January 24, 2011

NYSERDA's Green Jobs-Green New York Program: Extending Energy Efficiency Financing To Underserved Households

The New York legislature passed the Green Jobs-Green New York (GJGNY) Act in 2009. Administered by the New York State Energy Research and Development Authority (NYSERDA), GJGNY programs provide New Yorkers with access to free or low-cost energy assessments,[1] energy upgrade services,[2] low-cost financing, and training for various 'green-collar' careers. Launched in November 2010, GJGNY's residential initiative is notable for its use of novel underwriting criteria to expand access to energy efficiency financing for households seeking to participate in New York's Home Performance with Energy Star (HPwES) program.[3] The GJGNY financing program is a valuable test of whether alternatives to credit scores can be used to responsibly expand credit opportunities for households that do not qualify for traditional lending products and, in doing so, enable more households to make energy efficiency upgrades.

Financing Home Energy Upgrades in New York

Since 2001, New York residents have completed almost 36,000 energy upgrades through NYSERDA's Home Performance with Energy Star initiative. Prior to the launch of GJGNY, NYSERDA used Fannie Mae Energy Loans to provide program participants with access to financing to overcome the upfront cost barrier of energy upgrades. The underwriting standards for this unsecured loan product, including a minimum decision credit score of 640,[4] made financing inaccessible to many New York households—in recent years, approximately 30 percent of loan applications were rejected. The new GJGNY financing

---

This is the first in a series of Clean Energy Program Policy Briefs that LBNL will publish in the coming months. Using case studies, these working papers will highlight emerging program models, important issues that new programs face, and how these issues are being addressed. The work described in this Policy Brief was funded by the Department of Energy Office of Energy Efficiency and Renewable Energy, Weatherization and Intergovernmental Program under Contract No. DE-AC02-05CH11231.
Please direct questions or comments to Mark Zimring (mzimring@lbl.gov).

[1] The term energy assessment is used interchangeably with the term energy audit. Energy assessments are free to households earning less than 200 percent of County Median Income and subsidized if between 200 percent and 400 percent of County Median Income.
[2] The term energy upgrade is used interchangeably with the term energy efficiency retrofit.
[3] HPwES is an energy assessment-based EPA initiative targeting whole home energy upgrades. More information on NYSERDA's HPwES program is available HERE.
[4] The minimum decision credit score formula incorporates credit scores from multiple ratings agencies, including FICO.

platform is an effort to reduce this rejection rate by using alternative underwriting criteria to qualify creditworthy households for financing.

The Limits of Credit Scores

Credit scores have been used for many decades as a quick assessment of an individual's ability to repay a loan. These scoring metrics were developed during World War II in response to a shortage of credit analysts to make judgments on whether to provide loans.[5] The introduction of credit cards in the late 1960s reinforced the trend towards automating lending decisions.[6] Unfortunately, many creditworthy households are penalized by these scoring systems—in order to earn a high credit score one must have access to credit while in order to gain access to credit, one must have a high credit score. The financial crisis has further reduced consumer access to credit (i.e. borrowing limits on existing financing products, like credit cards, have declined), suppressing the credit scores of some creditworthy households at the same time that lenders have been raising minimum qualifying credit scores.

The new GJGNY financing program will provide loans to those households that responsibly pay their bills, especially their utilities bills—and may be able to afford to take on debt to invest in energy efficiency—but that have been unable to access credit markets through existing financing products.

New GJGNY Residential Energy Upgrade Financing Options

In November 2010, NYSERDA replaced its Fannie Mae Energy Loan offering and is now using two tiers of underwriting standards to qualify applicants for up to 15 year unsecured loans from $3,000 to $13,000 with an initial interest rate of 3.99 percent.[7] These loans will be funded from a $51 million revolving loan fund (RLF), half of which is targeted at the residential sector. The RLF will initially be capitalized with a portion of New York's Regional Greenhouse Gas Initiative (RGGI) proceeds.

