ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG) - BETTER BUILDINGS NEIGHBORHOOD PROGRAM

Award Number: DE-EE 003574

BBNP Name: Greater Cincinnati Energy Alliance

Project Title: Home Performance with ENERGY STAR® and Better Buildings Performance

Name of Project Director/Principal Investigator:
Andy Holzhauser, CEO

Team Members:
Jeremy Faust, Strategic Business Development Director
Chris Jones, Residential Operations Director
Chris Meyer, Commercial Operations Director
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Table of Contents

Disclaimer

Executive Summary

The Greater Cincinnati Energy Alliance (Energy Alliance) is a nonprofit economic development agency dedicated to helping Greater Cincinnati and Northern Kentucky communities reduce energy consumption. The Energy Alliance has launched programs to educate homeowners, commercial property owners, and nonprofit organizations about energy efficiency opportunities they can use to drive energy use reductions and financial savings, while extending significant focus to creating/retaining jobs through these programs.

The mission of the Energy Alliance is based on the premise that investment in energy efficiency can lead to transformative economic development in a region. With support from seven municipalities, the Energy Alliance began operation in early 2010 and has been among the fastest growing nonprofit organizations in the Greater Cincinnati/Northern Kentucky area.

The Energy Alliance offers two programs endorsed by the Department of Energy: the Home Performance with ENERGY STAR® Program for homeowners and the Better Buildings Performance Program for commercial entities. Both programs couple expert guidance, project management, and education in energy efficiency best practices with incentives and innovative energy efficiency financing to help building owners effectively invest in the energy efficiency, comfort, health, longevity, and environmental impact of their residential or commercial buildings.

The Energy Alliance has raised over $23 million of public and private capital to build a robust market for energy efficiency investment. Of the $23 million, $17 million was a direct grant from the Department of Energy Better Buildings Neighborhood Program (BBNP). The organization's investments in energy efficiency projects in the residential and commercial sector have led to well over $50 million in direct economic activity and created over 375,000 hours of labor created or retained. In addition, over 250 workers have been trained through the Building Performance Training Center, a program that was developed and funded by the Energy Alliance and housed at Cincinnati State Technical and Community College. Nearly 100 residential and commercial contractors currently participate in the Energy Alliance's two major programs, which have together served over 2,800 residential and 100 commercial customers.

Additionally, the Energy Alliance established loan programs for homeowners, nonprofits and commercial businesses. The GC-HELP program was established to provide up to ten year low interest, unsecured loans to homeowners to cover the energy efficiency products they purchased through the Energy Alliance approved contractor base. To date the Energy Alliance has financed over $1 million in energy efficiency loans for homeowners, without any loans written off. The nonprofit business community is offered five year, fixed-interest rate loans through the Building Communities Loan Fund of $250,000. Additionally, the Energy Alliance has developed GC-PACE, a commercial financing tool that enables buildings owners to finance their energy upgrades through voluntary property assessments deploying low-interest extended-term capital from the bond market. The Energy Alliance and its partners are actively evaluating additional market-based financing solutions..

In recognition of the work that the Energy Alliance has done, it has received several awards over the last three years. The staff is proud to be acknowledged for the positive impact they have made in the Greater Cincinnati community over the last years.

Green Business Award presented by the Business Courier 2011
Finalist: Education Outreach – Nonprofit
Project: Community Outreach Campaign

Next Generation Leader Awards presented by Legacy 2011
Finalist: Community and Social Services
Honoree: Andy Holzhauser

GEO Green Energy Ohio Annual Recognition Awards 2011
Winner: Nonprofit of the Year
Project: Community Canvass
Finalist: Market Strategy - Nonprofit
Project: Reduced-cost energy assessments

Best Places to Work presented by the Business Courier 2012
Finalist

Green Business Award presented by the Business Courier 2012
Finalist: Nonprofit Product/Service
Project: Home Inspection Program

CDFA Excellence in Development Finance Awards 2012
Winner: CDFA Excellence in Energy Finance Award
Project: Building Performance Program

Cincinnati Chamber of Commerce Small Business Excellence Awards 2013
Winner: Nonprofit Organization of the Year (1-40 employees)

Final Technical Report

Business Model

The Greater Cincinnati Energy Alliance has transformed during the grant years to reflect the lines of business that best facilitate energy efficiency in the community: Home Performance, Building Performance, Residential Financing and Commercial Financing. Each program as well as the auxiliary projects will be discussed in detail under Program Design.

The initial focus, as with many BBNPgrantees, was on developing programs catered to the homeowners. There was a large emphasis on Marketing and Outreach. It is hard to envision that just four years ago, there was little understanding of energy efficiency and its impact on individuals and business in the Greater Cincinnati region. Thus, the original business model emphasized education, not only of homeowners, but of contractors and business and community leaders as well.

The overriding mission of the Energy Alliance has been to create a business model that would be sustainable beyond the grant in order to continue energy efficiency programs in the Greater Cincinnati community. It was soon realized that this would only be accomplished through an emphasis on the development of financing programs and by becoming the regional authority on driving clean energy investment. Additionally, the Energy Alliance has solidified its importance in the community by forging partnerships with local and national groups. This has not only enhanced the sustainability model, but also improved the business models of its local partners.

Programs

1. *Marketing and Outreach*: Community education has been a cornerstone of the Energy Alliance mission and it remains committed to educating residents and businesses about the value of energy efficiency in both the residential and commercial markets. Early on, the Energy Alliance recognized the importance of utilizing a variety of communication forms to connect with the community. A website was created in the early stages with links to educational information and to Energy Alliance contractors. Educational sessions were held at schools, churches and libraries with attendance exceeding 24,000 over a three year period. The Energy Alliance partnered with AmeriCorps in the summer of 2011 to provide door to door canvassing in neighborhoods throughout Greater Cincinnati. Over 11,000 homes were visited. Regular business outreach and core business meetings were held with contractors. Over 2,000 individuals attended these sessions. Several contests were held to create awareness of energy efficiency. The Energy Alliance partnered with local community events whenever possible to increase awareness. The Ambassador Program was established in the summer of 2012 whereby part-time staff attended local fairs and farmers markets to sign up homeowners for assessments. Traditional advertising media (e.g., radio, newspaper, TV) were also used. A complete suite of marketing materials was designed by the Energy Alliance staff for use by the contractors to enhance their own marketing and educational efforts. Contractors were able to easily access these materials through an online portal. Please refer to the Driving Demand Synopsis for additional marketing detail.

2. *Home Performance:* The Energy Alliance established a successful program for residential audits and retrofits under the Better Buildings Neighborhood Program (BBNP) deploying the Home Performance with Energy Star standard. The Energy Alliance offered energy assessments valued from $400-$500 to homeowners at a reduced rate. The contractor performing the assessment received an incentive of $150 to $200 to compensate for the reduced rate. Although the initial upgrade incentive was up to $4,200 per upgrade, it was gradually lowered to $500 as demand for the program increased among homeowners and contractors. In addition, it highlighted the importance of keeping incentive levels at a reasonable level.

   By the end of the grant, the Energy Alliance issued $375,457 in incentives for 3,120 assessments and $3,929,169 in incentives for 1,788 upgrades under the residential program. The average retrofit size was $10,473 with total homeowner and grant investment topping $18.7 million. BBNP provided $ 3,603,034 for the Home Performance Incentive Program.

