State of New York Public Service Commission
Case 07-M-0548 – Proceeding on Motion of the Commission
Regarding an Energy Efficiency Portfolio Standard (EEPS)

Working Group VI – On-Bill Financing

Final Report
December 19, 2008

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Introduction

The June 23, 2008 Order in Case 07-M-0548 Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard (Order) identified On-Bill Financing as a "potentially valuable tool that may help overcome barriers to energy efficiency such as lack of capital or reluctance to commit capital by allowing a customer to finance its share of program costs directly through utility bills without any cash outlay." In its Order, the New York State Public Service Commission (Commission) identified targets for On-Bill Financing, which are provided in Table 1 below. The Commission also acknowledged that targets might be reassessed as experience with On-Bill Financing is gained.

Table 1: Energy Efficiency Portfolio Standard Utility Targets (MWH)

	4th Quarter 2008	2009-2014 Annually	2015	Total
On-Bill Financing[1]	17,159	68,635	51,476	480,443
Utility Targets[2]	120,111	480,443	360,333	3,363,104
On-Bill Financing as percent of total utility targets	14%	14%	14%	14%

This Final Report (Report) summarizes the research of Working Group VI (Working Group) into legal, technical and business issues relevant to the potential use of On-Bill Financing. As part of its effort, the Working Group considered the extent to which On-Bill Financing could overcome barriers to energy efficiency investments. The Working Group also gathered information about existing off-bill energy efficiency financing mechanisms. The Report provides descriptions and examples of potential on-bill and off-bill financing models, and provides a matrix describing a number of currently available financing mechanisms.

Through the Report, the Working Group endeavors to inform policy-makers at the Commission, utilities, energy efficiency advocacy groups, and consumer watchdog groups, and other interested parties of the issues particular to On-Bill Financing.

This Report does not represent consensus of the Working Group with respect to the document's content.

[1] From Table 7, App. 1, of the Order. Although the Order refers to on-bill financing as "Conservation Tariffed Installation Program" or "Conservation TIP," this Report uses the general term "On-Bill Financing" to avoid any assumption that discussions necessarily have association with any particular model.

[2] From Table 11, App. 1, of the Order.

Overcoming Barriers to Energy Efficiency Upgrades

Cost-effective energy efficiency measures are currently available to business and individual energy consumers throughout the State, yet numerous barriers may prevent or delay investments in those measures. On-Bill Financing is being considered for its potential to support the goals of the State's Energy Efficiency Portfolio Standard (EEPS) by reducing or removing one or more of these barriers to energy efficiency investments. Off-Bill Financing mechanisms can also overcome many of these same barriers. Barriers associated with the installation of energy efficiency investments are:

Split-benefit

Energy efficiency investments are generally made by those who will benefit from them, such as the owner of a property who is also responsible for the cost of energy used on the premises. A split-benefit exists when the party paying for the energy efficiency measure is not the party receiving the savings benefits that accrue from the energy efficiency measures installed.

- For properties where the heating, hot water and/or central air conditioning load are connected to the building owner's electric or gas meter, such as in multi-unit buildings, the building owner will be encouraged to make a major energy efficiency investment because he will experience the energy efficiency savings through his energy bill. However, the owner of a rental property, who has transferred the responsibility to pay for energy costs to his tenant(s), may not have an incentive to invest in energy efficiency upgrades since the owner will not benefit from the monthly utility bill savings;
- Tenants that pay their own utility bills may want to lower those bills. However, the tenants may lack incentives to make investments in measures that will remain attached to property that they do not own or that they may not want or be able to take with them upon vacating the property. Also, tenants may not remain in the buildings long enough for the investments to pay for themselves; and
- Tenants may be reluctant to enter into financing arrangements that would not allow them to own the equipment after the costs of the measures are paid in full.

For energy efficiency investments that have relatively low costs per occupied unit (e.g., residential refrigerators, window air conditioning units, and lighting), incentives in the form of rebates or discounts may be more effective than On-Bill Financing in eliminating this barrier. For higher cost measures, financing mechanisms, both on-bill and off-bill, can assist the consumer.

Customer reluctance to invest

Businesses and individual consumers may forego cost-effective energy efficiency measures due to perceived difficulties of selecting, purchasing, and installing the measures or concerns regarding the financial commitment involved.

- On-Bill Financing can assist consumers in finding a financing source, facilitating and expediting the lending process;
- On-Bill Financing can provide the added convenience of including the repayment in utility bills the consumer already receives (which may reflect the efficiency measure's savings); and

- Some forms of On-Bill Financing may be construed as having no debt obligation other than while taking service at the premises[3] and for unpaid previously billed charges incurred by a customer prior to the closing of his/her account

Financing Issues

Energy efficiency projects can involve significant expense. This expense may create numerous financing issues depending upon the consumer's particular circumstances. On-Bill Financing can help address the following financing issues:

- Up-front costs to the project such as required down-payments;
- Financing costs including high interest rates, transaction costs, and fees;
- Lack of sufficient creditworthiness required to secure financing;
- Investment does not immediately yield savings; and
- Loan must be paid off before all savings are realized.

Uncertainty of benefits or selection of contractor

Customers may be unable to assess the cost/benefit ratio and payback period of an efficiency measure. A component of each energy efficiency financing mechanism should be education providing clear and understandable information about the economic benefits of installing measures. This component should effectively combat this barrier.

A related problem is that customers may not be comfortable in selecting a contractor or relying on contractors to provide honest cost estimates and quality work. A component of On-Bill Financing may be to provide certified contractors and warranties to overcome this barrier.

Seasonal usage patterns

Customers considering efficiency measures that would be subject to seasonal usage may be discouraged by timing issues. They may not achieve positive monthly cash-flow during the off-season when the efficiency savings are low and the On-Bill Financing repayment charges remain fixed. A well-designed education program that helps the customer understand annual energy savings may address this issue.

[3] There is some disagreement as to whether the obligation while at the meter consists of the total amount to be repaid, or only the monthly installment amounts billed while at the meter.

Assignment of Obligation

The obligation to pay for an energy efficiency measure financed through an On-Bill Financing mechanism may be assigned to either the customer or the meter at the location where the measure is installed. Assignment of the obligation has critical impacts on program implementation and the ability of programs to overcome barriers to energy efficiency investments.

Customer Obligation

In this obligation type, the customer who installed the energy efficiency measure is liable for repayment of the funding for the energy efficiency improvements. Assignment of the obligation to the customer is consistent with customary financing practices. The approach generally considers the creditworthiness of the customer and usually results in a debt obligation. Considering creditworthiness decreases the likelihood of non-payment, but limits the availability of the energy efficiency program to only those with good credit.

Using loan instruments permits the use of established credit and collection mechanisms such as assessing late payment charges, issuing late payment notices, and application of judicial remedies including reducing debts to judgments and enforcing the judgments.

This type of financing provides that the measure will be paid for whether or not the customer remains at the premises and whether or not the measure remains at the property when the customer vacates the premises. By requiring that the loan be paid off when the customer closes his or her account, the customer obligation approach addresses the possibility that in some instances the measure may be removed by successor customers or "left stranded" if the premise remains vacant for an extended period.

Meter Obligation

In this obligation type, sometimes referred to as a Conservation TIP Program[4], the customer is responsible for payment of installments toward the cost of the energy efficiency improvements only while receiving service at the premises. This approach anticipates that when a customer moves and the measure remains in place and operational, the successor customer will pay the remaining installments and continue to receive the benefits of the measure. Some parties anticipate that this approach would support the financing of more costly energy efficiency measures than the customer obligation model because cost recovery could more easily be spread over the life of the measure.

The meter obligation approach addresses a "split-benefit" issue where the utility customer is a tenant. It allows tenants and others uncertain about the duration of their occupancy to participate without concern that they may be required to pay for measures for which they will not realize the full benefit.

Since the payment obligation is assigned to the meter as opposed to the customer, the obligation may not be considered to be a debt after the customer has closed his/her account at the meter location. This is important for customers who are unwilling or unable to incur additional debt.

[4] Sometimes known as Pay As You Save® or PAYS®, a particular type of Conservation TIP Program.

This is not only true for residential customers. Some business and government customers may prefer this type of transaction for a variety of reasons.

This obligation type requires full and complete disclosure to any successor customer of the terms of the obligation prior to the successor customer entering into a rental or purchase agreement for the property.

Legal Issues Related to the Extension of Credit or Debt Collection

The Working Group addressed the implementation issue of whether utilities would be required to comply with federal or state laws related to the extension of credit or debt collection under any of the various scenarios involving On-Bill Financing. This legal analysis assumes that any On-Bill Financing charge would be a "debt" or "loan" and that offering On-Bill Financing would be "an extension of credit." However, some parties argue that an obligation assigned to a meter (see section on Assignment of Obligation) is not a debt.[5]

New York State Public Service Law (PSL) § 65(6) prohibits the imposition of a "service charge" on gas customers. This Report does not address the implications of that statute for On-Bill Financing. All the following scenarios assume that the PSL and the Commission's regulations allow charges for energy efficiency projects, regardless of the source of funding for such projects, to be shown on the utility's bill and included in the total charges due from the customer and that the utility has obtained Commission approval for a tariffed charge for the repayment installments. These scenarios also assume that no utility's funds are at risk[6] and that the utility puts the installment amounts on its bill and remits payment to the third-party lender or other funding source[7] as received.

The first issue is whether the utility would be required to comply with laws governing lending and debt collection.

Scenario 1. Third-party lender does its own credit evaluation and undertakes its own debt collection activities[8].

The utility would not be required to comply with federal, state or local laws with respect to the extension of credit or debt collection for another. If the lender contracted with the utility for debt collection, the analysis would be the same as in the second scenario.

Scenario 2. Third party lender relying on utility credit evaluation and debt collection activities.

The utility may be required to comply with the federal Truth in Lending Act if it is

[5] It should be noted that if the Commission were to construe On-Bill Financing to be the provision of a utility service, collection of On-Bill Financing charges would be similar to collection of charges for utility service.

[6] For the purpose of this analysis, ratepayer funds collected by the utility and used to purchase energy efficiency measures using On-Bill Financing for customer payment are treated like System Benefits Charge (SBC) monies.

[7] The "funding source" may be SBC monies or monies from another source collected in a pool for the upfront costs of energy efficiency projects that will be paid for through on-bill charges. For instance, legislation pending in New York would authorize NYSERDA to issue bonds to fund residential weatherization projects (S.8756 filed Sept. 3, 2008).

[8] *Debt collection activities* are those activities undertaken by an entity in the pursuit of amounts due and owing the creditor that are in arrears. It does not relate to the billing of an On-Bill Financing amount on a customer's bill or the receipt of that amount when due.

construed to be the lender or the lender's agent.[9] Similarly, it may also be required to comply with the Equal Credit Opportunity Act, which generally applies to loans to consumers (essentially residential customers) but has been interpreted by Federal Reserve Board staff as applicable to loans made for business or commercial purposes.[10] The utility would be required to comply with federal, state and local laws with respect to debt collection if it is collecting monies due the third party lender and the funds were loaned for residential household purposes.[11]

Scenario 3. System Benefit Charge (SBC) or other funding source funds used to provide funding for energy efficiency measure. As a general comment, it is not clear who is the "owner" of such funds and therefore who can be identified as the creditor on the loan. This is relevant to the identification of the entity on whose behalf collection activities are undertaken, particularly if suit must be instituted.

a) utility collection activities[12] for non-payment of repayment installments:
If the utility is construed to be the creditor, then the utility would be obligated to comply with federal laws on the extension of credit but not with respect to debt collection if it makes collection in its own name.[13] The utility would be obligated to comply with state debt collection law.

b) write-off against other funding source:
If the utility were construed to be the creditor, the utility would be obligated to comply with federal laws on the extension of credit. If the utility were authorized to charge unpaid amounts to the other funding source without undertaking collection activities, the utility would not be obligated to comply with debt collection laws.

c) treatment as uncollectible debt due utility:
If the utility were construed to be the creditor, the utility would be obligated to comply with federal laws on the extension of credit. Assuming that the utility had to write off any unpaid amounts as uncollectible, the utility would undertake the same kinds of collection activities that it would otherwise take for utility service debts. If the utility is construed to be the creditor, then the utility would not be obligated to comply with federal laws on debt collection if it makes collection in its own name[14] but would be obligated to comply with state debt collection law.

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[9] 15 USCS § 1666a(a), states that credit reports by a "creditor or his agent" are regulated by The Truth in Lending Act. See also 12 CFR § 226, Truth In Lending Regulation Z, Subpart A, Note 30(2) stating that "the creditor or its agent" are prohibited from making or threatening to make adverse reports.

[10] 12 CFR §202.3, Supplement 1, Official Staff Interpretation states that The Equal Credit Opportunity Act covers a transaction if there is a right to defer payment of a debt for personal or commercial purposes.

[11] 15 USCS Section 1692(a)(5) defines covered debt as obligations incurred "primarily for personal, family, or household purposes."

[12] Such collection activities would include disconnection of service if authorized.

[13] 15 USC §1692a.

[14] Id.

A possible workaround would be to establish a legal entity authorized to hold and lend third-party funds, SBC funds, or funds from another source together or separately and to engage in any necessary collection work, including authority to sue in its own name.

The second issue is whether a utility would be obligated to be licensed in connection with activities related to the extension of credit or debt collection.

Summary Answer:
A utility would not be required to be licensed as a lender under State law if the loans were "isolated, incidental or occasional transactions," loans were to be secured by real estate, and the amounts exceeded $25,000 for household purposes or $50,000 for business purposes. If utility lending for energy efficiency were considered to involve more than isolated, incidental, or occasional transactions, licensing would be required for loans under $25,000 or $50,000, as applicable.

A utility would be required to be licensed as a debt collector in New York City unless the debt collection activities were conducted on the utility's behalf.

Relevant Laws

Lending and Debt Collection

Federal Law

- Truth In Lending Act (TILA) 15 USC §§ 1601, *et seq*. sets out formal disclosure requirements of loan terms, particularly how the interest rate is computed (must display APR computed by statutory method in "Schumer Box"). While the TILA does not apply to utility service generally, it does apply to the financing of durable goods and home improvements. 12 CFR §226.3(c).
- Equal Credit Opportunity Act, 15 USC §1691 *et seq.* bars discrimination in the provision of credit on the basis of race, color, religion, national origin, sex or marital status or receipt of public assistance. The application of state laws on creditworthiness does not constitute discrimination.
- Fair Debt Collection Practices Act (FDCPA) 15 USC §1692 *et seq.* regulates collection practices of a "debt collector," which is a business whose principal purpose is debt collection or who regularly collects debts. The "debts" covered by the law are those created when credit is extended to a natural person (a "consumer") for "consumer" purposes (personal, family or household). The Federal FDCPA exempts original creditors, so long as they collect debts in their own name (15 USC § 1692a). The law does not apply to any person collecting a debt owed another if the activity is incidental to a bona fide fiduciary obligation or concerns a debt that was originated by such person.
- Federal Fair Credit Reporting Act 15 USC §§ 1681, *et seq.* establishes requirements for lenders who make use of credit reporting agencies like TransUnion, Equifax, etc. to screen loan applicants. Where a credit application is denied or terms offered other than requested by the consumer ("adverse action"), the lender must provide a disclosure stating that the consumer's credit report was considered in making the loan decision, and inform the applicant that he/she has a right to request a free copy of the report and dispute/correct errors, with contact information for the credit reporting agency.

New York State Law

- General Business Law §600 *et seq.* – This is the state equivalent of the FDCPA. It only applies to loans for personal, family or household purposes and applies to the "principal creditor," which is any entity to whom money is owed. Thus, it governs the actions of those who collect debts for others as well as creditors themselves.