Tier 1 underwriting standards conform to the Fannie Mae Energy Loan standards that have been historically used in New York to qualify applicants for financing. Tier 2 standards eschew traditional credit metrics in favor of using reliable utility bill payment and good standing on outstanding mortgage obligations to qualify applicants for energy upgrade financing. These Tier 2 underwriting standards offer a promising new approach to assessing consumer creditworthiness and helping more homeowners overcome the upfront cost hurdle of an energy upgrade (see Table 1 for a description of Tier 1 and Tier 2 underwriting standards).

[5] Thomas, Lyn C., "A survey of credit and behavioral scoring: forecasting financial risk of lending to consumers" *International Journal of Forecasting*, Volume 16, Issue 2, April-June 2000, Pages 149-172.
[6] Ibid.
[7] The interest rate will be 3.49% for participants that establish automatic bill pay—a potentially innovative incentive to reduce administrative costs and loan non-payment rates.

Table 1. *Green Jobs-Green New York Residential Loan Underwriting Standards*

Green Jobs-Green New York Residential Loan Underwriting Standards			
Tier 1		Tier 2	
Minimum Credit Score	640	On-time Utility Bill and Mortgage Payments	Current for 2 consecutive months during each of the last 2 years. No utility bill payments more than 60 days late in the last 2 years.[8] Current on mortgage payments for the last year. No mortgage payments more than 60 days late in the last 2 years
Allowable Outstanding Collections, Judgments or Tax Liens	Up to $2,500	Allowable Outstanding Collections, Judgments or Tax Liens	Up to $2,500
Maximum Debt-to-Income Ratio	50%	Maximum Debt-to-Income Ratio	50%
Bankruptcy Restrictions	No bankruptcy in last 7 years	Bankruptcy & Other Restrictions	No bankruptcy, repossession or foreclosure in the last 7 years
Eligible Properties	Single-Family Homes	Eligible Properties	Single-Family Homes

While both Tier 1 and Tier 2 loans will be funded through the same revolving loan fund, NYSERDA plans to initially sell only its portfolio of Tier 1 loans to secondary market investors. NYSERDA anticipates reaching $25 million in Tier 1 loans in 2011 and plans to issue Qualified Energy Conservation Bonds (QECBs) secured by the loan pool repayment stream.[9,10] Bond proceeds will replenish the RLF and be used to provide additional energy efficiency loans. NYSERDA will hold its portfolio of Tier 2 loans and monitor its performance until a sufficient loan performance track record has been established to support a secondary market bond issuance at attractive terms, by combining such loans with other Tier1 loans. NYSERDA's long term goal is to issue bonds secured by the combined repayment stream of a single pool of Tier 1 and Tier 2 loans.

---

[8] These utility bill paying requirements were structured to extend financing to homeowners that underpay utility bills in cold months and overpay in warm months, but on-net meet their annual utility bill payment obligations.

[9] A QECB is a debt instrument whose interest is subsidized (about 70% of the interest costs) by the United States Treasury. QECBs may be issued by state, local and tribal governments for qualified energy purposes, including 'green community programs'. NYSERDA will use $20 million of the state's QECB allocation as well as at least $5 million from local governments that have reverted their allocations to the state to support GJGNY. More information on QECBs available HERE.

[10] NYSERDA plans to use a portion of its BetterBuildings grant to support the QECB issuances with a loan loss reserve (LLR) and debt service reserve (DSR). More information on LLRs and DSRs available HERE.

Filling the Gaps—A Diverse Energy Upgrade Platform in New York

The new GJGNY financing program will fill an important gap not met by New York's two income-qualified energy upgrade programs. Before the launch of GJGNY, there were few financing options for those households that did not meet Fannie Mae Energy Loan credit score-based underwriting requirements and that earned too much to qualify for the Weatherization Assistance Program. GJGNY Tier 2 underwriting standards may fill this gap by identifying and providing energy efficiency financing to creditworthy households. Table 2 provides a summary of these initiatives and their target populations.

