Expanding North Carolina Energy Efficiency and Renewable Lending Programs:

Market Snapshot

SEPTEMBER 2010

Environmental Finance Center
at University of North Carolina at Chapel Hill[1]

Funding provided by the DOE Financial Mechanism Technical Assistance Project

[1] *Center for Climate Strategies* is the Lead for the Department of Energy (DOE) financial mechanism project team that the Environmental Finance Center works within.

UNC ENVIRONMENTAL FINANCE CENTER

Introduction and Background

As part of a national effort funded by the US Department of Energy, the Environmental Finance Center (EFC) is currently providing support to state and local governments in the process of designing and implementing energy finance programs. The EFC is currently providing assistance to a number of North Carolina (N.C.) government entities including the State of N.C. energy office (SEO) and the city of Raleigh. Both the City of Raleigh and the SEO staff independently asked the EFC to collect information from key stakeholders that could be used to inform their design decisions. The EFC carried out research and stakeholder interviews in order to compile a brief snapshot of stakeholder views.

The document is not intended to be an exhaustive research paper, but rather a concise overview of a small sample of key stakeholders' current efforts, interest and concerns relating to North Carolina's energy efficiency and renewable energy (EERE) lending programs. To accomplish this our Technical Assistance Team, and AmeriCorps VISTA in partnership with Raleigh's Business Assistance Program, has interviewed a range of key stakeholders (see appendix for list of interviewees) about their interest in participating in a state-level EERE lending program, including:

- Banks (Credit Unions, Large Banks, Community Banks)
- Energy Contractors
- Electric Utilities
- Property Owners (Commercial and Residential)
- Local Governments

The purpose of this study was to gather insights and ideas that could inform lending policies.

This document is divided into two main sections: 1) Key findings for the overall N.C. EERE Lending Program, and 2)A sample of stakeholder views.

Key Findings

Current Financing Options in N.C. Range from 14% – 26% Interest Rate
For residential property owners that seek to make energy efficiency or renewable energy investments, interest rates for loans not secured by property are often in the 14-26% range. Fannie Mae approved energy lenders, including AFC First which currently operates in N.C., offer loans with interest rates between 14-16%. Other banks often offer unsecured loans with interest rates of 20% or more, but many banks do offer home equity loans for EERE retrofits. A few credit unions, including State Employee Credit Union and Electel, offer EERE loans, typically within the 6-8% range.

Secondary Market Access Key for Big Banks and Fannie Mae Lenders
Many of the larger commercial banks interviewed wanted the option of passing along EERE loans to the secondary loan market. Fannie Mae lenders have worked within a model that has possessed a secondary market, in their case Fannie Mae, for approximately 10 years. This would suggest that in order for North Carolina to involve larger commercial banks and Fannie Mae lenders, they should work towards develop a warehousing and secondary market strategy.

Limit Administrative Burden for Banks
Given that this is a new program, the interviewed financial institutions expressed uncertainty about the odds of the program succeeding. It is likely that some of the financial institutions will forego participation in the program if they believe reporting and administrative requirements will necessitate new full-time staff and multiple layers of reporting. Accordingly, the state's proposed program should be as simple and straightforward as possible to encourage a breadth of financial institution proposals.

Energy Contractors Key Partner in Marketing Lending Program to Property Owners
Energy contractors are a natural ally for the N.C. EERE lending program – better financing options can help potential customers pay for energy efficiency and renewable energy lending improvements. The organization that administers the state's lending program should partner with contractors, and create marketing materials that contractors can understand and use when interacting with potential customers.

Property Owners Require a Simple Program
Residential and commercial property owners desire an easy-to-understand and execute EERE lending program. The more steps in the process, the fewer property owners will participate in the program.

Coordinate State and City-Level Programs
Multiple N.C. cities are considering running their own energy efficiency lending programs. State and city-level lending programs should reinforce one another, instead of contradicting or competing against one another. Possible approaches for increasing coordination include enabling banks that participate in city programs to be included in the state-level program, and allowing cities to buy-down the interest rate provided by N.C. EERE programs.

Sample of Stakeholder Views

Banks

Banks are diverse institutions with different approaches to lending, and different key concerns. Large banks possess different goals and lending strategies/processes than credit unions. Accordingly, the state-level EERE lending program should take into account the concerns and interests of the different players within this diverse group. Below is a brief introduction to each type of bank, and their vantage point with regard to N.C.'s EERE lending program.

