

# Disconnection and On-Bill Repayment

AN ANALYSIS OF RISKS AND BENEFITS

CHRIS KRAMER, CONSULTANT TO THE CONNECTICUT ENERGY EFFICIENCY BOARD

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# Executive Summary

During the 2013 legislative session, the Connecticut legislature passed Public Act 13-298, “An Act Concerning Implementation of Connecticut’s Comprehensive Energy Strategy and Various Revisions to the Energy Statutes.” Section 58 of this act called for the Connecticut Energy Efficiency Board (EEB) and the Clean Energy Finance and Investment Authority (CEFIA), in consultation with the state’s electric distribution and gas companies, to establish a residential clean energy on-bill repayment program. The act also authorized disconnection for nonpayment by the customer of any financing repayment amount under this program, with certain exceptions.

In light of these provisions, the EEB has asked its financing consultant to provide information and analysis to allow it to evaluate any residential loan program in which a utility termination may be effected. The underlying question that this analysis is intended to inform is whether the joint developers of the new on-bill program should avail themselves of the authority granted to them under the legislation and implement disconnection for nonpayment as a feature of this loan program.

The issue of whether to implement disconnection in this context is, to some extent, a matter of competing policy priorities. On the one hand, Connecticut has long been a leader in supporting economically challenged residents, whether recently through its first-in-the-nation minimum wage increase to ten dollars and ten cents, or through its established history of laws and regulations that protect residential customers from the loss of essential electric or gas services wherever reasonably possible. On the other hand, the state also has a policy of encouraging the flow of private capital into clean energy investments, as described in the state’s Comprehensive Energy Strategy. Determining whether to implement disconnection for nonpayment as a feature of a state loan program ultimately depends on whether the benefits of this feature in terms of encouraging private capital investment in clean energy outweigh the risks associated with disconnection that form the basis of policies limiting its use. This report weighs both the risks and benefits of disconnection for nonpayment of loans through energy bills to help EEB members decide that question.

The Introduction to the report provides relevant background and context. It includes some discussion on the history of shut-off protections, such as a winter moratorium, protections in life-threatening situations, and protections in certain cases of medically certified serious illness. The report highlights the fact that shut-off has never been permitted for nonpayment of any type of debt and that regulations specifically prohibit disconnection for nonpayment of amounts owed for equipment repair, which may overlap in some cases with clean energy improvements. These provisions reflect a desire to protect customers wherever possible from the loss of what is widely considered an essential service. Yet despite the protections, most customers may be unaware of their rights and may lack the sophistication or resources to dispute threatened disconnection. The report points out that annual disconnections remain in the thousands and that the various protections against shut-off reflect a desire to limit the number from growing further.

The introductory section also discusses the precedent that might be created if shut-offs were extended to nonpayment of on-bill clean energy loans. Many other providers of energy-related services, including electric suppliers, have long sought to offer services to customers that would be paid for on-bill. The report notes that if termination of electric service is permitted for nonpayment of on-bill clean energy

loans provided pursuant to Section 58 of P.A. 13-298, this could set a precedent that might open the door to the shut-off of electric service for additional reasons besides non-payment of that utility service.

## **RISKS TO RESIDENTS**

The report then moves to a section entitled “Risks to Residents,” outlining the health and safety risks to individuals of a loss of utility service. Electric and gas utilities are widely considered essential services that are critical for public health and safety. Beyond its everyday functions, electricity can play an important role in avoiding health and safety risks by providing electric heat, cooling during high temperatures, power for medical devices and refrigeration of food and medications, fuel for electric cooking appliances and electrically heated hot water, and safe lighting. Gas service is critical for home heating in a large and growing number of homes and may also provide hot water or fuel for cooking.<sup>1</sup> The sudden loss of these services can sometimes result in tragic circumstances. For example, a number of fatal candle fires have occurred around the country after utility service has been disconnected, sometimes leading to utility settlements in regulatory or legal cases that involve grieving families. In other cases, electric shut-offs have led to fatalities resulting from loss of power to critical medical devices, even when proper utility protocols were followed. A recent case like this in New Hampshire prompted the state’s governor to order a full review of utility disconnection policies.

Risks to consumers may also stem from economizing to make loan payments. For families struggling to meet their financial obligations, risks can include forgoing medical or dental care, choosing not to fill a medical prescription, or even going without food for a day or more. These types of consequences have been documented both nationally and in Connecticut and are described in more detail in the full report.

This section of the report also addresses the question of who is likely to face risks like those described above. Given that the on-bill program being contemplated will at least initially accept only those customers above certain credit thresholds, one may ask what the risks are likely to be to those who enter the program. The report cites established research, however, showing that downward mobility is a common occurrence in American society, just as is upward mobility. Moreover, the report looks at evidence showing that consumer loan default rates fluctuate significantly over time, often as a result of macroeconomic circumstances beyond the control of individual borrowers. The report cites several reasons that energy efficiency loans may follow similar trends over time, despite relatively low default rates among highly creditworthy early adopters.

Finally, the “Risks to Residents” section examines the limitations on some of the consumer protections built into PA 13-298 §58. In particular, the report notes the limitations on the heating assistance provision that incorporates loan obligations into the heating assistance calculation if improvements are related to heating and the loan remains on-bill. These limitations include a very low income ceiling to qualify for benefits, as well as significant restrictions on available benefits per household for those that do qualify. The report also reviews the provision requiring anticipated “bill neutrality” (i.e., projected loan and energy obligations that are lower together than projected energy bills absent the project). Realization rate statistics from programs around the country are provided, showing that actual savings as a percentage of projected savings frequently fall well under 100%. Project-level variation is also

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<sup>1</sup> Current plans for the phased implementation of an on-bill repayment program under PA 13-298 §58 envision loan payments for both gas and electric improvements through the electric bill only. The legislation permits this arrangement but does not prohibit expansion to the gas bill.

discussed, showing that savings from individual projects often drop below projected levels even when overall realization rates are high, for reasons that are sometimes unrelated to customer actions.

### **COSTS TO RATEPAYERS, UTILITIES, AND OTHER PROGRAM ADMINISTRATORS**

The next section of the report addresses “Costs to Ratepayers, Utilities, and other Program Administrators.” Many of the program set-up costs, particularly those borne by the utility companies, are likely to be passed on to ratepayers through a cost recovery mechanism. The utilities have indicated that the costs of layering disconnection onto an on-bill program would likely be significantly more than simply implementing a new on-bill program without disconnection, which could piggyback on the infrastructure of similar existing programs. The report outlines how integrating disconnection could impact various IT components, such as billing and customer information systems, internal and external reporting, credit systems that track balances and arrearages, order systems that interact with field representatives, and customer notification systems and processes. In CL&P’s case, given that its IT infrastructure spans multiple states, additional costs would be incurred designing logic to account for different practices in Connecticut and testing that logic across its whole system to ensure that any changes did not introduce new glitches. There would also be ongoing costs for both electric utilities, including notification, scheduling and carrying out terminations, and credit and collection efforts to resolve a disconnection.

The report also reviews certain non-financial risks to utilities and other program administrators, particularly in terms of public perception. Public perception can skew negatively when tragedies occur after a utility shut-off, even when disconnection occurs exclusively as a result of nonpayment for a service that the utility is providing directly to the customer. It remains an open question as to what perceptions might arise if part or all of the reason for a shut-off were to protect the interests of a third-party private capital provider. The report highlights the potential wide reach of stories that relate these tragic circumstances, with reproductions from several major media outlets of coverage of a single such incident.

### **EXCERPTED STORIES FROM OTHER JURISDICTIONS**

Following the first two sections on costs and risks, the report includes a stand-alone section with “Excerpted Stories from Other Jurisdictions.” These stories highlight both the actual health and safety risks to residents that can occur as a result of utility shut-offs, as well as the potential for negative public perception and other risks that can accrue to utilities and other program administrators. In some cases, these additional risks have included regulatory reviews, legal actions against utility companies, and legal settlements.

### **IMPACTS ON COST OF CAPITAL AND LOAN PERFORMANCE**

Having reviewed the documented risks associated with shut-offs, the next section of the report, entitled “Impacts on Cost of Capital and Loan Performance,” weighs the potential benefits against those risks. If realized, these potential benefits would come in the form of improving loan performance and attracting low-cost sources of capital. The report finds that these benefits are highly speculative at best in terms of the cost of capital, and that available evidence thus far does not support their existence with respect to loan performance. With regard to capital costs, it is difficult to draw firm conclusions, as most programs today rely on non-private capital sources with rates that are determined by a wide array of

programmatic factors. Evidence from NYSERDA's experience, however, suggests that disconnection may not be an ideal tool for accessing low-cost capital through the secondary market. Indeed, NYSERDA was thwarted by a rating agency when it attempted to use disconnection as a tool to reach the secondary market, but the agency was able to execute on an alternative strategy that provided a high rating and other benefits, such as the ability to securitize both on-bill and off-bill loans.

In terms of loan performance, data from programs around the country indicate that default rates are actually slightly higher in on-bill programs that incorporate disconnection for nonpayment, as compared to loan programs that do not. This trend also holds true for data from residential programs only. For the NYSERDA program, on which the Connecticut program is based, default rates between on-bill loans with shut-off and direct-bill loans without it are virtually identical. Moreover, delinquency rates are higher for NYSERDA's on-bill loans in every tranche, when grouped by the number of days late. These data undermine the rationale that the threat of disconnection should lower the cost of primary or secondary market capital because it will ostensibly spur borrowers to keep up with their bills and will therefore improve loan performance.

## **ALTERNATIVES**

The next section of the report looks at "Alternatives" to disconnection. This section is divided into primary capital alternatives that may lower interest rates from existing lenders and secondary market alternatives that may provide access to a sustainable source of low-cost capital. In terms of primary capital alternatives, one option currently being pursued is to encourage competition for customers among existing program lenders. Some lenders have already decided to lower their interest rates below not-to-exceed limits, and it is hoped that more will follow suit when borrowers can more easily compare interest rates through the Energize CT Financing Wizard, which is under development. Another option is to encourage lenders to provide discounts for borrowers who are willing to sign up for automatic payment, either through direct billing or through their utility bill. Several lenders in the existing program already offer discounts for auto-pay on other types of products that they offer outside of the program, and NYSERDA currently offers a half-percent discount for auto-pay to direct-bill customers. Another primary capital alternative for lowering rates would be to expand the terms of credit enhancement to lenders. Currently, the program's loss reserve pool is relatively conservative, requiring lenders to cover expected defaults and paying out only once loan defaults rise above expected levels. Expanding the proportion of defaults covered by the program could encourage lenders to lower their rates. Finally, rates could be lowered directly through interest-rate buy-downs. The program has recently been offering buy-downs to zero-percent interest for the first six months, up to 100 loans per lender, but that offer was intended to conclude by the end of March 2014. As the 100-loan-per-lender limit is far from being reached, one option would be to extend the term of the buy-down period.

With regard to secondary market alternatives, the report provides further details on the route that NYSERDA ultimately took to reach the secondary market, which involved partnering with another state agency that provided a guarantee. That option allowed NYSERDA to receive a "triple A" rating on its loan portfolio from two different rating agencies. It also meant that NYSERDA could securitize all of its loans, including its direct bill loans, which have consistently represented 50 – 60 percent of its portfolio. Moreover, the ability to securitize both on-bill and direct-bill loans allowed NYSERDA to reach the secondary market much more quickly, as including both loan types meant the program had already nearly reached the \$25 million minimum threshold needed to attract secondary market investors.

The report then discusses the potential to undertake an analogous transaction in Connecticut, pointing out that while NYSEERDA and its partner agency may have had more of an arm's-length relationship, in Connecticut, the analogous partner agency would be the Department of Energy and Environmental Protection (DEEP). DEEP's close relationship to Connecticut's on-bill program administrators could potentially help to facilitate a similar transaction. The report also notes including direct-bill loans could be even more important in Connecticut, since the ratio of on-bill loans as a percentage of the portfolio may end up being even lower. This could result from the fact that, in contrast to NYSEERDA, Connecticut uses private lenders to provide capital for the on-bill program, and private capital providers have historically been reluctant to participate in on-bill programs that introduce an intermediary between themselves and the customer. From a customer demand standpoint, the threat of shut-off and the existence of direct-bill and on-bill alternatives that do not include it could also potentially reduce the percentage of on-bill loans in the program.

The report also provides several other alternatives to NYSEERDA's chosen route to the secondary market. The most obvious would simply be to securitize the program's direct-bill loans. The rating agency feedback that NYSEERDA received indicated that it could have gone this route and would likely have achieved a BBB rating, which is still considered "investment grade." The difference in pricing is difficult to determine prospectively, but the yield spread between AAA and BBB bonds of other types has typically ranged between 0.5% and 2%, depending on the bond type and the existing economic climate (with spreads between 2% and 3% during very challenging times). The report underscores that the existing possibility of securitizing direct-bill loans means that secondary markets are most likely already accessible with the current program structure. As such, the question of whether to implement disconnection may be reframed in terms of whether a potential basis-point reduction on the secondary market, which might not materialize, is worth sacrificing the consumer protections that are embodied in limits to the use of shut-offs.

Finally, the report briefly touches on various other alternative routes to the secondary market. These include the Warehouse for Energy Efficiency Loan (WHEEL) model, rate recovery bonds, and direct loan portfolio sales, each of which is summarized in the full report.

## **CONCLUSION**

The Conclusion of the report revisits the question of whether any identified benefits in terms of cost of capital or default rates outweigh the risks to consumers associated with a utility termination. It notes the findings that the risks to residents of disconnection are known and well documented and that there are potentially large costs and risks to ratepayers, utilities, and other program administrators, as well. It highlights the fact that there is little evidence of the benefits of disconnection in terms of reducing the cost of capital or improving loan performance. Further, it emphasizes the existence of several viable alternatives to accessing secondary market capital and points out that evidence thus far suggests that disconnection may not actually open the door to the secondary markets. Finally, the report concludes that given the certainty of the risks, the uncertainty of the benefits, and the availability of several viable alternatives, it is not possible to recommend implementation of disconnection for nonpayment of on-bill loans at this time.

# Introduction

During the 2013 legislative session, the Connecticut legislature passed Public Act 13-298, “An Act Concerning Implementation of Connecticut’s Comprehensive Energy Strategy and Various Revisions to the Energy Statutes.” Section 58 of this act called for the Connecticut Energy Efficiency Board (EEB) and the Clean Energy Finance and Investment Authority (CEFIA), in consultation with the state’s electric distribution and gas companies, to establish a residential clean energy on-bill repayment program. The act also authorized disconnection for nonpayment by the customer of any financing repayment amount under this program, with certain exceptions.

In light of these provisions, the EEB has asked its financing consultant to provide information and analysis to allow it to evaluate any residential loan program in which a utility termination may be effected. The underlying question that this analysis is intended to inform is whether the joint developers of the new on-bill program should avail themselves of the authority granted to them under the legislation and implement disconnection for nonpayment as a feature of this loan program.

The issue of whether to implement disconnection in this context is, to some extent, a matter of competing policy priorities. On the one hand, Connecticut has long been a leader in supporting economically challenged residents, whether recently through its first-in-the-nation minimum wage increase to ten dollars and ten cents, or through its established history of laws and regulations that protect residential customers from the loss of essential electric or gas services wherever reasonably possible. On the other hand, the state also has a policy of encouraging the flow of private capital into clean energy investments, as described in the state’s Comprehensive Energy Strategy. Determining whether to implement disconnection for nonpayment as a feature of a state loan program ultimately depends on whether the benefits of this feature in terms of encouraging private capital investment in clean energy outweigh the risks associated with disconnection that form the basis of policies limiting its use. This report weighs both the risks and benefits of disconnection for nonpayment of loans through energy bills to help EEB members decide that question.