Licensing of Lenders and Debt Collectors

- New York State Banking Law (Banking Law) Article 9 establishes a licensure requirement for lenders to individuals for personal, family, household, or investment purposes up to $25,000 and business and commercial loans up to $50,000. A licensed lender cannot obtain a lien on real estate as security except in connection with the recording of a judgment. Also, the loan business has to be conducted in premises separate from any other business except certain other types of business governed by the Banking Law. However, licensing is not required if the loans are "isolated, incidental, or occasional transactions." This sounds like the kind of

threshold that applies in California, for which San Diego Gas & Electric (SDG&E) received an interpretation from California's banking authority that so long as there are no complaints, SDG&E would not be required to be licensed.

- New York City Administrative Code §20-488 *et seq.* establishes a licensing obligation for debt collection agencies. It regulates debt collection with exceptions similar to the federal law exceptions and adds an exception for any person employed by a utility regulated under provisions of the PSL acting for the utility.

Disconnection

The Working Group explored whether existing laws, regulations, and utility tariffs permit the utility to disconnect service to a customer for failure to pay the On-Bill Financing portion of the bill. The question is relevant to the design of an On-Bill Financing mechanism. There are On-Bill Financing programs currently in effect in other jurisdictions that authorize the utility to treat On-Bill Financing charges no differently than other utility charges for purposes of collection and disconnection. There are also On-Bill Financing programs currently in effect that do not authorize disconnection for non-payment of On-Bill Financing charges.

Residential Service

The Home Energy Fair Practices Act ("HEFPA") (PSL §§30 et seq.) and the Commission's HEFPA regulations (16 NYCRR Part 11) are the basis of any legal analysis of the availability of disconnection as a remedy for loan default for residential customers. PSL §32 (HEFPA) provides that "utility service" . . . "may be terminated . . . if any person supplied with electric or gas service to a residence:

> (a) fails to pay charges for any service rendered . . .
> (b) fails to pay amounts due under a deferred payment plan; or
> (c) fails to pay or agree in writing to pay equipment and installation charges relating to initiation of service; and
> (d) is sent a final notice of termination . . ."

The Commission's termination regulations largely mirror the statutory text. 16 NYCRR §11.4. Inasmuch as "[a]ny termination of residential utility service . . . shall be in accordance with all relevant portions of [HEFPA]," PSL §32(1), termination of utility service for any reason *other than* those identified in the statute would be prohibited. If the financing of an energy efficiency measure is not interpreted as part of "utility service" or the repayment charge is not interpreted as for "service rendered" for the purposes of §32, termination of a residential customer's service for non-payment of a loan repayment amount would not be permissible under HEFPA.

The Commission itself has applied a similar interpretation to §32 in matters involving non-utility charges, as reflected in the treatment of ESCO charges on consolidated bills prior to HEFPA amendments adopted in 2003.[15]

However, if the financing of energy efficiency measures is determined to be included as part of rendering of a "utility service," §32 would then not prohibit disconnection for non-payment of On-Bill Financing charges. The Kansas Corporation Commission (Kansas Commission), citing a similar decision by the New Hampshire Public Service Commission, determined that Midwest Energy's "How$mart" charge, an On-Bill Financing obligation, is "complementary and interlocked with the provision of utility services and is an integral part of the utility service." Docket No. 07-MDWG-784-TAR et al., In the Matter of Midwest Energy Seeking Commission Approval to Implement a Pay-As-You-Save Program for its Natural Gas Service, *Order Upon*

[15] The HEFPA amendments also expressly broadened the definition of "utility" to include ESCOs, for purposes of Article 2, suggesting further that the term "utility service" would be narrowly interpreted to exclude charges not specifically authorized.

Reconsideration, p. 7, 2007 Kan. PUC LEXIS 1923 (Kansas Commission Dec. 20, 2007). The Kansas Commission did note that the program was "an experimental pilot program." There was also a statutory basis for Midwest Energy's program: HB 2278 authorized the Kansas Commission to approve and the utility to implement a tariffed service that provided for financing of energy conservation measures. *Id.* Subsequently, the Kansas Commission approved Midwest Energy's application to make the program permanent. Docket No. 08-MDWE-1129-TAR, In the Matter of Midwest Energy, Inc. Seeking Kansas Commission Approval to Revise and Permanently Implement Midwest Energy's How$mart Tariff for Its Electric Customers, *Order Approving Tariff Revisions,* (Kansas Commission Sept. 5, 2008).

The Working Group makes no recommendation regarding disconnection of residential utility service for non-payment of On-Bill Financing charges.

Non-Residential Service

HEFPA applies only to residential service. Termination procedure for nonresidential service is governed by Part 13 of the Commission's regulations, 16 NYCRR Part 13.[16] In relevant part, the regulation provides that a "utility may only terminate service to a customer if it provides advance final notice of the termination and fulfills all other requirements of this section when the customer (i) fails to pay any tariff charge due on the customer's account for which a written bill itemizing the charge has been sent . . .; or (v) fails to comply with a provisions of the utility's tariff which permits the utility to refuse to supply or terminate service." However, §13.11 of the Commission's regulations defines the approved contents of a non-residential customer bill. Section 13.11(a) provides that "[o]nly service(s) performed, materials furnished or **other charges made by the utility**, in accordance with its filed tariff, may be included . . . ." (emphasis added) It is unclear whether the term "made by the utility" might disallow the inclusion of On-Bill Financing charges of an entity other than the utility (e.g., a third-party lender). Being a regulation and not a law, however, §13.11 can be clarified or amended by the Commission if necessary and deemed appropriate.

The following are arguments "for" and "against" allowing disconnection authority as part of an On-Bill Financing mechanism.

"For" disconnection:

- Customers are assumed to be more likely to make timely payment to avoid loss of utility service, particularly customers that have the means to pay but may otherwise choose not to pay the loan installment amount. This may also serve to induce a lender to provide a lower financing charge; and
- If customers' savings exceed their costs, their actual risk of disconnection would not increase.

[16] Disconnection of non-residential gas or electric service rendered by Transportation Corporations is also addressed in the New York State Transportation Corporations Law, Trans. Corp. L. §15.

"Against" disconnection:

- The threat of disconnection may discourage some customers from participating in energy efficiency programs that use On-Bill Financing as the repayment mechanism;
- Disconnection is contrary to public policy that favors continuation of service, especially for residential customers;
- Energy efficiency measures, whether funded through On-Bill Financing or Off-Bill Financing could over the long run reduce a customer's risk of service disconnection because the customer's utility bills might be lower than the utility bills in the absence of the energy efficiency measures. However, where a customer with energy efficiency measures funded by On-Bill Financing experiences payment difficulties, the On-Bill Financing charge, being an additional charge on the customer's bill, would increase the customer's risk of disconnection;
- Without a positive cash-flow (monthly costs exceed monthly savings), there may be an increased risk of disconnection. For example, an efficiency measure subject to seasonal usage may not achieve a positive cash-flow during the off-season (the efficiency savings is low while the On-Bill Financing repayment remains fixed). In this example, the net effect would be a higher bill that may pose an increased risk of disconnection.
- Disconnection would not end a customer's payment obligation, and upon reconnection, might extend the period of the loan and make it more difficult for the customer to stay current on the utility bill, to the detriment of the customer and lender alike:
    - The effect of On-Bill Financing charges on establishing a deferred payment agreement is unknown. Continuation of utility service and avoidance of loan default needs further analysis; and
    - Potentially, disconnection increases the risk of losing all contact with the customer.
- The risk of loss on a loan can be mitigated through means less disruptive than shut-off, such as loan reserve funds, loan subsidies, third-party backstop financing, among other things. In addition, if creditworthiness standards are applied, the threat of disconnection would be less useful and possibly unnecessary altogether;
- If payments are shared between the utility and the lender, partial payments would result in increased amounts of utility charges becoming overdue. Because the energy efficiency measures reduced usage while the customer was still receiving service, however; the net effect would be reduced overall arrearages; and
- Uncollectibles for utility service might increase if customers are shut off because of non-payment of On-Bill Financing charges. Because the energy efficiency measures reduced usage while the customer was still receiving service, however; the net affect should be reduced overall arrearages.

Other Legal Considerations

This Report puts forth some legal considerations that have been reviewed by the Working Group. It is not intended to be a comprehensive analysis of all relevant legal issues that may exist. A review of additional legal considerations is necessary prior to implementation of any On-Bill Financing mechanism (*e.g.*, 16 NYCRR Section 11.10 Deferred Payment Agreements, Section 11.3 Applications for residential service).

Sources of Funding

Viable sources of funding need to be identified for an on-bill repayment mechanism to be put into effect. Funding is needed to:

- Finance energy efficiency project costs that will be repaid via the customer's utility bill;
- Develop and administer an on-bill repayment mechanism; and
- Provide for additional costs identified in the Program and Administration Costs section of this Report

Use of an on-bill repayment mechanism can best contribute towards the achievement of energy efficiency goals when it helps *increase* the funding available for energy efficiency projects and does not utilize funds that can be dedicated to other energy efficiency projects and efforts.

The Working Group identified a number of potential sources of funding that can be used to support On-Bill Financing. Some sources of funding may be able to support statewide initiatives while others may best serve to support utility specific programs.

System Benefit Charge (SBC) and EEPS Funding

The SBC and EEPS charge provide a source of funding for energy efficiency projects. Currently, SBC funding is dedicated to assist customers in performing energy efficiency projects. It is expected that additional funds authorized for collection from ratepayers under the EEPS proceeding will be shared between NYSERDA and the utilities and used to support energy efficiency initiatives that these entities have recently proposed in their 90-day filings.

A portion of SBC and EEPS funds could be allocated for use in funding projects repaid under an On-Bill Financing mechanism. This would expand the funding available under SBC and EEPS, since amounts loaned to finance energy efficiency projects would be repaid, thus, creating a self-funding mechanism using funds initially allocated for this purpose. However, if long-lived measures are financed, the repayment stream would not replace the funding in the near term.

SBC and EEPS funding could also be used to support other aspects of an on-bill repayment mechanism. SBC and EEPS funding could be used to guarantee third party loans. This could involve setting aside a portion of funds collected under the SBC that would need to stay available for this purpose. SBC and EEPS funding could also be used to fund the one-time setup and/or administrative costs of any On-Bill Financing mechanism. However, use of these funds for these purposes would reduce the funding available for projects sponsored by NYSERDA under the SBC and projects anticipated to be funded under EEPS. A careful review of the appropriate use of these funds is necessary.

Use of SBC and EEPS funding could be applied statewide.

Other Ratepayer Funding

If deemed appropriate, funding could be collected from ratepayers under other mechanisms to fund energy efficiency projects, guarantee third party loans and fund the one-time set up and/or administrative costs involved in the development and operation of an on-bill repayment

mechanism. The collection of funds could be limited to a set allocation amount. Such funding would increase the energy efficiency projects that could be undertaken by customers beyond those that can be supported by SBC and EEPS funding.

Third Party Funding

Third party funding may include traditional lending sources (i.e., banks and leasing companies) or non-traditional sources, such as retailers and other private entities. A lender and borrower could be brought together by an energy efficiency program administrator or vendor to effect a loan for an energy efficiency project. The Working Group has met with a number of third party lenders operating within and outside of the state to explore third party lender interest in providing funding for energy efficiency projects repaid under a utility on-bill mechanism and the types of program elements that lenders would require. The lenders included commercial banks and investment banks. A number of lenders expressed the following in regard to extending loans that would be repaid under a utility on-bill repayment mechanism:

- Creditworthiness would be considered a critical component in their assessment of any loan extended under such a mechanism whether the obligation is assigned to the customer or to the meter;
- A positive cash flow resulting from the installation of an energy efficiency measure that reduces energy charges would not serve to remove or reduce the need for a customer to meet creditworthiness criteria;
- Risk mitigation measures proposed, such as disconnection to correct payment defaults or assignment of the loan obligation to a meter rather than to a customer, would not serve as a substitute for creditworthiness or to justify a lower interest rate;
- Direct repayment of loans to the third party lenders is preferable to repayment of the loan through the utility bill and management of credit and collections activities related to the loan by the lender instead of another party such as the utility is preferred;
- No benefit is accrued from having the loan installment paid via the utility bill; and
- A guarantee mechanism, such as use of a fund to guarantee loans of nonqualified borrowers might be considered.

One lender, Hannon Armstrong, that funds energy efficiency projects for large governmental customers, was interested in elements that On-Bill Financing offers. Specifically, Hannon Armstrong does not have the infrastructure to handle billing, payment and credit and collection processes, and it is interested in extending loans if the utility were to perform these functions. Also, although a disconnection mechanism would not eliminate its creditworthiness requirements, Hannon Armstrong is interested in disconnection because it requires that payments be shared between the utility and the lender; that is proration would be utilized when partial payments are received. Hannon Armstrong would require a reserve fund and would want this fund to be used by the utility to guarantee defaults although a fund would not be necessary if the utility were to guarantee repayment.

Based on this feedback, whether third party lenders provide a good fit for providing direct financing to individual energy efficiency projects is unclear. It may be that third party lenders could be best utilized to develop a fund that could be used to support energy efficiency projects

repaid under the on-bill mechanism. In addition, the use of third party lending would necessitate the development of an infrastructure by which both the utility and lender would maintain information about and manage the receivable and communicate information to each other regarding the receivable and payments made on it. Electronic Data Interchange (EDI) transactions would need to be customized and implemented for: communication by the lender to establish the receivable in the utility system, communication from the utility to the lender to remit payment, communication from the utility to the lender regarding default on the loan, etc.

Public Agency Bonding

The potential may exist for raising capital from investors through the sale of tax exempt bonds by the state or public benefit corporations authorized to issue debt. Statutory bonding authority is available for certain customers. Public benefit corporations may be precluded from extending credit to their customers that do not meet creditworthiness standards unless these loans are guaranteed in part or interest rates are bought down. SBC or SBC-like funds could be used for this purpose.

In order to include additional customers, this alternative would likely require the enactment of State legislation. Such legislation would allow for the state or public benefit corporations to issue revenue bonds secured by an On-Bill Financing tariff charge payable by the customer who benefits from the financed energy efficiency improvements. Such a program might require the guarantee of loans. SBC or SBC-like funds could be used for this purpose.

Creditworthiness

Creditworthiness is used by lenders to evaluate whether a potential borrower has the ability to repay a loan. Many lenders indicate that even when energy efficiency measures produce positive cash flow, all other factors being equal, it is still necessary to ensure that customers will be able to pay the loan installment amounts.

Programs where the loan obligation may be transferred from one customer to another do not assure that the successor customer will be able to pay the loan installments. A creditworthiness review of the successor customer is not practicable and may interfere with the sale or rental of premises where energy efficiency projects are being repaid under the on-bill mechanism. Threat of service disconnection does not replace the need for creditworthiness review since such customers may not have the resources needed to repay the loan.