Large Commercial Banks
These banks possess a significant presence in North Carolina, with several large commercial banks headquartered in the state. Several of these banks offer energy efficiency products as an add-on when buying a new home (typically the FHA-approved Green Mortgage program), but there are no known loan products for energy efficiency or renewable retrofits. With the recent financial crisis, Community Reinvestment Act (CRA) teams feel added pressure from regulators to invest more in their communities, which could be beneficial for N.C.'s EERE program depending on how it was designed and marketed to banks.

Credit Unions and Community Banks
North Carolina has a very strong credit union presence, with several of the largest credit unions in the U.S., including the State Employee Credit Union (SECU) and Self-Help Credit Union. Credit unions may have higher costs of capital than commercial banks, but credit unions and community banks have been innovating within the energy efficiency space. For example, SECU's "green second mortgage", with an interest rate of 6.25-7.5% depending on terms, and Electel's new energy efficiency retrofit lending program, which has a 6% interest rate, are two innovative energy loan products in N.C..[2] While these programs offer relatively favorable terms, access to them is limited.

Fannie Mae Approved Energy Lenders
Fannie Mae has a long-standing energy lending program – approximately 10 years to date. Within this program there are three approved financial institutions that are able to originate loans. These institutions can then pass ownership of the loans along to Fannie Mae, who buys all the loans originated by the three approved energy lenders. These loans have a 14-15% interest rate, and about $250 million in loans for energy efficiency or renewable improvements have been made. AFC First, which also is responsible for managing a residential loan program with Progress Energy, is the main lender on the east coast. AFC First also originates and services loans through the Pennsylvania Keystone HELP program, which has executed 6,000 residential loans totaling $37 million since 2006. Keystone HELP uses a loan loss reserve structure to bring down interest rates to the 5-8% range, and default rates have been 1.3% to date. Viewtech and Wisconsin Energy Conservation Corporation (WECC) are the main Fannie Mae energy lenders on the west coast and Midwest, respectively.

[2] "Energy Smart Loans". Electel – Cooperative Federal Credit Union. Accessed Aug. 5th, 2010. http://www.electelccu.org/asp/products/product_1_6.asp

Key Interests and Concerns by Type of Financial Institution

Although our sample size was small and each financial institution has unique interests, concerns and competencies, there were some interesting similarities in the views voiced by different types of institutions,. The table below summarizes key ideas that were voiced during interviews with each group, by detailing key areas of interest and key concerns. Our team then used these interviews and background research to determine which roles these bank types would be best positioned to execute.

	Key Areas of Interest	Key Concerns	Roles Best Suited to Execute
Large, Commercial Banks in N.C.	• Possibility of helping banks comply with the Community Reinvestment Act (CRA), creating a better relationship with regulator • Commercial or larger-scale residential retrofits (e.g., $10-$30K)	• Loan sizes very small compared to typical loan, need to keep transaction costs low for loan application review • Administrative burden of federal/state programs, including: 1) Assigning program contact, 2) Separately tracking loans, 3) Following unique rules of program, 4) Educating underwriters on loan program • Size of credit guarantee; most SBA programs upwards of 50%, while the N.C. loan loss reserve likely will be lower • Possible unsecured nature of EERE loans	• Originate and service loans • Possibly holding loans, likely would want secondary market option • Deploy loans in multiple N.C. cities/regions, as they possess branches across the state
N.C. Credit Unions and Community Banks	• Building out real estate portfolio within areas of operation – likely hold onto loans originated • Interest in building niche in new market, specifically "green" and energy financing	• Whether loan loss reserve will be large enough for these relatively conservative institutions, particularly for unsecured product(s) • Whether product will bring enough demand from property owners • Keeping transaction costs low for loan application review	• Originate and service loans • Market program and deploy loans in focus cities/regions

	Key Areas of Interest	Key Concerns	Roles Best Suited to Execute
Fannie Mae Approved Energy Lenders *(AFC First, Viewtech, WECC)*	• Access to loan loss reserve to bring down interest rates (from ~15% for Fannie Mae approved loans) • Growing a presence in relatively immature southeast market	• Need for secondary market – used to having Fannie Mae or other entity buying originated loans (e.g., state treasurer in PA's EERE lending program) • Different and more complicated reporting requirements	• Originate and service loans • Partner with contractors to market state EERE program

Bank Takeaways

These takeaways are derived from a combination of interviews and EFC analysis. When structuring the EERE lending program, these points should be taken into consideration.