   From the grant onset, the Energy Alliance realized the power of local partnerships to boost the Home Performance program. Kentucky Home Performance partnered with the Energy Alliance to provide Quality Assurance services and incentives in the Northern Kentucky market. The City of Forest Park, a municipality in northern Hamilton County, provided an additional 15% incentive toward insulation and air sealing projects to entice their homeowners to the program. To date, the City of Forest Park has provided $180,000 under the Home Performance program and plans on continuing the program with the Energy Alliance. Further, the City of Cincinnati has recently contracted with the Energy Alliance in the amount of $150,000 to continue a direct incentive program for city homeowners. Lastly, the Energy Alliance and its contractors also informed and helped customers secure rebates from local utilities and federal and state tax credits to further reduce their project costs.

3. *GC-HELP* is a financing program established for the homeowner market. The goal was to increase energy efficient upgrades through marketing, education, quality customer service and loans with less emphasis on the incentive. The loans are unsecured with a fixed rate and a term up to ten years.To date, the Energy Alliance has experienced no losses under the GC-HELP financing program. BBNP provided $1,375,000 for the residential loan program. Of this funding, $1 million has been directly utilized for residential retrofit loans to homeowners. The remaining $375,000 was established as a loan loss reserve against a $500,000 loan the Energy Alliance received from a private investor to expand the residential lending program. The loan loss reserve was critical in obtaining private investment in energy efficiency and marks the first such effort in the Greater Cincinnati community. Additionally, the Energy Alliance has partnered with AFC First, an energy-focused lender, to handle the processing and collections of the GC-HELP loans. GC-HELP aligns with the conforming loan standard established by the Warehouse for Energy Efficiency Lending (WHEEL) and will continue to follow and help advance the secondary market to scale private investment in this program.

4. *Better Buildings Performance Program*: The Energy Alliance established its commercial nonprofit program after the residential program. The program is based loosely on the residential program with a heavy emphasis on commercial energy audit standards. The nonprofits received a 15% incentive towards an energy

upgrade. Under BBNP, the Energy Alliance provided $85,900 in incentives for 21 commercial nonprofit ASHRAE level audits and $1,792,783 in incentives for 31 upgrade projects. These funds leveraged over $24 million in total commercial investment.

The Energy Alliance continues to seek new funding to keep this program viable. More than 600 nonprofits and other community organizations are based in the Greater Cincinnati area. Recognizing the strength of the bond between these organizations and their members, the Energy Alliance has recruited these organizations to connect and network with nonprofits across the region that could benefit from energy upgrades.

5. *Building Communities Loan Fund* was established to issue energy efficiency loans to the nonprofit market segment within the Energy Alliance service region. The revolving loan fund provides short term commercial loans between $5,000 and $50,000 at an interest rate between three and five percent for a term of two to five years to qualifying nonprofits. The $250,000 capital for this fund is provided by BBNP funds. The Energy Alliance has partnered with the Cincinnati Development Fund (CDF), who originates loans and services the portfolio. To date, two loans have been originated: one to an art museum and another to a church. Several more nonprofit projects are in the pipeline. This fund has given nonprofits that would not be able to obtain conventional funding the ability to upgrade their facilities into quality energy efficient buildings. The Energy Alliance has established a credit analysis system which mirrors the best practices of bank lending. The typical nonprofit borrower exhibits stable operations, good cash flow generation, positive balance sheet and income statement trends, average leverage for the industry, along with quality management and board participation. To date, there have been no defaults under the program.

6. *GC-PACE:* The Energy Alliance and the Port of Greater Cincinnati Development Authority have formed a partnership to develop a suite of energy-related economic development programs that will support energy efficiency and renewable energy projects for commercial and industrial properties throughout Hamilton County. GC-PACE (Property Assessed Clean Energy) is an economic development tool designed to assist commercial and industrial building owners to access affordable, long-term financing for clean energy improvements to their buildings. PACE allows building owners to finance efficiency and renewable energy improvements through a voluntary assessment on their property tax bill. The repayment obligation transfers automatically to the next owner if the property is sold. Capital is secured by a lien on the property, so long-term bond capital can be raised from the private sector. PACE programs create jobs in the local community, allow businesses to reinvest energy savings in operations, and enable communities to meet sustainability goals. The PACE financing mechanism provides strong credit that is attractive to private sector investors without government subsidies. To date, more than 30 states have authorized PACE.

   The partnership will allow businesses to access the latest tools to help plan and finance energy improvements. These programs will provide services throughout the entire project process from assessment and contracting to financing and project monitoring. With a broad array of project services, local businesses will have greater

opportunity to invest in energy efficiency improvements, driving down their operating costs, and freeing up capital for further reinvestment or expansion.

7. *Prime Contractor Program*: As an outgrowth of the residential Home Performance with Energy Star program, the Energy Alliance is developing its own program whereby it will serve as the Prime Contractor to homeowners seeking to install energy efficiency measures. The Energy Alliance believes this program will meet homeowner demand for a neutral third party to conduct the assessment and develop the work scope, while increasing private investment. The Energy Alliance will serve as a project manager and leverage its existing private sector contractor base to install the energy efficiency improvements selected by the homeowner.

8. *TAP/Equipment Loans – Contractor Financing:* Through the course of the grant, the Energy Alliance used BBNP funds to operate two loan programs for contractors. The first was the Equipment Lease Program whereby contractors could purchase the complete suite of home performance equipment through the Energy Alliance. The contractor repaid the lease over the course of 12 months, interest free. At the end of the lease, the contractor was able to purchase the equipment for one dollar. The Tuition Assistance Program (TAP) was the other contractor assistance program. TAP allowed contractors to take classes at a reduced rate which lowered the up-front costs associated with becoming BPI-certified through the Cincinnati State Technical and Community College (CSTCC) Workforce Development Program. A TAP-approved contractor could receive a 50% reduction in the cost of the class and have up to six months to repay the balance. The Energy Alliance set aside $240,000 for this program. These two programs were instrumental in bringing smaller contractors into the Residential Program. Twenty-two contractors utilized the TAP program for a total of $35,598. Thirteen equipment leases for nine contractors totaling $66,184 were issued.

9. *Contractor Loan Program:* The Energy Alliance plans to merge its current Equipment Lease Program and Tuition Assistance Program into a Contractor Loan Program at the conclusion of the BBNP grant. The new program will be a loan program and will consist of two components. First, the Contractor Education Loan will be available to all companies appearing on the Energy Alliance's list of participating contractors. The goal of the program is to encourage contractors to further their education by reducing up-front costs associated with course fees. Eligible courses would lead to certification in a home performance related discipline (e.g., BPI or IGSHPA). Classes must be taken through CSTCC or another approved training provider. Contractors would have six months to repay the loan. Second, the Contractor Equipment Loan would be available to all companies appearing on the Energy Alliance's list of participating contractors. The goal of the loan program is to provide contractors with a way to reduce the up-front costs associated with purchasing home performance equipment. The Energy Alliance would purchase the equipment on the contractor's behalf. The contractor would sign loan documentation outline the terms of the loan. Contractors would have six months to repay the loan..

Driving Demand Synopsis

To encourage citizens to make energy upgrades, the Energy Alliance undertook several efforts:

- Conducting community outreach events and door-to-door canvassing,
- Creating a comprehensive and easy-to-use website for residents to access a free home energy comparison report and sign up online for an energy assessment,
- Forging partnerships with local nonprofits, churches, and other civic organizations, and
- Developing relationships with area contractors.

The Energy Alliance conducted door-to-door canvassing to reach residents where they live. The Energy Alliance's marketing team worked to create a plan for canvassing by selecting neighborhoods based on specific criteria. To develop the plan, the marketing team reviewed results from an analysis performed by the University of Cincinnati Economics Center and American Council for an Energy-Efficiency Economy (ACEEE), and selected the best ranking zip codes in categories such as homeownership rate, foreclosure rate, income level, education completed, and home equity. The team also looked for areas that had a high concentration of existing upgrades completed and used local knowledge regarding who would be receptive to energy efficiency work. Finally, tablet computers were utilized to upload daily maps and track potential homeowner's responses for a quicker turn-around in messaging and processing data.