Despite the indication by lenders referenced above, where the overall energy bill is reduced as a result of the energy efficiency measure, a creditworthiness standard may not be necessary because the overall bill is no greater than it would have been absent the efficiency measure. Therefore, the customer represents no greater risk of default than prior to installation of the measure. However, some lenders are concerned that creditworthiness checks may still be required due to factors such as price volatility that may outweigh the energy efficiency measure's savings.[17]

[17] The following is an example of how price volatility could outweigh savings. In this example, the measure will save 100 kWh a month year-round. The customer's monthly usage before the measure was installed is 400 kWh, and electricity costs the consumer 20 cents/kWh in the summer months (June to September), 15 cents/kWh in the shoulder months of April-May and October-November and 10 cents/kWh in the winter months (December to March). Before the measure was installed, the customer would have had a monthly cost of $60.00 at the weighted average price of electricity. After the measure was installed, the customer would save $15.00 for the 100 kWh of electricity he or she no longer uses. The repayment amount is set at 75% of the savings or $11.25; the customer is experiencing a positive cash flow with a savings of $3.75/month. If the weighted average price of electricity goes up to 20 cents/kWh, the customer is still using 300 kWh, now costing $60 and on top of that he or she owes $11.25 toward repayment of the cost of the measure. Although one could say that the customer is saving $20.00 based on the higher price for electricity, in fact the customer is now actually spending more than he or she was in the month the measure was installed.

Payment Terms and Administration

The Working Group has evaluated the impact of payment terms and administration of On-Bill Financing. There are several key components that need to be addressed when considering On-Bill Financing.

Loan Repayment Length

The amount financed and associated loan term can impact customer energy efficiency purchase decisions. The term of a financing agreement is a function of the equipment cost, expected savings, and measure life of the energy efficiency measure being financed; loan interest rate; and program administration costs, to the extent they are recovered through loan principal. Customers may seek a positive cash flow from projects by extending the energy efficiency loan term such that monthly payments are less than the estimated monthly savings from the projects.

Subsidies can reduce the amount financed, shortening the payback period and possibly the length of the loan term. In some instances, subsidies can create a positive cash flow for a measure that may not otherwise be implemented, assuming the loan term must be shorter than the measure life.

While existing financing programs appear to have varying loan terms, due in large part to the variables discussed above, the Working Group has provided some implications for short- and long-term loans.

Short Term (Up to 5 years)

- Best suited for energy efficiency measures with a short payback;
- With fixed funding levels, repayments replenish a loan fund relatively quickly thereby enabling others to participate;
- Can give customers a timely and very positive perspective of the impacts of efficient equipment and their ability to control energy bills; and
- Lower risk of loan default due to customer turnover during repayment period.

Long Term (5 to 20 years)

- Best suited for energy efficiency measures with longer payback;
- May allow for greater penetration of more comprehensive energy efficiency measures assuming customers are willing to incur long term obligation for energy efficiency measures with long paybacks;
- May limit the number of projects that can be financed within the constraints of limited funding levels;
- Provides a longer time period for customers to spread out payments to achieve a higher level of energy savings per bill, provided timeframe is within the useful life of the measure; and
- Increased risk of loan default due to customer turnover during repayment period.

Spreading payments across a project's payback period is a key concept with energy efficiency loans. Short term loans are often possible with faster payback measures such as lighting retrofits. Measures with a longer payback period, such as HVAC and heating systems, require a longer term for repayment. Loan terms should be flexible enough to meet customer needs when confronting

longer term decisions. Any established loan term should ensure loans are paid in full before the end of a measure's expected life is realized.

While many energy efficiency investment decisions are oftentimes based on a simple payback, optimal investment decisions include life cycle costs, which includes all costs – initial costs, operating costs, and maintenance costs – relative to the operation of the equipment over a measure's life. Determining a payback is complex and requires experience. Having independent certification of the measure and the payback period by a certified agent adds value. Additional complexities are introduced when energy efficiency projects encompass measures with different payback periods. The ability of the decision-maker to calculate an energy efficiency measure's payback can be impaired by limited time to make the decision, lack of accurate information regarding the savings, and lack of knowledge of operational costs.

Some On-Bill Financing models require the estimated monthly savings from the energy efficiency measure to exceed the monthly loan payment in order to provide the customer with a positive cash flow. This type of mechanism may require particular sensitivity to customers' expectations as there is no guarantee that customer bills will be less after the investment in energy efficiency. This may be caused by a number of independent factors such as seasonality in savings (e.g. air conditioning savings occurring during summer months but not winter months), changes in weather (e.g. insulation may not generate as many savings during a warm winter), and other changes to the home or business (addition of a swimming pool with heater), to name a few. Customers expecting a lower, or at least same level, bill, absent an understanding of the possible impact of these external factors, may be dissatisfied with the energy efficiency program and/or utility. Aside from these external factors, customers would be better off than they would have been without the energy efficiency purchase.

Loan Interest Rates

The rate of interest charged to participants impacts the participants' payback. Lower interest rates can increase participation since lower rates reduce the cost of the energy efficiency investment, thereby improving the measure payback.

There are a number of means available for reducing interest rates for participants including:

- Obtaining capital with lower-than-market interest rates, for example through bonding or through a government agency;
- Buying down the interest rate to an established rate; and
- Establishing a reserve fund to protect the lender from loan defaults

While lenders make loans for energy efficiency projects, many -- particularly for residential programs -- consider the loan to be an unsecured, personal loan and do not incorporate the energy efficiency savings when calculating the customer's ability to repay the loan. This can result in higher interest rates, increased costs for the borrower, longer paybacks, or potentially longer loan terms.

Some programs recover administration costs through interest rates. Benefits of recovering costs through this mechanism need to be carefully weighed against impact on desired penetration levels.

Funding interest rate subsidies is covered in the "Sources of Funding" section of this document.

Customer Defaults

Lenders have a variety of means to mitigate the risk and impacts of customer defaults. These include:

- Creditworthiness tests – all lenders cite this as a requirement;
- Disconnection and pro-rata payment allocation;
- Reserve funds to guarantee defaults; and
- Aggressive collection efforts.

The extent to which lenders are able to incorporate these techniques into an On-Bill Financing mechanism appears to be inversely related to the interest rate charged to participants (*i.e.*, the greater the protection for the lender, the lower the interest rate to the participating customer).

Another critical issue regarding customer defaults is if and how the default can be recovered by the lender. To avoid high loan costs and encourage participation by lenders, lenders need to be compensated for defaults. In addition, the default is not a liability of the utility; therefore defaults should not be charged off as utility bad debt. Funding needs to be made available to cover defaults; for example, defaults could be covered by establishment of a reserve fund using SBC funds, other rate payer funds, or some other source.

Partial Payments

Payment allocation rules are dependent on disconnection for non-payment rules. Where disconnection is not applicable to the loan amounts, payments are allocated towards utility tariff charges (for example, delivery and supply) first with any remaining payment amount being applied to the loan's monthly installment. This method is consistent with Commission policy established with Utility Consolidated Billing of ESCO charges without Purchase of Receivables. This payment allocation method may deter third party lenders from participating. Offering a guarantee for customer defaults may alleviate lender concerns over allocating payments to utility charges first.

When disconnection is not applicable to the loan amounts, a method for prioritizing payments must be developed to ensure that amounts subject to disconnection get paid in advance of amounts not subject to disconnection. This involves applying payments to utility charges first, even when loan installment amounts may be overdue. In order to simplify processes and costs, utilities should be allowed to use existing partial payment rules between tariff (utility) and non-tariff (non-utility) charges.

If disconnection is applicable, payments are allocated by a percentage of the payment across all receivables with preference to the age of arrears.

One operational model examined during the process incorporates a unique approach for managing partial payments that warrants a special comment. United Illuminating offers a program prohibiting disconnection for non-payment of energy efficiency loans billed on the electric bill. Its

partial payments policy requires the assignment of payments toward loan repayments before they can be used to pay for utility commodity or distribution service. Such an approach for sequencing partial payments could actually expose a customer to disconnection for failure to pay for utility service, even though their partial payments might have been adequate to satisfy such obligations.

Bi-Monthly Customers

Some utilities have customers who are invoiced for one or more services every other month (bi-monthly customers). While not a significant issue for all utilities, it would require in those instances that the bi-monthly bill include two installments for the energy efficiency investment.

Customer Groups

As noted above in the section "Overcoming Barriers to Energy Efficiency Upgrades", On-Bill Financing is a mechanism that is intended to facilitate the installation of energy efficiency measures. There are concerns specific to customer groups that should be considered when contemplating the implementation of On-Bill Financing. The experience gained from a specific class of customers over time can be used to expand On-Bill Financing, if appropriate.

Residential

- Owner - Single unit
    - Higher implementation costs and on-going administration costs to address the presumably larger volume of participants;
    - May require minimum loan amount to insure cost effectiveness; and
    - If disconnection is a necessary component of an On-Bill Financing program, that may affect class participation, and increase administrative complexity.

- Tenant – Single unit
    - Tenant may not be directly responsible for energy costs associated with heating, central air conditioning, water heating. Improvements will involve change out of appliances such as refrigerators, air conditioning units and lighting;
    - If disconnection is a necessary component of an On-Bill Financing program, that may affect class participation, and increases administrative complexity; and
    - If the tenant is responsible for energy costs associated with heating, central air conditioning and water heating, there will be a split-benefit scenario.

- Owner – Multi unit
    - Building owner's meter generally controls heating, hot water, central air conditioning. Improvements made to heating and cooling do not involve a split-benefit since energy efficiency savings are achieved on the building owner's meter; and
    - Disconnection will affect all tenants in the building and thereby increase administrative complexity. For example, procedures for disconnection are extremely complex for multi-dwelling buildings and involve posting of the building and notification of each tenant regarding the disconnection of service.

- Low Income
    - This group of customers will continue to receive benefits through weatherization, utility and NYSERDA programs that are specifically designed for them;
    - To the extent that weatherization, utility, and NYSERDA programs addressing low income customers continue and expand, On-Bill Financing may not be the most effective tool to address low income concerns; and
    - Low income tenants may benefit from programs designed for multi-unit buildings.

- Organizations operating residential facilities (*i.e.,* homeless shelters, supportive housing, assisted living, or certain residences for persons with disabilities)
    - Given that occupancy of these facilities is often transitory and residents may have limited resources, eligibility could be limited to facilities that pay all utilities for their residents, or will fund any measures they install through their own accounts for common areas and accept full responsibility for repayment of the obligation.

Small Commercial/Industrial

- Energy efficiency measures generally create more significant savings in this class, and they may experience more difficulty in securing financing through traditional sources;
- A turn-key approach that assists the customer in all aspects of project including financing will encourage participation;
- Energy efficiency measures may not be permanent and may be specific to the business at the location (for example, lighting, refrigeration); and
- Disconnection may severely impact the business enterprise and may result in the business vacating the premises but an increased risk of disconnection should be of minimal concern if energy efficiency savings exceed costs.

Large Commercial/Industrial

- Energy efficiency investments for these types of customers can be very large. One or very few customers can deplete the overall funding available to either provide the loan or guarantee the loan for a third party lender. Likewise, a default of one or very few could have a severe impact on an On-Bill Financing program;
- Multi-phased or longer timeframe projects requiring progress payments (upon completion of milestone steps) will add to oversight needs and complexity; and
- Large Commercial/Industrial customers are already targeted by ESCOs who typically provide financing and other options (shared savings, performance contracts, etc.).

Program and Administration Costs

Significant costs will be experienced in the implementation and operation of an On-Bill Financing mechanism. Costs involve both one-time development costs and on-going administrative costs. A high level description of the types of costs that will be experienced is discussed below.

Implementation Costs

In order to implement On-Bill Financing new business processes must be developed and existing processes modified. Likewise, Information Systems such as Customer Information and Billing systems, Voice Response applications, and Web applications will need to be enhanced to support associated business processes. As a result, internal training will need to be developed and administered to communicate On-Bill Financing business processes and system changes. While not meant to be an exhaustive list, following are some areas requiring process development, system modification, and training:

- Eligibility and loan application procedures;
- Denial/Approval procedure;
- Loan installment set-up and management including payback calculations;
- Billing & Invoicing;
- Payment processing & allocation;
- Credit & Collection (Creditworthiness, Defaults, Notifications, Disconnection / Reconnection, DPA's, etc.);
- Customer Service (Inquiries, Complaints, Application of Service/Denial, etc.);
- Energy Savings Certification (i.e., Independent Certification Agent for the meter obligation model);
- Interfaces between utility and lenders; and
- Interfaces between utility and installation contractors.

Also, business processes may need to be developed depending on the source of funding to communicate information regarding the loan installment amount and transmit the payment and information regarding the payment to the lender.

Further, communications mechanisms must be established between lenders and the utility. This will probably involve the use of Electronic Data Interchange (EDI) transaction sets that will need to be modified for this purpose and the implementation of a data transfer mechanism for transmission of these transactions between parties.

Likewise, customer outreach and education to provide information regarding customer energy efficiency loan options, installment loans and payments, which will include but not be limited to new processes and enhancements to online web and automated voice response applications. In addition to customer outreach and education, contractor outreach and education is necessary to promote the program and participate in the qualification, application and approval processes. Costs associated with certification of independent contractors are important considerations.

Administrative Costs

- Additional Customer Service staffing to administer day to day operations of On-Bill Financing including but not limited to handling customer , lender, and contractor calls regarding energy efficiency loans administered under the on-bill repayment mechanism;
- On-going program maintenance costs based on experience gained or external factors such as changes in customer outreach and education, system modifications, and changes associated with lenders or contractors;
- Staffing to oversee the operation of the utility systems supporting the On-Bill Financing mechanism;
- Depending on the source of funding, staffing to oversee the exchange of information between utilities and lenders including the maintenance of communication interconnection and exchange of data files;
- Depending on the source of funding, banking fees associated with the transfer of payments from the utility to lenders;
- Staffing to address updates and changes needed to online and automated voice applications;
- If a meter obligation model is used, staffing to ensure that disclosure occurs and loans are properly transferred to the successor customer account;
- Transaction fees associated with required Uniform Commercial Code (UCC) filings (used to establish security interests);
- Costs associated with obtaining necessary credit reports; and
- Where certification of energy savings is required, costs associated with such certification.

Customer Service Considerations

The operation of On-Bill Financing will involve a variety of customer service activities. It is especially important that customers are adequately informed about the On-Bill Financing mechanism and provided with accurate and complete information in response to their inquiries, and that processing and administrative functions are carried out efficiently. The Working Group has identified a number of functions that must be performed to support On-Bill Financing:

- Call Center handling of customer requests for program information and inquiries related to billing and payment;
- Customer account management;
- Loan application and approval process;
- Program administration including set up and administration of loans, reporting, and communications with third-party entities;
- Credit and Collections;
- Marketing;
- Outreach and Education; and
- Complaint Handling/Dispute Resolution.

The complexities of On-Bill Financing will require that utilities obtain adequate levels of well-trained staff. Call center staffing also must be augmented to handle the customer inquiries related to On-Bill Financing. In addition, dedicated staffing must be assigned to handle other functions such as administration of the mechanism.

Furthermore, utility performance targets related to customer satisfaction, complaints, and call answering service levels may need to be reviewed so that they adequately reflect the impact of On-Bill Financing.

Total Resource Cost Test

The Working Group discussion of On-Bill Financing is focused on a strategy for financing and payment of energy efficiency measures rather than on the specific elements of any energy efficiency programs. Accordingly, at first glance it would appear difficult to design a Total Resource Cost (TRC) Test to evaluate the cost-effectiveness of On-Bill Financing without exploring the context of specific program details.

In a general sense, determinations of program-specific TRC tests must consider the total costs of such programs, including both the total direct costs of the measures implemented and indirect costs. In order to pass the TRC test, programs are required to demonstrate that the value or benefit of the measures funded exceeds the total cost. This Working Group would not support implementing any On-Bill Financing mechanism that does not pass a TRC test.

An On-Bill Financing mechanism will create one-time implementation and ongoing administrative costs. Development of billing system modifications to handle an On-Bill Financing mechanism would likely be the largest upfront cost. Additional fixed and variable administrative costs would also be incurred. The extent of these costs will largely depend on the design of the program including but not limited to the amount of integration required between the utilities and a funding source.