Utilize key insights from current Fannie Mae energy lenders

Fannie Mae approved energy lenders have substantial experience lending within the EERE space. New energy lending programs should take into account key insights, including:

1) Contractors are key to marketing
2) Simple application process will attract customers and limit transaction costs
3) Marketing and branding of loan programs key to program success

Secondary market is key for big banks and Fannie Mae lenders

Larger commercial banks, at a minimum, want the option of passing along EERE loans to the secondary capital market. Fannie Mae lenders have worked within a model that has possessed a secondary market, in their case Fannie Mae, for about 10 years. Accordingly, in order for North Carolina to involve larger commercial banks, they must clearly develop a warehousing and secondary market strategy.

Loan loss reserve attractive, but not the deal maker

For the interviewed commercial banks, credit unions and community banks, a 10-20% loan loss reserve is generally seen as helpful, but not largely impactful. SBA loan programs often have a 50-100% credit guarantee. Accordingly, the lending program cannot solely rely on the loan loss reserve to create interest from financial institutions. Lending within this space needs to be seen as strategic and relatively secure.

Limit administrative burden

Given that this is a new program, financial institutions are uncertain how successful it will be. Many financial institutions will forego participating if they believe reporting and administrative requirements will necessitate new full-time staff and multiple layers of reporting. Accordingly, the state's proposed program should be as simple and straightforward as possible to encourage a breadth of financial institution proposals.

Energy Contractors

In the Triangle and Charlotte metropolitan areas, there is a strong network of energy contractors that can provide auditing, weatherization, and more complicated system replacements (e.g., HVAC systems, geothermal heating, solar panel installations). The N.C. EERE lending program should help support these businesses by providing financing options that make these home improvements more attractive and affordable for property owners.

Besides upfront financing barriers for customers, lack of trust in energy contractors also inhibits business. Interviewed contractors expressed interest in having energy efficiency retrofit performance tracked through the EERE lending program reporting process, specifically by tracking monthly utility bills over time. Such tracking, especially if done at the contractor level, could help contractors demonstrate the effectiveness of their work and help property owners avoid contractors that provide lower quality retrofit services.

Below, we summarize other key insights provided through our interviews with a small sample of energy contractors, principally from the Triangle and Charlotte metropolitan areas. The proposed roles for energy contractors listed below are our recommendations for how to involve contractors in the EERE program.

	Barriers to Securing Business	Concerns about EERE Lending Program	Proposed roles within in N.C. EERE Lending Program
Energy Contractors	• Upfront financing problems • Lack of trust in contractor and estimated energy efficiency improvements	• Do not want N.C. program to require division of audit and actual contract work (i.e., require two separate companies) • Lending options and application process being complicated for customer	• Go through certification process to participate in program, and learn about EERE lending program • Promote and market N.C. EERE lending program options to property owners • Allow review of work through tracking of electric utility bill expenses

Takeway: Contractors crucial ally for marketing N.C. EERE lending program
Energy contractors are a natural ally for N.C. EERE lending program – better financing options can help potential customers pay for energy efficiency and renewable energy lending improvements. The organization that administers the state's lending program should partner with contractors and create marketing materials that contractors can understand and use when interacting with potential customers.

Property Owners

Property owners, much like banks, are a very diverse group. With commercial owners, commercial managers and residential owners the interests, incentives, and challenges to energy efficiency retrofits vary widely, although concern with cost is a common thread across groups. As such, the N.C. EERE program should address the differing concerns of these groups.

Commercial Property Owners
Commercial property owners own large buildings/complexes and lease space to tenants. This structure results in misaligned incentives when considering energy efficiency retrofits because the owner is often responsible for any capital improvements while the tenant reaps the reward of lower energy bills. There is little financial incentive in this system for a commercial property owner to invest in EERE projects, although there are other incentives, which are detailed in the table below.