The Energy Alliance utilized an energy advisor to educate homeowners about energy efficiency and to address concerns. The energy advisor served as a resource for both homeowners and contractors and was able to manage projects to ensure that they reached completion. In 2012, the Energy Alliance launched an instant messaging function on its website that allowed homeowners to chat online with Energy Alliance staff.

The Energy Alliance recognized that the best way to drive demand was to get the local contractors that were in homes on a daily basis involved in the program. To that end, the Energy Alliance identified, trained and mentored local contractors who were interested in promoting the benefits of energy efficiency and saw it as a means to expand their business. Through collaborative work with a network of participating contractors, homeowners throughout Greater Cincinnati were made aware of and ultimately purchased energy efficiency products and services totaling almost $19M in value.

Sub-Grant

The Energy Alliance issued a sub-grant in the amount of $500,000 to Cincinnati State Technical and Community College (CSTCC) to provide the following services: (1) contractor screening, approval, certification and tracking; (2) maintenance of an approved contractor database, including contractor compliance, worker training, and certification for residential and commercial sectors; and (3) contractor quality assurance/quality control.

From 2011-2013, the Energy Alliance invested $500,000 to help create the Building Performance Training Center at CSTCC's Workforce Development Center. This centralized location provides the building performance contractor community with a venue to obtain initial and continuing education without leaving the Cincinnati area. The training center is supported by two important positions: the Workforce Assurance Manager is responsible for overseeing the center, contractor compliance, and contractor training; and the Quality Assurance Manager oversees on-site inspections and one-on-one consultation with the home energy assessors.

In 2011, the Energy Alliance held its first two-day introductory course for participating contractors—Energy Alliance 101—at the training center. By year's end, three Energy Alliance 101 courses were offered, with more than 50 contractors attending. In addition, there were five BPI-Building Analyst courses held to train and certify energy auditors currently participating in the Energy Alliance's Home Performance with ENERGY STAR® program.

To meet the anticipated demand created by the program, CSTCC increased the number of energy upgrade certification courses it offers. The school has already graduated several classes of students, many of whom were hired immediately by growing businesses.

A portion of the grant funds were used to hire 2.5 FTEs. These individuals served as quality assurance inspectors for homeowner upgrades, taught relevant classes to contractors and managed the workforce development program. The creation of this separate quality assurance group contributed to the validity of the residential program in the eyes of homeowners. CSTCC was a centralized educational facility whereby contractor training was standardized and monitored.

Detailed description of the sub-grant fund utilization is outlined in the attached report from CSTCC, the sub-grantee.

Data Verification

Assessments and Upgrades

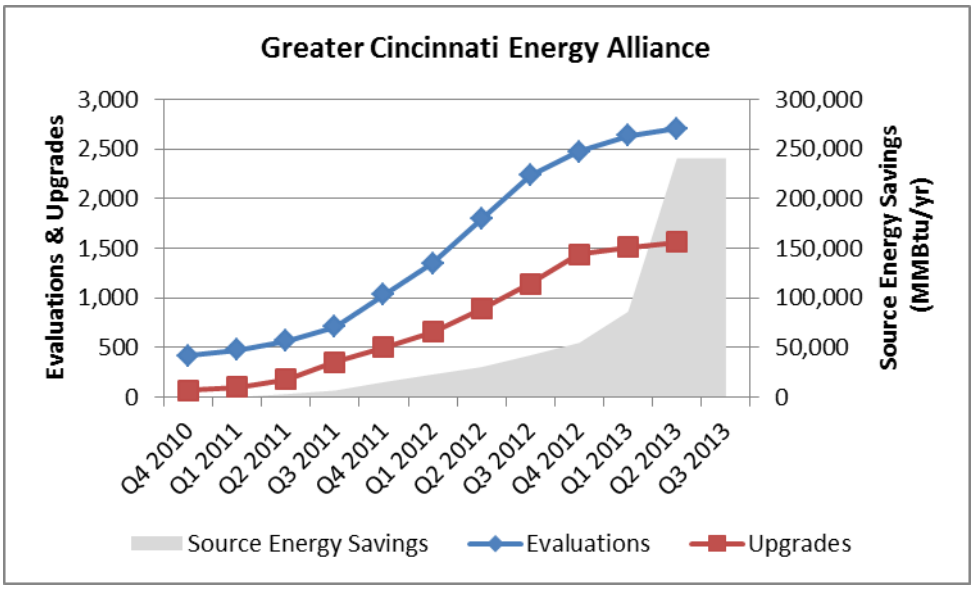

Figure 1: Greater Cincinnati Energy Alliance evaluations and upgrades by quarter and total reported source energy savings (right axis).

Financing and Incentives Synopsis

Financing Investments and Results	
RLF (Commercial – Building Communities Loan Fund)	$305,000
RLF (Residential – GC HELP)	$1,017,500
LLR (Residential –Greater Cincinnati Foundation loan)	$375,000
Amount loaned out (Residential)	$1,135,416
# of Loans (Residential)	127
Average Loan Amount (Residential)	$8,783
Amount loaned out (Commercial)	$ 60,000
# of Loans (Commercial)	2
Average Loan Amount (Commercial)	$ 30,000

Jobs Created Synopsis

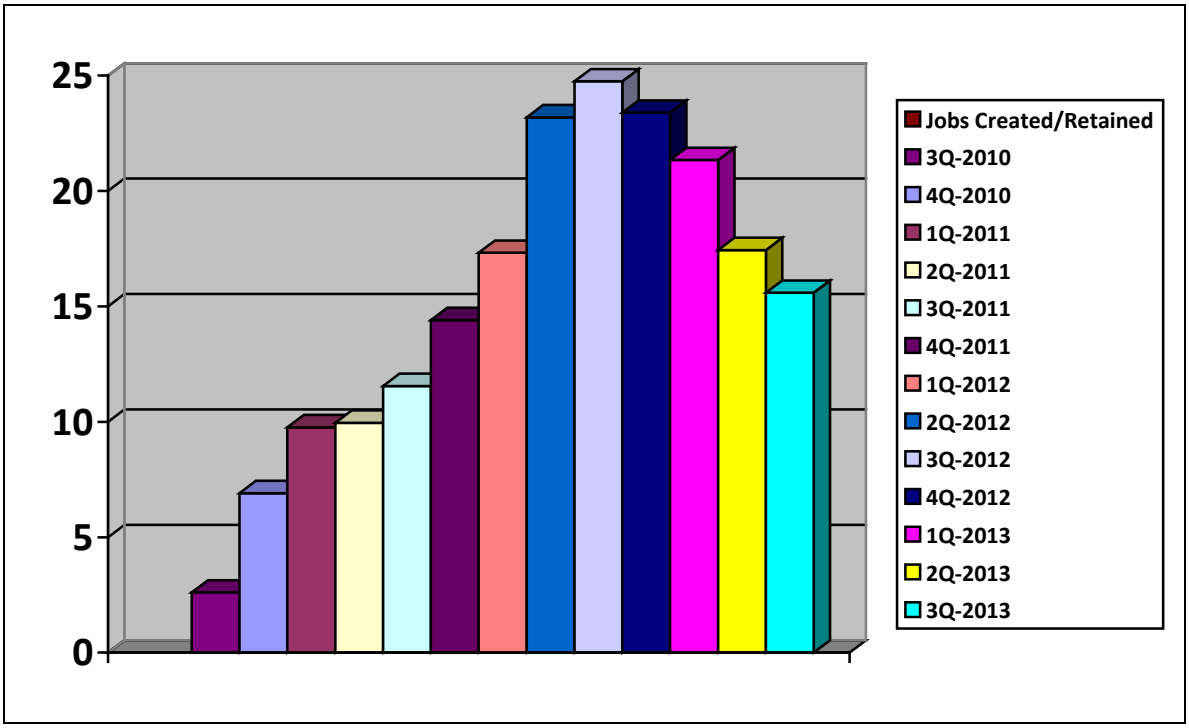

Figure 2: Greater Cincinnati Energy Alliance Jobs Created/Retained for the Quarter.