## History of Limitations on Utility Shut-Offs

At least since the 1970s, public service electric and gas utilities in Connecticut have only been permitted to terminate service for nonpayment of that utility’s bill for which that individual customer was liable; electric and gas service terminations have never been permitted for nonpayment of any other debt.<sup>2</sup> While there are limited additional reasons that termination of service may be effected, these do not relate to nonpayment of a utility bill.<sup>3</sup>

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<sup>2</sup> PA 07-242 §14, a study bill, required the Energy Efficiency Board (EEB) to develop and estimate costs for a possible efficiency loan program that may include on-bill repayment with a risk of termination of service in case of default, and report to the General Assembly regarding such proposal; the Act did not actually authorize terminations of service in response to a loan default. The EEB did not recommend use of terminations of service in this context.

<sup>3</sup> Utility service may be terminated for failure to provide appropriate identification on ordering such service, in the case of a hazardous condition (the one situation where notice in advance of termination is not required), where service provision violates the law, equipment tampering, fraud, failure to provide access to utility equipment or use of equipment that adversely affects equipment or service to other customers, and use of unmetered service,



State statutes and agency regulations circumscribing electric and gas utility shut-offs reflect a recognition of the need to protect residential customers, whenever reasonably possible, from the loss of electric or gas service, widely considered modern necessities. These statutes include a winter moratorium on termination from November through April,<sup>4</sup> limitations on shut-offs in some life-threatening situations<sup>5</sup> or serious illness as certified by a medical provider if the customer accedes to a reasonable payment agreement,<sup>6</sup> and certain limitations on disconnection of tenants resulting from landlord nonpayment.<sup>7</sup> Related provisions also protect residents by requiring proper written notices<sup>8</sup> and prohibiting shut-offs during weekends, holidays, and other off hours.<sup>9</sup> Other provisions also require that utilities provide customers the opportunity to enter into reasonable payment agreements prior to shut-off<sup>10</sup> and require additional notice in cases in which partial payment of at least 20% of the amount due is made.<sup>11</sup>

Connecticut regulations also specifically prohibit electric or gas service termination for nonpayment of merchandise purchased from a utility, a different class of service at the same or another location, repair of customer-owned or rented equipment, or the bill of a prior occupant or another customer for whom the customer is a guarantor.<sup>12</sup> The prohibition on termination of nonpayment for equipment repair may be particularly relevant to the issue of disconnection for nonpayment of energy efficiency loans, given that certain equipment repairs may involve the installation of program-eligible energy efficiency measures.

While collectively these law and regulations create some safe harbor for economically vulnerable residents, it is important to recognize that each of these provisions is limited by its specific language. Moreover, most customers are unaware of their rights and may not have the sophistication or resources necessary to challenge a threatened shut-off, even if their circumstances would entitle them to continued service.

Despite all of these protections, shut-offs remain a relatively common occurrence today, with nearly 4,000 hardship customers terminated by Connecticut Light and Power<sup>13</sup> and over 5,000 by United Illuminating<sup>14</sup> between May 1 and November 1, 2013. These figures do not include terminations by the

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and similar issues unrelated to nonpayment of the bill for utility service (*see* CGS §§16-262c, 16-262d, 16-262e(g), RCSA §16-3-100(b)).

<sup>4</sup> CGS §16-262c(b)(1), RCSA §16-3-100(b)(3)(B). Note that non-heat gas service may be terminated for nonpayment.

<sup>5</sup> CGS §16-262c(b)(1), RCSA §16-3-100(e).

<sup>6</sup> CGS §16-262d(b), RCSA §16-3-100(b)(3)(C) and (F), and (e).

<sup>7</sup> CGS §§16-262e, as amended by PA 13-78 §9, 16-262f, as amended by PA 13-78 §10, RCSA §16-3-100(i).

<sup>8</sup> CGS §§16-262d(a), (c), (d) and (e), 16-262c(b)(7), RCSA §16-3-100(b), (c), (d) and (e).

<sup>9</sup> CGS §16-262c(a).

<sup>10</sup> CGS §16-262c(b)(2), RCSA §16-3-100(b)(3)(A); Rogers v. SCG, Docket 83-07-18 (2/19/1985); Rotko v. SCG, Docket 83-25-08 (2/19/1985).

<sup>11</sup> CGS §§16-262d(f), RCSA §16-3-100(b)(2)(B) and (3)(B) and (d)(4).

<sup>12</sup> RCSA §16-3-100(b)(3)(G) through (I) and (L).

<sup>13</sup> Connecticut Light and Power Company, Annual Report to the Connecticut Legislature and the Public Utilities Regulatory Authority as required by Conn. Gen. Stat. §16-262c(c).

<sup>14</sup> United Illuminating, Annual Report to The Connecticut General Assembly and Public Utilities Regulatory Authority As Required by Connecticut General Statutes 16-262c.

Connecticut gas companies, which total several thousand more. The state permits shut-offs in cases of nonpayment for direct utility services that fall outside of the protections above, but these protections reflect a desire to limit the number of shut-offs from growing further.

### Policy Precedent

Many other providers of energy-related services, including electric suppliers, have long sought to offer services to customers that would be paid for on-bill. If termination of electric service is permitted for nonpayment of on-bill clean energy loans provided pursuant to Section 58 of P.A. 13-298, a precedent could be set that might open the door to the shut-off of electric service for reasons other than non-payment of that utility service.

It is worth noting that other jurisdictions in North America have been required through regulatory proceedings to open up their on-bill financing programs to additional parties after having established more limited programs that were deemed discriminatory. For example, Enbridge Gas in Ontario now offers an “Open Bill Access” program, which provides access to a wide range of HVAC and energy efficiency providers. This program is the successor to a more controlled billing relationship that Enbridge had established with a single HVAC provider, which was deemed discriminatory to the industry by the utility regulator. In a 2006 rate case, the regulator found that “any bill access which is provided should be on a non-discriminatory basis, because the access is linked with the provision of a regulated service, namely the billing of utility services.”<sup>15</sup> The regulator gave Enbridge the option of either switching to a stand-alone bill without any third-party access or opening up the bill, and Enbridge chose the latter option. Today, the Enbridge bill provides an entire separate page entitled “Charges from Other Companies,” which is left open to outside parties indiscriminately. As Enbridge officials have described it, “Effectively, it could be anybody.”<sup>16</sup>

The Enbridge case is illustrative of the difficulty of predicting how programs may evolve through the regulatory process. It is equally difficult to predict how program designs implemented at one point in time may lead to program expansions in the future. If Connecticut moves forward with a program that implements disconnection, and that program is then opened up to additional parties either by design or regulation, then the long trend of limiting disconnection to nonpayment of utility bills only could potentially be reversed.

The remainder of this report examines the potential implications of expansion of utility service termination. As discussed in the pages that follow, the risks and costs to residents, ratepayers, utilities, and program administrators can be described concretely. By contrast, the benefits in terms of impacts on loan performance or the cost of capital are highly speculative and in some cases unsupported by the available evidence.

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<sup>15</sup> Ontario Energy Board, “In the Matter of an Application by Enbridge Gas Distribution Inc., 2006 Rates, Decision with Reasons,” EB-2005-0001/EB-2005-0437, February 9, 2006, p. 67, [http://www.ontarioenergyboard.ca/documents/cases/EB-2005-0001/decision\\_090206.pdf](http://www.ontarioenergyboard.ca/documents/cases/EB-2005-0001/decision_090206.pdf).

<sup>16</sup> “Smaller Rivals Piggyback on Enbridge Bills,” Toronto Star, August 21, 2007, [http://www.thestar.com/business/2007/08/21/smaller\\_rivals\\_piggyback\\_on\\_enbridge\\_bills.html](http://www.thestar.com/business/2007/08/21/smaller_rivals_piggyback_on_enbridge_bills.html).

# Risks to Residents

Electricity and gas are essential services tied to the health and safety of residents, as well as the habitability of a home. Borrowers who are unable to readily meet loan obligations and are subject to utility terminations in case of a loan default may engage in dangerous practices to try to meet the needs of their households. Even if utility shut-offs are used rarely in case of defaults, the range of consequences can be serious. With regard to a loss of electricity in particular, some of the consequences may include the following:

- **Electric heat:** Approximately 16 percent of the households in Connecticut use electricity as their primary heating fuel.<sup>17</sup> While there is a winter moratorium for shut-offs in place between November and May, temperatures can drop significantly even outside of that timeframe. For example, daily lows fall below 31 degrees approximately 10 percent of the time in Hartford during the month of October.<sup>18</sup> The negative impacts of a loss of heat can occur at these times even indoors. The Connecticut Department of Public Health warns that victims of hypothermia are often elderly people with inadequate food, clothing, or heating, or babies sleeping in cold bedrooms.<sup>19</sup>
- **Cooling:** Connecticut also is known to reach high temperature extremes that can pose a risk to vulnerable residents, particularly the elderly. In July 2011, for example, regional hospitals reported large numbers of patients arriving with heat-related problems, such as dizziness or nausea, as well as respiratory issues, after temperatures topped 100 degrees.<sup>20</sup> Asthma and other lung conditions can also flare up during hot weather. Inadequate cooling is known to exacerbate these problems.
- **Medical Equipment and Medicine Refrigeration:** Electricity is often needed in the home for medical reasons. For example, a study by the National Energy Assistance Directors Association (NEADA) found that 25% of all energy assistance recipients with children under age 18 reported that a member of the household used medical equipment that requires electricity. Six percent of all energy assistance recipients surveyed by NEADA reported that the equipment using electricity was used to treat asthma. Four percent indicated that someone in the household was taking medication requiring refrigeration. Loss of electricity in these scenarios can place members of the household at risk of experiencing serious medical problems.

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<sup>17</sup> American FactFinder, U.S. Census, House Heating Fuel. 2012 American Community Survey 1-Year Estimates, [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_12\\_1YR\\_B25040&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_1YR_B25040&prodType=table).

<sup>18</sup> "Average Weather in October for Hartford, Connecticut, USA," WeatherSpark, <http://weatherspark.com/averages/30465/10/Hartford-Connecticut-United-States>.

<sup>19</sup> "Frostbite and Hypothermia," Connecticut Department of Public Health, <http://www.ct.gov/dph/cwp/view.asp?a=3115&q=472546>.

<sup>20</sup> Loh, Tim, "Weather Stalls Trains, Strains Public as Temperatures Top 100 Degrees," ctpost.com, July 23, 2011, <http://www.ctpost.com/local/article/Weather-stalls-trains-strains-public-as-1534944.php>.

- Candle Fires:** Residents who face a loss of electricity may turn to candles as their only source of lighting. These situations can increase the risk of candle fires, particularly because people often use candles differently during power outages than at other times. A National Fire Protection Association (NFPA) study on candle fires reported that fire departments in the United States respond to over 10,000 fires started by candles per year.<sup>21</sup> The study cited a sample of fire reports in which candles lit in homes without power caused approximately 26% of fatal home candle fires and approximately 34% of fatalities (as multiple fatalities were more common in these types of fires). In approximately two-thirds of the candle fires that occurred when the home was without power, the reported noted that “the power had been shut off or the home lacked utilities.” Temporary power outages and new homeowners who had not had the power turned on accounted for the remaining third of these cases. The report described a focus group study showing that people who light candles when the home is without power tend to light them in multiple rooms and leave them unattended, which can increase the risk of fires and allow them to spread before they are noticed.

A recent tragic example of multiple fatalities caused by a candle fire after a shut-off was the case of Tashika Turner, who lost three of her young children in a candle fire in New York last October, only one day after ConEd turned off her electricity as a consequence of unpaid electric bills. The case has been widely reported on by the Wall Street Journal,<sup>22</sup> CNN,<sup>23</sup> ABC,<sup>24</sup> CBS,<sup>25</sup> and NBC,<sup>26</sup> among others. According to the ABC story, Turner had just been approved for public assistance, and the lights were due to come back on the next day. These stories are reproduced in the next section of this report, followed by several others in a separate section entitled “Excerpted Stories from Other Jurisdictions.”

Economizing to make loan payments and avoid disconnection can also cause harm to household members, particularly infants and young children, or anyone who is ill, medically vulnerable, disabled, or elderly. For example, in 2004 the National Energy Assistance Directors Association (NEADA) conducted a survey of energy assistance households indicating that 38% of such households went without medical or dental care in order to have money to pay their home energy bill; 30% went without filling a prescription or taking the full dose of a prescribed medicine; and 22% went without food for at least a day, including 10% of elderly homeowners.<sup>27</sup>

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<sup>21</sup> Ahrens, Mary, “Home Candle Fires,” National Fire Protection Association, December 2013, <http://www.nfpa.org/~media/Files/Research/NFPA%20reports/Major%20Causes/oscandles.pdf>.

<sup>22</sup> “For Utility, Cutting Power ‘Last Resort,’ Deadly Fire in Bronx Sparked by Tipped-Over Candle,” Wall Street Journal, October 27, 2013, <http://online.wsj.com/news/articles/SB10001424052702304200804579162063990693356>.

<sup>23</sup> “Official: 3 Children Die in Bronx Fire After Candle Lit,” CNN, October 27, 2013, <http://www.cnn.com/2013/10/26/us/bronx-deadly-fire/>.

<sup>24</sup> “FDNY Says Fire That Killed 3 Boys in the Bronx Sparked by Candle,” ABC, October 27, 2013, [http://abclocal.go.com/wabc/story?section=news/local/new\\_york&id=9301860](http://abclocal.go.com/wabc/story?section=news/local/new_york&id=9301860).

<sup>25</sup> “Officials: Candles Likely Cause of Fire That Killed 3 Young Boys in the Bronx; Neighbors: Mom Used Candles After Electricity Had Been Turned Off Due to Nonpayment” CBS New York, October 26, 2013, <http://newyork.cbslocal.com/2013/10/26/police-candles-likely-caused-fire-that-killed-3-young-boys-in-the-bronx/>.

<sup>26</sup> “Candle Caused Bronx Blaze That Killed 3 Boys: FDNY,” NBC New York, October 27, 2013, <http://www.nbcnewyork.com/news/local/2-Children-Killed-2-Alarm-Bronx-Fire-229336951.html>.

<sup>27</sup> “National Energy Assistance Survey Report,” National Energy Assistance Director’s Association, April 2004, <http://neada.org/wp-content/uploads/2013/05/survey2004.pdf>.

Additional consequences to Connecticut residents may also occur as a direct offshoot of having had utility service terminated. For example, it may be possible for the utility company to impose a security deposit on a household in order to restore utility service.<sup>28</sup> Such a requirement could lengthen the time to restore service, placing residents at additional risk, and further burdening a household which may already be struggling financially to stay afloat.

While the program being developed currently under PA 13-298 §58 currently contemplates only electric termination, the precedent may lead to program expansion in the future. The consequences of a lack of heating are well documented. For example, the NEADA study indicated that almost 11% of households reported that a member became so ill because their home was too cold in the prior 5 years that doctor or hospital visits were required. A 2011 Connecticut report on energy affordability<sup>29</sup> also cites studies indicating adverse health consequences for the elderly who keep their housing too cool in winter in order to pay energy bills, including hypothermia, respiratory and cardiovascular illness and mortality, and for young children an ‘infection-malnutrition cycle’ as parents struggle to trade off which necessity to pay for, leaving children more prone to infection and illness when food needs are compromised. The Connecticut report also reviewed unsafe heating practices, including heating a home with an open oven door or faulty electric heater. Nationally, 120,000 residential fires and 600 deaths annually in the US are attributed to use of supplemental heaters, according to the report.