Commercial Property Managers
Commercial property managers, on the other hand, face a different type of issue. These organizations manage properties for the owner (often large corporations or apartment complexes), and make recommendations on what type of improvements should be made to the facilities. Because of their unique relationship, these managers become the "gatekeepers" of energy efficiency retrofit information. Commercial property managers influence capital expenditure decisions and are an important resource for achieving EERE lending and improvements on a commercial level.

Residential Property Owners
Residential property owners have yet another vantage point as both the owner and manager of their own property. As individuals there are financial challenges to taking on energy efficiency retrofits, but primary concerns include understanding what upgrades need to be done, with whom it can be achieved, and with whom it will be financed. Residential property owners require more education and resource information in order to take on EERE improvements. Moreover, the process needs to be streamlined and simple – the more moving parts from a transaction perspective (e.g., separately working with auditor, contractor and bank), the less likely property owners will invest in EERE improvements.

Breakdown of Interest in and Barriers to EERE Investments
Each property owner group has differing challenges to make EERE investments a reality. Accordingly, it is crucial to understand the key barriers for each of these players to take on EERE projects. The table on the top of the following page examines this topic as well as strategies for further engaging these stakeholders.

	Reasons for Possible Interest in EERE Retrofits	Key Barriers to EERE Investments	Best Strategy for Engaging Stakeholder
Commercial Property Owners	• LEED certification • Marketing/publicity • Maintain competitiveness	• Upfront costs • Savings on owner-paid retrofits go to tenants (misaligned incentives)	• Reducing upfront costs • Education on benefits from commercial property owner perspective
Commercial Property Managers	• Lower energy bills • Owner interest • Attracting tenants	• Upfront Costs • Convincing property owner/tenant to make capital improvements • Misaligned incentives	• Educate managers on EERE loan options and benefits • Coordinate with banks and energy contractors to supply commercial property owners with necessary information (e.g., financing options, tax credits, retrofit process)
Residential Property Owners	• Lower energy bills • Potentially higher home resale value	• Upfront Costs • Lack of willingness to take on another loan • Complexity of current EERE retrofit process	• Provide easy access to information on program (e.g., website) • Equip contractors to market lending program directly to residential property owners • Innovative financing solutions (on-bill financing*) to ease adoption

*See bottom of page 10 for definition

Property Owner Takeaways

The clearer and more straightforward the EERE lending program, either via education or financing, the greater percentage of property owners that will make retrofit upgrades. Below, we provide key takeaways from our conversations with property owners.

Upfront costs are the prime deterrent to EERE retrofits

In the current economy, organizations and individuals alike are hesitant to take on another loan regardless of the interest rate. Commercial and residential property owners must understand the payback on these improvements in order to invest in EERE projects.

Innovative financing solutions can facilitate property owner participation

Creating an innovative financing solution that will quell the hesitancy of property owners will be critical in engaging these stakeholders. If crafted well, these financing solutions can also help address the misaligned incentives that property owners face. Organizations interviewed responded positively to the concept of on-bill financing* (see bottom of page), if it would work logistically and legally.

Educate commercial property managers to engage commercial property owners
Much like contractors for residential property owners, commercial property managers are a key entry point for convincing commercial property owners to make EERE investments. Property managers should be educated on the risks and benefits of EERE improvements, available loan options, and tax credits available for energy efficiency retrofits. This will enable the state's energy lending program to gain access to a greater number of commercial property owners.

----

* **On-bill Financing**
On-bill financing is a utility-based method that allows property owners (residential and/or commercial) to repay loans through their utility bills. The idea is that energy savings from an energy efficiency upgrade will translate into dollar savings on monthly utility bills. The goal is for these dollar savings to be high enough that the investment is "Cash Neutral" or "Cash Positive": new monthly utility bill + loan repayment is less than or equal to old monthly utility bill. Loans would come from financial institutions, not the utility.

