



The Second U.S.-China Energy Efficiency Forum



Lawrence Berkeley National Laboratory

Energy Efficiency & On-Bill Financing For Small Businesses & Residential

**Presentation for:
The Second US-China Energy Efficiency Forum**

**Berkeley, California
05/06/2011**

5/12/2011

May 5-6, 2011 | Lawrence Berkeley Nation

Connecticut Light & Power
The Northeast Utilities System

CONNECTICUT
ENERGY EFFICIENCY FUND
www.CTEnergyInfo.com

UI
The United Illuminating Company

Connecticut's Energy Efficiency Programs are funded by a Charge on Customer energy bills. The Programs are designed to help customers manage their energy usage and cost.



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Connecticut Energy Efficiency Fund (CEEF)

Connecticut's Energy Efficiency Programs are funded by a Charge on Customer's electric bills.

The Programs are designed to help customers manage their energy usage and cost.



Small Business Objective

- **PROVIDE > COST-EFFECTIVE, turn-key CONSERVATION and LOAD MANAGEMENT SERVICES to SMALL C&I CUSTOMERS.**
- **What qualifies as a SMALL BUSINESS?**
- **A “Mom & Pop” store with a \$150 monthly electric bill up to a mid size manufacturing company with a \$20,000 monthly electric bill.**
- **Examples: Retail, convenience stores, houses of worship, professional offices, non-profits, gas stations, restaurants, common areas of apartment buildings, warehouses, sport facilities.**



UI Customer Base

- **325,000** Total Customers
 - **295,000** Residential Customers
 - **30,000** C&I Customers
(Commercial, Industrial, Municipal)
 - **16,800** are Small Businesses
 - Over **4,400** Small Businesses (25%) have participated



Small Business Statistics 2000 - 2010

- Over **4,412** Installed Projects
- **981m** Lifetime kWh Saved =

**> 531,000 TONS of AVOIDED
CARBON DIOXIDE!**

- **\$11.5m** Incentives Paid by CEEF
- **\$30.7m** in 0% Financed Loans
- Under \$297,000 (**<1%**) in loan defaults



Small Business Financial Solutions

- **NO OBLIGATION Energy Evaluation**
- **NO UP-FRONT COSTS**
- **INCENTIVES**
(up to 40% lighting & non-lighting measures)
- **0% ON-BILL FINANCING**
(to qualified customers)



Small Business Loans

- Minimum loan; \$250 - Maximum loan; \$100,000
- Maximum loan term 48 months
- Qualifications: Utility payment history; less than 60 day arrears in most recent 6 months
- 93% of customers qualify for financing
- Of those who qualify, 54% decide to participate
- Of the 7% who don't qualify for financing only 19% decide to participate



Small Business Loans (Continued)

- 80% of participants are “tenants”
- Multiple on-bill loan capability (for multi-phase projects)
- Loans are transferrable or assumable
- Defaults are recovered by public funds (low default rate must be maintained)
- Utility allowed to earn interest on funds they supply for financing
- Partial payments are applied to loan installment first



Small Business Sample Bill

New Charges & Credits

POD _____ (CYCLE 03)

Current Supplier: VIRIDIAN ENERGY, INC.

Generation Services Charge	80 kWh X \$.105000	\$	8.40
Generation Services Charge	4240 kWh X \$.099900	\$	423.58
Total Generation Services Charges		\$	431.98

Transmission per kwh on-peak	1520 kWh X \$.050792	\$	77.20
Distribution Basic Service		\$	66.82
Distribution per kw on-peak	14.4 kW X \$3.630000	\$	52.27
Distribution per kw off-peak	0.0 kW X \$3.630000	\$	0.00
Distribution per kwh on-peak	1520 kWh X \$.014199	\$	21.58
Distribution per kwh off-peak	2800 kWh X \$.014199	\$	39.76
Combined Public Benefits Charge	4320 kWh X \$.007512	\$	32.45
Competitive Transition Assessment per kwh	4320 kWh X \$.015222	\$	65.76
Non-Bypassable FMCC per kwh on-peak	1520 kWh X \$.013194	\$	20.05
Decoupling Adjustment	4320 kWh X \$.000291	\$	1.25
Pension Tracker and Earnings Sharing	4320 kWh X \$.000689-	\$	2.98 cr
Total Delivery Charges		\$	374.16

CT Sales Tax on Electricity (6.0%)		\$	39.37
Small Business Program		\$	516.19
Total New Charges		\$	1,361.70

Amount Now Due: \$ 1,361.70

Actual Account Balance: \$ 16,331.21

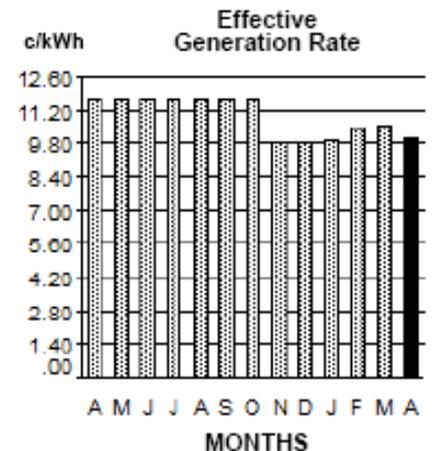
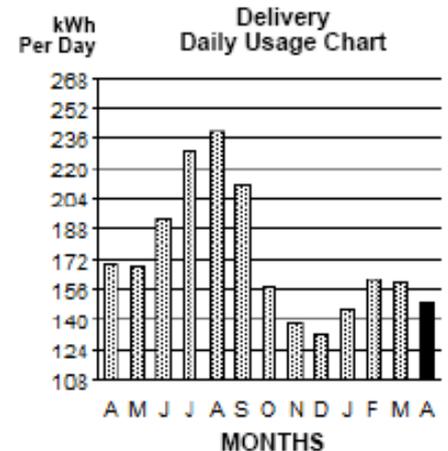
One or more components have changed pricing this month, pricing may not print for that component.