### Who Is At Risk?

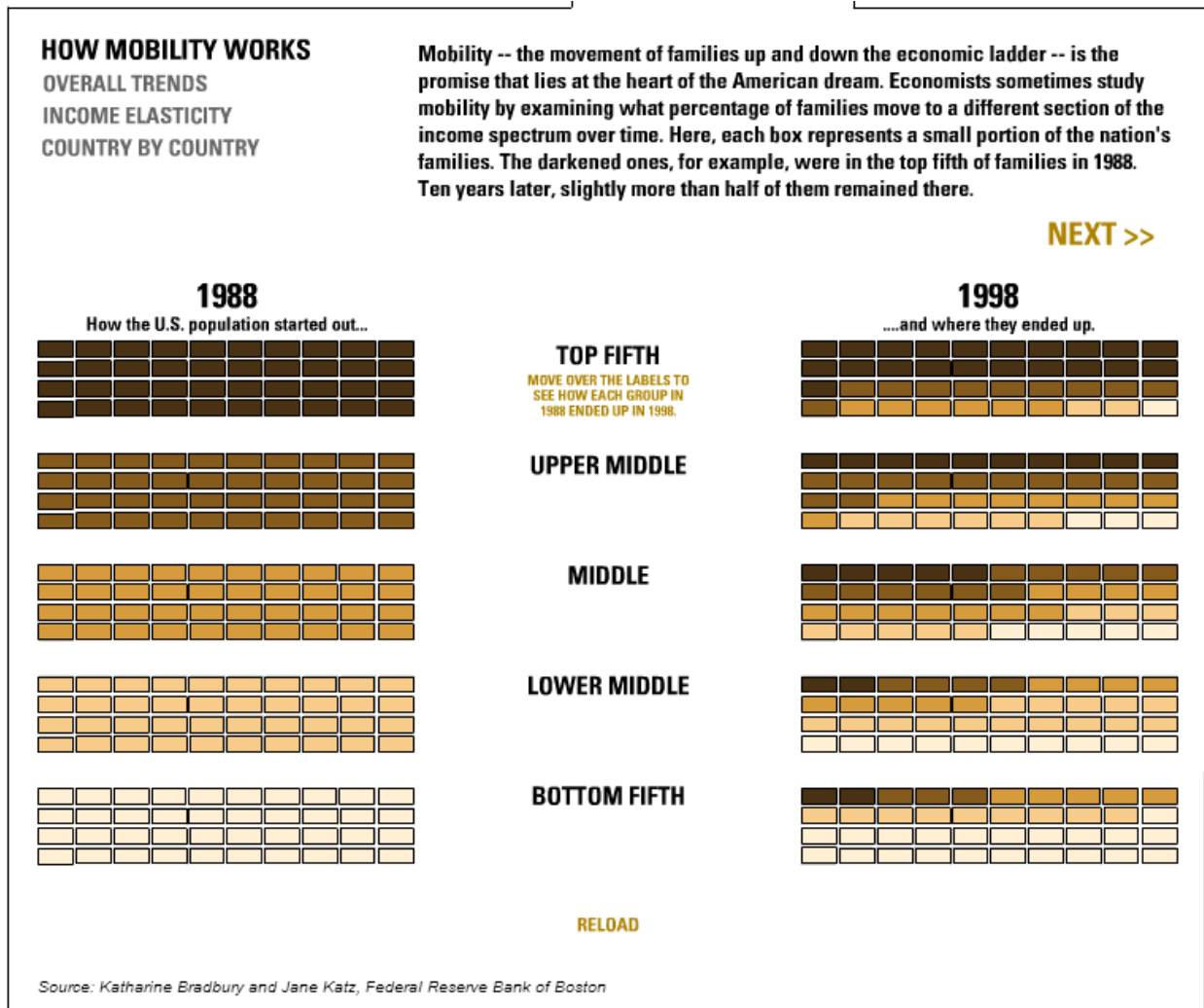
Certain customer groups are at greater risk of loan default and risks associated with a utility termination. At the time the loan is issued, many borrowers may be financially able to handle additional costs that may not have been anticipated, as borrowers will be homeowners with higher FICO scores and the income to support the loan, good indicators of the ability to repay debt. However, these underwriting criteria represent only a “snapshot” at the time the loan is made. A borrower may later face reduced financial circumstances (e.g., job loss, disability) or unexpected expenses (e.g., replacing defective equipment that does not perform as anticipated or is damaged in an unforeseen event). Moreover, a loan that runs with the meter, as is contemplated in the legislation, may be transferred to an individual who does not have adequate income to support loan payments and meet other needs, forcing difficult choices.

A change in household economic circumstances over a period of multiple years (such as the length of a loan term) is not an isolated event. Indeed, in 2005, the New York Times cited a study by the Federal Reserve Bank of Boston showing that over a 10-year period, nearly half of the households in the United States who ended up in the bottom 20% of the income spectrum had started out in a higher income quintile 10 years earlier. Over half of those who had moved into the lowest 20% of the income spectrum came from one of the top three quintiles. That data is summarized in the graphic below.

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<sup>28</sup> CGS §16-262j, as amended by PA 13-119 §14, RCSA §16-262j-1.

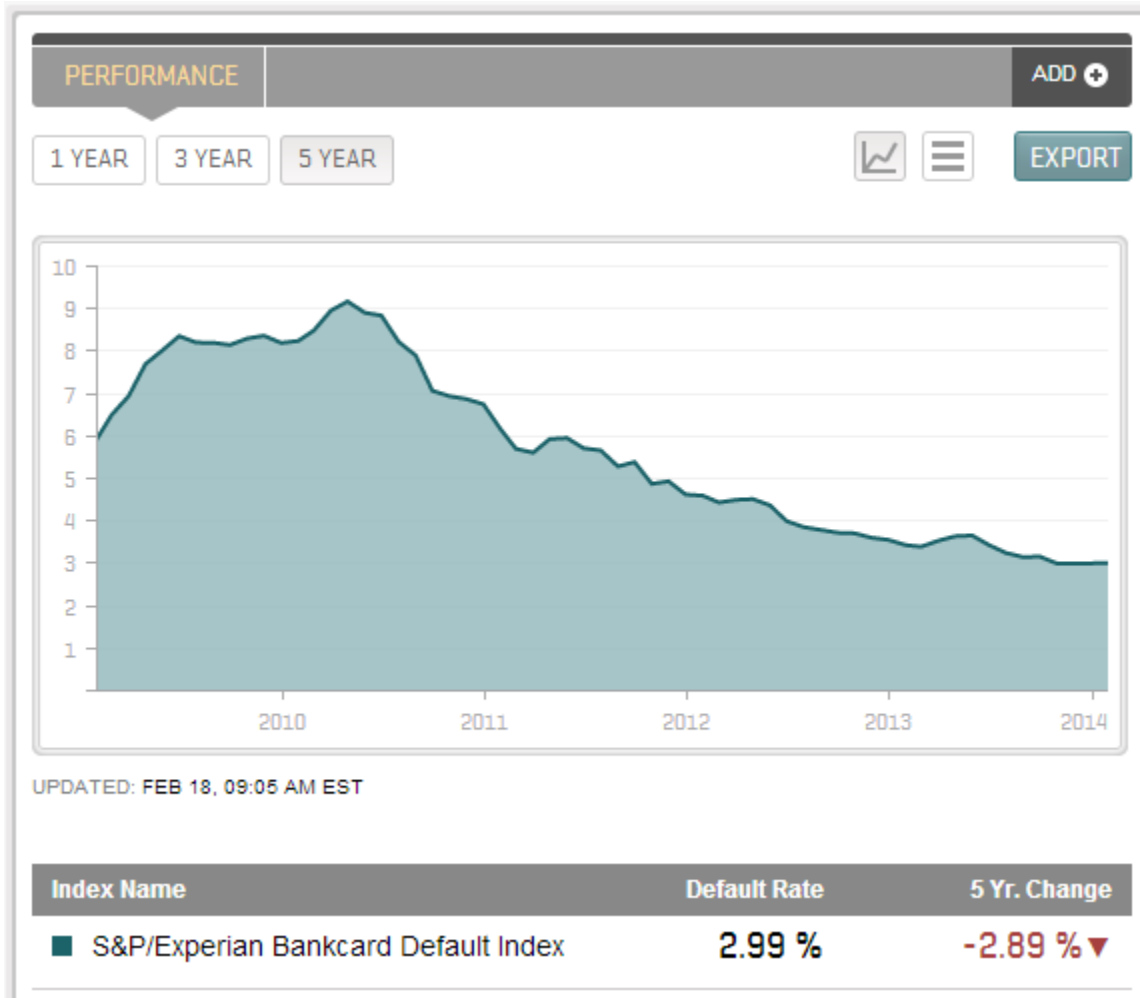
<sup>29</sup> Colton, Roger, “Home Energy Affordability Gap: 2011, Connecticut Legislative Districts,” prepared for Operation Fuel, December 2011, <http://www.operationfuel.org/wp-content/uploads/Connecticut-2011-HEAG-Final.pdf>.



Recent economic experience in the United States also underscores the lesson that delinquency and default rates can fluctuate significantly as people struggle to cope with unforeseen circumstances that may be no fault of their own. For example, the chart below of credit-card default rates shows that default rates were nearly double today's rates only five years ago, largely the result of changes in macroeconomic circumstances. Over the five-year period, default rates rose from just under 6% to above 9% before gradually dropping to under 3% today. It is worth noting that five years is the shortest term available for Smart-E loans, which may extend out as far as 12 years.

<sup>30</sup> New York Times, "How Class Works," [http://www.nytimes.com/packages/html/national/20050515\\_CLASS\\_GRAPHIC/index\\_03.html](http://www.nytimes.com/packages/html/national/20050515_CLASS_GRAPHIC/index_03.html).

S&P 5-Year Index of Credit Card Default Rates (as of 3/3/14)



It could be suggested that the risk of default and associated consequences, such as disconnection, could be lower for energy efficiency loans, given strong performance so far of this asset class. There are several issues with that reasoning, however, including the following:

- Strong performance is likely a function of the high average credit rating of today’s typical energy efficiency borrowers. Evidence shows that default rates for borrowers with lower credit ratings have been higher. For example, the overall default rate on NYSERDA’s more flexible “Tier 2” loans (made to less creditworthy borrowers, with a still relatively high average FICO score of 714—well above the 680 cut-off for the contemplated on-bill loans in Connecticut) are more than twice as high as the default rate on “Tier 1” loans (made to more creditworthy borrowers, with an average FICO score of 752).
- The strong performance of energy efficiency loans may also be a function of the relatively short life of many energy efficiency loan programs, as data suggest that default rates grow in these programs over time. For example, a 2010 presentation by the Pennsylvania Treasury on that state’s Keystone HELP energy efficiency program showed that the combined rate of defaults

plus loans that were more than 90 days past due was only 0.24% for loans originated in 2009, but had grown to 2.99% for loans that were originated in 2006.<sup>31</sup>

- Default percentages will equate to higher absolute numbers of individuals as programs grow to scale. When combined with the fact that scaling up may also involve reaching beyond “early adopters” and bringing in more borrowers with more mixed credit profiles, the risks of negative consequences from loan defaults are likely to increase. Those risks may become more apparent as relatively new and smaller scale programs grow and loans begin to mature.

For these reasons, as the energy efficiency loan market develops and grows to scale, one might expect that loan write-offs could begin to look more like typical utility bill write-offs. For reference, the tables below provide the numbers of write-offs and write-off amounts among Connecticut’s regulated utility companies.

*CT Electric Distribution Company Annual Write-Offs<sup>32</sup>*

	Partial or Full Write-Offs	Amount Written Off
CL&P	39,916	\$34,295,355
UI	53,112	\$12,102,014
Total	93,028	\$46,397,369

*CT Gas Company Annual Write-Offs<sup>33</sup>*

	Partial or Full Write-Offs	Amount Written Off
Yankee	12,079	\$7,291,762
CNG	14,163	\$8,695,798
Southern CT	15,320	\$10,766,111
Total	41,562	\$26,753,671

Ideally, energy efficiency loans will experience fewer write-offs than overall energy bills, particularly if the energy savings can help cover loan obligations. Nonetheless, the figures above are provided to communicate how the order of magnitude might change as compared to today’s early results if energy efficiency loan programs truly go to scale.

<sup>31</sup> “Keystone HELP (Home Energy Loan Program), Proposal to Sell \$25 Million Residential Energy Efficiency Loans,” Pennsylvania Treasury presentation to Bostonia Partners, LLC, July 2010, [www.iscvt.org/resources/documents/krasja\\_presentation.ppt](http://www.iscvt.org/resources/documents/krasja_presentation.ppt).

<sup>32</sup> November 1, 2012 – October 31, 2013. Annual Hardship/Arrearage Reports to the Connecticut Legislature and the Public Utilities Regulatory Authority.

<sup>33</sup> Note that these figures combine data from November 1, 2012 – October 31, 2013 for Yankee and November 1, 2011 – October 31, 2012 for CNG and Southern CT. Provided primarily for illustrative purposes, based on data available. Annual Hardship/Arrearage Reports to the Connecticut Legislature and the Public Utilities Regulatory Authority.



### Limits on Consumer Protection

PA 13-298 §58 does contain some protections to address potential risks to consumers, such as heating assistance requirements and bill neutrality requirements. However, these protections have significant limitations and may not fully address the risks inherent to utility service termination. Some of those limitations are explained further below.

### Limitations on Heating Assistance

For a household facing reduced financial circumstances, energy assistance heating benefits are protected under PA 13-298 §58 if the loan is for improvements related to heat and collection remains on-bill. However, the household must be impoverished to qualify, with income between \$0 and 60% of State Median Income. Income caps by household size are shown in the table below:

Household Size and Annual Income Cap						
1	2	3	4	5	6	7
\$32,190	\$42,095	\$51,999	\$61,904	\$71,809	\$81,713	\$83,570

Even for those households who do receive assistance, benefits are very limited, as indicated by benefits available for the winter 2013-2014: between \$350 and \$585 per year, depending on income, household size and the presence of a member who is 60+ years, under 6 years, or disabled.<sup>34</sup> While these benefits may help, they are not likely to cover home heating fuel and on-bill loan obligations.

### Issues with Anticipated Bill Neutrality as Consumer Protection

Another requirement under PA 13-298 §58 is that of anticipated bill neutrality. The statute requires that “the anticipated periodic customer bill after installation of the clean energy improvements does not exceed the anticipated periodic bill for electric or gas service without installation of such improvements, including no energy savings improvements.” In the context of service disconnection, this provision might be viewed as serving a consumer-protection function. An important caveat, however, is that “anticipated” bill neutrality is not the same as actual bill neutrality. In other words, borrowers have no guarantee that overall bills will go down in practice. The lower the household’s income, the greater its risk regarding loan affordability, given the lack of budget flexibility and the margin of error that is necessarily a part of bill neutrality calculations.

