



ACEP
Alaska Center for Energy and Power

PROJECT PROGRESS REPORT

PREPARED FOR THE DENALI COMMISSION BY THE
ALASKA CENTER FOR ENERGY AND POWER

PROJECT TITLE: Ground Source Heat Pump Assessment

COVERING PERIOD: 1st Quarter 2011

DATE OF REPORT: April 15th, 2011

GRANT RECIPIENT: Alaska Center for Energy and Power
University of Alaska Fairbanks
451 Duckering Building
Fairbanks AK 99775-5880

AWARD AMOUNT: \$90,000

PROJECT PARTNERS: Cold Climate Housing Research Center
Alaska Energy Authority
National Renewable Energy Center

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PROJECT OBJECTIVE: The Alaska Center for Energy and Power (ACEP) and the Cold Climate Housing Research Center (CCHRC) shall work in cooperation with the Alaska Energy Authority (AEA) and National Renewable Energy Laboratory (NREL) to compile and synthesize existing information, identify gaps in knowledge that act as barriers to implementation, and examine the economics associated with applying Ground Source Heat Pumps (GSHP) in Alaska.

SUMMARY

As of this report, all project activities are near completion. Task 2 (project database) and Task 3 (economic analysis) have been completed, and Task 1 (report writing) is complete except for technical editing and peer review. Work this quarter focused primarily on Task 1 activities. Work next quarter will focus on finalizing technical editing and peer review of the report.

The project is on budget but behind schedule according to internal timelines. The project is on schedule per award conditions.

BUDGET

As outlined in the award, the project budget is \$90,000 and includes funding for ACEP in the amount of \$59,876, as well as a sub award to CCHRC in the amount of \$30,124.

The ACEP budget includes \$33,495 for direct costs (personnel, benefits, travel, and publication materials) as well as \$26,381 in indirect costs, with time budgeted for overall project management, coordination, Task Two and Three activities, and Task One deliverables.

The CCHRC budget includes \$22,393 for personnel and \$1,050 for supplies, with time budgeted for Task One deliverables, project management, and coordination. NREL and AEA will contribute resources, project advice and feedback, and general professional assistance, as this topic is fundamental to their programs and missions. No specific match amount has been quantified.

The project is currently on budget, with no expected overages.

TIMELINE

As identified in the award, the performance period of this project is July 1st, 2010 through June 30th, 2011. As stated in the award proposal, however, it was anticipated that the project would be completed within approximately 6 months from the date of issue of the award.

The original planned delivery date for a final version was February 28th, 2011. The project team has had several setbacks due to illness, as well as detailed comment from the first report draft that required in-depth revision and editing. As such, the final date for delivery of a report to the Denali Commission has been pushed back to May 31st, 2011. With this regard, the project is behind internal scheduling, but it will not affect the overall timeline of the grant.

Task Two (database) and Task Three (economic analysis) activities have been completed this quarter. Task One (overall all report) activities have been mostly completed, with final technical editing and peer review remaining as the only outstanding activities.

SUB AWARD STATUS

The sub award document to CCHRC, for the amount of \$30,124 as identified in the award document, has been extended from March 31st to May 31st, to reflect the extension of the internal report deadline.

PROGRESS TO DATE

As of this reporting period, only Task 1 activities are ongoing, as Tasks 2 and 3 have been completed. The project team has been meeting on a daily basis as final report writing activities have been conducted.

On February 11, CCHRC joined ACEP in a presentation to the Southwest Alaska Municipal Conference (SWAMC) at their annual conference in Anchorage, Alaska. The presentation was by request of SWAMC given the high interest of this report in their communities. The presentation summarized the Statewide GSHP Assessment project goals and preliminary findings. There was a lot of publicity generated by this presentation for the report, and included NPR Talk of Alaska radio spots. ACEP and CCHRC expect that there will be much interest in the final report, once published, in May as potential and alternative methods of addressing high heating costs are a pressing need in the State.

Task One

During this time period, work has focused on putting together a completed report document, and revising this document. An initial draft was finished in February, but after extensive internal review, it was decided that a thorough revision was needed to meet the goals of the award and to ensure consistency and clarity. This revision took approximately 1 month to finish, and the final draft product has undergone further internal review, has been finalized, and has been submitted to technical editing.

Activities next quarter will focus on finalizing Task 1. Specifically, ACEP has submitted the draft report to a University technical editor, and is awaiting the final draft version (estimated to take two weeks). After technical editing is complete, the document will be released externally for peer review. This process is anticipated to take 3-4 weeks as ACEP is expecting detailed comment from various sources that will need to be integrated in to the report. Once finished, the report will be published for a May 31st submission date to the Commission.

Task Two

As of this quarterly report, work on the database has been completed. All known GSHP systems as well as installers, owners, designers, and manufacturers in the Alaskan GSHP industry have been identified, contacted, and included in the database. The database itself has been designed and filled in with project information. To address continual discovery of projects and project information, ACEP and CCHRC are planning on maintaining the database on their websites that will reflect current information. Finally, Major Findings and Recommendations have been distilled out of this database, in conjunction with other report content, and have been added to the final report.

Task Three

The economic analysis for this project has been completed. Activities this quarter focused on inputting remaining cost data and revising components of the analysis due to feedback from internal economists at both ACEP and CCHRC. In particular, several cost assumptions were revised to maintain consistency in economic comparison. In addition, the analysis for Bethel has been revised due to a recommendation to utilize other source material. Another focus this quarter has been integrating the economic analysis into the report content, and distilling findings and recommendations for the report conclusion.

Finally, two content items reported last quarter, (1) Case studies for several commercial scale projects, including the Juneau airport and pool projects and (2) Narrative analysis of key economic considerations for considering GSHP in retrofits, have been removed from the report or pared down significantly due to a lack of information and data, and an associated work load beyond the scope of this report. These two items remain a vital part to further assessing the viability of GSHPs in Alaska, and are detailed in the findings and recommendations.

ANTICIPATED MAJOR ACTIVITIES FOR NEXT QUARTER

Activities next quarter will focus on incorporating technical review edits, completing peer review activities, and final publication and delivery to the Denali Commission, expected to be by the end of May, 2011.

Peer review recipients will include ACEP and CCHRC staff not previously associated with the project, AEA staff, ISER, and various report contributors. In addition, NREL is independently contributing funding for a national expert to review the document and provide comment.

ACEP and CCHRC will be presenting on this report at ACEP's Community Energy Lecture Series on May 17th, 6-7:30 pm at the Blue Loon in Fairbanks, AK. This event will serve as a local publication kick-off for both ACEP and CCHRC.