It is possible that an On-Bill Financing mechanism would also produce additional benefits in the form of increased participation in energy efficiency program. Measuring the benefit would require estimating energy savings per measure and the more difficult task of determining proper free-ridership[18] and spillover[19] values.

In order to begin calculating a TRC for an On-Bill Financing mechanism, specific mechanism parameters will need to be established. Utilities and other parties will then be able to determine specific costs they will incur to comply with those parameters. Establishing such parameters will also allow for the development of the proper assumptions and estimated savings per measure needed to calculate a TRC.

[18] This is defined as a program participant who would have implemented the program measure or practice in the absence of the program. Free riders can be total, partial, or deferred.

[19] This is defined as a change in energy consumption and/or demand that is the result of the presence of the energy efficiency program, but is not a direct effect of the program.

Fuel-Blind Considerations

The Working Group discussed that in addition to helping reach the Commission's 15 by 15 goals for electric energy efficiency, On-Bill Financing coupled with a fuel blind energy efficiency program could be an effective tool to reduce an energy consumer's total energy needs. A "fuel blind" program permits a customer to finance an energy efficiency measure without regard to the fuel source. This may require the customer to pay for capital and installation costs of non-electric measures through a charge on their electric utility bills.

Proponents of fuel blind programs claim that such an approach is more aligned with the average consumer's perspective - that a consumer may be concerned with overall energy consumption and efficiency (total BTUs) and would benefit from greater integration. In addition, developing a program that would allow for the installation of electric, natural gas, propane, and fuel oil measures could result in the installation of the most cost-effective energy efficiency measures first.

Conversely, some view that expanding the scope of the program beyond electric energy efficiency could divert resources away from the Commission's 15 by 15 goals and would encourage spending funds provided by electric customers for improving the efficiency of other energy sources. It is possible that the installation of some measure, while consistent with the overarching goal of energy efficiency, could actually result in fuel switching, and thus be inconsistent with one of the Commission's stated goal (*i.e.*, reducing the consumption of natural gas). For example, if a consumer replaces an inefficient oil furnace with a new, highly efficient gas furnace, the customer's total energy usage may go down, but the amount of gas consumed by that customer would increase. A funding mechanism has not been identified for On-Bill Financing. If the Commission approved the use of SBC funds for this purpose, it could be argued that the installation of oil or propane efficiency measures, fuels which were not subject to the collection of an SBC, are not an appropriate use of limited funds collected from electric customers.[20] Moreover, this diverts electric utility resources to management of non-core functions.

However, if non-SBC funds were to be used to support On-Bill Financing, this subsidization issue could be greatly reduced or even eliminated. If governmental funds, third-party financing, or other non-SBC funds were used, a fuel blind program might be successfully implemented.[21]

As with any energy efficiency program, it is critical that proper customer outreach and education be undertaken for a fuel blind program to be successful. Consumers must be made aware that with a fuel blind approach, it is ***total*** energy costs that must be tracked and compared. It is probable

[20] It should be noted that NYSERDA's Home Performance with Energy Star® program is fuel blind. Under the Home Performance with Energy Star® program, SBC funds are used to buy down interest rates on energy efficiency loans customers receive from third party financiers (off-bill). These energy efficiency loans may be used to pay for the installation of any efficiency measures recommended by a Building Performance Institute (BPI) certified contractor upon the completion of a Home Performance energy audit, including, but not limited to, insulation and heating upgrades in non-electrically heated premises.

[21] Issues surrounding the recovery of up-front and ongoing administrative costs would need to be resolved. Such cost recovery issues could be addressed through an administrative fee that is added to a consumer's efficiency measure costs and recovered over the life of the loan financed on-bill or as a surcharge to the interest rate charged the consumer.

that a consumer's electric bill will increase significantly with the inclusion of On-Bill Financing for non-electric energy efficiency measures. However, if the program is successful, the consumer's total energy bill, from all sources, should be lower than it would have been, absent the installation of the efficiency measure.

Models - Purpose

During Working Group sessions and development of this paper it became clear that it would be helpful to the reader to present several models that illustrate how a variety of issues described in this paper could be addressed. The Working Group's goal was to use the models to give context to the various issues such as obligation type, financing, and customer groups. The Working Group does not present these models as particular endorsements, recommendations, or "best practices."

Customer Obligation Model

A Customer Obligation Model using On-Bill Financing can be designed that may effectively address the Commission's energy efficiency goals and provide utility customers with options to purchase and install energy efficient measures. This model can be implemented without any upfront customer costs (*i.e.*, no down payment). This model is flexible to meet the needs of customers and utilities.

Key elements of the Customer Obligation Model include:

- Assignment of the payment obligation to an individual customer;
- Tariffed billing and payment on the utility bill;
- No disconnection requirement for nonpayment which is supportive of state policy that favors continuation of service, especially for residential customers;
- Applicability to all customer classes; and
- Flexibility in model elements such as payback thresholds and project certification and can be designed to meet the needs of various energy efficiency programs.

The majority of On-Bill Financing offerings utilize this model including some that have been in operation for nearly 20 years. For example, National Grid in Massachusetts, Rhode Island and New Hampshire has utilized On-Bill Financing under this model for small/mid-sized business customers since the early 1990's, installing high efficiency electrical equipment such as lighting, lighting controls, refrigeration measures, energy management systems, and variable speed drive equipment. United Illuminating also provides financing under such a mechanism. San Diego Gas & Electric offers On-Bill Financing to various customer classes.

A Customer Obligation Model can be designed to provide utility customers with the means to buy and install cost-effective energy efficiency measures with no up-front payment. The defining feature of a Customer Obligation Model is that it enables utilities to develop programs that provide customers with flexible payment terms. Customers and utilities can negotiate payment terms to best meet customers' needs. That is, customers can choose between available long or short loan terms. The model uses negotiated loan terms and credit and collection mechanisms such as assessing late payment charges and issuing late payment notices to protect lenders.

Under this model, the customer has sole responsibility for repaying the loan which avoids the complexities and uncertainties associated with the transfer of an obligation to any other entity. This type of financing requires that the customer pay for the loan regardless of whether the customer remains at the premises. The cost of the loan to the customer can be reduced through the buy down of the interest rate and payment of administrative costs by using SBC funds; this lower loan cost can encourage participation.

Advocates for the Customer Obligation model state that it effectively addresses barriers to energy efficiency measures discussed *supra* at 5:

- "Split-benefits" – The Customer Obligation model provides financing to either building owners or tenants, who wish to invest in energy efficiency to take advantage of low cost loans and monthly on-bill payments even when they do not own the property (with the owner's permission, as applicable); building owners and tenants may be motivated to invest in energy

efficient projects even with uncertainty regarding the realization of the full financial benefits. In addition, they may choose to invest for other reasons such as the value that a customer places on the energy efficiency improvement;

- "Customer reluctance to invest" – facilitates the lending process and provides the added convenience of including the repayment in a bill the customer already receives. Provides the contractor a valuable tool to "close the deal"; and
- Financing Issues – a down payment is not required and the design of the mechanism can include a "buy-down" of interest rates.

In addition, advocates identified other benefits of a Customer Obligation model are:

- This model is consistent with customary financing practices;[22]
- Not dependent upon disconnection for nonpayment. If disconnection is not used, the threat of disconnection for customers of disconnection is avoided as well as legal considerations associated with rules related to applications for service and deferred payment agreements. Utilities could continue "application for service" and Deferred Payment Agreement practices as they are now;
- Individual utilities can provide financing options tailored to their different customer classes and energy efficiency programs. This model does not exclude participation by any customer class;
- Since the obligation is with the customer undertaking the loan, there is no impact on the subsequent sale or rental of a premise. Further, the creditworthiness of any future renter or owner is not relevant; and
- Avoids additional costs associated with external certification agents, without impacting the application of the measurement and verification practices of the energy efficiency program.

For purposes of illustration, the following example contains the key elements of a customer obligation model.

- Utility's energy efficiency programs will determine eligibility of:
    - Residential and business customers are eligible for this model;
    - Measures that save electricity, natural gas, oil, propane or water; and
    - Project costs.
- Funding of loan principal through: 1) the SBC funds, 2) funding from the issuance of bonds by governmental authorities, or 3) private lenders. It is recommended that SBC funds or some other revolving fund be used to avoid the complexity of the transactions between a third party lender and utility. A revolving fund would allow the fund to be restored as customers make installment payments;
- If possible, bonds from DASNY or NYSERDA should be used to provide the lowest possible cost capital. Some customers might not be eligible for funding from these sources because

[22] *Supra* at 7

these entities are limited by law to serving specific types of customers;

- If bonds are not feasible and SBC funding is not used, capital will be provided through a Request for Proposal process to ensure the lowest possible cost of capital;
- A guarantee fund could also be created by SBC funds to reduce the lender's interest rate, allow lenders to lower their creditworthiness criteria, and provide for recovery of defaults;
- Funding for additional financing costs or fees such as interest or utility administration costs could be incorporated into the participants' loan principal or paid through SBC funds. Participants' loan amounts will be lower if SBC funding is used to cover these costs and fees;
- Loan terms can be designed to meet customers' needs. Additionally, loan installments and repayment terms would not be determined based on a percentage of projected energy savings. This would allow customers more repayment options to encourage investments in energy efficiency projects;
- Measurement and verification will be applied under utility energy efficiency programs without the use of external certification agents;
- Not dependent on a direct install turnkey program but may be used in conjunction with one;
- In a direct-install, turnkey program:
    - Vendors selected through a competitive bid process market the program to customers, perform audits at customers' facilities, and provide project proposals to customers including the project cost, estimated annual savings, customer's contribution, and payback. Vendors are not paid for audits that do not result in installations of energy efficient equipment;
    - Customers agree in writing in a plain language document to the measures to be installed, the customer contribution, and payment terms;
    - The vendors are responsible for the purchase of materials from a supplier selected through a competitive bid process, and the installation of measures using local contractors that have sub-contracted to the vendor;
    - Vendors will be removed from the program for unsatisfactory performance;
    - Quality control of the installations include:
        - Customer sign off stating that the customer is satisfied with the installation. Vendors are only paid for the installation after this sign off is provided by the customer;
        - Post inspections by an independent third party to verify the installed measures. Post inspections are conducted on a random selection of projects as well as all projects exceeding a certain dollar threshold; and
        - Overall program measurement and verification including, but not limited to, billing analyses and customer surveys provided by the Evaluation Group.
- The Commission must determine whether ongoing utility operational costs should be

recovered from system benefit charge funds or recovered through customer obligation model payments;

- Start-up costs will be recovered from SBC funds or another source of funding as discussed in the Sources of Funding section of this Report;
- Where rebates are applicable to energy efficiency programs, rebates will be paid to customers for eligible measures; and
- For rental units, tenants would need approval of the building owner prior to participating.

Meter Obligation Model

A meter obligation model can be designed that may effectively address the Commission's goals and provides utility customers with options to purchase and install energy efficient measures without any upfront customer costs (*i.e.*, no down payment). A meter obligation On-Bill Financing model typically includes the following key elements:

- Assignment of the payment obligation to a meter location, not to an individual customer;
- Tariffed billing and payment on the utility bill;
- Disconnection for nonpayment of the meter obligation model charges; and
- Independent certification that products are appropriate and savings estimates exceed payments.

A meter obligation model can be designed to provide utility customers with the means to buy and install cost-effective energy efficiency measures with no up-front payment, no new debt obligation other than the same obligation all customers have to pay their monthly billed charges, and the assurance that a customer has an obligation to pay only if the measures continue to work as intended and the customer remains at the location where the measures are installed. The defining feature of a meter obligation model is that it enables customers to pay for the efficiency measures with a portion of their savings, since to be eligible to participate in the meter obligation model, all measures must have independently certified savings estimates that show that the measure or group of measures will save the customer significantly more money than the measure or group of measures cost in both the near and long term.[23] Repayment streams to participating lenders are protected by utilities' ability to disconnect for non-payment of bills, utilities' guarantee of payment[24], and utilities' treatment of non-payments the same as any other uncollectible (i.e., recovered from all ratepayers).

Advocates for meter obligation models state that they effectively address barriers to energy efficiency measures discussed *supra* at 5, including the following:

- Meter obligation models address the "split-benefit" barrier because they remove a tenant's disincentive to install energy efficiency measures if they might move before the benefits of installed measures exceed the costs;
- Meter obligation models help to address the "customer reluctance to invest" barrier because customers will not retain a personal debt obligation for future payments after a customer closes

[23] In the event a fuel-blind program is implemented, the utility bill on which the charges appear may not how all of the savings that result from the energy efficiency measures since some of those savings may appear on a different bill. For example, a customer of an electric utility could invest in a HVAC upgrade combined with new insulation certified by an independent certification agent to produce combined electric and gas savings well in excess of the costs of the energy efficiency measures. While the electric bill may not show savings that exceed the costs of the energy efficiency measures, the combined savings on the electric and gas bills should demonstrate the savings in excess of costs. This example demonstrates the importance of providing clear and complete information so the customer understands that the anticipated savings might not all show up on the bill upon which the meter obligation model charge appears.

[24] The implementation mechanism would have to be addressed.

its account and will receive the assurance of an independent certification of estimated savings;

- Meter obligation models address the "high-cost of financing" barrier because customers will not be required to make an up-front payment and the program's very purpose is to assure that their benefits will exceed their costs;
- Meter obligation models are designed to address the "uncertainty of sufficient off-setting savings" barrier because:
    - Independent certification is intended to assure customers that energy efficiency measures are appropriate and savings will exceed costs with a substantial safety margin;
    - Customers should not have to worry about measures failing before all savings are realized and the cost of repairs eliminating their savings;
    - As noted above, renters should not have to worry about moving before they have recovered their investment; and
- Meter obligation models address the "general complexity" barrier, for each of the above-stated reasons.

One example of a meter obligation model is the Pay-As-You-Save® (PAYS®) system.[25] For purposes of illustration, the following example of a meter obligation model contains the key elements that must be included in a PAYS® system.[26]

- Customers who are eligible under this model are:
    - Municipal, university, school and hospital buildings could install all measures that save electricity, natural gas, oil, propane or water and qualify for the tariff, providing the minimum project cost is $3,000 or greater;
    - Customers who occupy commercial and industrial buildings could install all measures that save electricity, natural gas, oil, propane or water and qualify for the tariff providing the project cost equals or exceeds $5,000. As part of the tariff design, the tariff may be limited to customers current with their utility accounts;
    - Residential customers who rent or own residential properties (including mixed use properties) could install measures that save electricity, natural gas, oil, propane, or water that qualify for the tariff providing that the minimum project cost is $1,000. Residential customers could not participate in the PAYS system unless the Commission adopts disconnection for non-payment and fuel blindness as components of this On-Bill model.[27] Residential customers would be allowed to install permanent and portable

[25] The meter obligation-On-Bill Financing models that have been implemented to date are, or are based on, the PAYS® system. As summarized in the matrix attached to this report, PAYS® was first implemented on a pilot basis in New Hampshire in 2001 and was subsequently required to be continued by Commission order. Variations of the meter obligation model have been adopted on a three year pilot basis in Hawaii and most recently in Kansas.

[26] A utility could modify and name its own program as it sees fit, but could not call its meter obligation model "PAYS®," unless the program adopts all of the key elements of PAYS®.

