

SEP Alabama

Final Technical Report

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Alabama - SEP

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A Multi-State Model for Catalyzing the National Home Energy Retrofit Market

Name of Project Director/Principal Investigator:

Elizabeth Grimes, Energy Program Manager

Alabama Department of Economic and Community Affairs (ADECA) – Energy Division

Team Members:

Alabama Department of Economic and Community Affairs (ADECA)

Southeast Energy Efficiency Alliance (SEEA)

Earth Advantage Institute (EAI)

National Association of State Energy Officials (NASEO)

Nexus Energy Center

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Executive Summary

In the fall of 2010, the Alabama Department of Economic and Community Affairs (ADECA) launched the *Multi-State Model for Catalyzing the National Home Energy Retrofit Market Project* (Multi-State Project). This residential energy efficiency pilot program was a collaborative effort among the states of Alabama, Massachusetts, Virginia, and Washington, and was funded by competitive State Energy Program (SEP) awards through the U.S. Department of Energy (DOE).

The objective of this project was to catalyze the home energy efficiency retrofit market in select areas within the state of Alabama. To achieve this goal, the project addressed a variety of marketplace elements that did not exist, or were underdeveloped, at the outset of the effort. These included establishing minimum standards and credentials for marketplace suppliers, educating and engaging homeowners on the benefits of energy efficiency and addressing real or perceived financial barriers to investments in whole-home energy efficiency, among others. The anticipated effect of the activities would be increased market demand for retrofits, improved audit to retrofit conversion rates and growth in overall community understanding of energy efficiency.

The four-state collaborative was created with the intent of accelerating market transformation by allowing each state to learn from their peers, each of whom possessed different starting points, resources, and strategies for achieving the overall objective. The four partner states engaged the National Association of State Energy Officials (NASEO) to oversee a project steering committee and to manage the project evaluation for all four states. The steering committee, comprised of key program partners, met on a regular basis to provide overall project coordination, guidance, and progress assessment. While there were variances in program design among the states, there were several common elements: use of the Energy Performance Score (EPS) platform; an audit and home energy rating tool; emphasis on community based coordination and partnerships; marketing and outreach to increase homeowner participation; training for market actors; access to financing options including rebates, incentives, and loan products; and an in depth process evaluation to support continual program improvement and analysis.

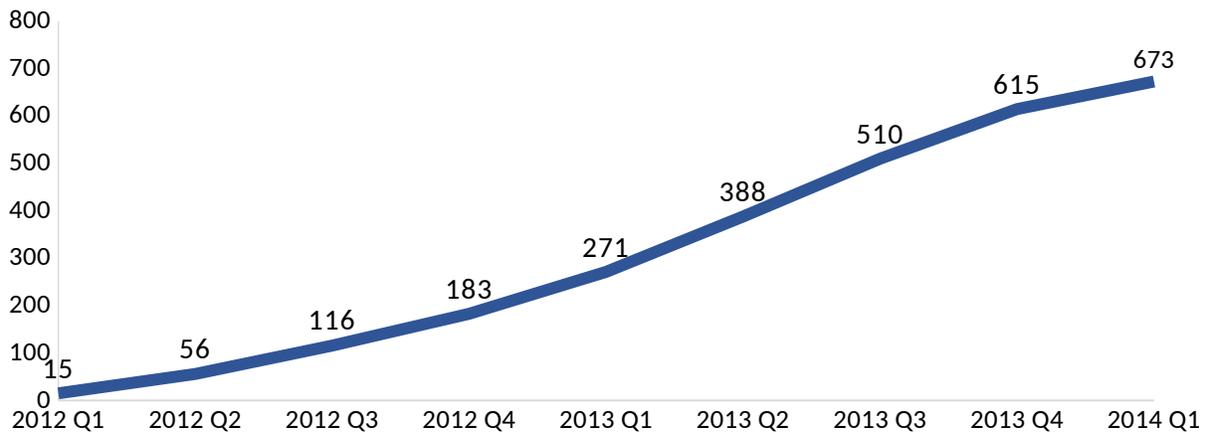
In Alabama, Nexus Energy Center operated energy efficiency retrofit programs in Huntsville and Birmingham. In the Huntsville community the AlabamaWISE program was available in five Alabama counties: Cullman, Lawrence, Limestone, Madison, and Morgan. In Birmingham, the program was available to residents in Jefferson and Shelby Counties. In both communities, the program was similar in terms of program design but tailored marketing and partnerships to address the unique local conditions and population of each community. ADECA and the Southeast Energy Efficiency Alliance (SEEA) provided overall project management services and common resources to the local program administrator Nexus Energy Center, including contracted services for contractor training, quality assurance testing, data collection and reporting, and compliance.

The fundamental components of the AlabamaWISE program included a vertical contractor-based business model; comprehensive energy assessments; third-party quality assurance; rebates for installation of energy saving measures; accessible, low-interest financing; targeted and inbound marketing; Energy Performance Score (EPS) tool to engage and educate homeowners; training for auditors, contractors, and real estate professionals; and online resources for education and program enrollment. Program participants were eligible to receive rebates or financing toward the assessments and upgrades to their home provided they reached at least 20 percent deemed or modeled energy savings.

The design of each program focused on addressing several known barriers including: limited homeowner knowledge on the benefits of energy efficiency, lack of financing options, lack of community support for energy efficiency programs, and lack of trained market actors including contractors and real estate professionals. The programs were able to make progress on addressing all of these barriers and were most successful in offering financing options and training market actors. The most challenging barriers proved to be the act of building a market for energy efficiency where none previously existed, convincing homeowners of the value in investing in energy efficiency (and therefore completing retrofits), engaging electric and natural gas utilities to partner on delivery, and achieving the overall project target of 1,365 completed retrofits.

