

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

PROJECT 2.2 – ENHANCED ENERGY RECOVERY THROUGH OPTIMIZATION OF ANAEROBIC DIGESTION AND MICROTURBINES PROJECT

REPORT PREPARED BY: COMMONWEALTH ENERGY TEAM

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What we planned to accomplish this period:

Information collection and analysis activities were to continue in relation to the implementation of technologies identified in the Process Selection Report. Activity is expected to continue related to increased energy production through enhanced anaerobic digestion and biogas production. Additionally, the CE team will continue to coordinate activity with the project hosts at IEUA and Riverside County. Efforts on the Site Selection and Test Plan were to focus on integrating 1) two ultrasound systems into the Riverside plant and 2) on gas drying, H₂S removal and siloxane removal systems into the IEUA RP-1 site. The approach of including a second ultrasound technology, instead of a thermal hydrolysis technology will provide greater applicability to other facilities in California and is in accordance with guidance received from the RPAC.

What we actually accomplished this period:

Task 2.2.1 Process Selection:

- The primary focus was on the draft report submitted previously and the guidance received at the RPAC meeting, to focus on the development of two ultrasound technologies instead of one ultrasound and one thermal hydrolysis technology. CH₂ continued to review and analyze technologies presented in the process selection report. This work is being done in support of the subsequent site selection and design tasks. Most notably, vendors were contacted and plans were established in order to provide the latest ultrasound technologies to the projects planned at Riverside County. The ultrasound vendors provided detailed information about their technologies and were heavily involved in the planning process to ensure that the transition from process selection, to site selection, to design, and to installation, will go smoothly.

- Discussions were held with Riverside County to discuss how these technologies would be integrated with their facilities. In general, the Project Team assembled detailed information about the technologies presented in the Process Selection Report and used that information to transition to more detailed discussions related to Site Selection. This was done so that detailed planning could be undertaken with Riverside County prior to the finalization of the Site Selection Report and development of the Site Selection Test Plan for the enhanced anaerobic digestion projects.
- Project planning was conducted in relation to the gas cleaning for microturbines task. Technologies presented in the process location report were evaluated in terms of how they could best be deployed at the RP-1 plant. This included collecting information on the gas quality and quantity produced at the plant, as well as the additional gas that is expected to be produced at RP-1 under Project 3.1. Overall, there are a number of locations where gas cleaning system elements could be deployed at RP-1. Technologies presented in the Process Selection Report were evaluated in terms of where they could be most efficiently deployed and tested. Site visits at RP-1 were also conducted to facilitate the more detailed engineering tasks later in the process.
- Several teleconferences and meetings were held with project host staff at RP-1 to better understand the existing gas handling system and to review how the new systems could be integrated into the project.
- As part of the ongoing effort to optimally implement Project 2.2, more detailed process evaluation activity occurred in November. This effort will facilitate a more efficient completion of the site selection, test plan and design efforts for both the enhanced anaerobic digestion and gas cleaning for microturbines portions of the projects. Efforts are focused on working closely with vendors in the planning phase thereby streamlining the subsequent site selection and design tasks. It also reduces risk of incompatibilities between the technology vendors, products, and the requirements of the sites where they are to be deployed.

Task 2.2.2. Site Selection and Test Plan

- Efforts on this task were undertaken by the CE Team and the ultrasound vendors in conjunction with applying the information developed in the process selection phase (see discussion in previous section) to the site selection and test plan development activities. As noted above, efforts were undertaken with vendors and the hosts to ensure that the processes to be deployed at the proposed host sites are compatible with the existing systems. Additional discussions were held with project hosts to ensure that siting preferences were considered. Similarly, anticipated project protocols were reviewed with the technology vendors to ensure that the systems to be installed were appropriate for meeting the project objectives of increased gas production, while ensuring the treatment processes are maintained or improved. Detailed planning and coordination was undertaken with the vendors so that the project could be delivered effectively, in accordance with the needs of the host facilities.

How we are doing compared to our plan:

The approach of evaluating two ultrasound technologies, instead of one ultrasound and one thermal hydrolysis technology, at the Riverside treatment plant will make the findings more relevant to the California market and expand the knowledge base in the rapidly evolving field of ultrasound technology. This approach will require that additional ultrasound vendors be contacted and brought into the program. When this task is completed, it is anticipated that findings will document how the use of ultrasound technology can help increase gas production and improve the treatment process. This modified focus for the Program is requiring that additional consultation with vendors be undertaken. As part of this consultation we are seeking to streamline the site selection and design tasks by getting the technology vendors involved in the project planning. This approach will enable future resources to be focused on project implementation rather than on further evaluations and design activities, but it also delays finalization of the Site Selection and Test Plan Report.

Overall, the goal is to include enough detail in the Site Selection and Test Plan in order to present it to the Technical Advisory Committee. This will ensure that the TAC has the appropriate information to determine and provide feedback on the Program's direction. It will also be of sufficient detail to allow the vendors to begin fabrication on the long lead-time equipment to be used on this project. The Site Selection and Test Plan Report will also outline how all of the project elements will tie together within the revised implementation schedule for Project 2.2.