Note: Recovery Act reporting information is available at federalreporting.gov/federalreporting/downloads.do#rrdm. Jobs created and retained for Recovery Act reporting is an estimate of the combined number of jobs created and jobs retained funded by the Recovery Act during the current reporting quarter in the United States and outlying areas. For grants and loans, the number shall include the number of jobs created and retained by sub recipients and vendors. The number shall be expressed as ''full-time equivalent'' (FTE), calculated quarterly as all hours worked and funded by the Recovery Act during the current reporting quarter divided by the total number of hours in a full-time schedule for the quarter, as defined by the recipient or federal contractor.

Note also: The above information does not reconcile with the data on the Recovery Act website.The jobs data provided in this report is correct and the Energy Alliance team can provide further information, if requested.

Upgrades & Energy Savings Synopsis

Estimated Energy Savings - Upgrade Project Totals		
	Total Number of Projects	**Installed Measure Savings Reported**
kWh Electricity Savings reported for project installed measures	1,426	8,262,104
Therms Natural Gas Saving reported for project installed measures	1,129	539,502
Gallons of Oil Saving reported for project installed measures	31	16,323
Gallons of Propane Savings reported for project installed measures	49	32,465
Total Estimated Source MMBTU Saved	1,465	166,249
Total Estimated Annual Cost Saved	1,480	$1,599,133

Estimated Energy Savings - Program Totals	
Method(s) of Savings Prediction	ASHRAE LEVEL 1, DEEMED SAVINGS, ENERGY STAR PORTFOLIO MANAGER, NA, OTHER, PSD SURVEYOR, RECURVE, REM/RATE, SURVEYOR, TRACE ENERGY MODELING, TREAT
kWh Electricity	7,921,573
Therms Natural Gas	1,350,307
Gallons of Oil	0
Gallons of Propane	21,277
Total MMBTU (source)	240,645
Average % Savings per upgrade / # of upgrades used to calculate	
Total Energy Cost Savings	$2,424,036

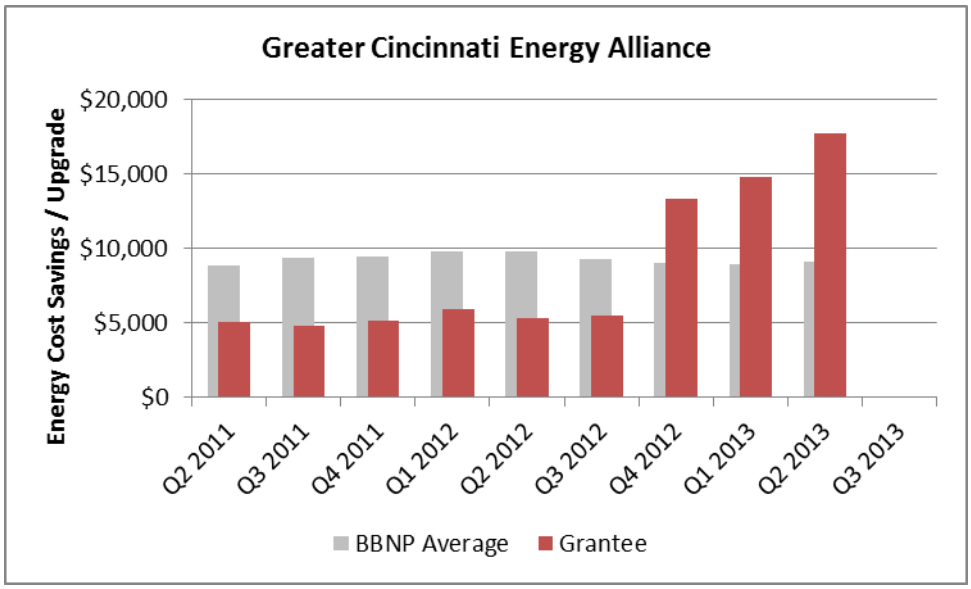

Figure 3. Greater Cincinnati Energy Alliance cumulative present value of energy savings per upgrade by quarter.

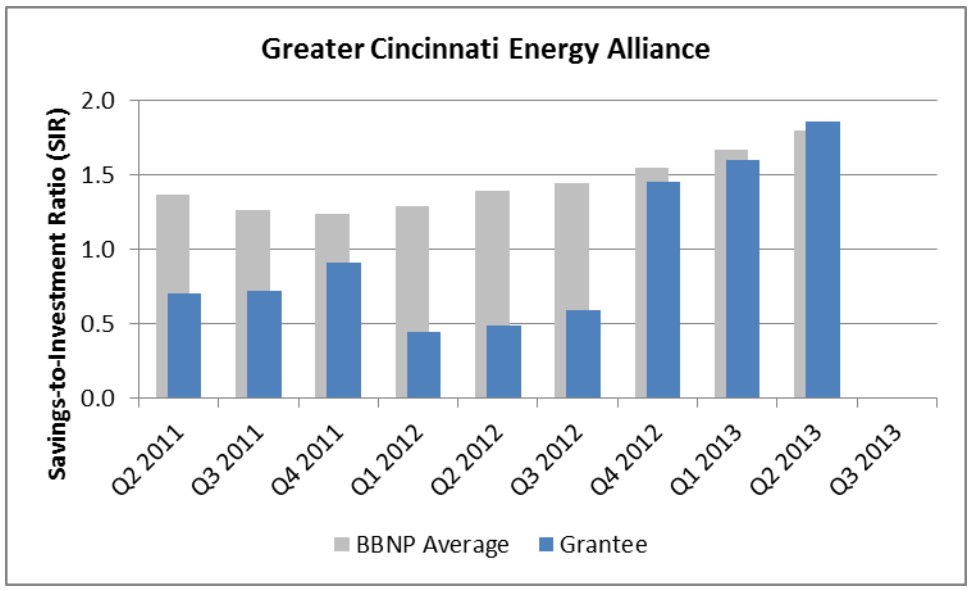

Figure 4. Greater Cincinnati Energy Alliance cumulative program savings-to-investment ratio by quarter.

Accomplishments per SOPO Tasks

1. Target: Onboard new staff to the Energy Alliance hired under the BBNP grant. Ensure that staff has the information and tools to implement the program.
    a. Actual: The Energy Alliance was formed shortly before the BBNP grant was awarded. The Energy Alliance successfully hired and trained over 20 full-time and part-time employees over the course of the grant. One significant accomplishment was the hiring of five trainees from CSTCC who all successfully transferred to full time positions within the Energy Alliance. Two of the five moved to career positions at companies involved in energy efficiency due to their training and experience at the Energy Alliance.

2. Target: Standardize reporting procedures across EECBG municipalities, DOE funds, and other grant funders.
    a. Actual: The Energy Alliance received direct and sub-grant funds from nine funders over the three year grant period. All reports were submitted on time and all funds granted were received and expended.