The components that proved to be the most valuable to program success were engaged contractor networks that could promote and endorse the program, partnerships with local business and organizations, and the access to rebates, incentives and financing mechanisms. The programs were successful in building relationships with a variety of community participants including: local contractors, Associations of REALTORS, home builders associations, universities, utilities, local and state governments, and other non-profit organizations. Throughout this program, 933 building audits and 795 building retrofits were completed making homes in Alabama more comfortable, less expensive to operate, more valuable to the marketplace, and safer and healthier for families. Continuing on this momentum, Nexus Energy Center plans to continue operating and expanding operations in Alabama as a Home Performance with ENERGY STAR sponsor and will continue to provide energy services and education to communities in Alabama.

Program	Cumulative Completed Retrofits	Cumulative Total Completed Audits	Audit to Retrofit Conversion Rate
Birmingham	274	339	80.82%
Huntsville	520	649	80.12%
Alabama SEP Total	794	988	80.36%



Final Technical Report

Institutional Design

The four State Energy Offices collaborated with NASEO and other partners, including the Earth Advantage Institute (EAI) and the Washington State University Energy Extension Program, to establish the overarching project concept. The stakeholders identified several key hypotheses that formed the basis of the project design. They included:

- Targeted communities did not have a history of energy efficiency program offerings - such as those provided elsewhere by utilities
- Homeowners lacked awareness of the benefits of energy efficiency as well as knowledge about how to reduce their home's energy consumption
- Homeowners lacked the tools to address real and perceived financial barriers to increased investment in energy efficiency measures
- Target markets lacked trained, qualified and well-informed energy efficiency providers (i.e. contractors)

In response to these key challenges, the collaborative proposed the following shared solutions to achieve the goals of creating residential energy efficiency markets:

- Local program implementation and marketplace coordination
- Locally-tailored and delivered homeowner engagement strategies
- Deployment of a nationally available home energy rating and labeling tool
- Workforce development and training of energy efficiency solution providers and allies
- Financial incentives and tools to address the expense of investing in whole home energy retrofits
- Measurement and evaluation of the project's impact using a variety of performance metrics

Accordingly, ADECA and SEEA solicited implementation partners to collaborate with and carry out this vision. Interest was expressed from a number of communities, and Nexus Energy Center formally responded to the call with a program to serve the Huntsville metropolitan area. When a second, independent partner could not be identified in Birmingham, Nexus engaged with a local contractor, Kelly Green Marketing, to deliver the implementation model in that community as well.

Business Model

Nexus Energy Center included the aforementioned elements in the AlabamaWISE Program design. Nexus Energy Center was established in 2010 as a nonprofit organization promoting energy education, conservation, efficiency, and renewables in Alabama by DOE's Better Buildings Neighborhood Program.

AlabamaWISE has since become a Home Performance with ENERGY STAR program with plans to eventually expand to support statewide residential and commercial energy efficiency programs. Nexus' operations are funded through grants, donations, corporate sponsorship, and program income tied to Nexus' organizational mission.

Nexus Energy Center was created in an environment with little history or experience in residential energy efficiency. Accordingly, it leveraged the SEP resources to test and modify its business model throughout the performance period of the award. Nexus served in many of the key roles fulfilled by start-up non-profit organizations in the Southeast including:

- Program Design
- Program Administration
- Contractor Engagement and Training
- Quality Assurance
- Customer Engagement and Marketing
- Administration of Financing

Over time Nexus tested and discarded or modified its approach in these areas. Since Nexus is dedicated to remaining a viable community resource following the SEP performance period, it has designed the foundation of a financial sustainable business model. Nexus' business model to generate program income includes:

- Charging fees to contractors for membership, services, leads and advertising
- Charging fees for project advisement to program participants
- Interest income from AlabamaWISE financing

Importantly, each revenue stream is linked to a particular step in the energy efficiency retrofit transaction and income generated is proportional to the value provided by Nexus in that process.

Program Design and Customer Experience

AlabamaWISE was designed to be a vertically integrated contractor-based model keeping in mind possible future participation in DOE's Home Performance with ENERGY STAR Program. Initially, AlabamaWISE typically kept a more 'hands-off' approach, but as the program progressed, more hands-on time was spent with homeowners and helping to generate program leads.

Rebates were a main feature of the program to encourage homeowners to consider energy efficiency upgrades to their residences. AlabamaWISE allowed up to \$750 in credits, depending on the measures installed. \$350 of the total \$750 rebate was reserved for an energy assessment rebate, provided that the

customer pursued implementation of the recommendations from the assessment. The program also offered a low-interest loan at six percent interest with a five year term. In order to qualify, a 660 FICO and 45 percent debt-to-income ratio or better were required. Even though the loan program took almost two years to establish, it has since seen great uptake and will likely run out of capital in the near future. Attracting additional capital will be a key component of long-term Program sustainability.

In both Huntsville and Birmingham, Nexus Energy Center focused on maximizing the effectiveness of AlabamaWISE partners and contractors. As such, the program spent less on outreach and homeowner recruitment and more on specialized trainings and development of necessary resources to build capacity among contractors and partners. In-depth training was provided to variety of market actors including contractors, Realtors and appraisers. AlabamaWISE has a required network of pre-approved contractors who voluntarily agreed to third party quality assurance. Auditing contractors in the program used the Energy Performance Score (EPS) to generate energy audit reports while single measure contractors did not. As the EPS and HOME Portal system matured, single measure contractors were also able to use the online software.

The marked success in the program's conversion rate and lack of marketing was primarily due to the program structure. Since marketing dollars were scarce, AlabamaWISE used a contractor base model to encourage the contractors themselves to be the primary marketers of the program. Contractors in the program typically had significantly more sales experience and success than AlabamaWISE staff and helped to propel the audit-to-retrofit conversion rate as well as provide valuable examples of marketing retrofits. The downside to this approach was that the program was less visibly branded than more hands-on models. Customers in AlabamaWISE were highly satisfied, as was discovered by the Multi-State Project evaluation by The Cadmus Group. The biggest challenge in the program design was general awareness of AlabamaWISE and the time constraint imposed by the use of grant funding for rebates. With such a new program for this Alabama area, a longer investment of relatively low-cost incentives would have been very helpful to grow the market. Even so, participants were happy with their results and the process to achieve them.

