

Models for Financing Clean Energy

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ConoverBrown LLC

- Consulting firm with a specialty in financing for clean energy & environmental strategy.
- Domestic and International government, non-profit and private clients.
- Published numerous papers on clean energy finance – including most recent one for SWEEP.
- Clean energy finance clients include states, lenders, national and regional associations and advocacy organizations. Working with these clients to set up new financing programs.

Presentation Objective

- To review several potential financing models as they are now occurring in several states.
- To provide an assessment of the types of the functions and types of markets that these models serve.
- The focus is on efficiency or small scale renewable energy -- not utility scale projects.

Outline

- A quick review of the major types of financing models available.
- A deeper look into financing models in:
 - Pennsylvania
 - Manitoba, Canada and Connecticut
 - Kansas
 - Berkeley, CA and Boulder, CO

The Goal of Many New Financing Programs is to:

- Move beyond the small scale pilot to large scale implementation of efficiency.
- Make the programs simple to use, with a low hassle factor.
- Remove the first-cost barrier to energy efficiency.
- Balance credit management with amortization period: longer loan terms = smaller monthly payments.
- Attract low cost capital to finance the program.

A Quick Review of Models

- 3rd Party Loans
 - Personal/business loans originated and serviced by a non-utility/non-gov't lender.
- On-Bill Loans
 - Personal/business loans originated and serviced by a utility.
- On-Bill Tariffs
 - Financing (not loans) originated by a utility, attached to meter.
- Property Tax/Local Gov't Fees
 - Loans or financing originated and serviced by local gov't. Attached to tax or gov't charge.

Considerations for Successful Financing Models

Considerations for Successful Financing

- Remember how much most people really care about their energy bill.
 - (Unless you're a big industrial company, not that much, really)

Considerations for Successful Financing

- Remember the financing alternatives
 - Home equity line of credit
 - Typically variable rate product.
 - Assumes that one has equity in the home.
 - More difficult to access now than 2+ years ago.
 - Consumer credit
 - Typical of a Home Depot/Loews credit card.
 - Often with a discounted teaser rate that increases dramatically.
 - SBA 7(a) loans:
 - May often be for larger amounts than typical business retrofits.
 - Personal guarantee required of the business owner.

Considerations for Successful Financing

- **Simplicity** Appropriate to the Need
 - Different market and submarkets need different levels of complexity. For example:
 - Mortgage loans require much greater due diligence than a small \$5,000 loan or credit card.
 - Small business needs for energy retrofits differ greatly from residential energy retrofits or emergency appliance replacements.

Considerations for Successful Financing

- Sources of Capital
 - Loans -- CRA/PRI investments
 - Federal funds – EECBG, SEP
 - Treasury or Pension funds
 - Bonding
 - Utility Public Benefit Funds
 - Private investor capital

Considerations for Successful Financing

- Consider the influence of loan term on monthly payments.
 - Shortest term loans are often for personal or business loans.
 - Mid-length term loans often occur with on-bill tariff programs.
 - Longest terms occur with efficiency/solar loans that are tied to mortgages.

Influence of Loan Term on Payments

Hypothetical Project

Annual Energy Savings:	42,301 kWh
Annual Energy Cost Savings:	\$6,927
Monthly Energy Cost Savings:	\$577

	<i>16 Month Term</i>	<i>24 month Term</i>	<i>36 Month Term</i>
Project Cost (net of \$7,800 rebate)	\$8,835	\$8,835	\$8,835
Monthly 0% Loan Payment	\$552	\$368	\$245
Net Savings (Between Energy Cost Savings and Monthly Principal & Interest)	<u>\$25</u>	<u>\$209</u>	<u>\$332</u>

Source: United Illuminating Company, 2008.

Considerations for Successful Financing

■ Interest rate

- Low interest rates are not necessary for all sectors.
 - Some of the highest participation programs (Manitoba Hydro, Keystone HELP) are not the lowest rate programs.
 - Interest rates and low-as-possible monthly payments are likely most important for residential or small business audit-based energy retrofits.

Considerations for Successful Financing

- Manage credit and default rates.

<i>Program</i>	<i>Default Rate</i>	<i>Criteria Used to Assess Credit Quality</i>
Keystone HELP	1.5%	Credit score of 640 minimum. Average score is 720
Manitoba Hydro	<1%	Current on utility bill for at least 12 months; credit score considered
Mid west Energy	0%	Current on utility bill for 12 months
United Illuminating	<1%	Current on utility bill. In business for at least six months.
Sempra	<1%	Account in good standing with non disconnect in previous 12 months; applicant must have been a utility customer for at least 24 months. Default leads to disconnection.

Companion Bill Example

- Pennsylvania Keystone HELP

Pennsylvania: 3rd Party Lender

- Among most successful ee financing: simple and effective with an innovative capital source.
- Keystone HELP offers unsecured personal loans at rates ranging from 4.99%-6.99%.
 - 4.99% for whole-house, audited measures.
 - 5.99% for advanced measures.
 - 6.99% for straight-up ENERGY STAR® measures
- Administered by a 3rd party lender that specializes in energy lending.
- Delivered through a certified contractor network & 1-800 number.