3. Review and confirm Energy Alliance target plan for each sector identified in Energy Alliance SOPO for <u>Single Family Residential Program</u>
    a. Community Outreach
        i. Target: Develop a marketing plan for the residential sectors to reach 180,000 residents with outreach and behavioral initiatives
        ii. Actual: This was accomplished as outlined above in the program section. The Energy Alliance made significant outreach inroads through its Ambassador Program, partnerships with local outreach organizations and outreach through its contractor base. A major market study for the region was done by the University of Cincinnati Economics Center and ACEEE with the support of Energy Alliance funding.
    b. Residential assessments and upgrades.
        i. Target: Utilize program to ramp up activity under our BB Funding. Follow-up with residential customer influx and ensure quality and consistency throughout the program.
        ii. Actual: The Energy Alliance established a successful assessment and upgrade program with local contractors, including completion of over 2,800 assessments and over 1,700 upgrades during the grant cycle. An Energy Advisor worked directly with homeowners ensuring quality customer service. The residential operations group worked with contractors to facilitate approved assessments and upgrades so that contractors were normally paid within seven days of presentation of qualifying paperwork.
    c. Financing Strategy

i. Target: Identify and establish legal agreements with a financial institution that will underwrite and process loans backed by a loan loss reserve. Create an unsecured financing product for the residential program.
ii. Actual: It was determined that the average upgrade size is $10,000, a practical loan amount. A legal agreement was established in 2011 with AFC First Financial, an energy bank, to process loans. An unsecured loan program, GC-HELP, was established in 2011 to provide fixed-rate loans to homeowners. By 2013, over $1 million in loans had been issued with no losses.

d. Customer Satisfaction
   i. Target: Continue to monitor the residential program, work with contractors to get customers through the upgrade process, and track data to allow the Energy Alliance to better understand what gets customers to move forward with upgrades.
   ii. Actual: The Energy Alliance was successful with homeowners and contractors by establishing an Energy Advisor position. The Energy Advisor walked homeowners through every aspect of the upgrade process. This hands-on customer service increased the number of upgrades that were closed and ensured a high standard of quality was maintained.
e. Contractor Development
   i. Target: Develop a methodology for contractors to deliver services under the Energy Alliance program. Enhance contractors' capacity to perform audits and convert audits to retrofit work. Expand residential contractor base while further standardizing audit documentation.
   ii. Actual: The Energy Alliance developed a specific set of criteria and documentation that a contractor had to meet to become an approved contractor. A Contractor Development Manager worked directly with the contractors, vetting them for inclusion in the program. This employee also organized weekly conference calls and quarterly meetings to increase energy efficiency knowledge for the 70+ contractors that participated.

4. Review and confirm Energy Alliance target plan for each sector identified in Energy Alliance SOPO for <u>Multi-Family Residential</u>
   a. Target: Multi-family (MF) tenant buildings face two primary barriers in proceeding with efficiency projects: split incentives, and landlord inability to take on additional debt. To overcome these barriers, the Energy Alliance will offer and encourage a number of services, including landlord and facilities staff training, tenant engagement, green lease negotiation, innovative purchased power agreements and off-balance sheet financing.

b. Actual: The Energy Alliance provided incentives on several successful MF building upgrades and developed a working group that is actively evaluating how to scale energy efficiency financing for multi-family buildings; the GC-PACE program can be one of these solutions.

5. Review and confirm Energy Alliance target plan for each sector identified in Energy Alliance SOPO for Small Business
    a. Outreach
        i. Target: A large-scale community outreach marketing approach will be implemented, focused initially on lighting and behavioral actions. Other major measures, including HVAC, refrigeration, controls and envelope will be promoted with the support of Duke Energy's incentives and contractor network.
        ii. Actual: The Energy Alliance partnered with local community action groups to interview 75 small nonprofits to determine likelihood of entering into upgrade contracts. Through this community outreach initiative, The Energy Alliance trained professional volunteers to conduct ASHRAE Level 1 energy assessments which led to a number of them investing in upgrades.
    b. Assessments and Upgrades
        i. Target: Nonprofit Energy Services Manager and Operations Director will meet with all nonprofit customers and contractors to determine the impact of incentive levels on the completion of projects.
        ii. Actual: Accomplished. This initiative resolved the type and amount of incentive that would be provided to nonprofits through the end of the program.
        iii. Target: The Energy Alliance will provide an incentive program for the nonprofit small business.
        iv. Actual: Under BBNP, the Energy Alliance provided $85,900 in incentives for 21 commercial nonprofit ASHRAE level audits and $1,792,783 in incentives for 31 upgrade projects.
    c. Financing Strategy
        i. Target: Energy Alliance will provide a loan product specifically targeted for nonprofit organizations in the Energy Alliance territory.
        ii. Actual: The Energy Alliance partnered with the Cincinnati Development Fund to establish a $250,000 revolving loan fund specifically for small nonprofits. The amount of each loan does not exceed $50,000 so that more nonprofits can use the funding.

6. Review and confirm Energy Alliance target plan for each sector identified in Energy Alliance SOPO for Large Commercial and Industrial
    a. Outreach

i. Target: A two-phase approach which constituted an industry mobilization program combined with technical assistance to dramatically increase the participation rate of large commercial and industrial energy consumers in energy efficiency, relying initially on education, training, and low-cost and behavioral initiatives such as retro-commissioning and improved operating and maintenance procedures. The second phase consists of investment grade audits and major measure retrofits, supported by sustainable financing mechanisms.
ii. Actual: The Energy Alliance worked with Department of Energy Technical Assistance on a specific playbook to use to evaluate loan programs available for all sectors. Additionally, the Energy Alliance developed a behavioral training class offered to over 20 organizations that provided their employee low/no cost ways to save money in the operation of their facility,

b. Assessments and Upgrades:
   i. Target: The Energy Alliance will expand its nonprofit audit, retrofit and incentive program created under the EECBG formula grants to serve larger nonprofits, including schools and hospitals.
   ii. Actual: Four school projects were completed totaling over $400,000 in incentive payments.

c. Financing Strategy:
   i. Target: Perform an evaluation of the financial options available for multifamily and commercial buildings.
   ii. Actual: The Energy Alliance invested in projects that used bond financing, New Markets Tax Credits, municipal lease financing, performance guarantees, and a variety of other solutions that ensured private capital was maximized. Going forward, evaluations have been completed in partnership with Clean Energy Solutions, Inc. and Harcourt Brown and Carey. The Energy Alliance is in the process of developing a local PACE financing program with an initial project expected in first quarter, 2014.

7. Review and confirm Energy Alliance target plan for each sector identified in Energy Alliance SOPO: <u>Public Sector</u>
   a. Target: The Energy Alliance will expand an unprecedented public building Energy Performance Contract aggregation effort occurring in Hamilton County and the City of Cincinnati to the entire region.
   b. Actual: There are partnerships with Hamilton County and City of Cincinnati. The energy Alliance recently completed a joint upgrade project with Hamilton County for the City of Blue Ash Community Center.

8. Duke Energy Partnership
    a. Target: Build partnership with Duke Energy to ensure that the Energy Alliance and Duke Energy's programs are fully leveraged with each other.
    b. Actual: The Energy Alliance has had an ongoing dialogue with Duke Energy throughout the grant period. During 2013, the Energy Alliance formally engaged Duke Energy, through the Public Utilities Commission of Ohio, to stress the value of better program integration to avoid duplication and enhance value for regional residents and businesses. Through that engagement, the Energy Alliance and Duke have agreed on a partnership to jointly deploy the Energy Alliance's GC-HELP financing program to Duke Energy customers. Additional opportunities for better program integration are part of ongoing discussions.

