

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

PROJECT 3.1 – DAIRY WASTE TO ENERGY PROJECT

REPORT PREPARED BY: COMMONWEALTH ENERGY TEAM

July 2003

Contractor Project Director:	Patrick Lilly (360) 906-0616
Contractor Project Manager:	Bill Kitto (503) 235-5022
Commission Project Manager:	Zhiqin Zhang (916) 654-4063

What we planned to accomplish this period:

Activities in July were to focus on finalizing the draft Task 3.1.1(a) 1 technical memorandum report comparing the performance and economics of the existing digesters at RP-1 and RP-5 to other plug flow and complete mix digestion projects. It was anticipated that comments received from the Commission on this draft report would have been responded to and incorporated into the final report.

Other activities in July were to have included further development and the finalization of the testing protocols that will implement some of the suggested projects identified in Project 1.1. This was to include co-digestion, improved pretreatment, and several other types of projects. It should be noted that the findings related to which projects should be recommended in the Task 1.1.10 prioritization and Project 1.1 Final Reports would influence future work on this project.. It was anticipated that the preliminary findings for Project 1.1 were to have been available in June. Because that informational project was not available by the end of June, additional effort on Project 3.1 scheduled for June and July were to be conducted in July and August. Overall, efforts in July were to continue in defining an approach, which facilitates incorporation of the results of the comparative analysis of technologies (i.e., plug flow v. complete mix systems) and the Mini-Grid analysis into the process and site selection activities. CH₂ planned to continue conducting such activities as preliminary information became available, while recognizing that the tasks in 3.1 cannot be fully completed until the results from the latter tasks in Project 1.1 are finalized.

What we actually accomplished this period:

Task 3.1.1: Assess, Evaluate and Select Animal Waste to Energy Technology

- Efforts on this task continued in July. These efforts focused on assessing different technologies that are applicable to dairy cluster projects with the intent of identifying those that could be evaluated at projects in the Chino Basin. Data developed as part of the digester comparison study were assessed to facilitate the evaluation of these processes to facilities in the Chino Basin. As noted in previous reports, information provided by NIRAS from Denmark on the European experience was particularly helpful.
- Comments were received from the Energy Commission on the Digester Comparison Report submitted previously and efforts were undertaken to respond to them. In addition, comments were received from Kurt Roos of the US EPA Ag Star Program. These comments focused primarily on the quality of data available from the different surveyed projects.

Task 3.1.3. Develop Bench Scale and Other Test Plans and Protocols

- Efforts continued in July on the protocols for testing different processes for optimizing biogas processes at existing dairy cluster projects at RP-1 and RP-5. These protocols will enable bench and pilot scale tests to occur during design activities, which will help ensure focused and successful projects. These test plans were compiled into a draft report, thereby enabling reviewers to assess the technologies and their potential benefits to the centralized dairy facilities in the Chino Basin and elsewhere in California.

How we are doing compared to our plan:

As indicated above, delays in the completion of biogas resource, data acquisition and submittal of associated reports under Project 1.1 have impacted the Project 3.1 schedule. Work on the project continues, and the CE team does not anticipate that the delays will adversely affect the revised schedule or budget.

Significant problems or changes:

On Project 3.1, Dairy Waste to Energy, it is clear that a key element on the project is to define and quantify the environmental and economic benefits of the dairy waste to energy project. This is particularly true for centralized dairy projects, which may offer the best potential for achieving environmental benefits for a range of dairy digestion projects. The Commonwealth Team is working with IEUA and is seeking to present cost information for the dairy waste to energy project at RP-5 in a form that can be appropriately used to present the relative benefits of on-farm and centralized facilities in Europe and North America. They

are also seeking to identify an approach to monetize the environmental benefits to help the overall economic performance of the project. Related to this, the Chino Basin is very well suited for centralized dairy digestion projects. Efforts are needed, however, to see that such systems are optimized as such systems will face increasing economic and environmental pressures as they are developed or expanded.

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.

What we expect to accomplish during the next period:

Activities in August will focus on incorporating comments received from the Commission and Kurt Roos on the Digester Comparison Draft Report. This report compares the existing digesters at RP-1 and RP-5 to other plug flow and complete mix digestion projects. In addition, it is anticipated that the Test Plans and Protocols Draft Report will be completed and ready for review. All of this information will be made available for use in completing the Prioritization Report and other reports for Project 1.1. Emphasis will be placed on co-digestion, improved pretreatment and, several other projects well suited to centralized dairy projects in the Chino Basin and elsewhere in California.

Overall, efforts will continue in defining an approach, which facilitates incorporation of the results of the comparative analysis of technologies (plug flow v. complete mix) and the Mini-Grid analysis into the process selection activities. We will continue to conduct such activities as preliminary information becomes available, but the tasks in 3.1 cannot be fully completed until the results from Project 1.1 are finalized.

Status of Milestones and Deliverables:

Table 1 below summarizes the status of Project 3.1 task deliverables as of the end of the current reporting period.