The loan program design, even with the best of tools, cannot ensure that future customer utility bill estimates utilized will reflect actual costs to the household. Some examples of circumstances that might impact bill neutrality after the loan is closed include the following:

- Efficiency audits such as those provided in the Home Energy Solutions program are not required of borrowers, which may affect savings and cost calculations, as well as installation of the most appropriately sized equipment.
- Volatility in the cost of utility service may not be anticipated. Standard offer electricity rates and other customer charges, as well as gas prices, can vary significantly over the life of a loan term. These variations can impact both the actual versus expected bill payments, as well as actual versus expected savings. On the electric side, pricing variability can be even more dramatic in a

<sup>34</sup> “Energy Assistance – Winter Heating Assistance Benefits,” Connecticut Department of Social Services, <http://www.ct.gov/dss/cwp/view.asp?a=2353&Q=305192&PM=1#bas>.

competitive supplier market, which can impact the line item on a customer’s bill tied to electric generation. A recent statement issued jointly by the Attorney General’s Office and the Office of Consumer Council warned that customers who opt into variable pricing arrangements with competitive suppliers may find that the generation charge on their bill can spike to rates that are more than double the standard offer.<sup>35</sup>

- Efficiency and clean energy measures installed may not perform as anticipated, for example in the case of equipment or installation defects. Aging equipment or appliances can result in increased utility costs. Damaged equipment may need to be replaced. Aging equipment or appliances can result in increased utility costs.
- Household make-up and need may vary over time. For example, the addition of an infant to the household, or the presence of an elderly, disabled or ill resident, can drive up utility costs. In such cases, anticipated savings may not be commensurate with loan payments due to factors such as household size, need and lifestyle (e.g., hours of the day family members are home, electrically powered equipment used in the home, etc.).

In contrast to anticipated bill neutrality, the ratio of actual bill savings to anticipated bill savings is sometimes called the “realization rate.” A recent review of realization rates from seven retrofit programs around the country found a very wide variation in both electric and heating bill realization rates.

*Realization Rates around the Country*<sup>36</sup>

	Electric Realization Rate	Heating Realization Rate
New Hampshire	53%	92%
Massachusetts	n/a	57-86% (varied by fuel type)
Delaware Dept. of Nat Res.	34%	47-101% (varied by fuel type)
Wisconsin Focus	98%	99%
Long Island Power Authority	62%	67%
NYSERDA	35%	65%
Energy Trust of Oregon	n/a	47%

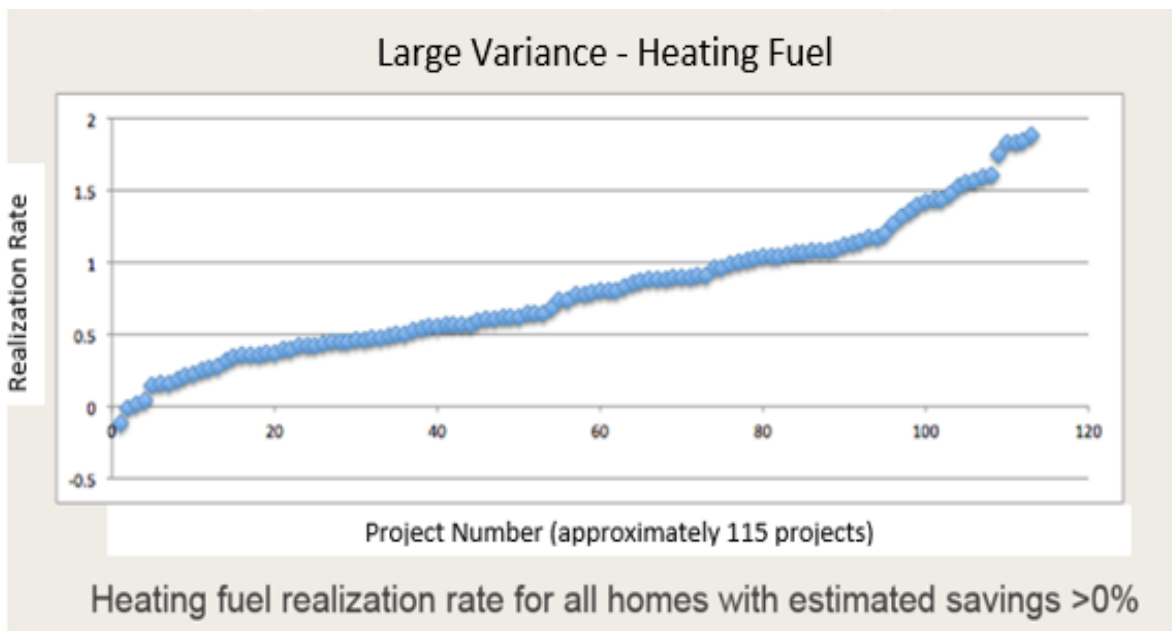
<sup>35</sup> “Consumer Advisory: Consumer Counsel, AG Warn Electric Supplier Customers to Check Their Rates; Thousands of Connecticut Residents Currently on Rates above 17 Cents per Kwh, Some More than Double Current Standard Offer Price,” Connecticut Attorney General and Connecticut Consumer Counsel, January 16, 2014, <http://www.ct.gov/ag/cwp/view.asp?Q=538190&A=2341>.

<sup>36</sup> Rosenberg, Mitchell, “The Resource Value of Whole House Retrofit: Evaluated Experience of Established Programs,” 2013 ACEEE Energy Efficiency as a Resource Conference, September 23, 2013, <http://aceee.org/files/pdf/conferences/eer/2013/1A-rosenberg.pdf>.

As shown, a number of these programs experienced realization rates that were considerably lower than 100%. This included the NYSERDA program, which experienced heating fuel realization rates of 67% and electric realization rates of only 35%.

Given the wide variation in realization rates and the tendency of actual savings to fall well below projected savings, relying on anticipated bill neutrality may entail significant risk to consumers. Moreover, even if program-wide realization rates were all at or above 100%, however, there would still be significant risks to consumers because of the variation that can occur at the individual project level.

*Babylon, NY Project-Level Realization Rates*



As shown in the graphic above, a recent study of approximately 115 projects from the town of Babylon, New York demonstrates the extent of variation that can occur at the individual project level.<sup>37</sup> While the overall heating fuel realization rate was approximately 76%, approximately 40 projects (or about one-third) had a realization rate at or below 50%.

<sup>37</sup> Schweiber, Will and Andy Frank, "The Holy Grail of Energy Usage Data," ACI Regional Home Performance Conference, Saratoga Springs, NY, 2/12/14, <http://www.affordablecomfort.org/events/2014-aci-regional-home-performance-conference-new-york/session/holy-grail-energy-usage-data>.

# Costs to Ratepayers, Utilities, and other Program Administrators

## Financial Costs

The Connecticut utilities have estimated that the costs of layering a service termination component onto an on-bill financing program could be substantial. For example, CL&P agreed that the costs could potentially be several hundred thousand to over a million dollars, depending on what changes are required. Questions currently exist as to how these costs would be paid for, though it is likely that they will ultimately be passed onto customers through some type of cost recovery mechanism.

Assuming cost recovery is allowed, some ratepayers could potentially view these costs as subsidies provided by ratepayers who stay current on their energy obligations to pay for expensive new processes to disconnect customers who fall behind on their loans. This concern could be heightened if the additional charges went toward creating or modifying a system that was not expected to be used very often (if incidents of disconnection were expected to be infrequent). While some costs are inevitable in setting up any new program, such as an on-bill loan program, the utilities have indicated that incremental costs of layering on disconnection would likely be significantly higher than simply implementing an on-bill program without disconnection. In Connecticut, this may be partially a function of already having built existing on-bill programs into the IT system that do not have disconnection tied to them. Some examples of the incremental costs of layering on disconnection may include the following:

- **Billing and Customer Information Systems**: The systems might need to be changed in order to recognize on-bill loans with disconnection tied to them as a different type of receivable. For example, in CL&P's system, existing on-bill loans are considered to be "non-service balances." CL&P does not currently initiate disconnection for any such balances that may be outstanding. If disconnection were layered onto on-bill loans, they would need to be classified as "non-service balances with disconnection." That new classification would have ripple effects across the system, in that it would require new accounting codes and procedures to track these receivables throughout the utility's financial infrastructure.
- **Reporting**: Internal and external reports (e.g., sales reports that help inform the appropriate rate base) all are set up with current systems in place. Changes in how receivables and account balances are coded and tracked might necessitate changes in how these reports are generated.
- **Credit Systems**: At least in CL&P's case, credit systems are different from billing systems and would also need to be changed. While billing systems track when to send out bills and are part of an overall customer information tracking system, credit systems separately track balances, arrearages, payment arrangements, etc. The two systems interface with each other, but are ultimately distinct from one another. Credit systems are set up such that there are certain triggers to initiate disconnection notifications and processes. Currently, CL&P's credit systems do not track existing on-bill loans. If disconnection were layered onto an on-bill loan program, credit systems would need to be changed in order to track these receivables and link them at certain trigger point to disconnection processes.

- Order Systems: Order systems are designed to link “back-office” operations with activities in the field, such as meter reading, customer moves, etc. Field representatives may sometimes provide information directly to customers on amounts owed. In these cases, it would be important to ensure that field representatives had accurate breakdowns of customer charges in order to explain any outstanding balances, particularly if they were tied to the possibility of service disconnection. Order systems might need to be modified in order to accurately reflect these breakdowns.
- Notifications: Disconnect notification processes would need to be created in order to notify residents who were in arrears of the possibility of service termination. These notifications would need to explain all of a customer’s rights and responsibilities with respect to disconnection tied to their loan obligations and how those rights and responsibilities differed from disconnection for nonpayment of energy account balances. Notification processes might or might not coincide with existing disconnection notification processes for nonpayment of energy-related obligations.
- Multi-State Architecture: In CL&P’s case, logic would need to be introduced to account for different practices by state. Wherever possible, Northeast Utilities uses common codes and processes across the three states in which it operates. Introducing new accounting codes and processes in one state would increase the complexity of the system and potentially add additional costs.
- Testing: Extensive testing would be needed, particularly in CL&P’s case, as tests would be run across all systems in each state to ensure that the addition of new codes and processes did not introduce defects elsewhere in the various systems. Such testing is critical to ensure that billing charges, notifications, account tracking, internal and external reporting, and other interactions with customers remain accurate and are not disrupted.

In addition to these set-up costs, ongoing costs could be substantial with respect to any particular customer whose nonpayment on their loan obligations triggered disconnection processes. These costs could include notification, scheduling and carrying out terminations, and credit and collection efforts to resolve a disconnection. CL&P has noted these additional ongoing costs could be amplified by the fact that customers who entered into the disconnection process as a result of nonpayment of loan obligations would represent a new class of customers who would need to be treated differently from any existing customer set, potentially creating new situational costs.

### Public Perception

In addition to financial costs, there may be other costs associated with implementing disconnection in the expansion of energy efficiency programs if shut-off authority is used and publicized. One such non-financial cost may be the perception of the utility companies that disconnect customers who do not pay their loan obligations.

Perceptions of utility companies can skew negatively even today, as ratepayers react to publicized incidents of disconnection that are tied only to energy obligations. When these incidents lead to consequences that attract media attention (such as medical situations, candle fires that occur when a home is without power, fatalities due to hypothermia or overheating, etc.), the utility that implemented the disconnection can sometimes face blame. When disconnection is tied only to nonpayment of energy bills, however, that blame can sometimes be tempered by the understanding that utilities may

not be able to provide a service indefinitely for which they are not being paid. Yet even under those circumstances, not all portrayals of utility actions are sympathetic.

An example of this variation in portrayals can be seen in some of the different headlines that were written in response to the case of Tashika Turner, mentioned earlier in this report. One headline from the Wall Street Journal read, “For Utility, Cutting Power ‘Last Resort.’”<sup>38</sup> By contrast, a CBS story on the same incident read, “Neighbors: Mom Used Candles After Electricity Had Been Turned Off Due to Nonpayment.”<sup>39</sup> While the first headline suggests that the utility tried to avoid shutting the customer off, the second focuses more on the circumstances that led to the tragedy after a utility shut-off was implemented.

It remains an open question as to what perceptions might arise if a publicized situation occurred after a disconnection resulting from nonpayment to a private bank or other lender. In some cases, customers might have fallen behind on both their energy and loan obligations, meaning that a disconnection might have occurred regardless of the loan. Even in those cases, however, the combined burden of energy and loan obligations could be a factor, particularly if program savings projections were not realized. In other cases, customers might attempt to remain current on their energy obligations even if they could not pay for the loan. In either case, perceptions could arise that private lenders had exerted some control over the disconnection of an essential service to vulnerable customers. These scenarios could be more difficult for a utility to explain than others in which the shut-off resulted directly and exclusively from nonpayment for a service that they were actually providing to the customer. Negative perceptions could expand to state agencies and program administrators, if the media were to highlight the fact that these stakeholders had a choice in designing an on-bill program in terms of whether to implement disconnection authority for the nonpayment of loan obligations.

It is worth underscoring that a single “worst-case” scenario can have far-reaching implications in terms of public perception. The articles below from several major media outlets on the Tashika Turner case show how wide an audience a single one of these scenarios may potentially reach. These articles are followed by a separate section highlighting several excerpts of similar stories from other jurisdictions. These excerpts reinforce both the actual risks to individuals from utility shut-offs, as well as the public perception risk that these stories create. In several cases, additional risks to utilities and program administrators are highlighted, such as regulatory reviews, legal actions, and settlements.

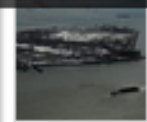
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<sup>38</sup> “For Utility, Cutting Power ‘Last Resort,’ Deadly Fire in Bronx Sparked by Tipped-Over Candle,” Wall Street Journal, October 27, 2013, <http://online.wsj.com/news/articles/SB10001424052702304200804579162063990693356>.

<sup>39</sup> “Officials: Candles Likely Cause of Fire That Killed 3 Young Boys in the Bronx; Neighbors: Mom Used Candles After Electricity Had Been Turned Off Due to Nonpayment” CBS New York, October 26, 2013, <http://newyork.cbslocal.com/2013/10/26/police-candles-likely-caused-fire-that-killed-3-young-boys-in-the-bronx/>.

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NY REGION

## For Utility, Cutting Power 'Last Resort'

### Deadly Fire in Bronx Sparked by Tipped-Over Candle

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By JOSH DAWSEY and DEREK KRAVITZ

Oct. 27, 2013 9:31 p.m. ET

Con Edison, saying it was owed thousands of dollars in unpaid electrical bills, shut off power Thursday to a Bronx apartment where Tashika Turner and her family lived, officials said.



On Sunday, a memorial outside the building where the fire occurred. Derek Kravitz for The Wall Street Journal

By Friday night, Ms. Turner's apartment was engulfed in flames, a fire sparked by a tipped-over candle she apparently used to keep the apartment lighted, authorities said. Three of her small children, including a four-month-old baby, were killed in the fire.

The Turner family is among 67,000 customers who had their service disconnected this year for not paying several consecutive bills, according to Con Edison.

The utility said such a move isn't taken lightly: Five notices are sent that power will be shut off and several attempts are made to contact the customer, a spokesman said.

And customers whose power is shut off can have service restored within 24 hours if they enter into a payment agreement.

"Disconnecting a customer's service is a measure of last resort," said Allan Drury, a Con Edison spokesman, adding "unfortunately, when customers are delinquent, that burden is placed on customers who are paying their bills on time."

On Sunday afternoon, Con Edison officials were present at the Bronx building, as stunned neighbors described a chaotic scene Friday night. Killed in the fire were Elijah Artis, 5 years old, 2-year-old Jeremiah Artis and Michael Turner, who was four months old.