[27] Variations of this model could include residential customers without these components

measures; however, the balance due for portable measures would be required to be paid off upon the customer closing his or her account (unless the customer seeks to transfer the payment obligation to another location within the utility's service territory). Because there are high transaction costs relative to the prospective savings from measure installations, a residential program may require a small subsidy to cover transaction costs;[28] and

- Other institutions or nonprofit organizations that operate residential facilities such as homeless shelters, supportive housing, assisted living, or certain residences for persons with disabilities could install all measures that save electricity, natural gas, oil, propane gas, oil or water and qualify for the tariff providing the cost equals or exceeds $3,000. Such facilities range from those housing residents in communal sleeping quarters to those providing separate units for individuals or households in hotel or apartment style settings.

- The Commission will approve one or more non-utility Independent Certification Agents, in connection with the implementation of the meter obligation model or models, with the Commission to determine whether there should be one statewide or separate regional or utility territory-specific Independent Certification Agents. The Independent Certification Agent(s) could be a state agency such as NYSERDA or such other non-utility entity(ies) that the Commission determines to be appropriate.
- Contractors will be permitted to market installations and assist customers with savings estimates and completion of all program forms. The Independent Certification Agent will approve qualifying projects with complete and accurate applications within 30 days. After approving an application, the Independent Certification Agent will: 1) if the customer is a renter, ensure the building owner (or the manager of the building) has agreed to the work and its responsibilities to disclose the obligation to successor occupants, to not damage the measure(s) and to allow access for repairs and inspections; 2) authorize the contractor to begin the approved project; 3) authorize the payment to the contractor for the agreed amount following satisfactory completion of the approved project; 4) request that the customer's utility begin billing the customer according to the payment schedule included in the approved application; and, 5) respond to and resolve any subsequent disputes between the contractor and the customer.
- The Commission will determine whether ongoing operational costs should be recovered from system benefit charge funds or recovered through meter obligation model payments.
- Start-up costs, including costs for the Independent Certification Agent, will be recovered from system benefit charge funds or another source of funding as discussed in the Sources of Funding section of this Report.
- Measures will be assumed to qualify for the tariff if the current value of the estimated annual savings to the customer (based on retail rates) exceeds 1.33 times the annual payments that will cover all measure costs, financing, and program fees (but not start-up costs). Additionally, the scheduled duration of payments may not be longer than 75 percent of the estimated life of installed measures or ten years, whichever is shorter. The Independent Certification Agent will

[28] This model would require a subsidy for residential customers in order for this customer class to meet the requirements of the program's minimum annual savings and payback period.

determine whether the "1.33" and "75 percent" requirements are satisfied.

- To minimize utility program costs and customer dissatisfaction, contractors must be bonded or provide irrevocable letters of credit which are valid for the duration of a customer's payment stream and equal to an amount the Commission determines to be sufficient and appropriate. Funds from the contractor's irrevocable bond are available to pay any repair costs for which the contractor is determined to be responsible or to repay the capital provider for any payments not made if a customer's payment obligation ceases because the repairs are not made.
- Rebates, not including in-store rebates, to all customers will be limited to the amount required to qualify a package of measures for the meter obligation model, regardless of whether the customer chooses to finance its portion of measure costs through the meter obligation tariff. Whether or not a customer uses the tariff, a very quick and simple analysis using available savings estimates and cost data is all that is necessary to determine the rebate. Limiting rebates to the amount required to qualify a package of measures for the meter obligation model will:
    - Reduce overall program costs, ensuring System Benefit Charge (SBC) funding is available to more customers and to incent installation of more measures;
    - Ensure all customers get the same program benefit (i.e., the amount of incentive sufficient to assure them immediate net savings instead of an arbitrary percentage of measure cost or dollar amount); and
    - Eliminate the boom and bust cycles associated with limited rebate budgets, because when rebates are limited as proposed, the presence or absence of rebates does not impact the benefits participants receive when installing the most cost effective technologies (i.e., customers installing these technologies do not receive rebates – they only receive the program assurances needed to incent their purchase).
- Disconnection for non-payment must be in accordance with Commission rules.[29]
- Meter obligation model payment obligations must be fully disclosed by the building's owner to subsequent purchasers or renters of buildings or building units with payment obligations on the meter that will continue after the new purchaser or renter begins utility service. Sellers will have the obligation to disclose the payment obligation to purchasers before the sales transaction pursuant to disclosure requirements established by the Commission. For rental units, disclosure of the payment obligation will be the responsibility of the building owner who must provide signed proof of disclosure to the new occupant using a Commission approved disclosure form or be liable for costs incurred by the new occupant (including relocation or consequential damages if the new occupant refuses to accept the benefits of the installation and the payment obligation). Utilities will notify new customers within 30 days of their taking occupancy of premises with meter obligation model measure payment obligations of their rights and responsibilities on a form approved by the Commission. This notification will effectively serve as a check that disclosure of payment obligation has been made to the successor customer.
- Third-party capital will be used to pay for the upfront costs of measures. Utilities will guarantee payment to the capital provider regardless of collections, with the cost to be

[29] Adopting a meter obligation model with PAYS elements would require disconnection for residential customers.

recovered from ratepayers. Utilities will be permitted to treat unpaid installment charges the same as all other unpaid charges. No change to payment application will be required.

- If possible, bonds from DASNY or NYSERDA will be used to provide the lowest possible cost capital. Some customers might not be eligible for funding from these sources because these entities are limited by law to serving specific types of customers. If bonds are not feasible, capital will be provided through a Request For Proposal (RFP) process to ensure the lowest possible cost of capital.
- If any measures fail (i.e., stop functioning in accordance with manufacturer's design parameters preventing savings) during the duration of customers' payment obligations, such measures will be repaired within 28 days of notification to the Independent Certification Agent, or the payment obligation will cease until the measures are made to function.[30] No increase in payment will be required of the participating customer; however, the repayment term will be extended to recover repair costs for which the customer is responsible. The Commission will determine procedures, to be implemented by the Independent Certification Agent, to allocate financial responsibility for any repairs among the contractor, customer and building owner. The Independent Certification Agent will be responsible for ensuring that repairs are made and that payment obligations be extended as appropriate, or that the payment obligation ceases when measures cannot be repaired, or if repairs are not made because the cost of the repairs would have extended the repayment term beyond the useful life of the measure. The Independent Certification agent will contract with participating contractors to ensure that funds from the contractor's irrevocable bond are available to pay any repair costs for which the contractor is determined to be responsible or to repay the capital provider for any payments not made if a customer's payment obligation ceases because such repairs are not made.[31]
- Payment durations at a location may be extended if extended vacancy or missed payments, whatever the reason, increase costs associated with measure installation at the location until all costs have been collected from those benefiting from the installation, unless the measure stops functioning.

Note: Except for residential customers, once changes to billing and information systems are made, all other customers can install cost-effective efficiency measures for practically zero program cost.[32] If a more comprehensive program is desired, SBC funded rebates could be used to ensure installation of all qualifying measures for the least possible cost to participants.

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[30] While payment obligation will suspended during this period, interest would accrue.

[31] There could be limited situations in which the remaining cost of measures would not be paid because customers' payments obligations would cease before full payment had been received. An example would include a situation in which a premises is demolished or damaged beyond repair. Such a situation could be covered by SBC funds, treated as utility bad debt or costs could be projected in advance and incorporated in all meter obligation model charges. Since the meter obligation model should provide energy efficiency savings at less cost to ratepayers generally than other SBC programs, it would be reasonable and administratively advantageous to opt for the payment from SBC funds alternative.

[32] As discussed above, there may be limited costs incurred for bad debt or because payment obligations cease before full payment is made.

Off-Bill Financing Model

An Off-Bill Financing model can be designed that may effectively address the Commission's energy efficiency goals and provide utility customers with options to purchase and install energy efficiency measures without any upfront customer costs (*i.e.*, no down payment). This model can be implemented in a relatively short period of time with minimal impact to ratepayers, compared to an On-Bill Model, and is flexible to meet the needs of customers, utilities, and state agencies. The Working Group heard a number of presentations from third party lenders providing this type of financing.

Key elements of the off-bill financing model include:

- Assignment of the payment obligation to an individual customer;
- Billing and payment processing are provided through a separate, non-utility bill;
- Disconnection is not applicable to this model. This is supportive of state policy that favors continuation of service, especially for residential customers;
- Available to all customer classes;
- Loan terms determined by the individual lender take into account customer and energy efficiency program attributes;
- Lenders perform the loan administration, underwriting, and collection activity;
- Avoids the need to develop a costly new utility lending infrastructure while providing energy efficiency benefits.

Many programs utilizing this model exist; examples are provided in the attached matrix. Funding for this model can be provided by third-party lenders or from other sources such as SBC funds, issuance of bonds by government authorities, or other state sources. NYSERDA has been working for about 10 years with a network of lenders to buy down the interest rate for energy efficiency improvements in all customer sectors. The buy-down is funded with SBC funds. Similarly, National Grid engages Enerbank to offer residential loans in Massachusetts. National Grid uses SBC funds to buy down Enerbank's rate to zero percent (0%). Energy Finance Solutions and AFC First Financial, as Fannie Mae Approved Energy Loan Lenders, offer their programs in a number of states to homeowners and provide preferential interest rates and terms for most types of energy efficiency improvements. In each of these examples, the lender receives the payments directly from customers and handles collections and defaults.

An off-bill financing model can be designed to provide utility customers with the means to buy and install cost-effective energy efficiency measures with no up-front payment. The defining feature of an off-bill financing model is that utilities and other program administrators and lenders work together to facilitate financing for energy efficiency investments. Customers and lenders can negotiate payment terms to best meet customers' needs. The lenders protect against risk by applying creditworthiness standards prior to extending loans and use their own established credit and collection practices and mechanisms throughout the loan cycle.

Under this model, the customer has sole responsibility for repaying the loan which avoids the

complexities and uncertainties associated with the transfer of an obligation to any other entity. This type of financing requires that the customer pay for the loan regardless of whether the customer remains at the premises. The cost of the loan to the customer can be reduced through the buy down of the interest rate and/or establishment of a guarantee fund using SBC funds; this lower loan cost can encourage participation.

Advocates for the Off-Bill Financing model state that it effectively addresses barriers to energy efficiency measures discussed *supra* at 5:

- "Split-benefits" –Low cost financing is available to either building owners or tenants who wish to invest in energy efficiency even when they do not own the property (with the owner's permission, as applicable). Building owners and tenants may be motivated to invest in energy efficiency projects even though there is uncertainty regarding the realization of the full financial benefits. In addition, they may choose to invest for other reasons such as the value that a customer places on the energy efficiency improvement.
- "Customer reluctance to invest" – facilitates a simple and quick lending process by bringing the customer and lender together when financing may be needed, such as at the time of an energy audit or at the point of sale. It provides the customer with a financing option for the energy efficiency measures without the customer having to spend valuable time researching financing options. It also provides the contractor a valuable tool to "close the deal". Many lenders offer the convenience of an electronic payment option.
- "Financing Issues" – No down payment is required and the mechanism can include a "buy-down" or guarantee fund that reduces interest rates. A guarantee fund can also be used to expand the number of customers that would qualify for financing.

In addition, advocates state that other benefits of Off Bill Financing from an administrative and implementation perspective are:

- Utilities would not be subject to legal issues related to the extension of credit or debt collection – these activities are performed by the lending institutions.
- Other legal considerations, such as "application for service" or Deferred Payment Agreements, are not an issue – utilities would continue practices as they are now;
- Disconnection is not applicable to this model as the loan would not be billed or collected by the utility. The loan would be issued by the lenders who already have processes in place to pursue collection activities;
- Implementation costs would be lower since utilities would not need to modify billing systems, develop supporting business processes and infrastructure, and provide detailed training related to program administration;
- Utility administrative costs would be lower because the lending institution would perform all loan administration activities;
- Customer service and loan installment billing would be directly provided by the third party lender keeping financing and utility services separate. An added benefit would be to minimize customer confusion relating to payment of the loan amount.

- This structure avoids the complications and expense of integrating the utility billing system with the funding source.
- Quickest model to implement once key decisions are made.
- Administration of financing programs can be better served by lenders who have lending expertise, are intimate with banking regulations, and have established practices for billing and collections of loans.

For purposes of illustration, the following example contains the key elements of a customer obligation model.

- Residential and business customers are eligible for this model.
- A broad spectrum of customers can be targeted for participation by the utilities, Commission and NYSERDA. In addition, contractors could offer off-bill financing as an option for customers at the point of sale. Information regarding financing would be made available through a number of different channels such as websites for utilities, program administrators, state, lenders, and towns and communities.
- Lenders will qualify customers based on creditworthiness criteria.
- This proposed model can fund loan principal using a number of funding sources such as private lenders, SBC funds, issuance of bonds by governmental authorities or a combination of sources.
- In conjunction with energy efficiency programs and in the absence of other sources of capital, a Request for Proposal process can be used to ensure the lowest possible cost of capital.
- A guarantee fund can be created by SBC funds to reduce the lender's interest rate, allow lenders to expand their creditworthiness criteria, and provide for recovery of defaults.
- SBC funds can be used to subsidize the interest rates, resulting in lower loan installments to participants.
- Loan terms can be designed to meet customers' needs. Additionally, loan installments and term of repayment would not be determined based on a percentage of projected energy savings. This would allow customers more repayment options to encourage investments in energy efficiency projects.
- The use of independent certification agents is not required and measurement and verification would be performed under either utility or program administrator evaluation protocols.
- This model is not dependent on a direct install turnkey program but may be used in conjunction with one.
- One option for a direct install turnkey program utilizing off-bill financing follows:
    - Participating contractors perform audits at customers' facilities, promote energy efficient equipment to customers, and provide project proposals to customers including the project cost, estimated annual savings, customer's contribution, and payback.

- Customers interested in installing high efficiency equipment are provided the opportunity to apply for a loan through the private lender. Customers are approved by the lender at that time and may proceed with the purchase and installation of the energy efficiency equipment.
- Contractors will be removed from the program for unsatisfactory performance.
- Quality control and measurement and verification will be applied as defined in the individual energy efficiency programs.

- Another option for a program utilizing off-bill financing is where customers seeking to install energy efficient measures are provided the opportunity to apply for a loan through a participating lender. Such programs involve coordination between the program administrator and lender.
- Where rebates are applicable to energy efficiency programs, rebates will be paid to customers for eligible measures.
- For rental units, tenants would need approval of the building owner prior to participating.

Energy Efficiency Loan Program Overview (Matrix)

According to the Database of State Incentives for Renewables & Efficiency (DSIRE) there are almost 200 Energy Efficiency loan programs across the United States. The Working Group researched a variety of U.S. and Canadian Energy Efficiency programs, with On-Bill and Off-Bill Financing mechanisms. These programs are reflected in a comparative matrix attached hereto. The list of documented efficiency programs and associated analysis is not intended to be comprehensive. The list is a sampling of current and discontinued residential and commercial programs. It should be noted that the Working Group identified the following elements in an attempt to streamline comparisons between programs, but not all programs readily lend themselves to these categorizations. Below is a list of elements documented:

Element	**Element Description**
Utility	Utility name
State	U.S. State or Canadian Province
Customer Class	Customer segment eligible to participate
On / Off Bill	Indicates whether program is On-Bill or Off-Bill Financing
EE Program	Program name
Start Date	Year program established. Also indicates if a program is no longer operational.
Eligibility Criteria	Includes the measures that are eligible, credit worthiness requirements, and any other program requirements.
Amount Financed	Dollar range available for financing
Financing Terms	Maximum length of repayment term
Interest Rate	Level of interest charged
Financing Source	Source of capital used to fund loans
Loan Obligation	Identifies if the loan is with a customer or is assigned to the utility meter.
Payment Allocation Rules	For On-Bill Financing, the rules used to distribute allocation across receivables when a customer pays only a portion of their current balance due. This is not applicable for Off-Bill Financing.
Disconnect Policy	Indicates if a customer can be disconnected for past due loan installments.
M & V	Program Measurement and Validation requirements
Participation Levels	Program participation statistics including total number of loans and dollars financed, 2007 statistics, percentage of customer class that have received loans, etc.
Internal Program Evaluation	Utility perspective of program's success
Default Rate	Number of loans in default to date
Comments	Additional information captured about program

Research Summary

Programs presented here range from those that have been in place for ten or more years to smaller more recent pilot programs. Some programs are statewide, while others are utility-specific. Some utility programs stem from state initiatives and legislation, while others have been initiated by utilities. The energy efficiency measures eligible for financing and associated financing terms vary greatly by program.