Energy Utilities

Public electric utilities and utility co-ops are a very important player in the proposed N.C. EERE lending program, even if most do not directly participate in financing. Accordingly, the Technical Assistance Team interviewed the two large public utilities that operate in N.C., and several co-ops. There are several overlapping interests between utilities and the proposed EERE lending program, including:

- **Energy Efficiency Improvements –** Public utilities have an incentive to promote energy efficiency, as it could be one relatively inexpensive way for these utilities to meet their Renewable Portfolio Standard (RPS) requirements. Integrating the N.C. EERE lending program with current energy efficiency efforts would enable utilities to cost effectively move toward reaching RPS requirements.
- **Customer Engagement –** Utilities, both public and co-op, possess a consistent relationship with consumers. Helping these customers make smart energy decisions will build trust with these consumers, and promoting energy lending programs with better interest rates could be part of this effort.
- **Contractor Relationships –** Utilities already have developed relationships with energy auditors and contractors, and could help jumpstart the N.C. EERE identification of potential contractor partners.

Even with the strong overlapping interests, the rebate programs provided by utilities in N.C., and the number of emerging financing options, it is very important for the N.C. EERE lending program to coordinate with electric utilities, instead of conflict. Accordingly, below we outline some of the existing rebate and financing programs, as well as recommended areas of possible collaboration. This information comes from interviews with utility employees, and from the NC Solar's Center DSIRE website:[3]

	Residential EERE Rebate Programs	EERE Financing Options	Areas for Potential Collaboration
Duke Energy	• Smart Saver Program, which is a rebate program for heat pumps and HVAC systems • Program includes $200 rebate for existing homes and $300 rebate for new construction	• No current lending programs, although currently exploring such possibilities	• Have expressed interest in trying on-bill financing* pilot; started pilots in other states in which Duke operates • Marketing and promotion of new N.C. EERE lending program

[3] "DSIRE: Database of State Incentives for Renewables & Effiency". North Carolina Solar Center. Accessed Aug. 25, 2011. http://dsireusa.org/incentives/index.cfm?re=1&ee=1&spv=0&st=0&srp=1&state=NC

	Residential EERE Rebate Programs	EERE Financing Options	Areas for Potential Collaboration
Progress Energy	• Energy efficiency rebate program covers about ten products, including HVAC systems, heat pumps, windows and air duct repair • Pilot system for 150 solar water heaters, $1000 rebate	• Partner with AFC First, a Fannie Mae approved lender, to offer loans in 14-16% range • $2,500 - $20,000, 10-year repayment period • No collateral or closing costs	• Marketing and promotion of new N.C. EERE lending program • Link rebate programs with N.C. EERE lending programs (e.g., coordinate promotion) • On-bill financing*, more likely long-term goal
Electric Co-ops	• Nine electric co-ops currently possess loan programs. • Piedmont's loan program possesses a 5% interest rate, for up to $10,000 and 7 years. 50-60 customers participate per year, partly due to Piedmont capital constraints. Program is only available to Piedmont members. • Brunswick's program is for energy efficiency projects (e.g., insulation, air ducts) or solar water heaters, for up to $6,000 at a 5% interest rate. In existence since 1989, $7.2 million in loans as of March 2010, with a default rate of less than 1% since inception.[4]	• About a dozen co-ops possess rebate programs for energy efficiency • Programs for weatherization efforts tend to have smaller rebates ($25-$50 range) • Programs for big improvements (e.g., new heat pump or HVAC), typically in the $100-$400 range	• Marketing and promotion of new N.C. EERE lending program • Link rebate programs with N.C. EERE lending programs (e.g., coordinate promotion) • On-bill financing*, more likely long-term goal

*See bottom of page 10 for explanation of on-bill financing

[4] "Weatherization Loans". Brunswick Electric Membership Corporation. Accessed Aug. 5th, 2010. http://www.bemc.org/weatherization.cfm

Electric Utility Takeaways

On-bill financing – the devil is in the details

Some N.C. energy utilities are interested in on-bill financing, in which customers would pay loan repayments on their utility bill, as this structure would allow utilities to link energy efficiency upgrades (which would be a big boost for meeting RPS standards). However, liability for non-payment of loans, and the potential need to shut power off for customers that fail to repay loans, could make on-bill risky for utilities and requires the N.C. utility commission approval.

Utilities are excited about additional financing options

Even utilities that possess existing financing programs expressed interest in the state developing further financial mechanisms for energy efficiency and renewable energy improvements. Utilities have limited capital and welcome outside funding, whether public or private.