# Official: 3 children die in Bronx fire after candle lit

From Laura Ly and Tom Watkins, CNN

updated 11:37 AM EDT, Sun October 27, 2013



Witness: I could hear them hollering

### STORY HIGHLIGHTS

- "I couldn't get them out," says neighbor -- "I tried"
- "This account had substantial arrears," says ConEd spokesman
- The brothers were ages 5, 2 and 4 months

New York (CNN) -- A fire that swept through a Bronx apartment killing three young brothers was caused by a candle and occurred one day after the power company cut off electricity for unpaid bills, officials said Saturday.

A neighbor said she was in her apartment in the building on West 165th Street -- half a mile from Yankee Stadium -- when she heard the boys' mother, Tashika Turner, screaming "Fire!"

Con Ed spokesman Allan Drury explained that the apartment's residents owed "a significant amount ... -- well into the thousands of dollars."

"We try to avoid turning service off to customers," Drury added. "We'll put them on payment plans to work with them to avoid turnoff, but this account had substantial arrears."



# FDNY says fire that killed 3 boys in the Bronx sparked by candle

Sunday, October 27, 2013




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FDNY says candle likely cause of fatal Bronx fire

## Eyewitness News

HIGHBRIDGE (WABC) -- Investigators say the fire that killed three children in the Bronx Friday night was accidental, caused by a candle in the kitchen area.

The three-alarm fire broke out inside a building on West 165th Street in the Highbridge section.

5-year-old Elijah Artis, 2-year-old Jeremiah Artis, and 4-month-old Michael Turner were killed in the fire.

Their 25-year-old mother, 4-year-old sister, and 4-month-old baby sister were taken to Lincoln Hospital where they were being treated for smoke inhalation.

Neighbor Eddie Tate took one of the girls from her mother, and carried her to safety.

Ten other people from surrounding apartments were treated for smoke inhalation, but none had life-threatening injuries.

A spokesman for Con Ed says power had been cut off to the family's apartment for non-payment.

According to neighbors, the mother had gone to the bodega downstairs and bought candles to light the apartment.

Fire marshals said the apartment did not have smoke alarms.

The mother had been approved for public assistance, and the lights were due to come back on Saturday.

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# Officials: Candles Likely Cause Of Fire That Killed 3 Young Boys In The Bronx

Neighbors: Mom Used Candles After Electricity Had Been Turned Off Due To Nonpayment

October 26, 2013 11:01 PM

Like 508
 Tweet 15
 Share 25

Related Tags: 165th street, Bronx, Candles, fatal fire, Fire, Fire Marshal, Highbridge, Mattie Ballard, The Bronx



**NEW YORK (CBSNewYork)** — Police and fire officials Saturday morning said candles may have been to blame for a fire that left three small children dead in the Bronx.

The Fire Marshal's office said a candle in the kitchen likely caused the fire swept through an apartment at 64 W. 165th St. in the Highbridge section of the Bronx just before 8 p.m. Friday.

As 1010 WINS' Eileen Lehpamer reported, Con Edison confirmed that it had shut off power to the apartment due to non-payment. Neighbors said the mother of five who lived in the unit had been using the candles as an alternative to light the apartment.

The power had only been off for a few days, Con Ed told CBS 2.

**Police: Candles Likely Caus**  
 1010 WINS' Eileen Lehpamer...  
 00:00

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## Candle Caused Bronx Blaze That Killed 3 Boys: FDNY

The fire broke out around 7:45 p.m. Friday evening on the second floor of a three-story building on West 165th Street

By Checkey Beckford and Jonathan Vigliotti | Sunday, Oct 27, 2013 | Updated 12:21 PM EST

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A two-alarm fire in the Bronx that left three little boys dead, including a 4-month-old baby, was started by a candle that was burning in the

apartment after electricity was cut off, officials said.

Fire officials say the fire broke out around 7:45 p.m. Friday evening inside an apartment on the second floor of a three-story building on West 165th Street in Highbridge. A candle in the kitchen was said to be the cause.

Police say 2-year-old Jeremiah Artis, 5-year-old Elijah Artis and 4-month old Michael Turner all died in the fire.

"FDNY fire marshals have determined the fire is accidental," authorities said in a statement. "And the fire was caused by a candle in the kitchen area."

An official for Con Edison said the power had recently been shut off in the apartment because the bill, which totaled thousands of dollars, had not been paid.

The children's 25-year-old mother and two of their sisters were also brought to the hospital, where they were being treated for smoke inhalation.

# Excerpted Stories from Other Jurisdictions

The following excerpts are drawn from media outlets and other sources, highlighting the risks of utility shut-offs, including health and safety risks to individuals, public perception risk, and additional risks including regulatory reviews and legal actions. Relevant parts of each story have been extracted; citations to the full story are provided in each case.

## **Power Is Cut, a Woman Dies, and Furor Follows<sup>40</sup>**

### **Her oxygen pump stopped. Now, N.H. officials press utility for an explanation**

The National Grid worker showed up at Kay Phaneuf's beige, Cape-style home on Charles Street at 9 a.m. Monday with an order in hand to shut off her electricity. He saw no car in the driveway. He knocked on the door and rang the doorbell, just inches away from a red sign stating "No smoking, oxygen in use." When he got no answer, he cut the power and left.

But Phaneuf, who relied on an oxygen machine because she suffered from chronic obstructive pulmonary disease, or COPD, was inside. By the time her husband, Stephen, arrived home an hour later, she was unconscious. The machine, a plug-in, had stopped working. Stephen Phaneuf called 911. Two days later, his 54-year-old wife was dead.

As a result of her death, the New Hampshire Public Utilities Commission, the regulatory body for utility companies in the state, has launched an investigation and Governor John Lynch yesterday called on the commission to conduct a broad review of the shut-off policies of all utility companies operating in the state.

Lynch ordered the results of the investigation, and any recommended policy changes, to arrive at his desk by the end of July.

## **PPL Agrees to \$300k Settlement in Shut-Off Case Before Fatal Fire<sup>41</sup>**

PPL Corp. has agreed to make a \$300,000 contribution to its customer assistance fund to avoid litigation over an alleged wrongful termination linked to a fire that killed two children. The settlement was announced by the state Public Utility Commission today.

The PUC was investigating PPL's handling of a utility shut off at the home of the Ryan Donachy family on Nov. 2, 2007. A day after the shut off, a fire blamed on an untended candle burning in a child's bedroom killed Britton Donachy, 2; and Onna Donachy, 18 months. Debbie Donachy, then 24, the children's mother; and 5-month-old daughter [*sic*], Autum, were seriously injured in the blaze.

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<sup>40</sup> Boston.com, June 26, 2010,

[http://www.boston.com/news/local/new\\_hampshire/articles/2010/06/26/power\\_is\\_cut\\_nh\\_woman\\_dies\\_and\\_furor\\_follows/](http://www.boston.com/news/local/new_hampshire/articles/2010/06/26/power_is_cut_nh_woman_dies_and_furor_follows/)

<sup>41</sup> The Patriot News, November 13, 2008,

[http://www.pennlive.com/midstate/index.ssf/2008/11/ppl\\_agrees\\_to\\_300k\\_settlement.html](http://www.pennlive.com/midstate/index.ssf/2008/11/ppl_agrees_to_300k_settlement.html)

### **PPL Fined \$450,000 for Improper Power Shut-Off<sup>42</sup>**

The state Public Utility Commission slapped PPL Electric Utilities with nearly half a million dollars in penalties for violating state rules on shutting off customers' power.

The case dealt with Cynthia Glassman, a Manheim Twp. resident who died in a fire in her home the day after PPL cut off her power and following a series of misunderstandings and miscommunications.

An informal investigation by the PUC prosecutory staff found the company had violated the state's Public Utility Code and Commission regulations including provisions on termination notices, medical certificates, payment arrangements, restoration of service and dispute rights.

### **Families Suing Penelec in Blaze; Utility Had Cut Power<sup>43</sup>**

A survivor of a Hastings fire and families of three of the four people who died there are suing Penelec, claiming negligence because the home's power was cut.

Authorities have said the deadly fire May 14 was accidental, started by an unattended candle burning in the house where electricity had been off for four days.

The blaze at 334 Miller St. claimed the lives of Dolores "Dee" Holland, 50; her grandson, Jordan M. English, 3; Alisha D. McConnell, 15; and Lindsey Depto, 14. McConnell and Depto were neighbors visiting for a sleep-over.

Mrs. Holland, her grandson and McConnell were pronounced dead at the scene. Depto died two days later at a Pittsburgh hospital. All four died of smoke inhalation, officials said.

The amount of compensation being sought is not specified, but the families also are seeking punitive damages.

Pennsylvania Electric Co. spokesman Scott Surgeoner would say little.

"We have not seen the lawsuit, so it would be premature to comment about it at this time," Surgeoner said Thursday.

"Penelec does intend to vigorously defend itself in any court of law," he added.

### **Detroit Family Dead from Carbon Monoxide Poisoning Had Been Using Generator After Utilities Shut Off by DTE<sup>44</sup>**

A man and his three children aged 6 to 16 died of suspected carbon monoxide poisoning Thursday, as the family ran a generator for the one night they would have been without power, authorities and neighbors said.

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<sup>42</sup> Scranton Times Tribune, November 20, 2009, <http://thetimes-tribune.com/news/business/ppl-fined-450-000-for-improper-power-shut-off-1.431543>

<sup>43</sup> The Tribune Democrat, Johnstown, PA, November 2005, <http://www.tribune-democrat.com/local/x519119492/Families-suing-Penelec-in-blaze/print>

<sup>44</sup> Associated Press, July 16, 2009, [http://www.mlive.com/news/index.ssf/2009/07/man\\_3\\_children\\_die\\_of\\_suspecte.html](http://www.mlive.com/news/index.ssf/2009/07/man_3_children_die_of_suspecte.html)

The electricity at the Detroit home had been shut off Wednesday, after the family fell behind on their bills, but the utility said they had been assured it would be back on Thursday. A neighbor awoke to screams from the children's mother, who was found slumped halfway out a side door, about 3:30 a.m.

The children were Mar'Keisha Reed, 16; DeMarco Owens, 12; and DeMarte Owens, 6.

Shortly after the power was turned off Wednesday, the family contacted DTE and said they were in preliminary bankruptcy proceedings, Austerberry said. DTE confirmed the bankruptcy and power was scheduled to be restored to the home later in the day Thursday.

### **3 Die in Fire at Detroit Home where Power Was Cut<sup>45</sup>**

A fire swept through a two-story home early Tuesday, killing three people who had been illegally accessing electricity to power space heaters, authorities said.

Charlotte Nash said two of those killed were her brothers Marvin Allen, 62, and Tyrone Allen, 61. Lynn Greer, a 58-year-old friend of Tyrone Allen's, also was killed.

Those living in the family home had been without power for months because of unpaid bills and had been using electric space heaters for warmth, Nash said.

### **Fairfield Family Had Power Shut Off<sup>46</sup>**

The police and coroner's investigations continued on Friday into a horrible tragedy in Fairfield. Four children were killed when the house caught fire and all of the children were all under the age of 4. Unpaid power bills may have sparked that fatal fire.

The mothers of the children are single mothers, who are sisters, and were having a hard time making ends meet.

PG&E had shut off power and fire officials say candles left burning inside started the blaze.

"First and foremost our hearts go out to this family," said Brian Swanson, a spokesperson for PG&E.

Swanson says when a customer isn't paying the bill, the utility has a two-month process involving letters and phone calls, trying to work out a way to keep the lights on.

"Throughout the more than two-month process, we contact the customer several times and tried to work out an agreement. So, this disconnection of electric service is only used as a last resort after exhausting all those other options," said Swanson.

Neighbor Rudy Sylvan says he's had trouble paying his bill; he thinks having children in a house should be reason enough to leave power on no matter what.

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<sup>45</sup> USA Today, January 5, 2010, [http://usatoday30.usatoday.com/news/nation/2010-01-05-detroit-fire\\_N.htm](http://usatoday30.usatoday.com/news/nation/2010-01-05-detroit-fire_N.htm)

<sup>46</sup> ABC, April 30, 2010, [http://abclocal.go.com/story?section=news/local/north\\_bay&id=7416709](http://abclocal.go.com/story?section=news/local/north_bay&id=7416709)

"Something like electricity, that's really just an essential of living a normal life. I mean, when you got four kids like they do, I have three kids that live in this house myself, and one's a diabetic and we have to keep her medicine refrigerated," said Sylvan.

PG&E says that a variety of arrangements can be worked out. There are a number of special programs directly offered through PG&E and also through charities like the Salvation Army. PG&E says those customers that get special exception are those like on life support or with medical conditions.

Regardless, having children in a house is not reason enough to be exempt from paying a bill and avoiding a power shutoff.

#### **Candles Used for Light Cause Fire that Killed Five, Ohio<sup>47</sup>**

At 6:12 a.m. on a morning in December 2006, the fire department was notified of a fire in a two-story single-family home of unprotected wood-frame construction. This fire broke out in the first-story living room. Power to the house had been shut off prior to the fire and the occupants were using candles throughout the house for light. A candle on a coffee table burned down to the table and ignited it. The smoke and fire spread, blocking egress from the stairs. The fire department had found smoke alarms in the home on a previous inspection, but firefighters found no evidence of any at the time of the fire.

Investigators learned that a guest fell asleep in the living room, and the candle burned unattended. The guest and four occupants upstairs were killed.

#### **Burglar Bars Block Escape, Texas<sup>48</sup>**

A 76-year-old woman died of smoke inhalation in her single-family home when a fire started by an unattended candle left burning in the living room overnight blocked her path to the door. Burglar bars on her bedroom window also blocked her escape.

The single-story, wood-frame house had battery-operated smoke alarms in the kitchen and bedroom, but investigators could not determine whether they operated during the fire. The utility company had cut off the home's electricity due to nonpayment, and the occupants were using candles for light.

A passerby saw the house on fire and called 911 at 5:18 p.m. Neighbors also alerted one of the woman's sons, who lived in a small building at the rear of the house, and he helped his mentally challenged brother out a rear window. However, he was unable to save his mother, whose body was found in a bathtub. Investigators determined that the unattended candle ignited nearby combustibles, and the fire spread undetected, blocking access to the door from the hallway.

The house, which was valued at \$34,000, sustained damage estimated at \$20,000. Its contents, valued at \$7,000 were destroyed.

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<sup>47</sup> Ahrens, Mary, "Home Candle Fires," National Fire Protection Association, December 2013, <http://www.nfpa.org/~media/Files/Research/NFPA%20reports/Major%20Causes/oscandles.pdf>, adapted from Stephen G. Badger's 2007 article, "U.S. Multiple-Death Fires for 2006", NFA Journal, September/October, 60.

<sup>48</sup> Ahrens, Mary, "Home Candle Fires," National Fire Protection Association, December 2013, <http://www.nfpa.org/~media/Files/Research/NFPA%20reports/Major%20Causes/oscandles.pdf>, citing Kenneth J. Tremblay, 2009, "Firewatch", NFA Journal, March/April, pg. 24.

# Impacts on Cost of Capital and Loan Performance

Given the risks laid out in the preceding sections, the question becomes whether the benefits of disconnection in terms of securing access to low-cost capital are likely to outweigh those risks. As discussed below, the potential for disconnection to lower capital costs is highly speculative at best. Indeed, some evidence from programs around the country and from the NYSERDA program suggest that disconnection is unlikely to impact the availability of low-cost capital or even to significantly affect loan performance.