Driving Demand

Throughout the project period, the AlabamaWISE program targeted specific types of customers through a variety of effective marketing and outreach activities.

The customers targeted by the programs fell into three main groups:

1. Customers who understood and valued energy efficiency – This group of customers was small and required very little external motivation to act on the program opportunity.
2. Customers who were already planning home improvements and wanted to take advantage of the financial incentives or could be persuaded to use the incentives to increase the efficiency of their purchase – In some cases, customers used the incentives to add energy saving measures to the purchase that otherwise they would have not added.
3. Customers with severe comfort issues, extremely high utility bills and/or poor experiences with contractors.

Initially, both programs focused on serving customers from the first two groups as they would require little motivation to act and were the most likely to participate in the program. However, as the project progressed the program saw the opportunity to address the needs of the third group of customers with comfort and expense issues. Once the early adopters from this group were satisfied with their comfort and quality outcomes, word-of-mouth spread and demand was further stimulated. Marketing efforts around saving money generally failed, while selling comfort proved to be a key motivator for most people.

Other successful marketing and outreach activities included: attendance at local events and home shows, earned media, and public service announcements. In Huntsville specifically, public radio was an especially powerful marketing tool. Although the reason for success of this particular method is not certain, it was likely due in part to the dense concentration of highly educated individuals with strong ties to government work or government contracting. In addition, local television frequently featured Nexus Energy Center as experts to help the community. Free publications also featured staff articles on energy saving tips in an editorial-like article.

In the last year of the program, www.alabamawise.org was officially launched and provided homeowners with over 200 staff written articles related to home performance. While it has taken some time to build traffic on the site, interest in the site is increasing, and the educational materials have proved to be the most visited portion of the site. The site is being utilized as both a repository for educational information and as an inbound marketing tool to capture contact information for interested building owners. Development of a comprehensive site such as this is large in scope and requires a great deal of time to develop and implement. Overall, the investment in the site has proven to be a success.

Alabamawise.org was also launched in conjunction with the announcement of AlabamaWISE becoming an official sponsor of Home Performance with ENERGY STAR. The branding and reputational boost of the program being affiliated with ENERGY STAR has been noticeable. When talking to potential program participants in the community, there is often limited interest in participation until the words ENERGY STAR are spoken. Since becoming a sponsor, Home Performance with ENERGY STAR has become a key feature and marketing focus for the program.

Unsuccessful marketing and outreach activities included: home energy block parties, home energy makeovers, and paid advertising. The block parties and home energy makeover contests were largely unsuccessful due to a lack of performance by a contract partner who failed to conduct effective outreach within to the community to generate interest. Paid advertising in general is helpful for brand awareness and can help indirectly generate leads as prospective customers continue to be touched by the program, but ultimately the cost of investment outweighed the benefit.

Successful Strategies	Unsuccessful Strategies
<ul style="list-style-type: none"> • Attendance at local events and home shows • Website: www.alabamawise.org • Public service announcements on public 	<ul style="list-style-type: none"> • Home energy block parties • Home energy makeovers • Paid advertising • Magazine ads

radio <ul style="list-style-type: none"> • Features on local news stations • ENERGY STAR affiliation 	
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Workforce Development

In order to address the skills and expertise of local energy auditors, home performance contractors, real estate agents and appraisers, a variety of workforce development opportunities were offered throughout the length of the project.

Advanced Energy provided technical trainings and sales trainings to building contractors based on their particular needs. The training curriculum was presented along with graphics and pictures to illustrate how to correctly install energy efficiency measures. The training curriculum was developed by Advanced Energy in conjunction with the then newly published DOE Workforce Guidelines. Advanced Energy’s knowledge and positive reputation helped to increase attendance at the trainings.

EAI provided trainings to both home energy auditors and contractors participating in the AlabamaWISE program on how to effectively use the EPS platform. These trainings served as a way to train contractors on how to enter in data and utilize the tool to generate a score. They also served as an opportunity to collect feedback from contractors and Nexus Energy Center on how to improve the tool to be easier to use and more accurate. EAI also provided training for real estate agents and appraisers through their two-day Sustainability Training for Accredited Real Estate Professionals (S.T.A.R.) course and the Appraising Green Homes course on the increased value that energy efficiency upgrades add to a home. The goal of engaging the real estate community is to educate them on the value of installing energy efficiency measures in a home with the ultimate goal of including this information when homes are listed or appraised. EAI and Nexus also collaborated on the creation of the on-line version of the S.T.A.R. training course to expand the scope of the audience for future trainings.

AlabamaWISE was also able to leverage a grant with Drake State Technical College to help provide weatherization and Building Performance Institute (BPI) certification trainings to students and contractors. This opportunity allowed AlabamaWISE to bring new contractors on board and train them in whole home performance. As a result of the various training opportunities offered throughout the project, over 50 contractors received sales, BPI, and RESNET trainings and certifications.

The real estate professional trainings were so successful that ADECA decided to fund additional trainings throughout the state and outside of the target market of the WISE program using SEP formula funding. Over 400 real estate agents and appraisers were trained in eight different cities across the state of Alabama.

Financing and Incentives

AlabamaWISE was setup to offer as few rebate dollars per homeowner as possible yet still motivate them enough to complete work achieving at least 20 percent energy savings. A total of \$750 in rebates was available with \$350 of the total reserved for an energy assessment and the remaining \$400 for retrofit work. A complete detail of rebates and incentives offered by the program is listed below.