9. Workforce Development
    a. Target: Develop a workforce program with CSTCC to train contractors.
    b. Actual: The agreement with CSTCC was signed September 30, 2011. The purpose of the program was to enhance contractors' training, capacity and sales skills throughout in the region. A full suite of educational materials and sales tools was launched in the second quarter of 2012.

10. Project Management and Reporting
    a. IT Tool Contract
        i. Target: Sign a contract for an information IT tool under the BBNP contract that will provide the Energy Alliance with a mechanism to facilitate automated customer recruitment and job tracking, while providing enhanced reporting capabilities and measurement and verification capabilities that will benefit all of Energy Alliance's EECBG funding.
        ii. Actual: A contractual agreement was initiated with Performance Systems Development in November 2010.
    b. Implementation
        i. Target: Complete the IT tool implementation process and integrate the software into day-to-day Energy Alliance and contractors' operations.
        ii. Actual: Implementation was completed in mid-2011. This tool not only enhanced the Energy Alliance's ability to recruit and tract customers but also expanded reporting capacity. Refinement of the software is ongoing.
    c. Measurement and Verification/Utility Savings
        i. Target: The Energy Alliance will contract with a firm to develop, implement, and complete a measurement and verification process across all sectors.

ii. Actual: The Energy Alliance has contracted with a consulting agency to begin the formation of an evaluation outline. This is building from the initial measurement and verification work the Energy Alliance has observed in over 50 homes it studied more than one year after their upgrade, to ensure energy savings forecasts are coming to fruition.

Challenges

1. Residential Incentive Program

   a. During the course of the grant, the Energy Alliance worked with contractors to help them understand the benefits of energy efficiency and to help them transfer that knowledge to their clients. As the Energy Alliance reduced the incentive available to homeowners, contractor participation in the program decreased. The decrease indicated that despite the training, contractors were selling the incentive rather than the benefits associated with energy efficiency. This demonstrated the need for additional sales training that reaches more employees within a contractor's organization rather than focusing exclusively on the owner.

   b. The Energy Alliance developed an equipment lease program to lower the upfront costs associated with entering the home performance industry. A large number of contractors purchased assessment equipment such as blower doors and infrared cameras through the program. As the demand for home performance services increased, the Energy Alliance recognized that contractors needed to incorporate technology into their daily business practices in order to increase efficiencies. Specifically, the Energy Alliance recommended that contractors utilize the equipment lease program to purchase tablet computers for use during the assessment process in order to reduce the amount of time needed to collect and analyze data. Contractors were reluctant to utilize tablet computers and struggled to meet the administrative demands of the program. This demonstrated the importance of working with contractors in the field to show them how new technologies can benefit them rather than simply discussing it with them at a conceptual level.

   c. The concept of home performance was relatively new to the Greater Cincinnati region when the Energy Alliance began. In order to help generate demand for the program, the Energy Alliance promoted low cost energy assessments through its contractors. The Energy Alliance found that a high percentage of homeowners took advantage of the low cost assessments with no intention of proceeding to a home energy upgrade. This resulted in a lower than expected conversion rate. Over the course of the grant, the Energy Alliance increased the cost of an assessment to a homeowner. This resulted in an increase in conversion rates. However, as assessment costs increased, it became clear that there is a tipping point. Homeowners in this region are not prepared to pay the actual market cost for a home energy assessment. In the future, it is important to establish a price for home energy assessments that is high enough to reduce the number of homeowners interested purely from a curiosity standpoint but low enough to generate a demand sufficient enough to support a home performance industry.

2. Commercial/Non-Profit Incentive Program

   The Energy Alliance worked with both nonprofit and for-profit organizations to improve the energy efficiency of their buildings. One of the challenges in working with these organizations is the long lead and construction time to implement improvements. The duration required to identify a problem, design a solution, secure financing, and do the construction work easily takes a year and can be phased to take several years. The challenge came in developing a pipeline of projects that would be completed before the

grant period ended, and a follow-up challenge was in turning away all the people working on projects that fell outside of the grant period.

Program Sustainability Plans

1. GC-PACE

The Energy Alliance is developing a Property Assessed Clean Energy program to provide access to capital for energy projects in the Greater Cincinnati region. The GC-PACE program will facilitate energy efficiency and clean energy improvements to commercial, industrial, and nonprofit buildings. The Energy Alliance has structured the program to include fees built in to the projects and amortized over the duration of the project's financing to provide economic sustainability to the program.

The GC-PACE program has the ability to provide a virtually unlimited supply of capital to qualified projects via the private bond market. The Energy Alliance is partnering with economic development agencies to facilitate the delivery of projects to market. The first partner is the Port of Greater Cincinnati Development Authority. The Energy Alliance has mainly communicated the GC-PACE program via business-to-business outreach and engagement with local political leaders. The organization will continue outreach to contractors, architects, and engineers.

The legal structure of PACE requires the passage of legislation at the state level and the local level. Ohio passed enabling legislation in 2009. In June of 213, the City of Cincinnati adopted an initial resolution directing the Energy Alliance to develop the infrastructure for a PACE program. Cincinnati is expected to pass the complete enabling legislation in first quarter, 2014. The Energy Alliance has engaged with a number of smaller cities and townships in the Greater Cincinnati area and will work to cultivate PACE projects and pass the enabling ordinances in those areas. Because the Commonwealth of Kentucky has not yet passed enabling legislation, the Energy Alliance has engaged in outreach with a large number of interested parties to provide guidance of their efforts.

The goal of our GC-PACE program is to provide long-term capital to permit the financing of comprehensive building upgrades, rather than ad-hoc, piecemeal improvements. Whole building upgrades support economic development, job creation, and an improved environment.

2. Single Measure Financing

The Greater Cincinnati Energy Alliance's GC-HELP financing program has $1.5 million in capital available and has funded over 120 loans in excess of $1,000,000 as of November 30, 2013. The Energy Alliance works with AFC First Financial in Pennsylvania, who does the loan underwriting and processing. The loans are then purchased by GCEA from AFC First in monthly portfolio purchases. GCEA has leveraged $500,000 in private capital that has been lent out, and is backed with a $375,000 BBNP-funded loan loss reserve. This adds to the additional $1,000,000 of DOE revolving loan fund capital in the loan pool. GCEA will leverage the DOE extension to further drive demand for this product and evaluate a secondary market

offering for its loan portfolio that uses underwriting criteria modeled after the WHEEL (Warehouse for Energy Efficiency Lending) standards.
Beginning in December 2013, the Energy Alliance will be adding a new option for GC-HELP to support homeowners' individual and urgent needs for their homes. Modeled after the successful EnergyWorks Philadelphia program, the new GC-HELP loan option will be available to finance "Improvement Specific" energy efficiency improvements such as emergency HVAC replacement. The "Improvement Specific" loan option will not require a detailed, whole-home energy assessment; however, the goal would be to convince the homeowner to have a whole-home energy assessment to provide a "roadmap" for additional energy efficiency project. Additionally, the Energy Alliance will be extending its geographical service territory to include the Greater Cincinnati, Ohio suburb counties of Butler, Warren and Clermont Counties. Enhancements in our loan program IT infrastructure will make it quicker and easier for customers and contractors to access our financing and we'll look to provide the contractors unique incentives and training to break-down market barriers.

3. Home Performance Contracting Services

During the course of the grant, the Energy Alliance has been the Home Performance with ENERGY STAR program administrator. As the program administrator, a primary responsibility is to oversee and develop contractors in the home performance contracting market. Due to multiple factors, the Energy Alliance did not see the expansion of home performance services by the initial contractors who participated in the residential program during the grant period. Therefore, we realized an opportunity exists to offer home performance services in the Greater Cincinnati market. During the 1st Quarter of 2014, we will begin to explore the opportunity.