## Cost of Capital

Nationally, there is little evidence thus far that termination authority lowers the cost of capital. A forthcoming review of on-bill programs around the country by Lawrence Berkeley National Lab (LBNL) indicates that most existing on-bill programs use utility, ratepayer, and/or public capital to fund their loan pools.<sup>49</sup> In these programs, the cost of capital is typically tied to the utility's internal cost of funds or is set largely at the discretion of program administrators. In those few cases in which private capital is used, other credit enhancements are often present, such as in an Illinois on-bill program that ensures a 100% guarantee to the capital provider. In this context, the question of whether termination authority lowers the cost of private capital remains largely theoretical.

While the evidence of a link between termination authority and lower capital costs is sparse, the NYSERDA program, on which the Smart-E on-bill program is based, does provide some useful insights.

In the fall of 2012, NYSERDA approached a bond rating agency with a proposal to obtain a rating on its portfolio of both off-bill ("Energy Smart") and on-bill residential energy efficiency loans. Achieving an investment-grade rating can be an important step in accessing low-cost, long-term private capital through the secondary markets. Typically, the higher the rating, the lower the capital cost.

Just as Connecticut is currently considering, NYSERDA had structured its on-bill loan loans to include termination authority, primarily to enable future securitization of these loans. In practice, however, once NYSERDA approached the rating agency, this shut-off feature proved insufficient to convince the agency that their on-bill loans should receive a rating.

NYSERDA has presented publicly on its experience, including on the feedback it received from the rating agency. The slide below from a presentation by NYSERDA Treasurer Jeff Pitkin summarizes the feedback that NYSERDA received.

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<sup>49</sup> It should be noted that the author of this report is on contract with Lawrence Berkeley National Lab and has reviewed its forthcoming paper on on-bill programs. The finding on on-bill sources of capital is consistent with the findings of a previous paper by ACEEE: Bell, C., S. Nadel & S. Hayes. 2011. "On-Bill Financing for Energy Efficiency Improvements: A Review of Current Program Challenges, Opportunities, and Best Practices." ACEEE report number E118. Washington, D.C.: American Council for an Energy-Efficient Economy.



## Rating Agency Feedback – Fall 2012

- Approached markets with traditional ABS structure/ratings process
  - Minimum investment grade “achievable”
  - Challenges with ABS vs Municipal bond structuring
  - Insufficient payment performance data
    - NYSERDA portfolio – avg paid term of about 1yr for avg 12yr loan term
    - Keystone HELP (PA) portfolio data
    - Summary performance data on NY loans issued in Fannie Mae portfolio
    - No comparable loss statistics on 15 yr consumer loans
  - **Unable to include OBR loans in first bond issue without jeopardy to rating**
    - Insufficient evidence of consumer and utility performance
  - Unable to include QECB subsidy payment in ratings cash flow models
    - Appropriation risk – resulted in lower advance rate (higher overcollateralization)
  - Servicing risks – Primary servicer not rated; required backup servicer
  - ABS turbo bond structure to address marketability
  - Likely to achieve only BBB rating (~70% advance rate)
- \$10M bonds with \$14M in pledged loans, \$9M of reserves, \$1B balance sheet is BBB?**



As this presentation and conversations with NYSEDA officials have indicated, the rating agency feedback to NYSEDA was not only that termination authority was an insufficient security mechanism to achieve a rating, but also that including the on-bill loans in the portfolio at all could actually jeopardize the chances of securing any rating.<sup>50</sup> The rating agency felt more comfortable providing a rating on direct-bill loans than it did in rating on-bill loans with utilities acting as intermediaries for loan payment collection and transfer.

Note that on their own, even the direct-bill loans were likely to achieve only a BBB rating, and only if they were significantly over-collateralized (i.e., the investment by bondholders could not exceed more than 70% of the total amount that the loan receivables were actually worth). NYSEDA has indicated that a BBB rating would have come with a higher cost of capital than they would have like to achieve and would have precluded a large segment of the market from investing in their program.

Ultimately, NYSEDA was able to access the secondary market using a different structure that allowed it to achieve a higher rating on both its off-bill and on-bill loans, without requiring termination authority. That structure is described in more detail later in this report.

<sup>50</sup> Conversations with Jeff Pitkin, NYSEDA Treasurer, and John Ahearn, NYSEDA Building Performance Program Manager, 2/12/14 and 2/20/14.

## Default Rates

The logic suggesting that termination authority may lower the cost of capital is that it should reduce the risk of nonpayment of loan obligations, since customers who know that their utilities may be shut off for nonpayment may be more likely to pay off their loans. The counter-argument is that default rates on energy efficiency loans have been historically low across the board, so there may not be a distinguishable difference in default rates between programs that do or do not incorporate termination authority.

As a starting point, available data suggest that default rates for general energy efficiency loans may not differ significantly from default rates for on-bill loans (with or without termination authority). For example, an ACEEE review of 19 various energy efficiency loans of all types found, “Default rates were very low ranging from 0–3% (cumulative).”<sup>51</sup> Lawrence Berkeley National Lab, for its forthcoming review of on-bill programs around the country, collected information on default rates in on-bill programs and also found a range of 0-3% cumulative defaults among the 22 programs that reported on this statistic.<sup>52</sup> Interestingly, the on-bill program with the highest default rate (3%) was one in which the program incorporated termination authority.

LBNL also collected information on loan program features, such as whether the program allowed termination of utility service for nonpayment of the loan. This information makes it possible to cross-reference default rates among programs by whether they include termination authority as a feature. Of the 22 programs that reported on default rates, 15 reported allowing utility service termination for nonpayment of loans, with an average default rate of 0.91%. Another seven programs reported not allowing service termination for nonpayment of loans, with an average default rate of 0.66%.

### *Default Rates for On-Bill Programs (All Sectors) With and Without Termination*

Number of Programs	Allow Termination for Default?	Average Default Rate
15	Yes	0.91%
7	No	0.66%

In other words, the average default rate for those programs that do not allow utility termination for default was actually slightly lower than the average default rate for those programs that allow termination such cases.

This trend held true for the residential sector, as well, where default rates were generally lower overall. In that sector, the 10 programs that allowed termination for loan nonpayment had an average default rate of 0.56%, while the 4 programs that did not had an average default rate of 0.26%.

### *Default Rates for On-Bill Programs (Residential Only) With and Without Termination*

Residential Programs	Allow Termination for Default?	Average Default Rate
10	Yes	0.56%

<sup>51</sup> Hayes, Sarah, et al. 2011. “What Have We Learned from Energy Efficiency Financing Programs?” ACEEE Report Number U115. Washington, D.C.: American Council for an Energy-Efficient Economy.

<sup>52</sup> LBNL agreed to share the data it collected on on-bill programs for this report, with the understanding that any analysis of the data would not be attributable to LBNL, given that LBNL’s paper was still in process. Thus, any analysis in this report based on the LBNL data is attributable only to this report’s author.

4	No	0.26%
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The trend was even more pronounced when the average default rate was weighted by the total amount loaned out across all residential on-bill programs that reported on both default rates and allowance of termination.

*Weighted Average Default Rates Across On-Bill Programs (Residential Only)*

	Termination for Loan Nonpayment	No Termination for Loan Nonpayment
Number of Programs	10	4
Total Amount Loaned	\$947,468,664	\$70,550,000
Total Default Amount	\$18,332,715	\$293,135
Default %	1.9%	0.4%

It is worth noting that these data from around the country are also consistent with data from the NYSEERDA program, on which the Smart-E on-bill program is modeled. The November 2013 Loan Status Report from that program shows that the default rates for the off-bill and on-bill loans are virtually identical.

*NYSEERDA Default Rates by Loan Type*

	Off Bill	On Bill
Amount Issued	\$28,725,699	\$12,831,549
Amount Charged Off	\$217,332	\$95,741
Default Rate	0.76%	0.75%

**Delinquency Rates**

LBNL did not collect data on delinquency rates, so it is difficult to know how these rates compare in on-bill programs across the country with and without disconnection authority for nonpayment. Data from the NYSEERDA program, however, provide a helpful reference point. The November 2013 Loan Status Report shows that delinquency rates are higher for on-bill loans with disconnection than they are for NYSEERDA’s direct-bill loans, for every tier (grouped by the number of days past due). The percentage of current direct-bill loans is also correspondingly higher than the percentage of current on-bill loans, as shown in the table below.

*NYSEERDA Delinquency Rates by Loan Type*

	Off Bill		On Bill	
	Amount	Rate	Amount	Rate
Outstanding	\$24,312,461		\$12,185,497	
Current	\$23,846,881	98.09%	\$11,125,861	91.30%
1 – 30 days	\$370,924	1.53%	\$669,262	5.49%
31 – 60 days	\$62,569	0.26%	\$189,983	1.56%

61 – 90 days	\$136,751	0.56%	\$111,255	0.91%
91 – 120 days	\$29,546	0.12%	\$89,138	0.73%

It is worth noting that delinquency rates are higher for NYSERDA’s on-bill loans, despite the fact that FICO scores are slightly higher for this loan type (750 weighted across all on-bill loans) as compared to direct-bill loans (748 weighted across all direct-bill loans). If disconnection authority reduced delinquency rates, one might expect a portfolio of on-bill loans with disconnection to exhibit lower delinquencies, particularly when credit scores are comparable or slightly better than other loans. The NYSERDA data, however, exhibit the opposite trend.

# Alternatives

## Primary Capital Alternatives

A significant downside of default risk is that it can increase the cost of capital, which in turn can increase financing costs to consumers and potentially discourage participation in energy efficiency programs among those who need program financing and are sensitive to interest rates and terms. There are a number of ways in which to encourage lower interest rates that do not involve disconnection. Many of these alternatives involve less risk to consumers.

## Competition

One approach to lowering interest rates is to encourage competition among lenders. The Smart-E program has begun to see some movement in this direction, as indicated by the table below highlighting lenders who have reduced their rates below the not-to-exceed rates established by the program. The Smart-E program is still in its early days, and there may be additional or deeper reductions among lenders as the program begins to mature.

### *Smart-E Lender Rates<sup>53</sup>*

	5-yr	7-yr	10-yr	12-yr
CorePlus FCU	4.49%	4.99%	5.99%	6.99%
Eastern Savings	4.49%	4.99%	5.99%	6.99%
Ion Bank	4.49%	4.99%	5.75%	6.75%
Liberty Bank	4.49%	4.99%	5.99%	6.99%
Nutmeg FCU	4.49%	4.99%	5.99%	N/A
Patriot Nat'l Bank	4.49%	4.99%	5.99%	N/A
Quinnipiac B&T	4.49%	4.99%	5.99%	N/A
Thomaston	4.49%	4.99%	5.75%	6.75%
Union Savings	4.49%	4.99%	5.99%	N/A

One purpose of establishing a “Financing Wizard” on the EnergizeCT website (which is not yet live) is so that borrowers will be able to compare rates up-front among different Smart-E lenders that serve their area. Ideally, this type of transparency should encourage lenders to bring their rates down to attract

<sup>53</sup> “Participating Lending Institutions,” [http://www.energizect.com/sites/default/files/uploads/Smart-E%20Lender%20List%20for%20Website\\_2.pdf](http://www.energizect.com/sites/default/files/uploads/Smart-E%20Lender%20List%20for%20Website_2.pdf). Accessed 2/28/14.

more customers. The concept is analogous to the “Lending Tree” model, which carries the tagline, “When Banks Compete, You Win.”

### Automated Payments

Another common approach to lowering interest rates among primary capital providers is to provide a discount to customers who sign up for automatic payment arrangements (“auto-pay”).

NYSERDA currently offers the same reduced interest rate to direct-bill customers who use auto-pay as it does to its on-bill participants.

#### *NYSERDA Residential Loan Rates and Terms*

	Off Bill (no auto-pay)	Off-bill (auto-pay)	On-Bill
Interest Rate	3.99%	3.49%	3.49%
Term	5, 10, or 15 years (term may not exceed expected useful life of measures)		

Some lenders who participate in the Smart-E program already offer such discounts on some of their other types of loans. None of these lenders currently advertise an auto-pay discount on their Smart-E loans.

#### *Auto-Pay Discounts Among Smart-E Lenders*

	Auto-Pay Discount	Loan Type	Applied to Smart-E?
CorePlus FCU	-	-	N/A
Eastern Savings	2%	Personal Loans	No
Ion Bank	-	-	N/A
Liberty Bank	0.25%	Some HELOCs	No
Nutmeg FCU	0.25%	Car loans	No
Patriot Nat’l Bank	-	-	N/A
Quinnipiac B&T	-	-	N/A
Thomaston Savings	0.25%	Personal and car loans	No
Union Savings	-	-	N/A

It may be worth exploring whether any of the Smart-E lenders, particularly those who already offer auto-pay discounts on some of their other loan products, would consider offering a similar discount to Smart-E borrowers who used auto-pay for direct billing or to pay both their energy and loan obligations through their utility bill.

### Credit Enhancement

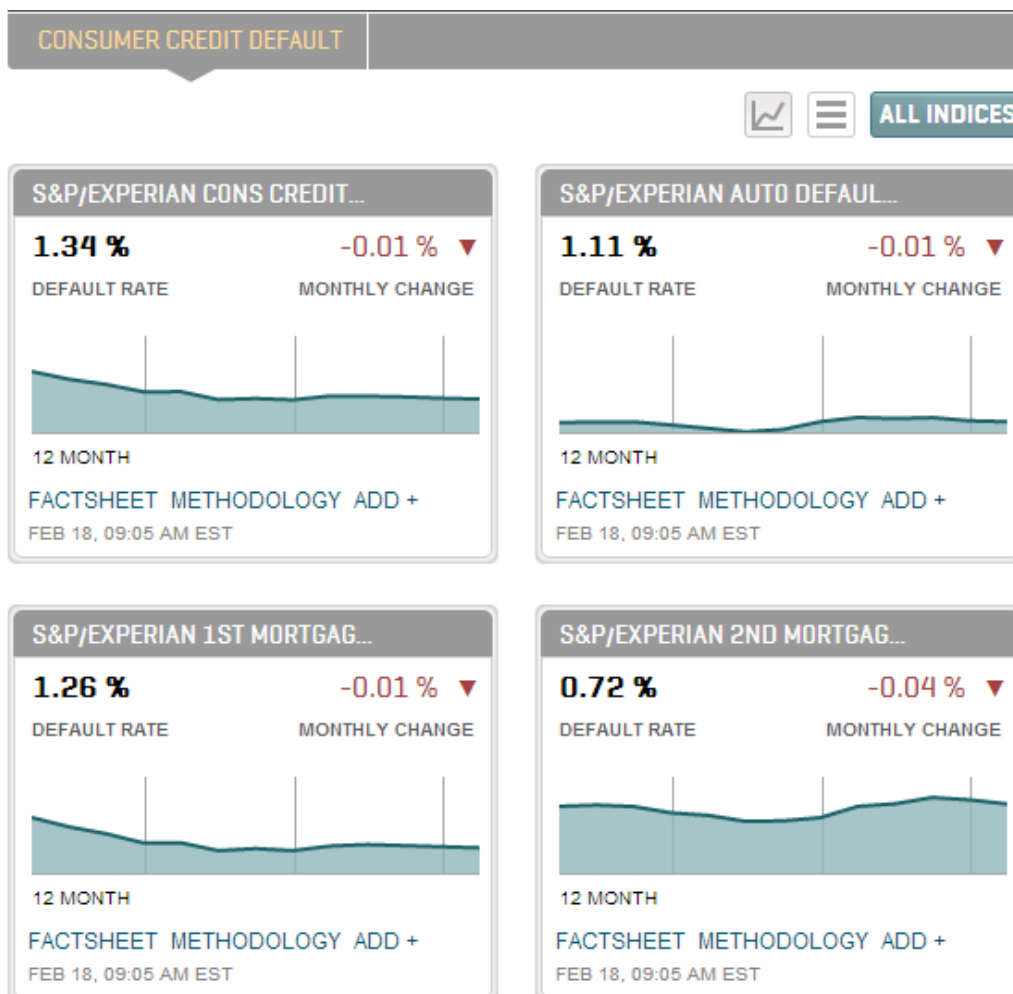
Another common way to reduce interest rates on energy efficiency loans is to implement credit enhancements that reduce financial risks to the lender. CEPIA has implemented a loan loss reserve for the Smart-E program, which is one reason that the lenders have agreed to the not-to-exceed rates

established by the program. However, the loss reserve as currently structured is relatively conservative in that it only pays out if default rates exceed rates that might typically be expected for this program. The Program Agreement with lenders states the following:

***“Lending Institution may only claim from the Lending Institution’s Reserve Account Eligible Losses to the extent the aggregate Eligible Losses at the time of the claim shall exceed the sum of one and one-half percent (1-1/2%) of the principal amount of all Class A Loans made by the Lending Institution.”***<sup>54</sup>

In other words, Smart-E lenders must bear the risk of defaults up to 1.5%. That rate is actually higher than current default rates on many types of consumer loans, as shown below, although they have been higher in recent years.