Eligible Improvements and Rebates:

- \$75.00/building – Air sealing using foam and/or caulk
- \$210.00/building - Attic insulation bringing total value to R-38 or higher*
- \$15.00/door - Door weather-stripping, threshold, or replacement
- \$120.00/system - Duct sealing or duct repair using mastic and duct replacement
- \$350.00/building – Encapsulate attic with spray foam insulation, bringing duct-work into conditioned space
- \$250.00/building – Encapsulate attic with spray foam insulation, no duct work included
- \$350.00/building – Installation of a spray foam closed crawlspace system, bringing duct-work into conditioned space
- \$250.00/building – Installation of a spray foam closed crawlspace system, no duct work included
- \$40.00/building - Installation of crawl-space ground cover
- \$250.00/building - Installation of bio-PCM (Phase Change Material) in attic*
- \$15.00/window – Low-E coating or film brings window performance to energy efficient window level
- \$25.00/window (\$250 max) - New energy efficient windows rated better than 0.31 U-value and 0.30 Solar Heat Gain Coefficient (SHGC) Use In-Like (same type window material) if required by law
- \$40.00/thermostat – Purchase, installation, and programming of a programmable thermostat
- \$250.00/HVAC - Purchase and installation of a new ENERGY STAR-rated HVAC system
- \$150.00/building – Purchase and installation of ENERGY STAR-rated water heater
- \$25.00/building – Purchase and installation of hot-water heater pipe insulation
- \$25.00/building - Purchase and installation of hot-water heater tank insulation
- \$210.00/building – Purchase and installation of R-19 or higher floor insulation*
- \$50.00/building - Repair and/or sealing of windows & doors
- \$75.00/building - Seal attic walls with foam board
- \$50.00/HVAC - Servicing of central HVAC equipment
- \$20.00/access - Weather-strip and insulate attic access doors

*To receive rebate, air sealing of the area must first occur.

AlabamaWISE Loan Description

- **Residential Energy Efficiency Loans:** Unsecured, personal loan
- **Eligible Properties:** Owner-occupied, single-family homes located within Cullman, Jefferson, Lawrence, Limestone, Madison, Morgan, and Shelby Counties.
- **Individual Eligibility Requirements:** FICO score ≥ 660 ; Debt-to-income ratio $< 45\%$
- **Loan Amounts:** \$2,500 to \$15,000
- **Loan Term:** 3 to 5 years; no prepayment penalty
- **Loan Rates:** 6% fixed interest rate; APR will vary based on \$120 loan origination fee and term. See Payment Estimator for more information.
- **Eligible Improvements:** Energy-saving improvements pre-qualified by Nexus Energy, such as air sealing, insulation and high efficiency HVAC, water heating equipment, and other efficiency measures.
- **Origination and Servicing Platform:** Point and click web based loan origination platform that allows applicants to apply for loans on-line. Underwriting, credit decisions, regulatory disclosures and contracts are also all delivered electronically. Full compliance with all applicable state and federal regulatory requirements. Loans are automatically boarded and uploaded to the servicing platform upon funding. Contractors are paid directly via wire of funds from Program escrow account.

Finally, with the approval of DOE, AlabamaWISE offered a \$3,000 rebate to homeowners for the installation of solar photovoltaic systems. This rebate was only available if the homeowner had already participated in the AlabamaWISE program and achieved a savings of 20 percent or greater.

Originally, \$298,000 was allocated to a revolving loan fund as part of the financing program. Another \$181,000 from the grant has also been allocated to the revolving loan fund to increase the loan pool size. Nexus Energy Center is the chief administrator of the revolving loan fund with Abundant Power Solutions providing the underwriting. Nexus Energy Center is continuing to research options for additional loan capital, including the PowerSaver and WHEEL programs. Through April 2014, a total of 30 loans have been made for a total of \$297,320, the average loan size being \$9,191.28.

Data and Evaluation

Data collection and reporting were key components to tracking and assessing program performance towards target goals, but they also proved to be very challenging and time consuming for the program and its partners. Several issues that were encountered included limited access to utility bill data; lack of sophisticated systems to track, analyze, and transfer project data; and the large amount of time and resources needed to collect, process, and format data to be used for analysis.

For almost the entire duration of the project, all data collection and tracking was performed in Microsoft Excel. This method proved to be error prone and time consuming. As participation in the program increased, time spent on reporting and data entry also grew. This led to a collaboration with the Top of Alabama Regional Council of Governments (TARCOG) to secure part-time personnel to assist with data entry for

reporting and analysis. Over the last six months of the project, all program data has been transferred to Salesforce, a cloud-based database platform. As a non-profit organization, Nexus Energy Center qualified for a donated version of Salesforce, free of charge. Salesforce has allowed for easier data entry and reporting and will continue to serve the program in the post-grant period.

The EPS platform was the primary tool used to estimate energy savings for building assessments. A combination of EPS and deemed savings tables were utilized for estimating energy savings after measures had been installed. The programs relied heavily on these tools to estimate energy savings as program staff lacked expertise to adequately analyze and determine actual savings.

Better Buildings Neighborhood Programs were asked to collect utility bill data to verify estimated savings. The AlabamaWISE program obtained waivers from homeowners, and worked directly with their utilities to collect the necessary data in electronic file formats. Most utilities in Huntsville and the surrounding counties were able to provide utility bill data with a signed homeowner waiver. On a monthly basis, Nexus Energy Center would send in requests via fax to the appropriate contacts at the utility.

All but one of the utilities in the Huntsville area, which were distributors of the Tennessee Valley Authority (TVA) provided utility information. In Birmingham, establishing a relationship with Alabama Power Company to support the program and provide utility bill data took quite some time. Eventually, program administrators were able to collect customer information from the utility in order to analyze the results, which was accomplished very late into the program.