Pennsylvania: 3rd Party Lender

- Typical loans are from \$5,000-\$7,000 over a 4-5 year term.
- Capitalized with \$20 million + from State Treasurer.
- Distribution of ~3,500 installations:

Whole-House	10%
Windows/Insulation	30%
HVAC	60%

On-Bill Financing: Tariffs and Loans

- Utility acts as finance program administrator, collection agent. May act as Capital Provider.
- Designed for either renewable energy or energy efficiency.
- Collections are through the utility bill.
 - A single bill for all energy/efficiency program payments.

Two Variants on On Bill Finance: Tariff-based systems

- PUC allows the utility to put an “energy service charge” on the bill.
 - One specific program is known as PAYS (Pay As You Save)
- The charge is actually a rate approved by the PUC.
- Energy savings will always exceed P&I payments.
- Failure to pay could result in disconnection in extreme circumstances.
- Obligation to pay passes to the next owner -- it stays with the meter.

Two Variants on On Bill Finance: Loan based systems

- Utility sets up a loan that is usually offered at a subsidized rate and at a term of up to 5 years.
- Customer pays for the loan through the utility bill.
- Energy savings typically exceed P&I.
- Obligation typically stays with the customer.

Why Not On-Bill Financing?

- Needs the utility to truly want to participate.
- Utilities can have legitimate concerns
 - Billing and collections systems may not be set up for a loan program.
 - Concerns about bad debt
- These issues can be resolved.

Why Not On Bill Financing?

- In cases where lenders provide capital
 - Lenders may be reluctant to give up servicing and collection
 - Contact with borrower and ability to upsell
 - Risk – lender capital at risk and utility collection
 - What is the definition of default??
 - If a significant loss reserve is unavailable, then lender may be unwilling to participate.

Why Is On-Bill Financing Attractive?

- Simplicity
- Can provide a secure payment stream.
- Leads to lower cost of capital and lowers cost of borrowing.
- Can be combined with a rebate program.
- Utilities can have a vested interest in making this work, if they have strong incentives to make energy efficiency programs work.

Manitoba Hydro: On-Bill Loan

- Most successful loan program in the country with \$200 million through 50,000 loans. Residential sector only.
- 4.9% rate for all loans is subsidized by utility (non-subsidized rate would be 5.9%). Maximum loan size is \$7,500.
- Covers insulation, lighting HVAC, windows, doors + others.
- Program administered by utility.
- But delivered through a strong network of contractors.

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- Covers insulation, lighting HVAC, windows, doors + others.
- Program administered by utility.
- But delivered through a strong network of contractors.
- The program uses a streamlined application process.
 - Borrowers know within minutes if they are approved.

Connecticut: On-bill loan

- United Illuminating (UI) program is one of the most successful on bill loan programs in the small commercial sector. Has reached nearly 1/3 of eligible customer base.
- UI offers a 0% loan that is paired with rebates.
- UI-certified contractors conduct an audit and provide results to the utility.
Customer/borrowers apply for loans and are screened for credit worthiness.
- Default rates on loans have been less than 1%.

Connecticut: On-bill loan

- UI is now bumping up against its \$4.5 million program maximum and has asked the utility commission to increase loan maximum to \$7 million.
- Lighting upgrades and refrigeration make up the majority of the installations. Typical loans are \$8-12,000.
- The combination of rebates and on bill loan always give the customer a net positive cash flow from day one.
- Relationship with contractors has been absolutely critical to program success.

MidWest Energy: On-Bill Tariff

- One of the more successful on-bill tariff programs, designed for the residential sector, primarily.
- A PAYS-like program; many elements are modeled after the Pay As You Save Model.
- Customers agree to make a payment on their energy bill that covers efficiency measures identified in an energy audit.
- Customers pay 4% for this financing. This is a subsidized rate that would otherwise be 8% absent a buydown from the KHRC.

MidWest Energy: On-Bill Tariff

- This energy charge is not considered a loan.
- Any unamortized portion of the remaining balance is passed on to the next building occupant. This allows for an extended repayment period.
- Repayment term is capped a 180 months for residential and 120 months for the commercial sectors.
- Program requires that energy \$ savings must exceed financing charge, and financing charge be no larger than 90% of the energy savings.
 - In some cases, this means that the customer must make a financial contribution to bring down the size of the loan.
 - Typical projects have resulted in financing = to 82% of the energy savings.

MidWest Energy: On-Bill Tariff

- After 20 months of operation, the program had ~450 projects completed or in the queue. Substantial interest in the program existed. It may be taken state-wide as well.
- 1/2 of projects were thermal shell improvements in addition to HVAC measures. Typical projects cost is \$4,500.
- 14% of the projects are on rental locations. Almost all are in the residential sector.