S&P Dow Jones Indices of Consumer Credit Default<sup>55</sup>



<sup>54</sup> “Class A” loans refer to loans taken out by borrowers with credit scores of 680 and above. The original Program Agreement also covered losses above 3% for “Class B” loans (credit scores between 640 and 680). This language may have changed in more recent versions of the Program Agreement, to reflect the fact that borrowers in this lower credit score range are now being referred to CHIF.

<sup>55</sup> S&P Dow Jones Indices, <http://us.spindices.com/index-family/specialty/consumer-credit-default>. Accessed 2/28/14.

One possible way to reduce interest rates further among Smart-E lenders would be to cover a greater proportion of defaults with a loss reserve or guarantee.

An alternative credit enhancement, which would be in line with the structure of the Energize CT Heating Loan (targeted to furnace and boiler replacements), would be to pay lenders for loan defaults using funds generated through cost recovery. This structure has allowed the Energize CT Heating Loan to achieve a primary rate of capital of approximately 3%, which has been secured without the use of interest-rate buy-downs. Payouts will come from funds raised through the system benefit charge, which is the cost recovery mechanism associated with the Energize CT Heating Loan program. It is unclear whether cost recovery for the Smart-E on-bill program could also cover payouts to lenders for the purpose of credit enhancement.

### Interest Rate Buy-Downs

Perhaps the most direct way of reducing interest rates on energy efficiency loans is to buy down the loan rates. For the past several months, CEFIA has in fact been offering an effective interest-rate buy-down that will expire at the end of March 2014. The CEFIA buy-down is framed as an offer of zero interest payments for six months. As stated in the Program Agreement:

***“Lending Institution will offer introductory promotions to its Customers for the installation of Qualified Projects, to be reasonably approved by CEFIA, for up to six (6) months of free interest payments on the principal of Program Loans for up to the Lending Institution’s first one hundred (100) Customers who obtain Program Loans.”***

Given that loan volume under the Smart-E program has not begun to approach the cap of 100 loans per institution, a simple way to lower interest rates to customers would be to extend this promotion beyond the end of March. Additional buy-downs could also be considered if they were considered likely to generate sufficient incremental participation in the program.

### Secondary Market Alternatives


Several alternatives for reaching the secondary markets exist today. In addition to the advantage of maintaining limits on the use of disconnection, some of these alternative strategies may carry additional advantages. The remainder of this section explores these alternatives and their potential applicability in Connecticut.

#### Partnering with a State Agency (NYSERDA Example)

One alternative to consider may be the route that NYSERDA ultimately took to reach the secondary market. After receiving feedback from a rating agency as described above, NYSERDA looked for an alternate route to securitize its loan portfolio. In the end, NYSERDA was able to securitize its loans by partnering with the New York State Environmental Facilities Corporation (EFC), which acted as a guarantor on its energy efficiency loans. Once NYSERDA obtained this guarantee from EFC, it was able to re-enter the rating process and achieve a AAA rating from S&P and an Aaa rating from Moody’s. The slide below presents the basic elements of this transaction.



Transaction Overview	
Issuer	New York State Energy Research and Development Authority
Guarantor	New York State Environmental Facilities Corporation
Par Amount	\$24,300,000
Use of Proceeds	Finance and refinance loans made by NYSERDA to fund energy audits and residential energy efficiency improvements for eligible applicants pursuant to NYSERDA's Green Jobs – Green New York program
Pricing	July 30, 2013
Settlement	August 13, 2013
Structure	Serial Bonds through 2023, Term Bond due 2028 (callable 2023)
Tax Status	Taxable (Qualified Energy Conservation Bonds) QECB subsidy – lesser of interest on bonds or 70% of published rate Subject to 8.7% reduction from sequester in Federal Budget for 2013; projections assume reduction will continue over life of bonds
Rating	AAA S&P / Aaa Moody's



The key distinction between this approach and the one that NYSERDA originally took was the EFC guarantee. The guarantee was tied to New York's Clean Water State Revolving Fund (CWSRF), which has provided more than \$12 billion in low-cost financing since 1990.<sup>56</sup> In order to obtain this guarantee, NYSERDA and EFC had to demonstrate to the U.S. EPA that there was a link between "Residential Energy Conservation Projects" (RECPs) and clean water. NYSERDA and EFC were able to demonstrate this nexus by estimating the reduction in NO<sub>x</sub>, SO<sub>2</sub>, and CO<sub>2</sub> over the life of its home performance projects.<sup>57</sup>

The EPA found this nexus to be sufficient to allow EFC to provide NYSERDA with a guarantee through the CWSRF. The letter from the U.S. EPA to the NY EFC, excerpted below, is fairly open-ended, likely implying that other states could go forward with similar transactions.<sup>58</sup>

<sup>56</sup> New York State Environmental Facilities Corporation, <http://www.efc.ny.gov/Default.aspx?tabid=82>.

<sup>57</sup> More detail can be found in NYSERDA's presentation, "New Models of Financing Energy Efficiency," available at <http://www.cdfa.net/cdfa/cdfaweb.nsf/ordredirect.html?open&id=webcastslides91713.html>.

<sup>58</sup> Letter from George F. Ames, Chief, State Revolving Fund Branch, U.S. EPA, to James Levine, Senior Vice President and General Counsel, New York State Environmental Facilities Corporation, March 22, 2013, available at [http://www.cdfa.net/cdfa/cdfaweb.nsf/fbaad5956b2928b086256efa005c5f78/ad2ad287a1245c40862573830083767c/\\$FILE/NYSERDA%20-%20EPA%20SRF%20ruling%20in%20favor%20of%20EE%20projects%27%20eligibility.pdf](http://www.cdfa.net/cdfa/cdfaweb.nsf/fbaad5956b2928b086256efa005c5f78/ad2ad287a1245c40862573830083767c/$FILE/NYSERDA%20-%20EPA%20SRF%20ruling%20in%20favor%20of%20EE%20projects%27%20eligibility.pdf)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

MAR 22 2013

OFFICE OF WATER

Mr. James Levine  
Senior Vice President and  
General Counsel  
New York State Environmental Facilities Corporation  
625 Broadway  
Albany, New York 12207-2997

Dear Mr. Levine,

Thank you for your letter of March 4, 2013 concerning the Environmental Facilities Corporation's (NYEFC) proposal to assist the New York State Energy and Research Development Authority (NYSERDA) in their lending to "Residential Energy Conservation Projects" (RECP).

From your letter, we understand that the assistance to be provided would either be in the form of Clean Water State Revolving Fund (CWSRF) bond proceeds used to purchase NYSERDA bonds or by NYSERDA issuing its own bonds supported by a CWSRF guaranty. NYSERDA would use these funds to provide low interest loans to a wide range of recipients such as residences, small businesses and non-profits. The loans would finance "Residential Energy Conservation Projects," including high efficiency heating and cooling measures and energy star appliances.

...

You asked us to consider the proposal essentially in terms of the eligibility of the RECPs as CWSRF projects. We agree that the projects as described would be eligible.

Clean Water State Revolving Funds (CWSRFs) are administered by all 50 states, with oversight from the U.S. EPA. The CWSRF program was established in 1987, and since that time CWSRFs have funded over \$89 billion in water quality projects. Connecticut's CWSRF, known as the Clean Water Fund, is administered by the Department of Energy and Environmental Protection (DEEP). The Clean Water Fund has targeted approximately \$1 billion in federal funds and state bonds toward water quality projects.

Ultimately, partnering with a CWSRF bore a number of advantages over NYSERDA's original approach, as summarized in the table below.

*Advantages of NYSERDA's Final Secondary Market Approach*

	Original Approach	Ultimate Approach
Rating	Likely BBB	AAA/Aaa
Include Direct & On-Bill Loans?	No <sup>59</sup>	Yes
Speed of Access to Secondary Market	Would have needed to build more volume if only one loan type included	With both loan types included, able to achieve a rating and securitize immediately

The higher rating that NYSERDA secured using this alternative approach likely had a positive impact on pricing. Yield spreads between AAA and BBB bonds vary depending factors such as the type of bond and the current economic climate, but they typically range between about 0.5% and 2% (or higher in more challenging economic times, when there is a shortage of the highest-rated instruments). Higher ratings also tend to increase the potential pool of interested investors, and NYSERDA has indicated that in their case, the higher rating helped bring socially responsible investors into the transaction.<sup>60</sup>

It is important to emphasize, however, that NYSERDA likely could have received a BBB rating (still considered “investment grade”) on its direct-bill loans, even without a guarantee from the EFC. The primary impacts of the guarantee were simply to increase the rating and lower the bond yield. In other words, the guarantee was not fundamentally necessary in order to access secondary market capital. As discussed later on, simply securitizing its direct-bill loans would have been an option, though it might have carried a higher cost.

The same logic could be applied to disconnection authority. Even if one presumed (contrary to the evidence from NYSERDA’s experience) that disconnection authority might provide an improved bond rating, the fact that NYSERDA could likely have achieved a BBB rating on its direct-bill loans suggests that, at best, disconnection would improve the bond rating and lower the bond price incrementally. In light of that fact, the question becomes whether operationalizing disconnection authority would be worth the potential (if unlikely) incremental rate reduction on the bond price, given all of the health and safety risks, as well as public perception risks, that disconnection may bring.

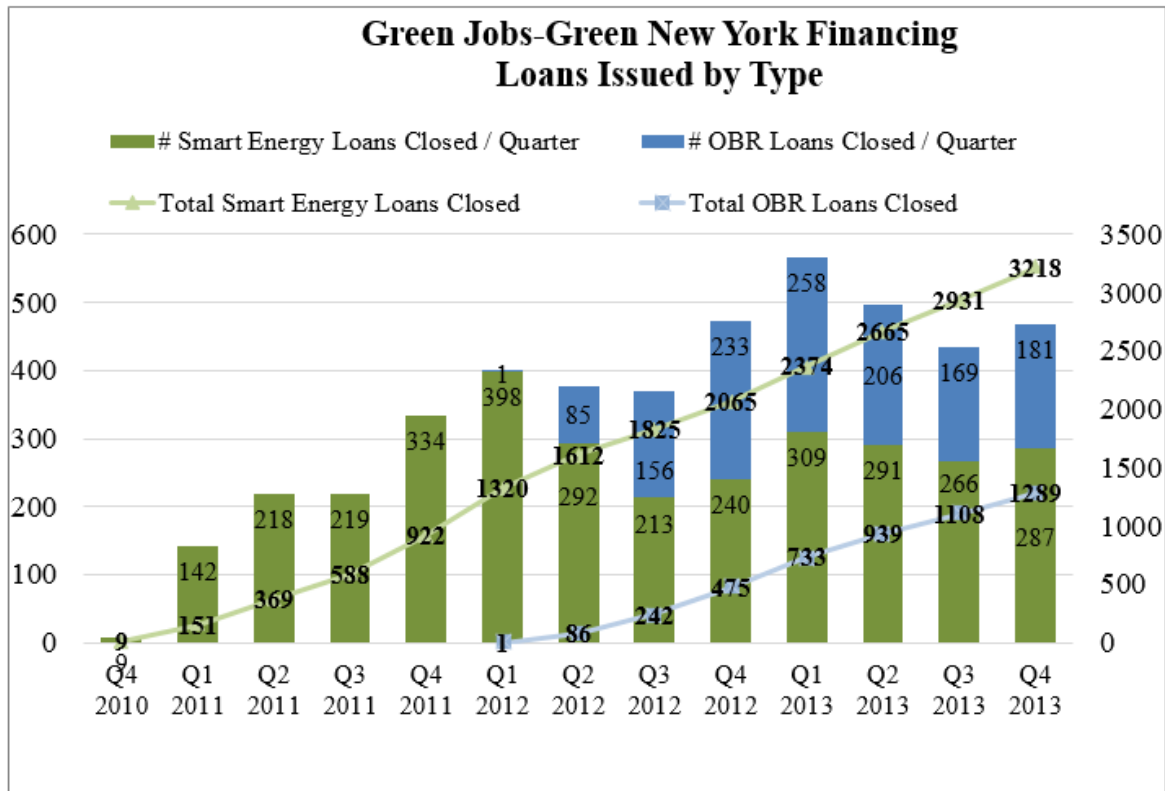
Aside from the higher rating, another advantage of the guarantee structure was the ability to include both on-bill and direct-bill loans in the securitized portfolio. As shown in the chart below, direct-bill loans have continued to constitute a majority of the loans closed each quarter since the introduction of on-bill loans in the second quarter of 2012.<sup>61</sup> Direct bill loans represented approximately 60% of the

<sup>59</sup> As described earlier, NYSERDA assumed it would be easier to achieve a rating on its on-bill loans, given that termination authority was one feature of those loans. In fact, the feedback it received from the rating agency was that achieving a rating only on the direct-bill loans (which did not involve payment through an intermediary) would be more likely.

<sup>60</sup> Conversation with Jeff Pitkin, NYSERDA Treasurer, 2/12/14.

<sup>61</sup> “Home Performance with ENERGY STAR® and EmPower New York,” John Ahearn, Program Manager, ACI Regional Conference, February 11, 2014.

loans closed in 2013, and the share of direct bill loans was actually larger in Q4 2013 (61%) than in Q4 2012 (51%).