The Cadmus Group was contracted by NASEO to provide an independent third party process evaluation for the Alabama programs. As part of this evaluation, Cadmus surveyed homeowners, contractors, and other market actors to assess the effectiveness of each of the programs. DOE also undertook a national impact and process evaluation performed by a group of private evaluation contractors.

These various evaluations, while operating separately, at times overlapped and caused a huge burden to be placed upon the programs to provide information. One solution for future evaluations would be to identify data inputs at the beginning of the program and ensure programs have the means to collect and report that information. Also, it would be valuable for various program partners to combine evaluation efforts to avoid duplication.

Accomplishments

Listed below is the original Statement of Project Objectives (SOPO) and a detailed description of target and actual objectives and activities.

Statement of Project Objectives

PHASE 1: Program Strategy/Plan

1. Task 1.0:

- **Target:** Create a development strategy for the AL REAs to deliver a residential whole-house energy efficiency program. Effective program elements will be transplanted from established markets to emerging markets within Alabama and across a multi-state area. Development strategy to include marketing, financing, Quality Assurance protocol for work performed, and Measurement & Verification.
- **Actual:** Alabama collaborated with the other SEP states and partners to develop energy efficiency retrofit programs with common elements including the EPS scoring tool, contractor and real estate professional training, and rebates and financing options. Nexus Energy Center tailored the program design and marketing methods to fit the communities of Huntsville and Birmingham. SEEA contracted with Advanced Energy to provide quality assurance inspections. NASEO contracted with the Cadmus Group to complete a process evaluation of the Alabama programs.

Subtask 1.1:

- **Target:** Establish a communications protocol for frequency and method for sharing information between program participants.
- **Actual:** SEEA served in a project management role for both the Alabama and Virginia projects and coordinated regular communications including bi-weekly group calls, regular e-mail communications on deadlines and guidance updates, and site visits. NASEO also helped to coordinate steering committee calls and meetings among the four states and other project partners.

Subtask 1.2:

- **Target:** Contract for a suite of online tools to be used by program implementers to manage customers, engage homeowners, facilitate the conversion process from intake to audit to retrofit, and M&V on the process.
- **Actual:** EAI was contracted to provide the EPS tool to program administrators, auditors, and contractors to use during the audit and post-retrofit stage of a project to generate an energy score and potential savings.

Subtask 1.3:

- **Target:** Identify workforce training issues and contract for the training of auditors and the development of retrofit contractor businesses.
- **Actual:** EAI provided auditor and contractor trainings on the EPS platform. Advanced Energy was contracted by SEEA to provide contractor trainings to the local programs based on the needs of the contractors in each area. Nexus Energy Center was also able to provide BPI certification training and weatherization training to contractors through a grant with Drake State Technical College.

Subtask 1.4

- **Target:** Create a plan for the implementation of the Energy Performance Score (EPS) metric to be adopted and promoted by the REAs in all areas. Public outreach around the EPS will include training of Realtors and Appraisers to establish the mechanisms for valuing energy efficiency within the real estate community.
- **Actual:** EAI developed an implementation plan for each of the program communities which involved onboarding programs and contractors on how to use the EPS platform along with targeted trainings for realtors and appraisers that demonstrated the value of the EPS score and how to market energy-efficient homes.

2. Task 2.0

- **Target:** Issue an RFP for an energy efficiency financing program using the grant award to set up a loan loss reserve for this fund.
- **Actual:** A request for information was issued by SEEA early on in the grant. After unsuccessful negotiations for the establishment of a loan loss reserve, the focus of the financing program became to establish a revolving loan fund instead. Program administrators are still considering using some of the loan funds for a smaller loan loss reserve in the future.

3. Task 3.0

- **Target:** Establish an Evaluation, Monitoring and Verification protocol (EM&V) to be developed in coordination with our partners at a level and standard that is similar to the industry-accepted practices identified in the National Action Plan for Energy Efficiency and DOE metrics outlined in their Better Buildings program.
- **Actual:** Through NASEO, the four states jointly contracted with The Cadmus Group to perform an independent third party process evaluation. The final evaluation report, *Multi-State Residential Retrofit Process Evaluation: Alabama*, is attached.

4. Task 4.0

- **Target:** Identify policy drivers and recommended legislation to support large scale adoption of retrofit remodeling.
- **Actual:** Environment Northeast (ENE) prepared a white paper entitled *Best Practices for Advancing State Energy Efficiency Programs: Policy Options & Suggestions*. The paper, while good, was not very useful since it did not consider much of the policy climate in the Southeast surrounding energy efficiency programming. The second report drafted by ENE, *Energy Policy Recommendations for Alabama*, was a viable look at suggested options for efficiency in Alabama. However, many of the recommendations centered around utility policies, which the program could not have an effect in.

PHASE 2: IMPLEMENTATION AND EVALUATION

1. Task 1.0

- **Target:** Building off of the work completed in Phase 1, Phase 2 will begin to implement the residential retrofit programs. Installation of programmatic software and launch of a customer web portal will accompany the programs' implementation.
- **Actual:** EAI worked with Nexus Energy Center to customize their online customer engagement tool to be embedded in the alabamawise.org website. EAI continually updated the tool to make adjustments to the calculations and user interface in order to make the tool more accurate and easy to use. Nexus Energy Center also established the site Alabamawise.org.

Subtask 1.1

- **Target:** Curriculum for the contractor development package finalized and integrated into the training protocols for each state's target areas. New curriculum will be integrated into established curriculum for local training. New curriculum will also address critical needs in workforce viability and expansion, as somewhat distinct from workforce development. The focus will be on helping grow existing home

performance contracting businesses, i.e., transitioning remodelers, HVAC or insulation contracting firms into home performance firms, as opposed to creating wholly new businesses.