Potential for N.C. EERE lending program to bring down interest rates for utility financing programs

Multiple co-ops already provide EERE loans to their customers at interest rates in the 5-7% range, and the larger public utilities offer (or will offer) financing options in the 14-16% range. If structured effectively, the N.C. EERE lending program could help bring down these interest rates, possibly through the loan loss reserve or a direct interest rate buydown.

Local Governments

Within the state of North Carolina, several cities are considering the development of a city-level energy lending programs. Some of these cities plan to use ARRA money to jumpstart these programs (e.g., Raleigh, Asheville, Greensboro). Other cities, including Charlotte, Chapel Hill and Carrboro, would likely use grants from the Southeast Energy Efficiency Alliance (SEEA), which secured a $20 million grant from the DOE to fund city-level innovations in energy efficiency.[5] Moreover, these different cities will likely use a range of loan program types, including revolving loan funds, loan-loss reserve models and interest rate buy-down programs.

With the potential for several city-level lending initiatives, it is very important for there to be communication and integration at the state and local levels. State and local-level lending programs should reinforce one another, instead of contradicting or competing against one another. Some options for increasing compatibility include:

- Holding regular energy efficiency lending program webinars or conference calls between state of North Carolina and cities with lending programs to facilitate communication and collaboration.
- Enabling lenders participating in city-level programs to participate in the state-level lending programs.
- Consistent and coordinated state-wide branding and marketing efforts.
- Allowing cities to buy-down interest-rates for the state-level program. For instance, with Pennsylvania's Keystone HELP, the city of Allentown used city funds to buy-down the state program's interest from the 5-7% range to the 3-5% range.

Acknowledgements

Michael Chasnow was the lead author for this report, however this report was a collaborative effort supported by staff from the EFC, the UNC Center for Sustainable Enterprise, and several supporting organizations. We extend special appreciation to Liz Bowen – with AmeriCorps Vista and Raleigh's Small Business Assistance Program – for a great partnership in gathering information for this study. Also, thanks to Kelly Boone, Lysandra Gibbs, Soo Kyung Kim, Glenn Barnes and Christine Boyle, Jeff Hughes and Jeannine O'Brian for help with interviews and draft editing. And most importantly, this snapshot would not be possible without the input from stakeholders, who generously gave their time and shared their insights.

[5] Southeast Energy Efficiency Alliance. Accessed Aug. 25, 2011. http://www.seealliance.org/programs/cities.php

Appendix

For this study, we interviewed 20+ key stakeholders within North Carolina, including:*

Bank Interviews:
Jim, Evans, VP of Commercial Lending, Harrington Bank
Carlos Goodrich, SVP – Direct Retail Lending Risk Manager, BB&T
Peter Krajsa, Chairman & CEO, AFC First Financial Corp.
Bryan Monteith, Vice President, Fidelity Bank
Brian Schneiderman, VP of Real Estate and Facilities Lending, Self-Help Credit Union
Jason Spencer, Acting CEO, Fourth Sector Financial Corporation
Astrid Taylor, Community Mortgage Officer, RBC Bank (USA)

Energy Contractor Interviews:
Paul Alexander, President, Solar Air Systems
Bobby Ferrel, Co-Founder, Green Horizon
Joe Fleming, Financial Manager, Solar Air Systems
Richard Harkrader, CEO, Carolina Solar Energy LLC
Michael Shore, CEO, FLS Energy

Electric Utility Interviews:
Jay Berry, Loan Program Manager, Piedmont Electric Membership Corporation
Benita Hernandez, Consumer Accounts Representative, Brunswick Electric Membership Corporation
Delta Sonderman, Product Development Manager, Duke Energy
Brad Wood, Senior Product Manager – Efficiency and Innovative Technology, Progress Energy

Commercial Property Owner and Manager Interviews:
Terry Finch, Director of Operations, Spectrum Properties (Charlotte, NC)
Mary Gwyn, Chief Innovator, Apartment Dynamics (High Point, NC)
Donnie Robinson, Managing Director – Asset Services, CB Richard Ellis (Charlotte, NC)

Associations:
Paul Quinlan, Deputy Director & Strategic Projects, NC Sustainable Energy Association

* *Interviews were conducted with practitioners at these institutions. However, their comments and thoughts do not represent official company policy or stances on financing for energy efficiency or renewable energy.*