Attachment: Cincinnati State Technical & Community College
Sub-grant Technical Report

Cincinnati State
WORKFORCE DEVELOPMENT

December 9, 2013

Andy Holzhauser
Greater Cincinnati Energy Alliance
200 W. 4th St., Suite 600
Cincinnati OH 45202

Re: Revised Grant End Report

Please find attached the revised Grant End Report for the GCEA Services Contract with Cincinnati State - August 1, 2011 to June 30, 2013. This revision includes

- Green Energy Database section: A thumb drive is included with this report with all contractor documents that are on file with the College.
- Worker Training & Certification section; All requested changes were made.
- QA Metrics section;
  - A spreadsheet with all recorded QA's and Retests is now included.
  - The requested spreadsheet for Test-in's was not included. The college was responsible for monitoring test-ins to make sure they were done correctly. The HPC recorded all data and uploaded it to Compass. The college has no test-in records.
- Next Steps Section – The date the college will begin Advanced Home Energy Professional certification exams is include.

Regards,

Larry Cherveny
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513-569-1497

Cc: Dr. Dennis Ulrich, Vice President Workforce Development

Cincinnati State
WORKFORCE DEVELOPMENT

Greater Cincinnati Energy Alliance Services Contract with Cincinnati State

Grant End Report

August 1, 2011 to June 30, 2013

Organization Information

Name of Grantee:	Cincinnati State Technical & Community College – Workforce Development
Contact Person:	Larry Cherveny
Title:	Industrial Maintenance & Green Technology Business Manager
Address:	10100 Reading Rd., Cincinnati OH 45241
Phone:	513-569-1497
Email	larry.cherveny@cincinnatistate.edu

Grant Information

Grant Number:	Services Contract with Cincinnati State Technical & Community College
Date Granted:	August 3, 2011
Amount Granted:	$499,895

Scope:
The Energy Alliance requests a range of technical services from CSTCC in support of the Grant. The services required by the Energy Alliance include the following:

- Contractor screening, approval, certification and tracking.
- Maintenance of an Approved Contractor Database including Contractor Compliance, Worker training and certification for residential and commercial sectors, and
- Contractor Quality Assurance/ Quality Control

Grant Staff:

Jim Tenhundfeld	Workforce Project Manager & Workforce Assurance Manager
Paul Helms	Quality Assurance Manager
Damon Bennett	Assistant Quality Assurance Manager

Grant Overview

GCEA partnered with the Workforce Development Center (WDC) of Cincinnati State Technical & Community College to create a Contractor Excellence Institute for Building performance. The Energy Alliance has determined that the success of fulfilling the Grant is largely dependent upon developing a skilled and trained Building Performance Workforce. The Energy Alliance's goal is to close the gap between the skills people have and the skill that employers need. The WDC and Energy Alliance will work closely to identify the needed skills and improve and coordinate training programs to respond to the needs of workforce and create career pathways for individual to get the skills they need to obtain sustainable jobs in the Energy Assessment and Energy Upgrade Fields.

Program Cost Summary
Overall, based on the final Quarterly Report Spending Summary submitted by Tony Cowden, Reporting and Grant Accountant, the budget total was underspent by $69,842. There were no line item anomalies. The only line item over budget was Equipment (-$250) but this was less than 10% of the line item. See Appendix A for complete Final Quarterly Report Spending Summary.

Equipment was purchased to support the project under the equipment and supplies line items of the budget. The equipment included:

- Two sets of Energy Auditor Equipment:
  - Assessment blower door systems, Test Instruments, IR cameras, ladders, hand tools, Cordless Drill, cameras and video cameras
- House of Pressure - visually demonstrates pressure and air flow dynamics within a residence, using pressure diagnostics (table top).
- Office Equipment - used desks and cabinets.
- Cell phones – cell phones were not purchased. Each grant employee received a $40/ month reimbursement for use of their personal cell phones.
- Computers- were not purchased they were leased. The computers will be returned at the end of the three year lease.
- Office Supplies – minimal office supplies were purchased with the GCEA budget. GCEA grant staff typically pulled office supplies from the WDC supplies.

The assets retained form the grant therefore consists of two sets of Energy Auditor equipment and the Training House of Pressure. WDC intends to continue to offer training for BPI: BA, EP and the new Home Energy Professional certifications. One energy auditor set of equipment will be required to continue this training and the second will serve as a backup and or replacement if any of the primary equipment fails. The second set will also be available for use by the Cincinnati State's Renewable Energy degree program, currently chaired by Larry Feist. WDC will use the House of Pressure trainer in our BPI classes and will make it available for use by Cincinnati State Renewable Energy Degree program.

See Appendix B for complete equipment purchase list.

Regarding leveraged funds; Cincinnati State provided 5% oversight by WDC Vice President, Dennis Ulrich and 20% by Industrial Maintenance & Green Technology Business Manager, Larry Cherveny for a total leveraged funds amount of $52,502.

Leverage Funds – Management

Item	Year 1	Year 2	5%
Dennis Ulrich	$119,090.66	$135,216.12	$12,715.34
Larry Cherveny	$96,751.20	$102,185.98	$39,787.44
Total Salary and Fringe Leverage			$52,502.78

Green Energy Compass Database
Based on statements from Jim Tenhundfeld, WDC can confirm that all relevant data on all Contractors, Subcontractors and Homeowners were entered into the Green Energy Compass Database through May 30, 2013. This is the end date of Jim Tenhundfeld's employment at WDC. A thumb drive with all contractor files on record at the college is included with this report.

Regarding Quality Assessment data; Paul Helms and Damon Bennett conducted Quality Audits on the scheduled completed Energy Efficiency upgrades. Two main documents were completed for each audit: QA Audit Check List and QA Evaluation documents. Per the QA procedures these two document plus other results from the QA audit were uploaded to the Compass database. This data was required to be loaded to Compass within 48 hours. Since the QA data was reviewed by GCEA personnel, any outages in this area would quickly be identified. I can personally verify that this data was uploaded up to Compass through May 30, 2013, at which point Paul and Damon reported directly to Chris Jones at GCEA.

Contract Deliverables

Contractor Screening, Approval, Certification and Tracking
Jim Tenhundfeld was hired to be the Workforce Project Manager & Workforce Assurance Manager for this project. He was responsible to develop a process to screen, approve and track contractors on criteria per the GCEA Contract Participation Agreement.

Items Delivered:

- Contractor Screening & Tracking Process – Contractor Certification Procedures were developed to document the process. See Appendix C.
- Contractor Screening - HPC Contractors were screened per criteria in the Contractor Participation Agreement. This included contractor licenses (city, OH/ KY), Lead Certification, BWC, proof of liability insurance and Energy Auditors with BA & EP certifications on staff. Jim requested documents from the Contractors confirming each criterion. Similarly Installing Contractors were screened per criteria in the Contractor Participation Agreement.
- Approve Contractors - contractors were approved once all documents were received and verified. Jim loaded all contractor documents into Compass and changed their status to approved contractor.
- Contractor Tracking (Contractor Database) – an Excel spreadsheet was used to track contractor documents and certifications. See Appendix D & E.
- Cincinnati State is not in possession of hard copies of contractor documents, only electronic PDF files. Contractors typically sent scanned copies of their documents. Included with this report is a thumb drive which includes copies of all contractor files on record with Cincinnati State.

Issues: The process for the initial qualification of contractors worked quite well. Contractors were eager to provide documents to become qualified. However, the process to keep copies of renewed documents on file became an issue. Jim's process required him to review the database on a monthly basis and request copies of renewed documents from the contractors. This part of the process resulted in some expired documents on file for up to several months for some contractors. The issue wasn't that the contractor didn't renew the license/ certification documents. It was Jim's reminder and contractor document request process missed some expired document and the time it took for some contractors to respond to the document update request.