Table 2. *New York's Statewide Energy Upgrade Financing Programs & Eligibility Requirements*

New York's Statewide Energy Upgrade Financing Programs		
Program	**Eligibility Requirements**	**Participant Benefits**
Weatherization Assistance Program[11] (WAP)	Income≤60% Area Median Income	Free installation of basic energy efficiency improvements
Assisted Home Performance with Energy Star (AHPwES)	Income≤80% Area Median Income[12]	50% grant up to $5,000 (and potential to qualify for GJGNY financing)
GJGNY Financing (A complete description of GJGNY eligibility requirements can be found in Table 1)	FICO≥640	3.99% financing
	FICO≤640 Strong Utility Bill & Mortgage Repayment History	3.99% financing

What We May Learn From the GJGNY Financing Program

The GJGNY 2-tier financing program is an interesting test of how expanded credit opportunities may impact the home energy upgrade market. The program's performance may provide insight into these key questions:

- ***Are less qualified households willing to take on additional debt to finance energy upgrades?***

  In the past, lower and moderate income households have had some aversion to taking on additional debt for energy upgrades, in part due to the uncertainty that the investment will deliver savings in excess of its costs.[13] This risk aversion may be exacerbated by current economic challenges and uncertainty.

[11] More information on WAP is available HERE.
[12] Households earning less than 80 percent of Area Median Income (AMI) annually (higher in counties where AMI below state median income (SMI)) are generally eligible for NYSERDA's AHPwES program.
[13] Stern, P., E. Aronson, J. Darley, D. Hill, E. Hirst, W. Kempton, and T. Wilbanks. 1985. "The

- ***Which households that do not meet traditional lending standards can afford additional debt? Are GJGNY's Tier 2 underwriting standards effective at identifying these creditworthy households?***

  While credit scores are imperfect measures of a household's ability to repay loans, default rates on consumer finance products have historically increased nonlinearly as credit scores decrease. Energy efficiency programs must carefully balance the energy savings and equity goals of more inclusive financing instruments against the risk of providing loans to those for whom additional debt may be too great a burden.

  In the past, several pilot programs that have provided financing to less qualified households have approved very low percentages of loan applications and have provided credit counseling to approved borrowers to ensure that they are able to make loan repayments. While low loan approval rates and financial management assistance increase program costs, GJGNY's lack of financial education assistance for loan applicants approved through its Tier 2 underwriting standards may contribute to high non-payment rates. This risk may be mitigated by the 50 percent maximum debt-to-income (DTI) ratio in the Tier 2 underwriting standards, which may screen out applicants for whom the additional debt burden of an energy efficiency loan may be too high.

- ***Will secondary market investors be willing to invest in bonds backed by a pool of loans originated using a blend of Tier 1 and Tier 2 underwriting standards?***

  Several energy efficiency finance programs have struggled to find investors for bonds backed by unsecured loans originated using Tier 1 underwriting standards. It is also unclear whether investors will request a credit enhancement to support a blended pool of Tier 1 and 2 loans and whether strong Tier 2 loan performance will increase investor confidence in providing capital to less qualified homeowners. This issue highlights a key tension faced by many ARRA grantees between establishing sustainable secondary markets for energy efficiency projects and ensuring that public monies are spent equitably.

- ***Will less qualified households save money by investing in energy efficiency?***
  On average, energy upgrades have historically delivered energy and monetary savings. However, the variance in the performance of these upgrades—much of it owing to household behavior—has been significant.[14] For those households with little financial buffer should estimated energy savings not be realized, taking on debt with the assumption that utility bill savings will offset principal and interest payments may be perceived as a risky endeavor. NYSERDA has robust quality assurance mechanisms in place and will be collecting utility bill data to assess the realized savings from these energy upgrades. These data will help to increase confidence in the performance of improvements and inform future program design.

  For some less qualified households, an energy upgrade may be primarily motivated by the need to replace aging equipment (e.g. HVAC systems)—an expenditure that should be included as part of operating and maintaining a home. This raises important questions about how programs should target key equipment-related transaction points and whether focus is more appropriately placed on whether energy savings offset the incremental costs of the efficiency components of system replacements.

Effectiveness of Incentives for Residential Energy Conservation." *Evaluation Review* (10): 147-176.

[14] Part of the reason for the wide variance between estimates and actual performance is that initially energy savings estimates were not calibrated to pre-upgrade baseline usage. There have been significant improvements in estimation capabilities since this experience, but the issue of variance remains a concern.

GJGNY Program Status and Future Plans

In the first two months since the launch of the program, about 1,400 applications were received for energy assessments, of which 2/3 qualified for free assessments. Of these assessment requests, 445 have been completed and 51 have resulted in approved energy efficiency improvement projects.