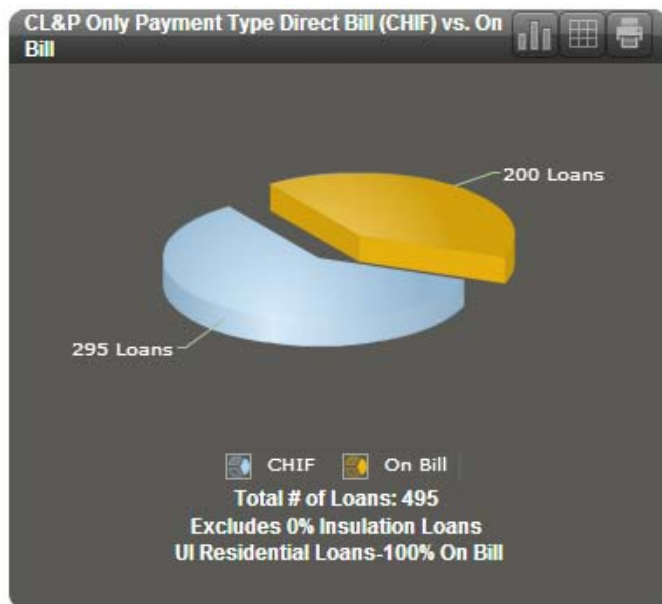


One reason for the sustained demand for direct-bill loans is the bill neutrality requirement attached to NYSERDA’s on-bill loans.<sup>62</sup> Many projects that customers are interested in simply do not meet bill neutrality requirements, even if they do save energy. In other cases, even when projects might meet bill neutrality requirements with a longer loan term, many customers are reluctant to take on long-term debt and prefer to opt for shorter-term financing.

Even without a bill neutrality requirement, however, the fact that NYSERDA’s portfolio continues to be weighted toward direct-bill loans would be consistent with the experience in Connecticut of CL&P, which offers a choice between on-bill and direct-bill loans (but does not require bill neutrality). In the CL&P portfolio, direct-bill loans have also constituted approximately 60% of the portfolio, as shown in the graphic below, taken from the EnergizeCT Dashboard:

<sup>62</sup> John Ahearn, NYSERDA Building Performance Program Manager; comments made during presentation cited above.

### CL&P Direct and On-Bill Loans, Cumulative



It is possible that the Smart-E on-bill program could skew even more heavily toward direct-bill loans, depending in part on how many Smart-E lenders decide to offer an on-bill option. For reasons discussed further below, many private lenders around the country have been reluctant to participate in on-bill programs, which introduce a third party intermediary between them and the customer. If this pattern continues in Connecticut, then even if on-bill loans represent somewhere in the range of 40 – 50% of Smart-E loans among lenders who offer on-bill financing, the overall percentage may be lower, since some lenders may choose not to offer it at all.

In addition to allowing securitization of both types of loans, it should also be noted that the guarantee structure likely allowed NYSERDA to access secondary market capital much sooner than would have otherwise been possible. To the extent that bridging the gap between energy efficiency and secondary markets is seen as a programmatic goal, expediting that process could be viewed as an additional advantage. One possible reason the guarantee allowed quicker access to the secondary markets was that the rating agencies and investors may have been less concerned with historical performance of these types of loans, in light of the guarantee. In essence, the guarantee allowed NYSERDA to access the secondary market today, given current investor comfort levels, while providing the opportunity to collect data on the bonds and underlying revenue streams, which may help overcome the need for a guarantee in the future.

Another basic reason that the guarantee expedited the path to the secondary market is that without both types of loans, NYSERDA simply may not have had the volume necessary to conduct a successful secondary market transaction. NYSERDA had been advised that it would need to offer around \$25 million of loans in order to draw the attention of secondary-market investors, who tend to have large appetites for capital investments.<sup>63</sup> As it happened, NYSERDA was able to offer just under this amount

<sup>63</sup> Conversation with Jeff Pitkin, NYSERDA Treasurer, 2/12/14.

(\$24.3 million), only because it was able to securitize both direct and on-bill loans together. Had NYSERDA been able to securitize only one loan type, it may have needed to wait significantly longer to achieve the necessary volume to access the secondary market.<sup>64</sup>

### Partnering with a State Agency (Connecticut Potential)

As NYSERDA ultimately did, Connecticut could potentially establish an inter-agency partnership that would allow it to securitize both its on-bill and direct-bill loans as soon as the combined volume of these loans became sufficient to attract secondary market investors. This flexibility could be particularly advantageous in the Smart-E program, given the potential for an even lower percentage of on-bill loans as a percentage of the total Smart-E portfolio, as compared to the percentage of NYSERDA or CHIF on-bill loans.

While the Smart-E program has set a goal of 50% of loans becoming on-bill, that would still leave half of the Smart-E loans on the table that could not be securitized. Moreover, there are legitimate questions as to whether the 50% goal is likely to be reached. For example, in the case of both NYSERDA and CHIF, there is only one lender in each program, which is either the actual program administrator (in NYSERDA's case) or a contractor of the program administrator (in CHIF's case). Each of these entities is driven as much by programmatic objectives as by financial considerations and has therefore been willing to work through the complexities of on-bill financing. By contrast, Smart-E relies on a number of private lenders to provide capital. Historically, very few private capital providers have chosen to participate in on-bill financing programs around the country, regardless of whether the program includes disconnection authority or not. The reasons for their reluctance include all of the same barriers that can discourage private capital investment in energy efficiency, as well as several additional barriers specific to on-bill financing.

One of these specific barriers is simply the added complication of introducing a third party to act as an intermediary between the lender and the customer for purposes of collecting and disbursing payments, which can create uncertainties and administrative hassles. A related issue is that giving up the direct servicing relationship with the customer means that lenders may have fewer opportunities to “upsell” additional products to new customers whom they acquire through energy efficiency lending. Given that the acquisition of a new line of typically highly creditworthy customers can be one of the most attractive reasons for lenders to offer energy efficiency loan products (which often are not highly profitable on their own), some private lenders may balk at the idea of sacrificing the ongoing relationship with a customer for the sake of offering on-bill financing.<sup>65</sup>

It is possible that the percentage of Smart-E on-bill loans could be further reduced based on customer concerns about the risk of disconnection, combined with the availability of direct-bill and on-bill alternatives that do not incorporate this feature. Depending on the scope of a particular project, some contractors may advise customers about other on-bill financing options, such as the Energize CT Heating

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<sup>64</sup> In NYSERDA's case, waiting would have been a serious issue, because it was approaching the limit of its original capital pool and needed to replenish funds.

<sup>65</sup> A situation like this occurred in the Clean Energy Works Oregon program, which originally began with two lenders. One lender, a nonprofit community development financial institution (CDFI), chose to offer on-bill financing, while another lender—a local bank—balked at the idea and chose to offer direct billing only.

Loan or on-bill financing through CHIF, neither of which would put the customer at risk of having their utilities shut off if they fell behind in their payments.

Given the various issues that could impact on-bill loan volume, it is worth considering that an alternative approach like the NYSERDA guarantee model, which allowed securitization of both direct-bill and on-bill loans, could potentially be even simpler to facilitate in Connecticut. In New York, NYSERDA partnered with the New York Environmental Facilities Corporation because that agency happened to be the administrator of the state's Clean Water State Revolving Fund (CWSRF). Aside from this transaction, however, NYSERDA and the New York EFC do not necessarily interact on a daily basis across a wide range of projects.

By contrast, in Connecticut, the CWSRF is administered by DEEP, while Smart-E loans are administered by CEFIA. The very close working relationship that already exists between these two agencies could potentially facilitate a partnership for the securitization of Smart-E loans. In addition to the administrative advantage of this relationship, there may also be financial advantages. The EFC required NYSERDA to substantially over-collateralize its loans and to set aside a sizable loss reserve on top of that in exchange for providing a guarantee. To some extent, those provisions were intended to satisfy the U.S. EPA that the NYSERDA transaction would not put the New York CWSRF at risk in any way, but much of the negotiation was also intended to satisfy the New York EFC itself.<sup>66</sup> The dynamics of any such negotiation between DEEP and CEFIA could be positively influenced by the trust that has been established in recent years through their history of working together across a number of other fronts, as well as DEEP's in-depth understanding of the Smart-E loan program.

With regard to the requirements placed on NYSERDA to obtain the NY EFC guarantee, it is also worth noting that none of these requirements came from any rating agency or were actually needed to access the secondary market. As soon as NYSERDA obtained the NY EFC guarantee, that assurance was sufficient to achieve an investment-grade rating.<sup>67</sup> Moreover, the credit enhancements that NYSERDA provided were designed in accordance with the novelty of the transaction and may be revisited in future similar transactions.<sup>68</sup> In other words, the credit enhancements and collateral requirements attached to a similar transaction in Connecticut would largely fall to the discretion of the agencies involved, as long as they satisfied any concerns of the U.S. EPA.

One possible objection that might be raised to using a guarantee structure could be that this type of structure does not allow energy efficiency loans to be judged by investors on their own merits, which could be detrimental to the long-term goal of helping bring energy efficiency investments into the mainstream. It should be noted, however, that if the goal is for energy efficiency investments to be evaluated on their own merits, then using disconnection as the key toward achieving a rating may also detract from the goal. If investors focus primarily on the disconnection feature, then they may be less likely to evaluate project performance or cash flows from energy savings in their investment decisions. With this in mind, one approach could be to provide whatever kind of "added" security is needed in the shorter term that does not conflict with other policy goals, while measuring performance data over time to allow project performance to ultimately determine the relative value of a portfolio.

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<sup>66</sup> Conversation with Jeff Pitkin, NYSERDA Treasurer, 2/12/28.

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

## Securitizing Direct-Bill Loans

While the approach of providing additional security in the shorter term may be worthwhile to achieve a higher rating and lower capital cost, an alternative could simply be to forge ahead without this added security by selling investments with a lower rating and working to improve that rating in future transactions over time. The rating agency feedback that NYSERDA received suggests that one way to execute this approach could be to simply package and sell direct-bill loans.

Even without a state agency partner, the rating agency feedback that NYSERDA initially received indicated that it would have been possible to obtain a BBB rating on its direct-bill loans (but not its on-bill loans). Substantial overcollateralization would have been required (bond proceeds likely could not exceed 70% of the value of the loan receivables) and pricing would undoubtedly have been impacted, but from a rating agency standpoint, it appeared that an investment-grade rating was possible. It is unclear whether the pricing associated with BBB-rated bonds would have allowed NYSERDA to sustain the loan rates and terms that it offers to customers (3.49% - 3.99% for up to 15 years). Those terms, however, are substantially lower than Smart-E terms, with a maximum rate of 6.99% for 12 years. It is therefore possible that securitization of Smart-E direct-bill loans, even with a BBB rating, could provide a sustainable source of capital for the Smart-E program. Moreover, NYSERDA was bringing to the rating agency a first-of-its kind transaction, so it is quite possible that future ratings on these types of offerings could improve.

A key takeaway from NYSERDA's experience is that since direct-bill loans can likely be secured today with an investment-grade rating, secondary markets are likely accessible without mechanisms like disconnection of service. Assuming that is the case, then the only rationale behind operationalizing disconnection authority would be to access that same large pool of capital at a somewhat lower cost. That fact potentially reframes the discussion from one in which the question is whether operationalizing disconnection is necessary to access secondary market capital at all, to one in which the question becomes whether layering on disconnection is worth a basis-point reduction in the cost of capital. Given that it is questionable whether disconnection would even achieve such a cost reduction, and that the risks of disconnection are known and documented, moving forward at this time with implementation of the disconnection feature may be difficult to justify.

## Warehouse for Energy Efficiency Loans (WHEEL)

The Warehouse for Energy Efficiency Loans (WHEEL) is designed to provide low cost, large scale capital for residential energy efficiency loan programs sponsored by states, local governments, and utilities. Supported by the National Association of State Energy Officials (NASEO), WHEEL is intended to fund unsecured residential energy efficiency loans originated in participating programs. The loans are aggregated into diversified pools and will be used to support the issuance of rated bonds sold to institutional investors. Proceeds from these bonds should allow WHEEL to continue purchasing eligible loans from state and local programs for future rounds of bond issuance.<sup>69</sup>

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<sup>69</sup> National Association of State Energy Officials (NASEO), "Warehouse for Energy Efficiency Loans (WHEEL)," <http://www.naseo.org/wheel>.



One advantage of the WHEEL program is that it is open to a wide range of consumer loans. As such, both Smart-E direct-bill and on-bill loans (with or without termination authority) could be securitized together under this program, as could other EnergizeCT residential loans. As with other securitization models, WHEEL also offers participating programs an opportunity to significantly leverage their public funds with a sustainable and potentially unlimited source of private capital.

### Rate Recovery Bonds

The state of Hawaii recently authorized the sale of \$100 million of bonds to support its emerging on-bill financing program. Customer repayments of the on-bill loans will be used to repay the bonds. If repayments are not sufficient to cover bond payments, the bonds are secured by funds raised through the state's Public Benefits Charge. This robust security shows promise in making large pools of low-cost private capital available to finance energy improvements.<sup>70</sup>

It is worth noting that a somewhat analogous mechanism now exists for securing low-cost primary capital for the Energize CT Heating Loan. In that program, defaults are covered by funds raised through Connecticut's system benefit charge. Adjustments to this structure, which would require legislative action, could potentially allow the system benefit charge to cover obligations to bondholders, as well.

### Loan Portfolio Sales

Programs such as Keystone HELP in Pennsylvania and Clean Energy Works Oregon have successfully attracted direct buyers of their energy efficiency loan portfolios.<sup>71</sup> The sales allowed these programs to replenish their capital pools without having to go through the process of securitizing their loans. While secondary-market capital is generally considered attractive (low-cost and long-term) for large investments, securitization can carry substantial costs that can actually drive interest rates up if those costs are not adequately spread over sufficient investment volume. By selling loans directly, programs can avoid those considerable costs and maintain attractive rates to customers while still replacing outstanding receivables with needed cash. It is worth noting that in Oregon's case, the sale was of on-bill loans that did not incorporate termination authority as a feature.

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<sup>70</sup> "Energy Efficiency Financing Program Implementation Primer," State & Local Energy Efficiency Action Network (SEE Action) Financing Solutions Working Group, January 2014, [http://www1.eere.energy.gov/seeaction/pdfs/financing\\_primer.pdf](http://www1.eere.energy.gov/seeaction/pdfs/financing_primer.pdf).

<sup>71</sup> Zimring, Mark, et al., "Getting the Biggest Bang for the Buck: Exploring Rationales and Design Options for Energy Efficiency Financing Programs," Lawrence Berkeley National Lab, December 2013, p. 14 (Footnote 23), <http://emp.lbl.gov/sites/all/files/lbnl-6524e.pdf>. See also, "Treasurer McCord, National Experts Call Home Energy Efficiency Loan Sale a Milestone for Attracting Private Capital, Creating Secondary Market," <http://www.keystonehelp.com/news/treasurer-milestone>.

# Conclusion

The question presented for this report was whether any identified benefits in terms of cost of capital or default rates outweigh the risks to consumers associated with a utility termination. The preceding discussion indicates that at this point, there is little evidence regarding what benefits allowance of utility termination may have in terms of securing lower-cost capital or reducing default rates. On the other hand, the report highlights the many known risks to residents associated with utility termination, as well as costs and risks to ratepayers, utilities, and other program administrators. Given the uncertainty around benefits and the well-established risks, it is not possible at this time to assert that the risks are outweighed by the benefits.

Further, the report highlights the fact that there are several viable alternatives to accessing secondary markets that do not involve the implementation of disconnection. Indeed, rating agency feedback thus far suggests that disconnection may not be a sufficient mechanism to achieve an investment-grade rating. Some of the alternative routes, such as securitizing direct-bill loans, may be available with few if any existing program changes, while others, such as partnering with a state agency such as DEEP, could be facilitated by the close working relationship among relevant Connecticut agencies that exists today.

Given the uncertainty of the benefits, the certainty of the risks, and the availability of several viable alternatives, it is not possible to recommend that disconnection of utility service for nonpayment of on-bill loans be operationalized at this time.