Table 1: Summary of Project Status and Deliverables – Project 3.1

Task No.	Description	Start Date		Due Date		Status (%)
		Planned	Actual	Planned	Actual	
3.1.1a(1)	Technical Memorandum Comparing Plug Flow and Complete-Mix Digestion Performance & Economics	03/17/03	04/04/03	06/27/03	06/27/03	90%
3.1.1a (2)	Preliminary Draft Process Recommendation Report	02/05/03	04/04/03	10/25/03		15%
3.1.1a (3)	Draft Processes Recommendations Report	02/05/03		11/18/03		
3.1.1.b	Assess Evaluate, and Select Animal Waste to Energy Technology	02/05/03		01/17/04		
3.1.2	Site Selection	02/05/03		12/20/03		
3.1.3a	Test Plan and Protocols	03/17/03	04/04/03	09/10/03		80%
3.1.8	Coordinate with Renewables Project Advisory Committee	2/05/03		05/12/06		

Explanation of any Difference(s) in Schedule

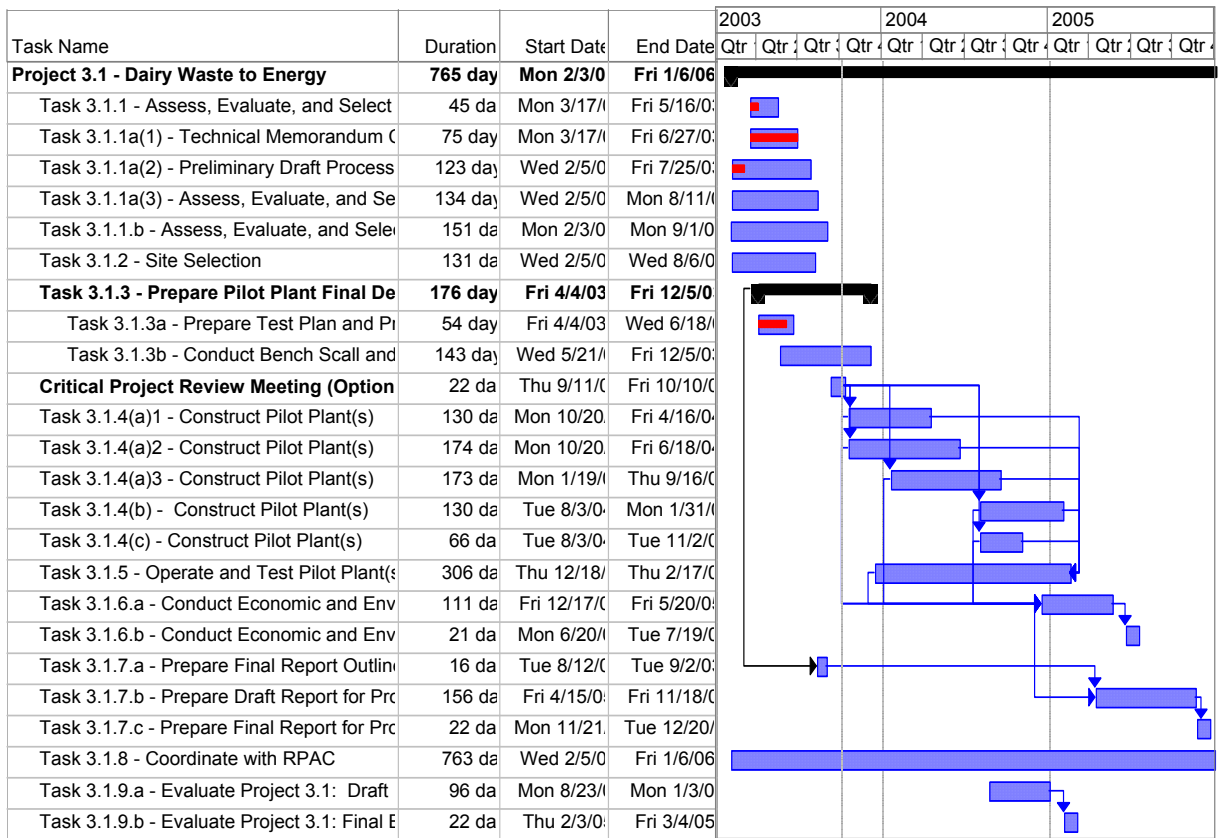
The following listing provides the explanation for the reported changes in the schedule at the project task/deliverable level.

Task 3.1.1.(a).1 – Technical Memorandum Comparing Plug Flow and Complete Mix Digestion and Economics – This report, initially planned to be submitted in mid-May was delayed. The primary cause of the delay was the length of time required to assemble the cost information for the RP-5 project so that it is in a form that it can be readily compared to the other digester projects. Comments received from reviewers will be factored in future studies and the delay will not affect the overall schedule.

Task 3.1.3.a – Test Plan and Protocols – This report builds on the finding of the digester comparison report submitted as a part of Task 3.1.1(a)1 described above. There is a lag time of two months between delivery of the digester comparison report and the delivery of this

report. Due to the delay of the digester comparison report, this task has been similarly delayed. Once the deliverable for Task 3.1.1(a)1 is completed, this task’s deliverable should be submitted approximately two weeks later. Thus, it is now expected that the Test Plan and Protocols report will be submitted in August. Since this test plan and protocol is the initial part of the design task, with more detailed design activities to be completed in the second half of the year, the delay in the submittal of this document should not affect the overall task or revised project schedule.

Overall Schedule for Project 3.1:



Overview of Fiscal Status:

Table 2 below summarizes the fiscal status of Project 3.1 by task as of the end of the current reporting period.

Table 2: Fiscal Status by Task – Project 3.1

Task Number	Budget	Invoiced To-Date	Fiscal Status *
3.1.1 a (1)	\$48,000	\$0	OT
3.1.1 a (2)	\$72,000	\$0	OT
3.1.1 a (3)	\$120,706	\$0	OT
3.1.1.b	\$240,706	\$0	OT
3.1.2	\$171,240	\$0	OT
3.1.3 a	\$61,000	\$0	OT
3.1.3 b	\$40,000		
3.1.3 c	\$200,177		
3.1.8	\$0	\$0	OT

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