(4) Closing the Gap: Getting Full Performance from Residential Central Air Conditioners
This two-year project includes the development of next-generation central air-conditioning performance ratings, development and demonstration of a central air conditioner for hot/humid climates, and HVAC contractor training.

Total project cost: $1,534,716
Funding request: $683,179
Project Lead: New York State Energy Research and Development Authority
Project Participants: Florida Solar Energy Center; Advanced Energy; Energy Center of Wisconsin, American Council for an Energy-Efficient Economy; CDH Energy; Wisconsin Energy Conservation Corporation, Lawrence Berkeley National Laboratory

Patents
None

Publications/Presentations
In Quarters 2 and 3, Wisconsin Energy Conservation Corporation prepared and released a draft write-up summarizing field test data on the operating characteristics of central air conditioners in Wisconsin and Minnesota.

Progress in Past Quarter and Current Status

Task 1 Improve central air conditioner performance ratings

Task 1.1 Review present standards and method of testing

Task 1.2 Field performance data review

Task 1.3 Develop population weighted temperature bin-hour distributions

Task 1.4 Preliminary proposed rating procedures

Task 1.5 Simulate benefits of alternative metrics for diverse climates

Task 1.6 Analysis and recommendations

(Status—ongoing) The Center had no activity in this area during the reporting period.

Task 2 Robust Feature Set for Residential Air Conditioners

Task 2.1 Develop trial specification sets

Task 2.2 Draft specification

Task 2.3 Consensus-building workshop

Task 2.4 Coordinate with manufacturers

(Status—ongoing) Task 2 will be primarily completed by other project partners (NYSERDA and its subcontractors). The Center had no activity in this area during the reporting period.

Task 3 Field Performance Data and Innovation

Task 3.1 Ratings and Field Performance

Task 3.2 Benefits of proper sizing

Task 3.3 Research using 2-stage systems

(Status—ongoing) The Center completed a minor amount of data cleaning and processing during the reporting period. The Center also provided background information for—and participated in—the DOE peer review in early February.

Task 4 Develop New Climate-Sensitive Air Conditioner Designs

Task 4.1 System Configuration: identification, simulation and cost-benefit analysis

Task 4.2 Prototype System: design, construction, laboratory and field testing

The Energy Center has no role in this task.

Task 5 Information Dissemination and HVAC Contractor Training

(Status—not started) The Center had no activity in this reporting period. The Center's portion of this task is scheduled to be completed later in the project.

Plans for Next Quarter

In the upcoming quarter (April-June, 2006), the Center will initiate the final round of data collection under Task 3.