- **Actual:** Advanced Energy delivered established and new curriculum to all of the program areas. The trainings were scheduled and implemented to meet the needs of the contractors in each program area. Trainings offered by Advanced Energy included HVAC installation, air sealing, and contractor sales training.

Subtask 1.2

- **Target:** Implement contractor training. For the technical training, the recipient will work with existing training centers and the AL Weatherization Training Program delivered via the community college system to coordinate programs. Trainings developed and deployed will be consistent with national standards and implement national certification trainings where applicable.
- **Actual:** Through a grant with Drake State Technical College, Nexus Energy Center was able to offer BPI certification and weatherization training to new contractors who may not have received training in the past.

Subtask 1.3

- **Target:** Implement auditor training. At least two training sessions per year will be offered for each program. Within the first year of implementation, local entities will be trained to deliver ongoing EPS auditor training.
- **Actual:** EAI provided auditor trainings to educate auditors on how to input information into the EPS platform to generate an energy score. Auditor trainings were conducted by both program staff and EAI staff at the beginning and throughout the course of the project.

Subtask 1.4

- **Target:** Realtor/Appraiser Outreach & Training. The REAs will offer the highly successful S.T.A.R. (Sustainability Training for Accredited Real Estate professionals) to Realtors in the targeted communities. The S.T.A.R. course educates real estate professionals about the features and benefits of new and existing high performance homes. Participants are taught the tools needed to communicate the advantages of energy efficiency, the EPS, and green features to their clients.
- **Actual:** EAI delivered four Broker Courses for Real Estate Professionals to 84 Realtors in Alabama. EAI also delivered four Appraising a Green Home and Certified Green Home Appraiser trainings to 56 appraisers in Alabama. S.T.A.R trainings were also delivered.

Subtask 1.5

- **Target:** Launch marketing and outreach campaign will include, but is not limited to, public and private area schools, faith-based organizations, non-profits, government

staff, utilities, universities, real estate associations, Chambers of Commerce, and trade organizations. The recipient will also actively work with regional and local lenders to support the program implementers in promoting the inclusion of the energy retrofit in remodel work done at the point of sale or during a refinance for home improvement (important for the success of the EPS).

- **Actual:** Nexus Energy Center partnered with many organizations within the target communities, including academic institutions, local governments, faith-based institutions, utilities, real estate professionals, trade organizations, and local neighborhood and business associations.

2. Task 2.0

- **Target:** Perform quarterly evaluations of programs in terms of metrics described above.
- **Actual:** Program submitted monthly and quarterly qualitative and quantitative reports to SEEA. SEEA compiled inputs from the programs' reports along with reports from other program partners including NASEO and EAI into the DOE required quarterly report formats. These reports were then submitted to ADECA to add additional information and review. Reports were submitted quarterly to DOE and address progress made towards goal stated in the SOPO.

Subtask 2.1

- **Target:** Establish a standardized EM&V plan with common metrics.
- **Actual:** The Cadmus Group developed an EM&V methodology and plan to address their independent process evaluation of the Alabama programs. The evaluation elements evolved over time as the program became operational but included an overall program theory, logic model, and researchable issues. SEEA and ADECA worked with the program to collect quantitative information on a monthly and quarterly basis. In addition to this information being submitted to DOE for analysis, SEEA also published quarterly Snapshot Reports that detailed program performances compared to goals and energy savings impacts.

Subtask 2.2

- **Target:** Identify existing contractors under contract by SEEA and/or LEAP to perform EM&V for the State of Alabama.
- **Actual:** The Cadmus Group was selected by NASEO to perform a process evaluation for all four SEP project states.

Subtask 2.3

- **Target:** Begin EM&V Activities. Communicate metrics and procedures to contractors; ensure measurement protocols are implemented beginning with initial retrofit activities.
- **Actual:** The Cadmus Group began the process evaluation of the Multi-State Retrofit Project in September 2011. The overall process and findings can be found in the report *Multi-State Residential Retrofit Process Evaluation: Alabama*, which is attached. .

Additional Program Accomplishments

Workforce Development and Contractor Management

- The AlabamaWISE contractor network includes an exceptional group of professionals who care about the industry. There were minimal challenges working with the program contractors, and they proved to be one of the strongest parts of the program. Without their involvement and commitment, the program would not have maintained its growing success.
- One of the few issues encountered with quality of work was the accuracy and consistency of air sealing. Advanced Energy was brought in to teach a hands-on air sealing class, and the quality of work dramatically improved.

Marketing and Outreach

- The AlabamaWISE program developed an online suite of tools with the HOME Portal by EAI and the AlabamaWISE website. These online resources were very popular with homeowners as an easy, non-threatening way to get information. The AlabamaWISE website is starting to generate significant traffic and providing good quality leads to the program.
- Earned media was a big plus for the programs and surprisingly easy to obtain. Program staff regularly appeared on local news stations talking about the programs and gave advice on how to save energy. A regular public service announcement on public radio was recorded and updated throughout the project.
- Participating contractors did an excellent job of promoting the programs in their own marketing and at public events. All participating contractors carried stock promotional materials, promoted the programs at home shows and often generated significant leads.
- The use of www.mygreenbirmingham.com in the Birmingham market as a resource for free advertising and content marketing was an asset to program outreach.

Financing

- Even though it took a significant amount of time to start a financing program, it has since been a great success. In the last six months, the AlabamaWISE program originated nearly all of its starting pool of \$298,000.