A single lender, Energy Finance Solutions (EFS), is currently originating GJGNY loans. In time, NYSERDA plans to allow financial institutions throughout New York to originate GJGNY loans on NYSERDA's behalf.[15] Table 3 provides an update of loan volume to date.

Table 3. *Green Jobs-Green New York Loan Origination (as of January 1, 2011 since November 15, 2010 launch)*

Green Jobs-Green New York Loan Origination	
Loan Applications	341
Tier 1 Loan Approvals	209 (61%)
Tier 1 Loan Denials - insufficient D:I ratio - insufficient FICO - other	132 (39%) 59 (45% of denials) 48 (36% of denials) 25 (19% of denials)
Tier 1 Loan Closings	9 ($80,000)
Approved loans awaiting closing	52
Approved loans in process	142
Tier 2 Loan Reapplications	0
Tier 2 Loan Approvals	0
Tier 2 Loan Closings	0

Tier 2 Financing Update

The loan application process may explain why no Tier 2 loans have yet been issued. Currently, loan applicants that do not meet Tier 1 underwriting standards are issued a rejection notice by the loan originator. These applicants are also given a letter indicating that they may still qualify for GJGNY financing and are asked to submit utility bill information (mortgage payment history, if any, is generally reported from credit scoring bureaus). NYSERDA is working with its lending partner to streamline this bulky application process to reduce the likelihood that loan applicants will drop out if they do not meet Tier 1 standards.

In addition, the loan originator contacted a number of these applicants, several of whom indicated that they assumed that the "Tier 2" offer was a worse offer than what they had applied for. NYSERDA is evaluating its messaging to reduce any potential stigma around qualifying for financing via the 2nd tier of underwriting standards as both Tier 1 and Tier 2 borrowers receive the same loan terms.

[15] There will be a single third-party master loan servicer for all loans, which will service loans originated by participating program lenders and monitor these origination practices to ensure they conform with NYSERDA's loan underwriting standards

New Loan Structures

Should Property Assessed Clean Energy (PACE) financing or on-bill financing become available, NYSERDA plans to include these tools in its portfolio of GJGNY offerings. For more information on PACE, see: LBNL PACE Status Update. The New York legislature must authorize on-bill financing.

Future Bonding

QECBs will reduce NYSERDA's borrowing costs to approximately 2 percent, which allows NYSERDA to offer GJGNY loans at an attractive interest rate of 3.99 percent.[16] Once this QECB allocation is exhausted, NYSERDA will face higher borrowing costs (approximately 3 percent higher interest rate) when it attempts to bond future GJGNY loan pools, so the interest rate on loans would be increased correspondingly. NYSERDA is exploring a partnership with the New York Environmental Facilities Corporation (NYEFC), a public benefit corporation, to reduce this financing cost.[17] Under the proposed partnership, NYEFC would provide a credit enhancement to NYSERDA's bond issue by signing a backup bond purchase agreement that would cover any cash shortfalls from the loans supporting the bonds. This agreement would allow NYSERDA to establish a AAA rating on its bond issuances. With this AAA rating, NYSERDA would reduce its borrowing costs by almost 1 percent compared to raising capital on its own, which will be reflected in the interest rates charged to residential GJGNY borrowers.

This policy brief has highlighted a number of exciting Green Jobs-Green New York program elements. LBNL will follow the Green Jobs-Green New York program as it matures and evolves and provide updates in the near future.

For more information on the Green Jobs-Green New York initiative, visit:
http://www.nyserda.org/GreenNY/

---

[16] U.S. Department of Treasury interest rate arbitrage restrictions generally limit the interest rate premium to 1.5 percent over the net interest cost on bonds, or 1/8 percent over its costs of providing financing; NYSERDA has used the latter approach and included its expected net interest cost on bonds plus its costs for origination and servicing of loans to determine that a maximum rate of 3.99%/3.49% could be charged on loans without trigger requirements that excess interest would be rebated back to the federal government.

[17] NYEFC provides low-cost financing to public and private entities to help them comply with federal and State environmental protection and environmental quality requirements. For more information, visit: http://www.nysefc.org/