The following observations and trends are worth highlighting:

- From the researched programs, Off-Bill Financing has the largest number of residential loans issued per year;
- While meter obligation On-Bill Financing programs are relatively new, the participation levels for Off-Bill Financing programs with a customer loan obligation have been higher;
- All programs allowed for early re-payment without a penalty or fee;
- Kaua`i Island Utility Cooperative (KIUC) has both an On-Bill Financing option and an Off-Bill Financing option. No customers have elected the On-Bill Financing option while 100 customers in 2008 have chosen Off-Bill Financing. The contact at KIUC recommends conducting customer focus groups prior to initiating program design to assess interest in On-Bill Financing. KIUC's experience indicates that consumers prefer rebates and Off-Bill Financing;
- Several utilities provide energy efficiency loans but they bill loan installments through a separate invoice from their customer's utility invoice. Hawaiian Electric Company includes the loan invoice within the same envelope as the customer's utility bill. Maui Electric Company, Alliant Energy, and Sacramento Municipal Utility District (SMUD) mail a loan invoice separate from the bill;
- The program with the largest number of On-Bill Financing loans per year for residential customers is Manitoba Hydro with approximately 8,100 loans in 2007;
- The program with the highest number of On-Bill Financing loans per year for non-residential customers is National Grid's Small/Mid-Sized Business program with approximately 1,600 loans per year;
- The state-wide Keystone Home Energy Loan Program has the largest number of Off-Bill Financing loans per year for residential customers with approximately 1,300 loans per year;
- NYSERDA's Energy Smart Loan program has the largest number of Off-Bill Financing loans per year for non-residential customers with approximately 100 to 200 loans per year; and
- Three of the programs with the highest number of loans per year include monthly interest on the loan.

Programs within the United States are listed first alphabetically by state and then utility with Canadian programs following.

On-Bill Programs

Utility	State	Customer Class	On / Off Bill	EE Program	Start Date	Eligibility Criteria	Amount Financed	Financing Term	Interest Rate	Financing Source	Loan Obligation (Customer or Meter)	Payment Allocation Rules	Disconnect Policy	M&V	Participation Levels	Internal Program Evaluation	Default Rate	Comments
Alabama Power (1.4M customers)	AL	Residential	On-Bill	Dealership Incentive Program (Water Heaters, Heat pumps, Caulking/Weather-stripping, Duct/Air sealing, Building Insulation, Windows, Doors)	Sometime between 15 - 20 years ago (1988 - 1993)	Deed to property; No bad/returned checks or disconnections in prior 12 months; Good FICO score; Equifax approval based on special utility matrix	$1,500 - $25,000 Amounts above $25,000 require Treasury approval.	Payable up to 7 years.	Varies based on results of eligibility criteria: 9.9%, 13.9%, 16.9%	Utility-funded by shareholders, not ratepayers	Customer	Utility gets paid first	Do not disconnect for loan non-payment, no reports to credit bureau, utility "eats" the loss	Performed by state certified and licensed dealers	Avg. ~183 loans/yr ~2,750 loans over life of program; 25% of installed heating pumps are financed. There have been 11,000 heating pump installations.	There are conversion goals, not financing goals. Financing has increased installation of heat pumps but has not done much for weatherization	3%	Mandatory 13.5% annual return on investment to utility (ROI based on all loans); 10 utilities and cooperatives in Alabama offer residential financing for heat pump programs
Dixie Electric Cooperative (18,000 members)	AL	Residential	On-Bill	Energy Resources Conservation (ERC) loan program;	15+ years ago	Heat pumps, Custom/ Others pending approval Improvements, upgrades, gas to electric conversions or installation of a heat pump system	Maximum loan is $5,000	Payable up to 5 years.	5%		Customer							Information based on limited material found on the company's website
First Electric Cooperative (83,000 members)	AR	Residential, single family, owner occupied	On-Bill	Home Improvements Loan Program	Unsure of start date, 15+ years ago; This program is the latest in a series of energy efficiency upgrade programs.	Credit check required, but lenient as long as the customer has not been subject to disconnection (included in the cut list) for the past 12 months	No minimum.	Up to 10 years. Equipment liens, 2nd mortgage on non-removable equipment	Current rate is 6.75%	Utility Money and National Rural Electric Cooperative Association	Customer	Utility gets paid first	Do not disconnect for loan non-payment		Currently, 500 active Loans out of 83,000 residential customer (0.6%)		No defaults	Customer must install heat pumps and then other measures.
San Diego Gas & Electric (3.4M consumers)	CA	Non-residential [Commercial/industrial, taxpayer-funded customers (i.e., gov't agencies) and owners of residential multi-family units who do not reside on the premises may be approved for measures to common areas, NOT tenant units	On-Bill	*Small Business Super Saver (rebate), *Express Efficiency (rebate), *Standard Performance Contract (incentive), Energy Savings Bid (incentive), *Multi-Family Rebate Program (for owners not living at the premises) and select Utility Third Party Programs (programs awarded via a competitive bid)	First loan application processed in 2007, however program start-up implemented in 2006. Preparation took approx. 1 1/2 years	Participant in a SDGE EE program; Active SDGE account for 24 months for the same business (businesses that relocate must have 12 months of usage at the new location); Account in good standing, with no deposit on record or disconnect notices in past 12 months	Commercial: $5,000 - $50,000/meter, Taxpayer-funded: $5,000 - $100,000/meter; No more than 100% of total project costs less rebates/incentives received. (Rebate/incentive reduced by 10% if loan repaid on the bill.)	Simple Payback: Commercial - 5 years maximum, Tax-payer funded - 10 years maximum; [Simple payback formula: loan amount ÷ estimated annual savings = simple payback period. No penalty for prepayment	0%	Currently utility shareholders. 2009-2011 filing requests to charge ratepayers. (Administered by SDGE under the auspices of California Public Utilities Commission). Financing is first-come- first served until funds are no longer available. *NOTE: Some qualifying EE programs are 2 year programs expiring 12/31/08.	Customer; repayment due within 30 days of account being closed or customer default.	Energy payments first for partial payment in month 1. Partial payments submitted in month 2 go to the oldest outstanding charges, including loan amount; No LPCs applicable to late payments	Yes - non-payment treated as default under utility account; adverse credit reporting; customary collection procedures including legal action	Utility energy assessment & pre-inspection prior to work, equipment must qualify for rebate; utility post-completion inspection	Avg. ~35 loans/yr w/avg loan amt. of ~$21,500 As of 5/08 Financed $1.5M for 60-70 projects in less than 2 years.	Energy savings are not assigned to on-bill payment mechanism.	No defaults to date.	2006 - early 2007 was planning stage, loan approval/disbursement began in mid-2007; Utility does not warrant contractor work; OBF does not have separate incremental kW or kWh energy efficiency performance targets.

On-Bill Programs

Utility	State	Customer Class	On / Off Bill	EE Program	Start Date	Eligibility Criteria	Amount Financed	Financing Term	Interest Rate	Financing Source	Loan Obligation (Customer or Meter)	Payment Allocation Rules	Disconnect Policy	M&V	Participation Levels	Internal Program Evaluation	Default Rate	Comments
United Illuminating (320,000 customers)	CT	C&I customers, including municipalities	On-Bill	Small Business Energy Advantage	2000	Up to 150 kW of average peak demand. Customer must qualify with good credit history (in business at least 1 year; there can be up to one instance of 60 day arrears however, NOT in the most recent 6 months.)	Set at level that normally provides positive annual cash flow; Customer finances project costs minus an incentive between 25-50% of project cost; up to a $22,000 incentive; up to $78,000 financed;	36 months (simple payback); payback must be 48 months or less before incentive is applied; Have extended for payback to 48 months for churches	0%	Connecticut Energy Conservation Fund pays incentives (earns their weighted cost of capital on the fund), utility finances balance with right to recover defaults	Customer; however loan can be transferred to subsequent owner with consent of all parties.	Priority given to OBF installments and then applied to distribution and supply charges.	Do not explicitly allow shut-off for non-payment of OBF installments; however, due to priority of payments, payment of loan amount only or failure to pay loan amount will lead to disconnect	Utility post installation inspection	As of 6/08 2450 projects since 2000. Average about 300 programs per year. Financed $21M in loans, $6.9M in incentives, 670M lifetime kWh saved 2006 annual: 310 projects, 93% qualified for financing, $2.2M in loans, $1M in incentives, 5.8M kWh saved		2 defaults at cost of $13,000	CT DPUC was pushing for residential program; utilities advised of compliance requirements with state and federal credit-related laws; DPUC dropped suggestion.[1] Initial no-obligation energy efficiency audit performed. Installations done by approved contractors.
Hawaiian Electric Company, Maui Electric Company; Hawaii Electric Light Company (the "HECO Companies" - 1.2M customers)	HI	Residential (Marketed primarily to renters and landlords)	On-Bill - Due to some system limitations issued as a separate bill and included within same envelope as customer's electric bill (Solar Water Heater loan)	Solar Water Heating Pilot Program "Solar Savers" program	June 29, 2007, 3 Year Pilot Program	Estimated life cycle savings must exceed cost of system (not necessarily on a month to month basis); Customer must be current 6 months on electric bill, recently relaxed from 12 months due to customer payment performance weakening. Execution of SolarSaver Customer Agreement	Rebate applied to total cost	Per tariff, monthly fee equal to 80% of monthly energy bill savings, as estimated for a family of four (regardless of actual family size), reset quarterly for new installations; Term long enough to recover cost or accelerated at customer request, but typically 12 years; No charge if equipment fails through no fault of customer until equipment is repaired or replaced.	0%	Ratepayer Fund funded by mandatory SolarSaver surcharge on residential customers included within the Integrated Resource Planning Charge, covers bad debt; Surcharge billing rate updated every 6 months	Meter, program participation agreement to be recorded against property; property owner responsible to inform tenant of remaining obligation under program	Electricity use portion of bill first	Yes		Hawaii Electric Company: Pilot program limited to 300 participants over 3 year program Year 1 (year ended 6/30/08) - 90 participants - based on an estimate of 100. Year 2 - already fully subscribed Maui Electric Company: Pilot program limited to 150 participants over 3 year program Year 1 - 0 participants Year 2 - fully subscribed Hawaii Electric Light Company: To date 87 participants	Year 1 Program evaluation due to be filed with PUC.		Pilot program (3-yr) based on statutory authorization[2] including recovery of all reasonable start-up (Including billing system adjustments) and implementation costs (including costs not recovered by bill payments) as part of revenue requirement (but only to the extent such costs recoverable under orders relating to IRP/DSM); Must comply with applicable provisions of Fair Credit Reporting Act and other applicable laws and requirements; Interveners insisted that third-party financing be obtained, utility to investigate. No guarantee of lower bills;
Kaua`i Island Utility Cooperative (30,000 members)	HI	Residential	On-Bill	Solar water heating equipment only	2007		Cost of Solar System - no rebate	Pro rata share of incremental costs factored into total cost of investment to determine payment schedule	0%	Will fund internally and recover from each program participant when trigger dollar level is achieved.	Meter (new customer app requires applicant to consent to charges); program participation agreement to be recorded against property		Yes		No participants.			3-yr pilot program under Act 240. KIUC to retain ownership of equipment but may dedicate to customer on final payment, claims it is not lender and Fair Credit Reporting Act not applicable
Maui Electric Company A HECO company.	HI	Residential (marketed primarily to renters and landlords)	On-Bill; Due to some system limitations issued as a separate bill for Loan Program	Maui Solar Roofs Initiative	Sep-02	Review of 12 month utility credit history	65% of cost is eligible for financing; customer pays 35% of cost directly to contractor	Up to 8 Yrs; Avg Loan $3700	0%	Funded from county-wide property tax assessment; began with $250,000 funded - the revolving fund is now approx $750,000	Customer; If residence is sold, customer must repay outstanding loan balance	Electricity use portion of bill first	Yes		Approximately 350 homes		Very low	Customer receives 35% state tax credit

On-Bill Programs

Utility	State	Customer Class	On / Off Bill	EE Program	Start Date	Eligibility Criteria	Amount Financed	Financing Term	Interest Rate	Financing Source	Loan Obligation (Customer or Meter)	Payment Allocation Rules	Disconnect Policy	M&V	Participation Levels	Internal Program Evaluation	Default Rate	Comments
Midwest Energy (48K electric customers & 42K gas customers)	KS	Residential and non-residential, existing and new structures (directed primarily at low income and rental markets)	On-Bill	How$mart[SM]	8/1/2007 (Pilot in 4 counties) 9/5/2008 (Approved for entire territory)	Residential customers current on utility payments; Commercial; Utility can refuse application if structure has expected life shorter than payback period.	Customer or owner can buy down amount to be financed so it results in a positive cash-flow; Financing limits based on savings; repayment amount not to exceed 90% of projected savings but charge will include annual interest rate not to exceed Company's most recently approved rate of return; new structure, only incremental cost of high efficiency equipment.	Duration can not exceed 75% of estimated measure life or 15 years, whichever is less; Residential - 15 years; Commercial - 10 years; No early payment penalty; Customer can not double up on payments.	4% residential (15 yrs) 7.25% commercial (10 yrs)	Statutory authorization of program cost recovery in rates.[3] A general revenue fund and a state housing fund provide capital	Meter - requires written disclosure. If written disclosure is not given, the remaining obligation is to be repaid by the former owner within thirty (30) days of the sale of the property. A Uniform Commercial Code (UCC) form with the county's Register of Deeds for all How$martSM obligations. A UCC will provide information to potential buyers, brokers, or real estate agents that obligations exist at the property.	Treated as utility service charge but KCC order[4] assumes partial payments applied first to commodity and delivery.	Yes	Selective inspection of completed measures, M&V procedures determined in generic docket	8/07-7/31/08 **I. 278 Requests/Inquiries** 1. 234 audits completed. 2. 16 declined program without an audit. 3. 28 audits pending **II. 234 Audits Completed** 1. 47 How$mart Projects completed - $200,101.60 invested in efficiency improvements. The 47 include 39 homeowners, 6 rental properties, and 2 commercial businesses. 2. 89 plans completed and waiting for customer decision or contractor*. 3. 98 plans rejected by customers** **III. 47 Projects Completed** 1. ~114,250 kWh and 8,632 Therms per year saved. 2. Avg mo. energy savings is $46.69/cust, with an avg mo. How$mart charge of $38.00 or net mo. savings of $8.69/cust. How$mart requires by tariff a savings of a least 110% of the charge. Customers are saving on avg about 123%. 3. On average, landlords are buying down project costs by 49.4% in order to qualify			Utility personnel will screen without charge; $200 fee to building owner or landlord for comprehensive audit waived for participants in program or less than $1,000 in improvements to be paid for by utility; on-bill amount to include up to 5% of cost to offset program costs. Contractors are still overwhelmed with approximately a 6 month backlog
National Grid Companies (1.7M customers)	MA, NH, RI	Small/Mid-Sized Business	On-Bill	Small/Mid-Sized Business Program Promote the installation of energy efficient lighting, refrigeration, and custom measures using direct-install turnkey program design.	1989	200 kW or less; No creditworthiness checks done	30% of total project cost. No minimum or maximum.	Up to 24 months. Customer may choose either lump sum, 12 or 24 months.	0%	SBC. Unpaid charges are not repaid into the SBC fund	Customer	Late Payment Charges applicable to late payments, remaining balance goes on final bill	Do not disconnect for loan non-payment	Program QC controls: - customer sign off on installation (100% verified by NG prior to installer being paid) - post installation inspection by independent inspectors (25% random verified by NG, and 100% verified over $15,000)	1500-1700 projects/year since 1989; 40% of projects (representing 60% of the dollars) use OBF for 12-24 month installments. Remainder pay off in single installment on bill with 15% discount	Evaluation Group evaluates and files reports on annual basis.	approximatel y 1%	