Partnerships and Collaborations

- Though difficult at times, the program was able to maintain continued open conversations with local utilities about program support and data access. In some cases, progress was limited, but the ability to continue these conversations is considered a success.
- The AlabamaWISE program developed very strong ties with other non-profits and community actors such as local universities, the Cornerstone Initiative (a faith-based poverty fighting organization), Community Action Partnership, Energy Huntsville (a Mayoral initiative for energy-related economic business development), and CASA (Care Assurance System for the Aging and Homebound).
- The AlabamaWISE program in Birmingham was fortunate to have Alabama Power support during the project. Several times throughout the grant period they provided space for events and meetings, and educated their energy auditors and HVAC representatives about the program so they could provide information to the public. They also periodically promoted the program on social media.
- Alagasco partnered with WISE's leading contractor in Birmingham, Jonathan Handey, and did exclusive marketing and outreach on his behalf. The result was an increase in clients who took advantage of the program.
- Early on the Home Builders Association of Birmingham was helpful in giving the AlabamaWISE program a platform to speak to contractors and realtors. The Home Builders Association of Huntsville was also a helpful partner.

Innovation

- The program website (<http://www.alabamawise.org>) was an innovative approach to use inbound marketing techniques to drive demand. Program staff and contractors created unique educational materials and articles to address common questions, complaints, and concerns in our target market. Organic search results from Google and other search engines started to pick up about six months after the introduction of the site. Currently, the website is generating over 300 hits per day and generating a significant amount of qualified leads.
- AlabamaWISE used an innovated business model and approach to the contractor network. The program took a very hands-off approach with the exception of quality assurance. By allowing contractors and the market to dictate the space with targeted but limited guidance from the program, each participating contractor carved out a specific niche in the market and was able to succeed.

Challenges

Startup Delays and Capacity

As mentioned earlier, many of the partners involved in this project were in a “start-up” mode themselves when the Multi-State Project was awarded the funds in September 2010. When DOE awarded ADECA the grant funds in September 2010, Nexus Energy Center was incorporated as a non-profit organization to implement the Multi-State Project originally in Huntsville, and then several months later, through contracted assistance, in Birmingham as well.

SEEA provided Project Management services for Nexus Energy Center in both Huntsville and Birmingham. A number of issues including underestimating the time requested for processing invoices and the staff turnover/staff capacity at SEEA caused concerns with the consistency of services and hampered the timely reimbursements to Nexus Energy Center, which resulted in cash flow issues for an organization with little other access to operating capital. This disrupted Nexus' ability to establish strong relationships with contractors, who were already burdened by reporting requirements, data collection and other program requirements. This was cited as a problem in ADECA's first DOE monitoring and was improved but not completely resolved.

The amount of time necessary to setup a financing program was also underestimated. SEEA was originally tasked with pursuing a financing mechanism. Little time was devoted to pursuing financing in Alabama by SEEA due to other commitments and staff turnover, and the negotiations that were made fell through.

Nexus Energy Center then tried to pursue its own financing mechanism, which proved to be difficult too. The assumption that a bank or community credit union would be willing to work with a local non-profit covering their risk proved to be unfounded. In turn, the AlabamaWISE program struggled to get a financing program up and running. Eventually, ADECA and Nexus Energy Center worked together to get Abundant Power Solutions on board to provide underwriting for a revolving loan program.

Nexus Energy Center believed that this challenge was due to the lack of the organization's history with a lending program. Since the financing program was established in early 2013, a reliable record has been established which has led to more financial institutions becoming interested in developing a partnership.

Additional help from SEEA and/or DOE to allay the concerns of banks and credit unions or help creating a more regional/national lending program would have been helpful. Notably, SEEA is leveraging its experience from the State Energy Program and Better Building Neighborhood Program to establish a more robust energy efficiency financing network and range of services in the region now but found it difficult to do so during the grant.

Contractors

In general, AlabamaWISE program administrators were satisfied with their relationships with contractors in their network. There were several instances of contractors not reporting collected information for projects which caused a lag in the information submitted for monthly and quarterly reports.

Currently the programs are challenged with decreased contractor participation as the program incentives are depleted. In Birmingham in particular, most of the contractors work part-time and are not as invested in participating the program in the post-grant period.

Client and Program Management

In order to run an effective program, systems and processes need to be established to ensure effective financial and program management. When the project began in late 2011, ADECA had not undertaken the administration of a residential program of this scale and Nexus Energy Center was still a relatively new non-profit organization. Establishing the structural items needed to run an organization including financial and accounting systems, office space, technology, staffing, and a strategic vision along with the day-to-day management of the energy efficiency retrofit programs proved to be very challenging for Nexus Energy Center. Nexus Energy Center also was not very familiar with federal grants and their regulations.

Therefore, SEEA was brought in to provide assistance and expertise. However, at times this seemed to delay processes and add cumbersome administrative backlogs. Delays in submitting invoices and documentation at times caused disruption in program cash-flow from Nexus Energy Center to SEEA to ADECA.

Marketing, Market Knowledge and Demand

Both markets lacked a variety of factors that would have enhanced marketing efforts including existing, experienced partners such as utilities offering energy efficiency programs, a trained and knowledgeable contractor network and consumer exposure to energy efficiency in the residential context. Accordingly, rather than leveraging these assets to introduce a new suite of services into the market the Programs were focused on negotiation, training and generating awareness.

With limited financial resources and staff and little history of energy efficiency programming on which to draw, determining the appropriate marketing channels proved to be a trial and error exercise for Nexus Energy Center in both Huntsville and Birmingham.

Generating community awareness initially for the program proved to be one of the greatest challenges for the AlabamaWISE program in Birmingham. There was not a significant budget for marketing so the program relied on mostly earned media. Additional support from major utilities as well as the City of Birmingham would have helped promote the program's reliability as a trusted resource and would have also eased the burden for outreach and marketing.

Additionally, Birmingham struggled to motivate and retain a strong contractor network, which due to the absence of utility interest, was a crucial marketing mechanism for the AlabamaWISE program. Over time, Birmingham saw contractor participation dwindle, primarily because none of them were full time contractors. Most performed the work on the side, and didn't completely invest in this aspect of the business.

