

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

PROJECT 3.1 – DAIRY WASTE TO ENERGY PROJECT

REPORT PREPARED BY: COMMONWEALTH ENERGY TEAM

November 2003

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What we planned to accomplish this period:

Activities in November were to focus on continuing to respond to comments made at the RPAC and follow-up meetings. The primary activity to be undertaken in November was the completion of a plan that describes the implementation of this project in light of guidance received at these meetings. Other activities on this task will be limited until the Plan is reviewed with Commission staff. The CE Team will focus on finalizing previously submitted work, including completion of the Digester Comparison Report. The CE Team plans to use information that was provided in late September, as well data that become available in November to revise and finalize the report. In addition, it is anticipated that the Test Plans and Protocols Report will also be revised to focus on activities that can be undertaken at locations other than the existing plug flow digester project at RP-5.

What we actually accomplished this period:

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

- Efforts on this task in November were limited and focused on developing the revised implementation plan for Project 3.1. A draft of this plan was prepared and submitted in late November, which outlined projects developing at locations other than RP-5. Key elements of the plan included: 1) monitoring (not developing) new projects, at RP-5, 2) identifying the environmental benefits of centralized cattle manure digestion projects, 3) identifying opportunities for other centralized anaerobic digestion projects in California, 4) developing demonstration projects that will improve key processes necessary if future centralized dairy projects are to be economical, and 5) assembling these findings so they can be applied at future centralized projects in the Chino Basin and elsewhere in California.

- Further work was also undertaken responding to comments on the draft Digester Comparison Report. Responses were compiled and changes to the report were made in response to the Commission's comments and the report was finalized.
- In conjunction with completing the plan for Project 3.1, additional activity was conducted to accelerate the environmental analysis under Task 3.1.6. Consultations were held with IEUA staff and a detailed proposal developed for undertaking this work. This proposal was included as an attachment to the plan to accelerate Project 3.1.6. Efforts were also begun to ensure that the PIER work being proposed will be integrated with future efforts IEUA plans to initiate in conjunction with efforts it is proposing to the USDA. Overall, the PIER program work is intended to build on work conducted previously and establish a sound methodology for addressing environmental benefits of centralized anaerobic digestion projects.

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

- Revisions made to the prioritization list developed under Task 1.1.10 in order to focus future PIER projects at locations other than the existing RP-5 plug flow project, led to preliminary modification of that element of the Test Plan and Protocol Report. In November, the Test Plan and Protocol Report was further modified to be applicable to RP-1, emphasizing those projects that will advance the development of centralized digesters that can take advantage of existing infrastructure and expertise such as is available at POTWs. Finalization of the test plans, taking into account necessary guidelines is anticipated after feedback on the revised Project 3.1 plan has been received.

How we are doing compared to our plan:

As indicated previously, delays in the completion and submittal of biogas and T&D impacts related reports in Project 1.1 have impacted the Project 3.1 schedule.

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 CE Team is working with IEUA and is seeking to present cost information for centralized dairy waste to energy projects in a form that can be appropriately used to present the relative benefits of on-farm and centralized facilities in Europe and North America. Additionally, we are also seeking to identify an approach to quantify the environmental benefits to help the overall economic performance of the project. Related to this, the CE Team plans to submit a proposal in December that advances work on Project 3.1.6, by quantifying some of the environmental benefits of centralized anaerobic digesters. This will be an important

component of the program, as efforts are needed to insure that future centralized systems are optimized in order to see that economic and environmental benefits are maximized.

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:

Project 3.1 activities in December will continue to focus on responding to comments made at the RPAC and follow-up meetings. The primary activity in December will be the response to feedback on the Project 3.1 Implementation Plan, prepared in light of guidance received at the RPAC and related meetings. Other activities on this task will be limited until the Plan is reviewed with Commission staff. Additionally, the CE Team will focus on finalizing previously submitted work, including the *Test Plan and Protocols Report* and will continue working with Commonwealth to link these projects into its business plan under the PIER program.