On-Bill Programs

Utility	State	Customer Class	On / Off Bill	EE Program	Start Date	Eligibility Criteria	Amount Financed	Financing Term	Interest Rate	Financing Source	Loan Obligation (Customer or Meter)	Payment Allocation Rules	Disconnect Policy	M&V	Participation Levels	Internal Program Evaluation	Default Rate	Comments
National Grid Companies (1.7M customers)	MA, NH, RI	Municipal customers (OBF Pilot)	On-Bill	Energy Initiative Promote the installation of energy efficient lighting, HVAC, VSD and custom measures	Energy Initiative - 1989 On Bill Financing PILOT: 2007	To qualify for OBF, customer must be municipal customer; No creditworthiness checks done	Measure cost less incentive amount	Up to 24 months. Customer may choose either 12 or 24 months.	0%	SBC. Unpaid charges are not repaid into the SBC fund	Customer	Late Payment Charges applicable to late payments, remaining balance goes on final bill	Do not disconnect for loan non-payment	Program QC controls: - pre-inspection by NG or representative - customer sign off on installation (100% verified by NG prior to installer being paid) - post installation inspection by independent inspectors (10% random verified by NG for lighting under $10K, and 100% all else) - commissioning if large projects or controls	Pilot Program through 2008. Less than 50 per year. Filed as part of 2009 programs.	Evaluation Group evaluates and files reports on annual basis.	0%	
Empire District Gas Company (215,000 customers)	MA, NH, RI	Residential	On-Bill	Energy Smart Solutions (gas heating equipment, water heaters, ranges, dryers, etc., Installation, and Conversion)		1-2-3-4 family dwellings on year-round basis; Credit qualifications;	Equipment, Installation, Gas Conversion, extended warranties; Amounts in excess of $10,000 at discretion of Company	6 months to 5 years	2% above the annual prime rate, as quoted in The Wall Street Journal, on the first Dec. business day.									Information based on limited material found on the company's website
Progress Energy Carolinas Inc (f.k.a., Carolina Power & Light Company) (3.1M customers)	NC, SC	Residential	On-Bill - Cancelled	Heat pumps, HVACs, storm windows and doors, insulation	This program is no longer operational (run from 1980 to 2001). The company now runs an off-bill financing program	Credit check required	No minimum. Loans over $1,500 required second mortgage	Life dependent on loan amount with longer paybacks for larger loans	Ranged from 6%-9% over program	Utility-funded by shareholders, not ratepayers	Customer	N/A	Did not disconnect for loan non-payment		Average 3,100 per year (approximately 0.25%)	Very successful. The company made approximately $150-200 million in loans over the life of the programs	1%	The company's shareholders were responsible for defaults. Once the loan exposure became too great, the company ended this voluntary program. The company now offers off-bill third party financing.
New Hampshire Electric Cooperative (80,000 members)	NH	Non-Residential (Residential was cancelled)	On-Bill	SmartSTART	Pilot bagan 6/2002	To qualify, project cost must not exceed ¾ of measure's estimated annual savings over ¾ of its estimated useful life.	Rebate available to offset some cost	Term based on savings. Customer can choose to accelerate payments, term extended to cover additional utility costs for out of warranty repairs and missed payments; NHEC accepts only 5-yr maximum payback projects		Guarantee fund (borrowed by utility)	Meter if the measure is permanently installed, customer if the measure is portable		Yes	Utility post installation verification	Calendar year 2006: 3 projects, 6.5 million lifetime kWh saved Calendar year 2005: None			Landlord agreement required for tenant to obtain loan; Loan forgiven if equipment fails and cannot be repaired; Current program name permitted by 2004 NHPUC order.

On-Bill Programs

Utility	State	Customer Class	On / Off Bill	EE Program	Start Date	Eligibility Criteria	Amount Financed	Financing Term	Interest Rate	Financing Source	Loan Obligation (Customer or Meter)	Payment Allocation Rules	Disconnect Policy	M&V	Participation Levels	Internal Program Evaluation	Default Rate	Comments
Public Service of New Hampshire (490,000 customers)	NH	Municipal customers	On-Bill	Municipal Smart Start Program	Pilot bagan 1/2002 Available for installations through December 31, 2008	To qualify, project cost must not exceed ¾ of measure's estimated annual savings over ¾ of its estimated useful life.	At least $1,000; savings at least equal to cost but no guarantee of savings; rebate available to offset some cost	Term based on savings. Customer can choose to accelerate payments, term extended to cover additional utility costs for out of warranty repairs and missed payments;		Revolving loan fund using SBC revenues and customer repayments	Meter; In the event the Customer does not remain a full requirements delivery service Customer, any remaining charges under this rate shall immediately become due and payable;		Yes	Utility post installation verification	Calendar year 2006: 37 projects (treated savings under other projects) Calendar year 2005: 25 projects, 40.2 million lifetime kWh saved			Landlord agreement required for tenant to obtain loan; Loan forgiven if equipment fails and cannot be repaired; Current program name permitted by 2004 NHPUC order.
New York Power Authority	NY	Governmental	On-Bill for NYPA-billed customers, Off-Bill otherwise	NYPA Governmental Customers and Statewide governmental/public entities	1990		Full cost of Energy Efficiency and Clean Energy Project	On Average- ten year amortization	Tax-exempt or taxable Commercial Paper rates	Proceeds of Commercial Paper issuances by NYPA	Customer		Do not disconnect for loan non-payment	where applicable	More than $1 billion financed to date		No Defaults	Loan installments are on the customer's electric bill if they are NYPA's customer. If they are not NYPA's customer a separate invoice is sent just for the energy efficiency work.
Piedmont Natural Gas (Nashville Gas) (62,000 customers)	TN	Residential	On-Bill	New Gas Equipment	20+ yrs	Equipment purchased through their trade allies. Credit approval required (good paying customer).	Financing based on approved credit; 0% down with approved credit;	Up to 5 years	A) Prime Rate B) Prime Rate+2%	Piedmont Natural Gas	Customer; UCC lien so property cannot be sold without the lien being satisfied	Utility charges first.	Do not disconnect for loan non-payment (can not shut-off for non-utility charges).	Use licensed and insured heating contractors. Negates need for any follow-up.	Not available	Program goal is to retain and gain gas customers.	Not available	A - All natural gas equipment & installation when gas water heater on same contract or gas water heater is currently in home. Propane conversions when natural gas water heater is on same contract. B - Same as A, when natural gas water heater is not in home or on same contract. Also, allow equipment to be leased and then purchased at a later date.
		Commercial	On-Bill	New Gas Equipment	20+ yrs	Equipment purchased through their trade allies. Credit approval required (good paying customer).	With approved credit 90% of installed price. No down payment required on propane conversions.	Up to 3 years	A) Prime Rate B) Prime Rate+2%	Piedmont Natural Gas	Customer; UCC lien so property cannot be sold without the lien being satisfied	Utility charges first.	Do not disconnect for loan non-payment (can not shut-off for non-utility charges).	Use licensed and insured heating contractors. Negates need for any follow-up.	Not available	Program goal is to retain and gain gas customers.	Not available	A) All natural gas equipment with year-round usage. All propane equipment conversions when year-round equipment included in conversion contract B) Same as A without year round load.
Alliant Energy (Wisconsin Power & Light) (1M electric customers & 400K gas customers)	WI	Non-residential (C&I, farms, and government)	"On-Bill": But billed separately from utility charges. - Customer sets up separate account - Separate bill sent every month through billing system.	Shared Savings	1987	Any technology that saves energy may qualify for Shared Savings; Creditworthiness check on loan applicants;	The amount financed is up to 5 times the annual estimated savings of the energy efficiency project.	Typically 5 years	Buy down to 2% to 3%	Low cost financing program where utility buys down interest rate to 2 to 3% using SBC funds; Use shareholder dollars to fund the loans.; Defaults recovered through SBC funds;	Customer Obligation with - UCC lien so property cannot be sold without the lien being satisfied - Customer signs contract and balance is due on sale or can be assigned to new owner.	No pro rata. Customer sent separate bills and must submit separate payment.	No disconnect	Energy savings are independently measured and verified; - No certification of savings - Have engineers that evaluate the savings from the measure - End of year: third party contractor verifies savings	1997-2206: 3114 projects implemented, many repeat participants - Approximately 200/year @ $150,000 /loan - Over 5 years: $40,000,000 in contracts - Smallest loan is $5000/Largest is millions	20% of WP&L 3.5% annual growth in C & I load is deferred; Invested $353M in Wisconsin's economy 2005 saved approx. 50M kWh	Less than .5%	Program objective to meet or exceed energy savings goals set by the Wisconsin Public Service Commission Alliant Energy - Interstate Power & Light (Performance Edge) - Utility not allowed to offer rebates. State-wide FOCUS ON ENERGY programs. Customers can NOT double dip on FOCUS ON ENERGY and SHARED SAVINGS Program

On-Bill Programs

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Madison Gas & Electric (136K electric customers & 140K gas)	WI	Businesses and Governmental entities	On-Bill	Shared Savings	15 Years	Energy Efficiency Measures: Utility payment history plus evaluation of company balance sheet and income statement	Projects between $5,000-$50,000	Up to 10 Years; No penalties for early repayment	Variable based on review of customer risk	Third party lender's loan to utility	Customer	Utility charges first.	Do not disconnect for loan non-payment (can not shut-off for non-utility charges).	No M&V by MG&E, too many variables weather/contractor etc. MG&E determines best estimate of savings. Personal connection with customer	200 customers over 15 years, diverse mix of customers. Participation has slowed recently.		Estimated at less than 1%.	Utility works directly with customer. No customer/bank interaction.
Manitoba Hydro (522K electric customers & 261K gas customers)	Manitoba, Canada	Residential	On-Bill	Power Smart Residential Loan Program	March 2001	Credit Worthiness - Bill payment history and/or credit review	$7,500 max unsecured	Up to 5 years	6.50%	Utilities general revenue fund	Customer		Disconnect after account balance in arrears for 90 days		Since 2001, $167M for 41,000 loans 94% of applications approved 2007 - 1.9% res. Households (8,100/420,000 homes) avg loan $4,800 59% - Windows & doors 35% - Heating systems 6% - insulation, ventilation, and air		0.20%	Rebates offered in conjunction with loan for insulation, ventilation, and air sealing.

[1] Docket 06-10-02, Conservation and Load Management Plan 2007 and 2008 submitted jointly by The Connecticut Light and Power Company and The United Illuminating Company, Final Submission (Oct. 2, 2006), Exhibit, pp. 2-3; DPUC Review of CL&P and UI Conservation and Load Management Plan for Year 2007 and 2008, Decision (May 23, 2007), pp. 15-16.
[2] Hawaii Act 240 (June 2006)
[3] Kansas House Bill 2278, effective 7/1/07, authorizes electric and gas utilities to "enter into agreements with customers and landlords of customers for the financing of the purchase price and installation costs of energy conservation measures by such utilities." Utilities are authorized to "recover the cost of such financing and related program costs through approved tariffs and paid for by the customers benefiting from the installation of the energy conservation measures." This authority amplifies Kansas Corporation authority to approve energy conservation programs. K.S.A. 66-117.
[4] Docket Nos. 07-MDWG-784-TAR and 07-MDWE-788-TAR, In the Matter of Midwest Energy Seeking Commission Approval to Implement a Pay-As-You-Save Program For Its Natural Gas Service and Electric Service, Order Upon Reconsideration (Dec. 20, 2007)

Off-Bill Programs

Utility	Location	Customer Class	On / Off Bill	EE Program	Start Date	Eligibility Criteria	Amount Financed	Financing Term	Interest charges	Financing Source	Loan Obligation (Customer or Meter)	Payment Allocation Rules	Disc. for default	M&V	Participation Levels	Success Level	Default Levels	Comments
Sacramento Municipal Utility District (589,599 customers)	CA	Residential	Off	Residential program - Equipment Efficiency Loans	1977 Originally On-Bill, Off Bill for at least 20 years-loan bill sent separately	Loan application provided by contractor, Credit rating reports used to determine customer creditworthiness	No maximum; Average Loan $9000 Total Loan Amt Outstanding $68 Million, 10,200 customers	Insulation - 36 mos Cool Roof-Flat 60 mos Cool Rood-Steep 120 mos Central A/C, Heat Pump, Solar Water Heater 10 yrs, PV 20 Yrs All prgms 10 yr and longer are secured loans.	Effective Nov 2008 - 8.5%, Prior rate of 7.5% in effect from Sept 2003 thru Oct 2008	All SMUD ratepayers, utility is allowed to charge all costs of program to allow SMUD to break even.	Customer	Not applicable	Not applicable		2006 - 3800 2007 - 3200 2008 - 2600 Approx .6% of res households Total loans 137,074 since 1977; Approx 25% of customer base		Default rate of 1.49%, Loans are secured so default rate very low.	Switched to off-bill when implemented new customer system-has been in effect for over 20 yrs. SMUD indicates separate bill is administratively more efficient for payment and collection. Loan application fee of $100. Participating contractors provide 2 year contractor warranty, SMUD is not responsible for repairs or service.
Kaua`i Island Utility Cooperative (30,000 members)	HI	Residential	Off	Solar HW & Misc	Mar-06	Third Party Bank Screening; If customer application fails the Kauai's Co-Op Credit Union, application is immediately forwarded to County Housing Agency for it's review. See notes in Other.	Average of $8,000 per customer	Up to 5 years	0% Utility pays interest up front	Funded in rates by all customers charge NOT separately identified.	Customer	Not applicable	Not applicable		Total of 175 Customers: 2006 - 25 Customers 2007 - 50 Customers 2008 - 100 Customers	Total Base of 25,000 Residential Customers	1 customer since start of program.	Bank performs screening, billing and collections. Customer pays principle for up to 5 years. Two lending institutions: Kauai's Co-op Credit Union and County of Kaua`i Housing Agency. City Housing Agency has federal funds made available through Community Development Block Grant - Small Cities program. Also, see comments for on-bill program.
National Grid Companies (1.2M customers in MA)	MA	Residential - 1 to 4 family homes	Off	Insulation, air sealing, heating systems (all fuel), windows, domestic hot water, solar domestic hot water, thermostats, other renewable technologies	2006	Bank credit requirements	Up to $10,000	Up to 7 years	0	Loans are provided by private ender. Interest rate is bought down to 0% by SBC funds.	Customer	Not applicable	Not applicable	Post installation inspection	1,272 since 2006 Average loan size is $7500			Rebates available for energy efficient equipment in addition to buy down of interest.
Progress Energy Carolinas Inc (f.k.a., Carolina Power & Light Company) (3.1M customers)	NC, SC	Residential	Off	HVAC, storm windows and doors, insulation, zoning systems, electric water heaters (30 to 82 gallons), programmable thermostats	2002 (From 1980 to 2001, the company ran an on-bill program	Credit check requirements; Eligibility based upon FICO score	Up to $20,000	Installment Financing Unsecured Terms up to 10-years; Energy Star® up to 12-years	Variable rates dependant on FICO credit score	Third party financing through Fannie Mae and administered by Volt VIEWtech, which specializes in providing energy efficiency programs to utility customers	Customer	Not applicable	Not applicable	Work must be completed by approved contractors	Very low annual participation rate Under 20 per year. Plan has a high interest rate set by Fannie Mae -no buy down			Company has been encouraging home equity loans over this program (due to high rates). The Company will launch a new program that will likely offer a choice of rebates or reduced rate financing. See also comments on former on-bill program.