Partnerships and Collaborations

Utility engagement was significantly harder than originally planned. It became quite clear as time progressed that many utilities did not have the appropriate set of motivations or regulatory conditions to support the delivery of energy efficiency as aggressively as the program did. This eventually led to the change of the program structure to a vertical contractor model which allowed AlabamaWISE the flexibility to operate outside the purview of a utility energy efficiency program and under normal market conditions.

This structure yielded more success and higher output than the beginning of the EECBG Program with a utility company.

Program Goals and Requirements

The requirements associated with a federal grant program made it challenging to implement certain practices and make certain investments to facilitate a shift from grant-funded support to market-based sustainability. For example, since the program could not collect fees to build post-grant capital (i.e. from providing trainings) or leverage the grant resources to invest in related areas outside of the original grant agreement (i.e. commercial buildings, low-income housing opportunities), AlabamaWISE has had to retrench and attempt to regain steam rather than make a full force effort for sustainability using the grant as leverage.

The original retrofit target of 1,365 completed retrofits at the end of three years proved to be a challenging target to reach. Reaching this target was difficult for the program as it was new or still in the early stages of development when ramp up of operations began. Also the program had to address barriers including lack of infrastructure and identifying contractors and partners before it could move forward in addressing the retrofit goal. Starting new energy efficiency programs in areas where programs have not existed before requires a great deal of time and commitment. If similar programs are developed in the future, the goals and timeline should align with the starting conditions and work that needs to be accomplished in order to achieve the goals.

The inability to collect fees during the project also proved to be a challenge for the programs. A fee-based business model appeared to be the best model to implement for program sustainability, but the inability to test the effectiveness of that model may be a challenge for the program, particularly in the post-grant period.

Financing Programs

The amount of time necessary to setup a financing program was also grossly underestimated. The assumption that a bank or community credit union would be more than happy to assist in a residential efficiency program or work with a local non-profit covering their risk proved to be unfounded. In turn, the program struggled to get a financing mechanism up and running. We believe most of this challenge was due to the lack of history with a lending program. Since we were able to find a financial services partner and show success, more banks and credit unions are now interested in developing a partnership. Help from SEEA and/or DOE to allay the concerns of banks and credit unions or help creating a more regional/national lending program would have been helpful.

Program Sustainability Plans

Overview

AlabamaWISE will continue to operate in the Huntsville market in accordance with the program sustainability plan outlined below. As described previously a variety of factors presented challenges to the AlabamaWISE program in Birmingham, and it was unable to gain enough financial momentum to generate a viable sustainability plan for continuing into the future.

Program Name:

AlabamaWISE

Year 1 Goals:

Successfully sustain an open market program without utility assistance. Generate at least 300 leads to contractors.

Program Funding:

- \$25 - \$150 qualified lead fees depending on contractor enrollment level
- \$250 - \$1500 annual fee to contractors for other program resources such as training, cooperative network, etc.
- \$35 memberships are available to individuals who wish for Nexus Energy Center to act as their Project Advisor.
- Nexus Energy Center is continuing to pursue other foundations for lending capital, such as WHEEL and PowerSaver.
- Nexus Energy Center is also pursuing other foundations for programmatic funds primarily for the underserved community.

Target Market:

State of Alabama, Residential

Product Offerings:

Program offerings are still evolving and responsive to customer and contractor needs.

- Home Performance Score or other auditing software and CRM
- Home Performance with ENERGY STAR
- Quality Assurance

- Public education and online resources
- Qualified leads to contractors
- Training

Intended Partners:

- ADECA
- Abundant Power
- Home Builders Associations
- Associations of REALTORS
- Redstone Federal Credit Union
- AFC First
- U.S. DOE / ENERGY STAR
- Earth Advantage
- CakeSystems
- RESNET
- Local non-profit organizations

Additional Program Sustainability Support

Per discussions between NASEO and ADECA, NASEO drafted a case study on the AlabamaWISE program in order to highlight the best practices and lessons learned from the project. Alabama identified the goal of having a document that could be shared with other local governments to create interest in the program.

After several rounds of editing, NASEO and Alabama have an updated working version of the document. See Attachment E for the most up-to-date version of the case study. The document was also written in a way to allow Nexus and/or ADECA to make periodic updates to it over time. Thus, it should meet a variety of purposes moving forward. The case study also provides useful outcomes and lessons learned from the AlabamaWISE program that could be utilized in final DOE reporting.

Verification of Data

- ADECA and its project partners have reviewed and verified the summary information of data submitted to the BBNIS to be used for third-party evaluations.
- The Cadmus Group completed a third-party process evaluation of the Alabama Program. The report *Multi-State Residential Retrofit Process Evaluation: Alabama*, prepared by The Cadmus Group.

Developed Products

- The Cadmus Group report *Multi-State Residential Retrofit Process Evaluation: Alabama* (Attachment A)
- Earth Advantage Institute online and in person Sustainability Training for Accredited Real Estate Professionals (S.T.A.R.) course material (Attachment B)
- ENE Report *Best Practices for Advancing State Energy Efficiency Programs: Policy Options & Suggestions* (Attachment C)
- ENE Report *Energy Policy Recommendations for Alabama* (Attachment D)
- NASEO Case Study (Attachment E)
- Nexus Energy Center customized Energy Performance Score (EPS) platform
- [The SEEA Energy Pro³ Report](#)
- [SEEA Energy Pro³: The Economic Impact of Energy Efficiency Investments in the Southeast](#)
- [SEEA Energy Pro³ Infographic](#)
- [SEEA Energy Pro³ Report: Alabama](#)
- [SEEA Snapshot Reports](#): Released quarterly and found on [SEEA's website](#).
- SEEA Salesforce Database
- AlabamaWISE Salesforce Database
- Website and Blog Content www.alabamawise.org
- A variety of content promoting the AlabamaWISE program and offering insight to readers, can be found at [My Green Birmingham](#)