- Number of Contractors Screened and Status (See Appendix D & E)

	HPC Contractors	Installer Contractors	Total
# Contractors Screened	22	63	85
# Contractors Approved as of 3/30/13	12	50	62
# Contractors Suspended/ Deactivate as of 3/30/13	10	13	23

Worker Training and Certification
Overall Cincinnati State conducted a 17 40-Hour BPI certification classes and 11 8-Hour workshop classes serving a total of 240 students.

Training	Contact Hrs.	Classes Conducted	Total Trained
BPI BA	40	9	57
BPI EP	40	4	36
BPI WHALC	40	4	25
Workshops	8	6	70
Product Demos	3	5	53
	Total	28	240

The Building Science and Sales & Marketing classes were not developed/ conducted per the contract. This item did not meet the requirements stated in the grant.

Appendix F: Summary of BPI Certification and Workshop classes conducted & Student Roster for each class.

Contractor Quality Assurance and Verification

QA Program Overview & Procedures

Overall, the QA program was developed by GCEA prior to the Contracted Services Agreement with Cincinnati State. Mike Robinson, of GCEA, transferred the QA program to Jim Tenhundfeld (Project Manager) and Paul Helms and Damon Bennett (QA Auditors). August 2012 Jim, Paul and Damon made improvements and documented the QA process. Below are the QA Process, QA Inspection Forms and Protocols that were developed to guide the QA auditors in their audits. Appendix G.

Onsite QA Inspection Process

- QA Scheduling Process
- QA Inspection Process
- QA Failure & Follow-up Process
- Protocol for changing a HPC's Inspection Tier due to QA Issues

QA Inspection Forms & Documents

- Quality Assurance Inspection Evaluation
- QA Check List for QA Inspection Evaluations
- Home Owner Failed QA Report
- Procedure for Determining Conditioned Ft^2 of Detached Residence
- Unconditioned Attic Ventilation Protocol
- CAZ Confined Space Determination
- HPC QA Audit Feedback (auditor feedback)

Home Owner Communication

The home owner's primary contact in the process was the HPC. Cincinnati State would become involved with the home owner for scheduling the QA, Conducting the QA and QA follow up.

Once a home owner's job was ready for a QA

- HPC would enter the job in to the GCEA job scheduler.
- Jim Tenhundfeld would schedule date and time for the QA
- HPC communicates QA date and time with home owner
- On date of QA the QA auditor would call either the HPC or the home owner to confirm the appointment. If the QA auditor was held up he would call the home owner with the expected time of their arrival.
- During the QA the QA auditor would interview the homeowner to determine their satisfaction with the complete worked performed by the HPC. This information was included in their Inspection Evaluation report.
- Upon completion of the QA, the auditor will provide the consumer with a copy of the Quality Assurance Inspection Evaluation and expected next steps if the job failed the QA.

QA inspector Oversight

Jim Tenhundfeld was the Project and Workforce Assurance Manager for the project. He provided guidance and oversight for Paul Helms and Damon Bennett. Jim, Paul and Damon shared office space so there was frequent communication regarding QA jobs and issues. Jim held an official weekly QA jobs meeting to:

- Review QA jobs completed and action steps to resolve failed QA's
- Procedures – What's working and what needs improvement
- Review data entered into Compass

Larry Cherveny, WDC Industrial Maintenance and Green Technologies Business Manager, provided administrative oversight for Jim, Paul and Damon. Challenges to any QA report was addressed by the WDC project members and a technical team that consisted of WDC and GCEA technical members.

QA Metrics

Overall, our records show 352 QA's conducted during the period of grant. Of these jobs 107 failed the initial QA. For each failed QA, the HPC contractor received a report detailing the reasons for the failure. In almost all cases the HPC addressed the QA issues and upon a conducting a follow up QA the job passed. Below is a breakout of QA's conducted by HPC contractor. A listing of all recorded QA's and Retests is found in Appendix I.

Total Quality Assurance Audits Summary by GCEA Contractor

Contractor	Total Test In's	Total QA's	# Jobs Failing Initial QA, but passed upon Remediation Work
Advanced Energy Solutions	0	11	5
Apollo	2	4	4
Arlinghaus	3	42	9
Cool Times	3	5	2
Drysdale	0	10	6
Eco Environments	0	12	4
Energy Fitness for Homes	0	1	1
Green Street Solution	0	10	10
Hader HVAC	0	5	1
Home Energy Services	0	44	16
Inspired Green	1	12	7
Jacob Brothers	0	0	0
Jansen Interiors	0	5	5
Smart Foam	1	15	4
Workman HVAC	0	1	0
Green Energy Professionals	0	41	6
Think Green Midwest	0	15	3
Tiburon	0	19	3
Cincinnati Energy Solutions	0	42	9
Arronco	0	33	6
Housh	0	25	6
Total	**10**	**352**	**107**

Note: QA data is through 1/30/12 - 3/30/13, data per Jim Tenhundfeld 3/30/13 report

See Appendix H for detail of all jobs with Failed QA's.

See Appendix I for listing of all recorded QA's and Retests from 1/30/12 – 3/1/13

Benefit of Independent QA's

We believe the independent QA's conducted by the College had a great impact on the effort to improve the energy efficiency of homes in the Greater Cincinnati Area.

- Training – As part of the QA process, our QA auditors assisted the HPC's BA in their first five "Test In's". This helped the new BA review and practice the Energy Audit procedures with our QA experts present. Also, when the QA auditors failed jobs, the QA auditor would provide feedback to the HPC's BA or installer, regarding why the job failed and what should have been done to do the job correct in the first place.
- Quality for the home owner – The QA process greatly benefits the home owner. Without the QA audit the home owner has no way to confirm that the energy efficiency work contracted was completed correctly or the efficacy of the energy upgrade. The QA audit report will pressure the HPC to correct the improvement work.
- HPC Quality – Knowing that an energy audit will be conducted before and after an energy upgrade, the HPC knows that energy performance (air leakage) promises will be checked by QA audit and reported to the home owner. This forced contractors to be careful in their energy savings projections to consumers and in the actual energy retrofit work.

Next Steps

Cincinnati State Workforce Development will support the Energy Efficiency Industry by continuing to be a training and testing center for individuals seeking BPI energy professional credentials. Recently the demand for BPI training has been minimal. However, we expect this to change if subsidies or tax breaks become available to home owner for Energy Efficiency upgrades. Assuming this happens Cincinnati State will be ready to offer BPI Professional training and certification testing for at least the BPI credentials listed below. The College will begin offering certification testing for the Advanced Home Energy Professional certifications February 2014. In addition WDC will support the Cincinnati State academic Renewable Energy degree and major by sharing the energy audit equipment obtained through this grant.

BPI Professional Credentials:

Skilled Building Performance Credentials

- Building Analyst Professional
- Envelope Professional

Advanced Home Energy Professional

- Energy Auditor
- Retrofit Installer
- Crew Leader
- Quality Control Inspector

Respectfully Submitted by,

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Attachments

Appendix	Description
A	Final Quarterly Financial Report Spending Summary
B	Equipment Purchase List and Inventory
C	Contractor Certification Procedures
D	HPC Contractor Screening approval & Certification Database
E	Installer Contractor Screening approval & Certification Database
F	Summary of BPI Certification and Workshop Classes & Student Class Lists
G	QA Procedures and Forms
H	Failed QA's List by Contractor
I	All recorded QA's and Retests from 1/30/12 – 3/1/13