All charges are due as of your Statement Date. Any unpaid charges will be subject to interest as of your Statement Date, at the rate of 1.25% per month, if not paid on or before **May 6, 2011**.

Making your payment on the Due Date at an authorized payment agent may not post until the following business day. If you have a question, contact UI. As authorized by law, for residential accounts, we supply payment information to credit rating agencies. If your account is more than 90 days delinquent, a delinquency report could harm your credit rating.

MONTHLY MONEY-SAVER

Make sure lighting dimmer switches are turned off when not in use. Sometimes a light that appears to be off is still consuming electricity.





Before

- Obsolete lighting
- No lighting controls
- Obsolete refrigeration
- 24/7 Refrigeration
- Poorly maintained HVAC equipment

= \$3,000 monthly bill

After

- New lighting tech.
- Occupancy sensors
- New refrigeration technology
- Refrigeration controls /night shutoffs
- Properly maintained HVAC /Programmable Thermostats

= \$1,800 monthly bill



Side by Side Comparison

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Default Loan Term

Project Cost:

Material costs	\$9,204.20
Labor costs	\$6,571.03
Project Subtotal	\$15,775.23
Tax (CT 6%)	\$946.51
Total Cost	\$16,721.74
Approved UI Incentive	\$7,886.52
Net Total Cost	\$8,835.22
Monthly Payment (16)	\$552.20

-> *Annual Energy Savings* 42,301 kWh

Estimated: -> *Annual Dollar Savings* **\$6,927 = \$577.25/monthly**

(may include adjustments) ->

Pay Back 1.2 years

Cash Positive \$25.05



Loan Extension – 24 months

Project Cost:	Material costs	\$9,204.20
	Labor costs	\$6,571.03
	Project Subtotal	\$15,775.23
	Tax (CT 6%)	\$946.51
	Total Cost	\$16,721.74
	Approved UI Incentive	\$7,886.52
	Net Total Cost	\$8,835.22
	Monthly Payment (24)	\$368.13
	-> <i>Annual Energy Savings</i>	42,301 kWh
<i>Estimated:</i>	-> <i>Annual Dollar Savings</i>	\$6,927 = \$577.25/monthly
<i>(may include adjustments)</i>	-> <i>Pay Back</i>	1.2 years

Cash Positive \$209.12



UI Residential Financing

Objective of residential financing is to encourage a higher market penetration of energy-efficiency measures in the residential sector.

UI is currently offering an off bill financing option that will transition to on bill financing as of June 1, 2011



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Home Energy Solutions

- ❖ Who can participate?
 - Customers that heat their home with electric, natural gas, propane or oil
- ❖ What are customers eligible for?
 - Home Energy Assessment
 - Duct and Air Sealing
 - CFL replacements (up to 25)
 - Water measures
 - Enhanced rebates for qualifying measures as deemed eligible by the Home Energy Solutions Technician with measures that meet minimum efficiency levels
 - Clothes Washer or Refrigerator- \$50
 - Freezer or Dehumidifier - \$25
 - HVAC/Heat Pumps - \$250
 - Package Terminal Heat Pumps - \$150
 - Wall and Attic Insulation
\$.50/sq. ft. for Contractor Install or
\$.20/sq. ft. for Do-it-Yourself Install
 - ENERGY STAR Windows - \$50 per eligible window
 - Early Retirement Furnace - \$500 natural gas or \$200 oil or propane
 - Water Heater - \$400 for Heat Pump Water Heater
- ❖ Educate customers on their usage and how to lower manage their energy usage
 - Provide recommendations for additional energy efficiency measures
 - Provide information on financing options

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Residential Customer Steps to On Bill Financing

- UI customer has Home Energy Solutions (HES)
- Customer signs up with contractor to perform additional energy efficiency measures
- Customer applies for financing through 3rd party vendor
- 3rd party vendor approves customer
- Contractor installs energy efficiency measures
- Customer confirms measures installed
- 3rd party vendor pays contractor directly
- Customer's loan payment will be a separate line on their monthly UI bill



Residential Financing Details

- Offered at 2.99% for Comprehensive projects (more than one measure) from \$7,000 to \$20,000
- Offered at 4.99% for comprehensive projects from \$2,500 to \$6,999 and for single measure projects from \$2,500 to \$20,000
- Measures available for on bill financing
 - High efficiency insulation
 - Water Heating systems
 - Advanced air sealing
 - Duct sealing
 - HVAC equipment
 - Windows-must be done with at least one other measure



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Residential Loans Began June 1, 2010

- Through March 31, 2011 there has been 75 loans set in the amount of \$883,968.25. Average loan: \$11,700
- 75% of those funds were for central air and heating systems
- Off bill financing source of capital is Fannie Mae
- On bill financing source will be from shareholder funds
- Loan origination/qualification by third party



U.S. DEPARTMENT OF ENERGY National Development and Reform Commission (NDRC)

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Contact Information

Dennis O'Connor

Small Business – Program Administrator
The United Illuminating Company
157 Church Street, Mail Stop 1-6B
P.O. Box 1564
New Haven, CT 06506-0901

Phone: 203-499-3715

Fax: 203-499-2800

E-Mail: dennis.o'connor@uinet.com

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