/03	DR: 9/08/03	99%
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	DR: 09/12/03 FR: 11/28/03	100%
1.1.10	Prepare Prioritized List of Projects for PV and Biogas Systems	12/03/02	11/04/02	09/10/03	DR: 09/10/03	98%
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	3/08/03	04/18/03	09/26/03		65%
1.1.13	Develop M&E Plans	6/5/02	7/15/03	05/29/03		12%

Note 1: "Planned" dates per revised Program Schedule submitted to CEC on September 17, 2003. "Actual" Dates include both the draft report (DR) date (above) and final report (FR) submittal dates (below), where appropriate.

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 1.1.10 Prepare Prioritized List of Projects for PV and Biogas Systems – This task started on schedule. Its completion has been 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 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, as well as to allow for incorporation of the Mini-Grid T&D impacts analysis and guidance of the

RPAC. These changes, however, are consistent with other aspects of the program, which needed to await incorporation of the findings of the Mini-Grid analysis.

**Overall Schedule for Project 1.1:**

Task Name	Duration	Start Date	End Date	2003				2004				2005			
				Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
<b>Project 1.1 - Program Planning and Analysis</b>	<b>510.93 days?</b>	<b>Wed 6/5/02</b>	<b>Wed 5/19/04</b>												
Task 1.1.1 Review Tech & Market Assessments	103 days	Wed 6/5/02	Thu 10/31/02												
Task 1.1.2a - Dev. DB of Agri. Facilities	368 days	Wed 6/19/02	Fri 11/14/03												
Task 1.1.2b - Agri Facilities GIS Inventory Rpt	368 days	Wed 6/19/02	Fri 11/14/03												
Task 1.1.3a - Landfill DB	97 days	Wed 6/19/02	Thu 10/31/02												
Task 1.1.3b - Landfill GIS Inventory Rpt.	97 days	Wed 6/19/02	Thu 10/31/02												
Task 1.1.4a - WWT DB	97 days	Wed 6/19/02	Thu 10/31/02												
Task 1.1.4b - WWT GIS Inventory Rpt.	97 days	Wed 6/19/02	Thu 10/31/02												
Task 1.1.5 - BIPV DB	133 days	Wed 8/14/02	Fri 2/14/03												
Task 1.1.6 T&D System DB	250 days	Fri 7/5/02	Thu 6/19/03												
Critical Program Review Meeting	21 days	Mon 12/1/03	Mon 12/29/03												
Task 1.1.7 - Market Potential Assessment	131 days	Sun 11/10/02	Fri 11/14/03												
Task 1.1.8 - Generation Profiles	158 days	Wed 12/11/02	Tue 9/16/03												
Task 1.1.9a - Power Flow Analysis Model	200 days	Mon 10/14/02	Fri 7/18/03												
Task 1.1.9b - Power Flow Analysis Report	253.25 days	Tue 11/5/02	Mon 12/1/03												
Task 1.1.10 - Prioritized List of Pilot Projects	120.7 days	Tue 12/3/02	Mon 12/29/03												
Task 1.1.11a Prepare Draft Rpt Outline	110 days	Fri 1/17/03	Thu 6/19/03												
Task 1.1.11b - Draft Report for Proj. 1.1	55 days	Sat 3/8/03	Thu 7/3/03												
Task 1.1.11c - Final Report for Proj. 1.1	23 days	Thu 11/27/03	Mon 12/29/03												
Critical Program Review Meeting	15 days	Wed 4/28/04	Wed 5/19/04												
Task 1.1.12 - Coordination with RPAC	44 days	Tue 12/30/03	Fri 2/27/04												
<b>Task 1.1.13 - M&amp;E Plans</b>	<b>384 days?</b>	<b>Mon 8/19/02</b>	<b>Thu 2/5/04</b>												
Task 1.1.13a - M&E Plans for Proj. 3.2	115 days	Mon 8/19/02	Fri 1/24/03												
Task 1.1.13b - M&E Plans for Overall Program	105 days?	Fri 9/12/03	Thu 2/5/04												

**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**

<b>Task Number</b>	<b>Budget</b>	<b>Invoiced To-Date</b>	<b>Fiscal Status *</b>
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	\$98,840.00	OT
1.1.7	\$ 96,896.00	\$0	OB
1.1.8	\$ 15,363.00	\$0	OT
1.1.9	\$114,174.00	\$37,040.00	OT
1.1.10	\$172,132.00	\$0	OT
1.1.11a	\$ 18,540.00	\$0	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)