Significant problems or changes:

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 our revised project schedule and within budget.

What we expect to accomplish during the next period:

Information collection and analysis activities will continue in relation to the implementation of technologies identified in the Process Selection Report. Activity related to enhanced energy production, gas cleaning and advanced energy recovery, will continue as well, and additional coordination activity with the project hosts at IEUA and Riverside County will be on-going. Efforts on the Site Selection and Test Plan will focus on integrating two ultrasound systems into the Riverside plant and on gas drying, H₂S removal and siloxane removal systems into the RP-1 site. The CE Team will continue to coordinate with vendors to ensure that the processes evaluated can and will be smoothly implemented into the design and construction phases.

Status of Milestones and Deliverables:

Table 1 below summarizes the status of Project 2.2 task deliverables as of the end of the current reporting period.

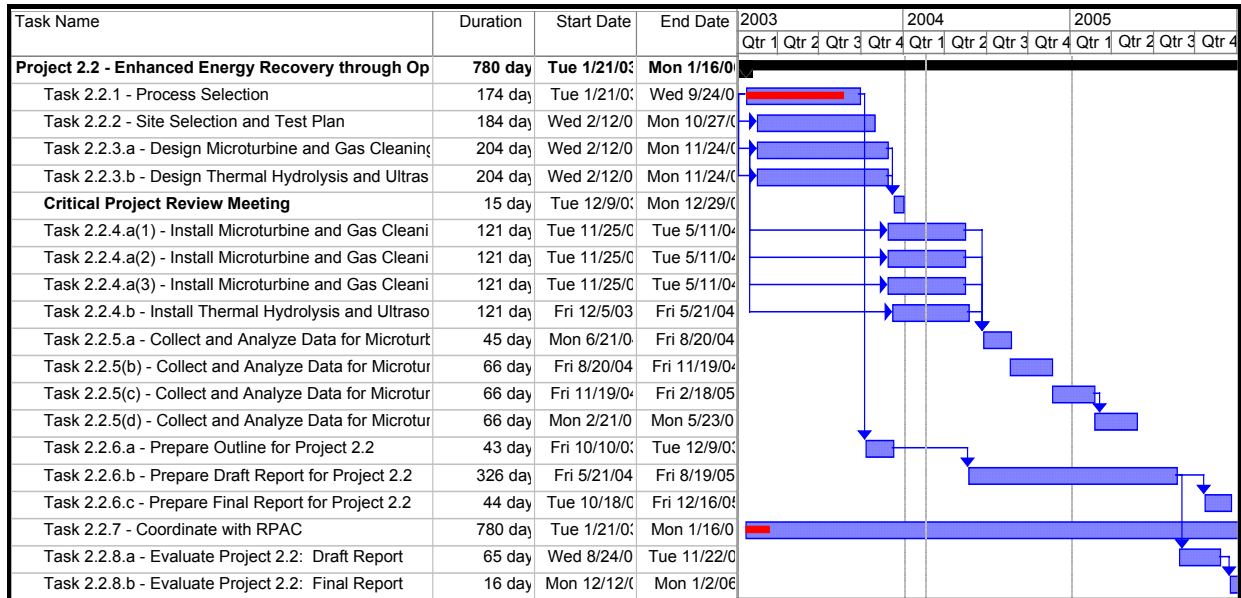
Table 1: Summary of Project Status and Deliverables – Project 2.2

Task No.	Description	Start Date		Due Date		Status (%)
		Planned	Actual	Planned	Actual	
2.2.1	Process Selection	01/24/02	01/24/03	09/04/03		85%
2.2.2	Site Selection and Test Plan	02/15/02		10/26/03		
2.2.3.a	Design Microturbine and Gas Cleaning System	02/15/02		11/24/03		
2.2.3.b	Design Thermal Hydrolysis and Ultrasound System	02/15/02		11/24/03		
2.2.7	Coordinate with RPAC	01/24/02		01/16/06		

Explanation of any Difference(s) in Schedule

Task 2.2.2 – Site Selection and Test Plan – The findings of the Process Selection Report identified the technologies that are to be used at both the Riverside plant for enhanced anaerobic digestion and at IEUA’s RP-1 facility for gas cleaning. As noted previously, additional coordination activities with vendors are required. Efforts are being undertaken to streamline the site selection and test plan and design processes by conducting more detailed coordination with the vendors on their technologies. This approach will shorten the time needed to secure the long lead-time equipment items. It will also improve the likelihood that demonstration pilot programs can be implemented most efficiently, but will delay the completion of the site selection and design tasks.

Overall Schedule for Project 2.2:



Overview of Fiscal Status:

Table 2 below summarizes the fiscal status of Project 2.2 by task as of the end of the current reporting period.

Table 2: Fiscal Status by Task – Project 2.2

Task Number	Budget	Invoiced To-Date	Fiscal Status *
2.2.1	\$236,563	\$0	OT
2.2.2	\$182,543	\$0	OT
2.2.3.a	\$242,995	\$0	OT
2.2.3.b	\$215,842	\$0	OT
2.2.7	\$22,557	\$0	OT

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