Off-Bill Programs

Utility	Location	Customer Class	On / Off Bill	EE Program	Start Date	Eligibility Criteria	Amount Financed	Financing Term	Interest charges	Financing Source	Loan Obligation (Customer or Meter)	Payment Allocation Rules	Disc. for default	M&V	Participation Levels	Success Level	Default Levels	Comments
Nebraska Energy Office (Population 1.7M)	NE	Residential; Non-Residential	Off	State Loan Program; Energy Efficiency, Renewables	1990	Improvements to buildings at least 5 years old, audit requirement w/measures having 15 year payback for building improvements; 5 yrs appliances or electronics; 10 yrs all other items	Up to $35,000 singe family Up to $75,000 multi-family secured or unsecured depending on lenders requirements Non-Residential: $75,000 - $175,000;	Up to 15 yrs for building improvements, 5 yrs appliances or electronics, 10 yrs all other items	Average rate <5%. Interest rate is half lender's rate. The state puchases remaining half for up to $7,500 at 0% interest.	Third-party lender funds, and a State Energy Office Oil overcharge fund	Customer	Not applicable	Not applicable		As of December 2007, 24,113 individual loans had been made totaling $194.8 million 22,700 residential loans for $138M 2007 - 784 residential loans for $7.1M, avg. $9,000 per loan		<.01%	Over $85 million has been State Energy Office money. Work can not begin until lender notifies the customer of the Energy Office's commitment.
NYSERDA	NY	Residential (1-4 family homes)	Off	Energy Smart Loan	1999	Improvements to an existing 1-4 family home which pays the SBC; The borrower must be approved for financing through a lending institution that participates in the program. Improvements must be installed by a Building Performance Institute-certified contractor.	Up to $20,000; Up to $30,000 for ConEd customers; Secured or unsecured loans.	Interest Rate Reduction for up to 10 years; Or can receive 10% rebate;	Base interest rate determined by lender based on credit score. Rate charged to customer equals Base rate minus 4% or minus 6.5% in ConEd.	3rd party participating lenders. SBC funds used to buy down lender's interest rate.	Customer	Not applicable	Not applicable	by installation contractor	2461 loans (avg 273/year); $2.5M in subsidies paid leveraged $21M in Loan Activity			ConEd discount higher through March 2009 per Commission order
NYSERDA	NY	Multifamily (5 or more res. units)	Off	Energy Smart Loan	1999	Improvements to a facility which 1) pays the SBC; 2) pays the SBC or the Mo. Ad. Clause to ConEd or 3) pays the Mo. Rate Adj. to ConEd Gas. The borrower must be approved for financing through a lending institution or leasing company that participates in the program. Must receive a technical analysis from NYSERDA's Multifamily Performance Program (MPP) or a NYSERDA technical assistance program.	Up to $5,000 per unit up to $2.5M; up to another $2.5M for advanced metering. New construction up to $1M plus maximum $500K for Green Building Improvements (Ends 1/31/09).	Interest rate reduction for up to 10 years.	Base interest rate determined by lender based on credit score. Rate charged to customer equals base rate minus 4% or minus 6.5% in ConEd.	3rd party participating lenders. SBC funds used to buy down lender's interest rate.	Customer	Not applicable	Not applicable	by installation contractor	184 loans; $18.6 M in subsidies paid leveraged over $105M in loan activity		No defaults reported by lenders as required by NYSERDA participation agreement	ConEd discount higher through March 2009 per Commission order

Off-Bill Programs

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NYSERDA	NY	Commercial; industrial, institutional, governmental, agricultural, health-care and non-profit sectors	Off	Energy Smart Loan	1999	Improvements to a facility which 1) pays the SBC; 2) pays the SBC or the Mo. Ad. Clause to ConEd or 3) pays the Mo. Rate Adj. to ConEd Gas. The borrower must be approved for financing through a lending institution or leasing company that participates in the program.	Up to $1M; New construction up to $1M plus maximum $500K for Green Building Improvements (Ends 1/31/09).	Interest rate reduction for up to 10 years.	Base interest rate determined by lender based on credit score. Rate charged to customer equals Base rate minus 4% or minus 6.5% in ConEd.	3rd party participating lenders. SBC funds used to buy down lender's interest rate.	Customer	Not applicable	Not applicable	Post-installation verification by by installation contractors, or random sampling by independent consultants;	635 loans; $30.1M in subsidies paid leveraged over $184M in loan activity. Avg 100-120 loan per year.		No defaults reported by lenders as required by NYSERDA participation agreement	ConEd discount higher through March 2009 per Commission order. Program is over-subscribed with more applications than money to buy down loans.
Oklahoma Gas & Electric (660,000 customers)	OK	Residential	Off	HVAC(Heat Pumps); Electric Water Heaters ONLY with Heat Pump Installation	Approx 1992; In 2005 moved to Off Bill administered by OG&E's Employee Credit Union	Loan / Credit Application; Requires Mortgage Payment and Holder Info, and Employment Info	$1,500 - $25,000	Air Heat Pump and Zoned Heat Pump - 72 Mos. Ground Source Heat Pump - 84 Mos.	Tiered by Credit Score/ Unsecured/ Secured Rates: 680 and over/10.99/ 7.99; 610-679 /13.99/10.99; 609 and lower/13.99/ NA	Communication Federal Credit Union (CFCU)	Customer	Not Applicable	Not applicable	None - Both OG&E & CFCU have right to inspect installation	Approx 300 Loans; 78% Secured; 22% Unsecured; Avg Loan - $4,200			Loan Process Requires: Consumer Loan Dealer Agreement, Customer Loan Application, Heat Pump Installation Completion Certificate; Moved from OG&E to CFCU due to high customer defaults; CFCU established credit criteria for customer eligibilty.
Keystone Home Energy Loan Program (Population 12.4M)	PA	Residential (primary and secondary res.)	Off	High efficiency heating, air conditioning, insulation, windows, doors, siding, geothermal and solar PV systems as well as “whole house” improvements using *Home Performance with Energy Star*	2006 - Statewide	Good credit and the ability to repay are required, however all income levels are eligible.	Unsecured loans $1,000 - $10,000 Secured loans $10,000 - $35,000	Unsecured Loans up to 10 years Secured loans - terms available up to 20 years	Unsecured Loans are 8.99% Fixed Rate; Secured Home Equity Loans (1st, 2nd or 3rd lien) up to 120% of the home's value are Fixed Rate and range from 6.375% to 8.875%. Rate is determined by loan to value and term.	AFC First Financial Corp., a PA lender and principally supported by the PA Treasury Dept and the PA Housing Finance Agency	Customer	Not applicable	Not applicable	Work must be completed by approved contractors	Over 4,000 loans in 3 years	65 - 70 % approval rate of loan applications	less than 0.5%	
Hydro One (1.3M customers)	Ontarion, Canada	Residential; Non-Residential	Off	solar, geothermal, photovoltaic	2007 Application cut-off in Feb. 2009	Bank credit requirements	$2K to $50K	Up to ten yrs.	0%	Banks. Loans subsidized by provincial government	Customer	Not applicable	Not applicable					This is a pilot program will limited subsidy "buy-down" funds of $1.1M CDN). Loan payments are automatically withdrawn from customer's bank checking account.

Conclusion

The Working Group did not reach agreement on a single best method for overcoming financial barriers to investment in energy efficiency measures. As discussed in this Report, a number of alternatives for financing energy efficiency investments exist, including both On-Bill and Off-Bill Financing mechanisms. Time, effort, and cost needed to implement and administer these mechanisms vary. Actual costs have yet to be determined.

As expected in early meetings of the Working Group, we faced a number of extremely problematic and controversial issues. The Working Group worked arduously to identify and develop comprehensive conclusions but was unable to reach consensus on many of them. A discussion of these issues follows with differing views expressed for each.

A major disagreement existed over which model to recommend for consideration. Some in the group strongly favor one model over another. Issues and concerns center around the appropriate elements needed to overcome obstacles to energy efficiency investments and the costs and difficulty of implementing and administering a given model.

Likewise with respect to the split-benefits issue, some in the group are most concerned with which model will facilitate investment in rental units. There was disagreement in the group whether the split-benefits issue could be solved by any particular model, and if so which model was best able to do so. In addition, some in the group feel that a one-size-fits-all approach to this scenario may not be the best because of the differences in needs of the various customer segments and the differences in types of investments needed. For example, in upstate New York large energy investments related to heating and central air conditioning are affected by this issue; whereas in New York City these energy investments do not fall under the split-benefits scenario because central heating and air conditioning is billed under the building owner's meter.

There was also a great deal of concern with respect to which model could best serve low income customers and not-for-profits running group homes and shelters. Financing for these customers poses unique challenges, and while some feel that On-Bill Financing presents a solution, others believe that adoption of On-Bill Financing will not necessarily in and of itself resolve these challenges. As discussed in the Report, other types of assistance may better serve these customers.

Another issue was whether On-Bill Financing would attract private lenders. Here, some members believe that private lenders would be interested in On-Bill Financing, where others point out that a number of private lenders indicated that they would not be interested in participating in On-Bill Financing under any model. More research is needed to better gauge the interest and viability of lender participation. Likewise, the group differs in opinion as to whether creditworthiness checks and disconnection would affect lenders' willingness to participate and/or fund an On-Bill Financing model.

The Working Group was also unable to resolve whether a creditworthiness standard need be applied to On-Bill Financing. Some in the group believe that creditworthiness standards are not needed if total energy bills are lowered on an annual basis after the loan repayment charge is established on the account. Others believe that whether or not annual bills are lowered,

creditworthiness is important to ensure that customers will be able to successfully make payments on the loan.

Some believe creditworthiness is not necessary to safeguard against default if loan payments are subject to disconnection. Others believe that the lack of a creditworthiness standard will likely increase customer defaults that will be difficult to resolve, which can ultimately undermine the solvency of the On-Bill Financing mechanism. While some see the lack of a creditworthiness standard as providing a benefit to customers with poor credit, others believe that other types of assistance will better serve credit-troubled customers and reduce issues caused by default.

The Working Group also has different perspectives on applying disconnection. Some believe that the potential for disconnection will limit defaults and encourage maintenance of the energy efficiency measure. Others believe that disconnection could potentially limit participation and that it is not in itself a remedy for repayment default.

Some members of the group believe that Off-Bill Financing rather than On-Bill Financing provides the best alternative for advancing the financing of energy efficiency projects in New York State. Off-Bill Financing provides an already existing infrastructure for the extending and repayment of energy efficiency loans that customers can use for energy efficiency investments and programs using Off-Bill Financing have benefited many customers while also providing for reductions in energy use.

Another issue is whether basic principles should be applied uniformly across all utilities, with those utilities free to independently develop additional elements of their On-Bill Financing offering. This approach would be consistent with the EEPS proceeding[33] where utilities have proposed energy efficiency programs that are tailored to regional and demographic characteristics of their customer base. Some in the group feel that it is imperative that whatever is adopted should provide utilities with flexibility to design models that can address the specific needs of their service territories. Generally, in complying with the Commission's rules and regulations, utilities are allowed some latitude to develop procedures that best fit their customer base. For example, programs implemented across the state supporting the competitive marketplace are administered under basic principles, and then customized to best serve the individual utility's customers. Based on this, it's appropriate that implementation of a financing mechanism in New York State is handled in the same manner. That is, basic principles should be applied across the utilities and the utilities should be free to develop the individual elements of their On-Bill repayment offering. Since use of the On-Bill repayment mechanism is intended to support individual utility offerings, individual utilities need to be allowed to offer the mechanism in a way that best supports their overall programs.

Based on the issues discussed above and elsewhere in this Report, the Working Group was unable to reach a consensus on whether the Commission should adopt an On-Bill or Off-Bill Financing mechanism (in any of its various forms). Although some in the group advocate the adoption of On-Bill Financing, others feel that a successful outcome from the implementation of On-Bill Financing at this time is far less certain. They recommend that prior to adopting a statewide On-Bill Financing mechanism, the Commission should closely examine the merits and feasibility of

[33] Ordering clauses 10 and 11

On-Bill Financing and, as an alternative, Off-Bill Financing. As part of this, they recommend that the Commission explore the level of customer interest in the different financing models through focus groups.

Appendix A

Comparison of Purchase of On-Bill Financing Receivable to Purchase of Energy Service Company (ESCO) Receivable:

On-Bill Financing does not assume the utility would purchase the lender's receivables. The utility would remit to the lender or the SBC pool those repayment installments the utility received as part of customers' payment of utility bills.

Under the Purchase of Receivables (POR) model used by utilities to purchase ESCO receivables, the utility makes payment to the ESCO for the receivable at some date after the ESCO commodity charge amount is billed to the customer. Depending on the utility agreement with its ESCOs, the date of the utility payment can extend up to the customer's payment due date or beyond. Under some arrangements, the utility may have received payment for the supply charges from some or all of the customers prior to making payment to the ESCO. Receivables are purchased at a discount. The discount rate takes into account the risk associated with possible loss of the receivable amount and the cost of administering the program. The risk is based on the utility's experience with receivables of a similar type, that is, receivables based on utility charges.

Utility purchase of monthly loan installments would differ from utility purchase of ESCO receivables for monthly supply charges as follows:

- With respect to customers who have defaulted for multiple months, the utility's obligation to purchase the monthly receivable should end. A critical difference between the POR for monthly commodity purchases and the POR for a monthly installment loan payment is the outstanding loan obligation. In the first, the obligation for future purchases can simply terminate, yet in the second the outstanding obligation must still be addressed. Specific rules for dealing with default and the remaining principal need to be developed;

- Utilities do not have experience collecting repayment installments on loans. The discount rate applicable to the purchase of energy efficiency loan receivables is likely to be different than the discount rate for commodity receivables in a retail access POR program. More investigation is necessary to determine appropriate discounts rates, including factors specific to loans of this type;

- Utilities may experience cash flow issues in purchasing energy efficiency repayment installment receivables. If a utility borrows funds to make these purchases, the cost of such funds would be reflected in the discount rate, and not recovered through rates;

- ESCOs avoid collection costs by the utility's purchase of their receivables. Lenders are not necessarily in the same position to avoid collection costs through the purchase of their receivables. In the business of making and collecting on loans, they presumably have collection mechanisms and collections departments for which they would continue to incur costs while shifting some collections activities to the utility through the sale of their receivables. If the utility's discount rate is greater than the lender's avoided cost, lenders may not be interested in such an arrangement; and

- Business processes and corresponding EDI transaction sets would differ significantly from existing POR on monthly commodity purchases.

Appendix B

Links to related document sources:

Enabling Investments in Energy Efficiency; Merrian Fuller, Energy & Resources Group, UC Berkeley - http://ciee.ucop.edu/energyeff/documents/CA_ResiFinancing.pdf

Database of State Incentives for Renewables & Efficiency (DSIRE) - http://www.dsireusa.org/

Appendix C

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