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	01/24/02	04/04/03	06/27/03	06/27/03	95%
3.1.1a (2)	Preliminary Draft Process Recommendation Report	01/24/02	04/04/03	10/25/03		20%
3.1.1a (3)	Draft Processes Recommendations Report	01/24/02		11/18/03		
3.1.1.b	Assess Evaluate, and Select Animal Waste to Energy Technology	01/24/02		01/17/04		35%
3.1.2	Site Selection	01/24/02		12/20/03		
3.1.3a	Test Plan and Protocols	03/25/02	04/04/03	09/10/03		90%
3.1.8	Coordinate with RPAC/TAC	01/24/02	05/27/02	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 plug flow digester project in a form such that it can be readily compared to other digester projects. Comments received from the Commission and Kurt Roos were responded to and the document was finalized. The information developed as a part of this report has been used on other related tasks and the delay in finalizing the report has not affected the overall Program 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. Thus, the initial submittal on this report was made without the benefit of a fully complete digester comparison report. The initial Test Plan and Protocols report also was based on plans to conduct tests at RP-5. Based on comments received from the Commission, no PIER-funded digester projects are planned at RP-5. The Test Plan and Protocol Report has been revised to reflect that situation. In addition, the report will be revised to be consistent with the Commission Test Plan guidelines and the revised plan for Project 3.1 that is being prepared as a follow up to discussions held in conjunction with the RPAC meeting.

Once the Commission has accepted the revised implementation plan for Project 3.1, the remaining tasks on Project 3.1 can be completed. The plan, which identifies a number of projects that are to be implemented, will provide a sound platform for future centralized dairy projects. The overall schedule for Project 3.1 will be revised once the plan is approved and further work on other tasks can begin.

Overall Schedule for Project 3.1:

Task Name	Duration	Start Date	End Date	2003				2004				2005			
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Project 3.1 - Dairy Waste to Energy	853 days	Wed 2/5/03	Fri 5/12/06												
Task 3.1.1 - Assess, Evaluate, and Select Animal Wa	45 day	Mon 3/17/03	Fri 5/16/03												
Task 3.1.1a(1) - Technical Memorandum Comparing f	75 days	Mon 3/17/03	Fri 6/27/03												
Task 3.1.1a(2) - Preliminary Draft Process Recommer	188 days	Wed 2/5/03	Fri 10/24/03												
Task 3.1.1a(3) - Assess, Evaluate, and Select Animal	205 days	Wed 2/5/03	Tue 11/18/03												
Task 3.1.1.b - Assess, Evaluate, and Select Animal W	248 day	Wed 2/5/03	Fri 1/16/04												
Task 3.1.2 - Site Selection	228 day	Wed 2/5/03	Fri 12/19/03												
Task 3.1.3 - Prepare Pilot Plant Final Design & Dai	190 days	Mon 3/17/03	Fri 12/5/03												
Task 3.1.3a - Prepare Test Plan and Protocols	128 days	Mon 3/17/03	Wed 9/10/03												
Task 3.1.3b - Conduct Bench Scall and Other Tes	105 days	Mon 7/14/03	Fri 12/5/03												
Critical Project Review Meeting (Optional)	29 day	Tue 12/30/03	Fri 2/6/04												
Task 3.1.4(a)1 - Construct Pilot Plant(s)	131 day	Thu 5/13/04	Thu 11/11/04												
Task 3.1.4(a)2 - Construct Pilot Plant(s)	174 day	Thu 5/13/04	Tue 1/11/05												
Task 3.1.4(a)3 - Construct Pilot Plant(s)	174 day	Wed 8/11/04	Mon 4/11/05												
Task 3.1.4(b) - Construct Pilot Plant(s)	130 day	Mon 2/28/05	Fri 8/26/05												
Task 3.1.4(c) - Construct Pilot Plant(s)	66 day	Mon 2/28/05	Mon 5/30/05												
Task 3.1.5 - Operate and Test Pilot Plant(s)	306 day	Mon 7/12/05	Mon 9/12/06												
Task 3.1.6.a - Conduct Economic and Environmental .	111 day	Tue 7/12/05	Tue 12/13/05												
Task 3.1.6.b - Conduct Economic and Environmental .	22 day	Thu 1/12/06	Fri 2/10/06												
Task 3.1.7.a - Prepare Final Report Outline for Projec	17 day	Fri 11/28/03	Mon 12/22/03												
Task 3.1.7.b - Prepare Draft Report for Project 3.1	47 day	Wed 11/9/03	Thu 1/12/04												
Task 3.1.7.c - Prepare Final Report for Project 3.1	21 day	Mon 2/13/04	Mon 3/13/04												
Task 3.1.8 - Coordinate with RPAC	853 day	Wed 2/5/03	Fri 5/12/06												
Task 3.1.9.a - Evaluate Project 3.1: Draft Evaluation I	96 day	Fri 10/14/05	Fri 2/24/06												
Task 3.1.9.b - Evaluate Project 3.1: Final Evaluation F	22 day	Tue 3/28/06	Wed 4/26/06												

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	\$301,177	\$0	OT
3.1.8	\$33,919	\$0	OT

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