

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:

Work was initiated in late January for this Project, as information to be collection began on the processes that are to be analyzed as a part of the Process Selection Task. As the main body of work was minimal, no January Monthly Status Report was submitted.

A formal project kick-off meeting will be held in late February.

What we actually accomplished this period:

Task 2.2.1 Process Selection:

Information continues to be collected on different processes that are being analyzed as part of this task. Using data assembled during the completion of the Sewage Treatment Database and Inventory Report as a starting point, both additional and more detailed information is being collected to better define and analyze the technologies considered under this Task. Processes that are being considered include the 1) thermal hydrolysis and 2) ultrasound processes. Information from vendors involved in developing and monitoring both of these processes is being solicited and received. This information includes cost and technical material as well as information on the availability of units for the pilot projects.

In addition to these vendor contacts, firms with expertise in biogas cleaning were also contacted. Ingersoll-Rand, which has recently developed a new fuel conditioning module for its micro-turbine, as well as firms with gas drying, H₂S removal and siloxane removal were contacted. This information is being assembled for use in the process selection report. Work on the process selection report is proceeding although the fact that the project recommended for funding will not be identified until after the Task 1.1.10 Prioritization and Project 1.1 draft reports are submitted in May and June raises questions about the prudence of

completing the process selection report in April or early May. At this point, work is proceeding, but this schedule issue will be further evaluated as work on this task proceeds.

The kick-off meeting for Project 2.2 was also planned in February and conducted on February 28th in Sacramento. The work scope elements as well as an overview of the findings of the Planning and Analysis Project that affect Project 2.2 were presented. Topics associated with potential processes to be employed to increase biogas production (e.g., thermal hydrolysis and ultrasound), gas cleaning (e.g., gas blending and Ingersoll-Rand fuel processing module) and advanced energy generation (organic rankine as a bottoming cycle) were presented by CH₂. The overall approach to the Project was also presented and discussed with attendees.

How we are doing compared to our plan:

Work is primarily proceeding as anticipated. However, as stated above, the uncertainty of the specific project components that may be recommended for funding, may push the deliverable due date for the Process Selection Report back two months.

Significant problems or changes:

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

What we expect to accomplish during the next period:

Information collection and analysis activities will continue as related to the process selection. Activity as related to enhanced energy production, gas cleaning and advanced energy recovery will continue. Communications with technology developers for the technologies under consideration will also continue.

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	01/21/03		04/12/03		25%
2.2.2	Site Selection and Test Plan	02/12/03		07/28/03		
2.2.3.a	Design Microturbine and Gas Cleaning System	02/12/03		09/25/03		
2.2.3.b	Design Thermal Hydrolysis and Ultrasound System	02/12/03		09/25/03		
2.2.7	Coordinate with RPAC	01/21/03		10/18/05		

Explanation of any Difference(s) in Schedule

Work is proceeding as anticipated, however it is possible that Task 2.2.1’s deliverable date may be revised.

Overall Schedule for Project 2.2:

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 2.2 - Enhanced Energy Recovery through Optimization	715 days	Wed 6/19/02	Wed 3/16/05	\$0.00												
Task 2.2.1 - Process Selection	58 days	Fri 1/24/03	Tue 4/15/03	\$236,563.00												
Task 2.2.2 - Site Selection and Test Plan	119 days	Fri 1/24/03	Wed 7/9/03	\$182,543.00												
Task 2.2.3.a - Design Microturbine and Gas Cleaning System	161 days	Fri 1/24/03	Fri 9/5/03	\$242,995.00												
Task 2.2.3.b - Design Thermal Hydrolysis and Ultrasound System	161 days	Fri 1/24/03	Fri 9/5/03	\$215,842.00												
Critical Project Review Meeting	14 days	Mon 9/8/03	Thu 9/25/03	\$22,557.00												
Task 2.2.4.a(1) - Install Microturbine and Gas Cleaning System	121 days	Fri 1/24/03	Fri 7/11/03	\$292,430.00												
Task 2.2.4.a(2) - Install Microturbine and Gas Cleaning System	121 days	Fri 1/24/03	Fri 7/11/03	\$30,000.00												
Task 2.2.4.a(3) - Install Microturbine and Gas Cleaning System	121 days	Fri 1/24/03	Fri 7/11/03	\$0.00												
Task 2.2.4.b - Install Thermal Hydrolysis and Ultrasound System	120 days	Mon 2/3/03	Fri 7/18/03	\$229,585.00												
Task 2.2.5.a - Collect and Analyze Data for Microturbine and Gas Cleaning System	44 days	Tue 8/19/03	Fri 10/17/03	\$87,073.00												
Task 2.2.5(b) - Collect and Analyze Data for Microturbine and Gas Cleaning System	65 days	Mon 10/20/03	Fri 1/16/04	\$87,073.00												
Task 2.2.5(c) - Collect and Analyze Data for Microturbine and Gas Cleaning System	65 days	Mon 1/19/04	Mon 4/19/04	\$87,073.00												
Task 2.2.5(d) - Collect and Analyze Data for Microturbine and Gas Cleaning System	66 days	Mon 4/19/04	Mon 7/19/04	\$87,073.00												
Task 2.2.6.a - Prepare Outline for Project 2.2	44 days	Wed 4/16/03	Mon 6/16/03	\$25,404.00												
Task 2.2.6.b - Prepare Draft Report for Project 2.2	325 days	Mon 7/21/03	Fri 10/15/04	\$190,528.00												
Task 2.2.6.c - Prepare Final Report for Project 2.2	42 days	Thu 12/16/04	Mon 2/14/05	\$38,105.00												
Task 2.2.7 - Coordinate with RPAC	715 days	Wed 6/19/02	Wed 3/16/05	\$0.00												
Task 2.2.8.a - Evaluate Project 2.2: Draft Report	64 days	Fri 10/22/04	Thu 1/20/05	\$79,117.00												
Task 2.2.8.b - Evaluate Project 2.2: Final Report	14 days	Wed 2/9/05	Tue 3/1/05	\$19,779.00												

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 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	\$0	\$0	OT

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