

Innovative Financing: The Use of On-Bill Financing for Energy Efficiency Home Retrofits

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Outline

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2. Barriers to Residential Energy Efficient Retrofits
3. On-bill Financing
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5. NRCan's Value Proposition for On-bill Financing
6. Conclusion



NRCan & Energy Efficient Home Retrofits

- \$1.14B in funding since 2007
- 1.1M homes with EnerGuide Rating System (ERS) labels
- 20% annual average energy savings
- \$3B of cumulative energy saving by 2016
- Up to \$10B economic spin-off & thousands of jobs created
- Provided support to many energy efficiency programs in Canada
- \$45M to OEE Housing Division through 2016 to support ERS, ENERGY STAR for New Homes, and R-2000
- Exploring new opportunities: Innovative Financial Mechanisms (E.g. On-bill, local improvement charges)



Barriers to Residential Energy Efficient Retrofits

- Upfront costs
- Transaction costs
- Lack of information
- Competing priorities
- Contractor selection
- Limited financing options available
- Uncertainty of the savings and benefits that the energy retrofits will bring



On-Bill Financing

- On-bill financing allows utilities or other entities to provide financing to homeowners for energy efficiency investments and to recover the financing through charges added to their utility bill.
- Features of innovative on-bill financing:
 - Covers up front costs
 - Loan repayment is transferable
 - Long loan amortization terms
 - Loan is attached to the meter
 - Often combined with incentives
(Interest buy down, EA costs are covered)
 - Multiple loan options and providers can be considered
 - Loan is approved based on customer's utility or tax bill payment history
 - Energy savings pays for part of the loan repayment



On-Bill Financing Research & Regulatory Change

- Significant research activity that can inform implementation in Canada:
 - **Elenchus** (NRCan & CGA Cooperation)
 - ACEEE
 - Columbia Institute
 - And many others...
- New legislation/programs in various jurisdictions in Canada
 - British Columbia
 - Manitoba
- US, UK and Australia are also all working on new legislation



Categorization of On-Bill Financing Programs

- **Elenchus** report “On-Bill Financing of Residential Energy Retrofits” developed typology based on various combinations of:
 - Role of utilities
 - Assisted
 - Driven
 - Level of Incentives
 - User pays (no incentives)
 - Low interest rate
 - Deep savings



Example of On-Bill Programs

Canadian



United States



United Kingdom



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Example: Manitoba Hydro Power Smart Loan Program

- Manitoba Hydro has been delivering on-bill financing since 2001
- New Financing program will include:
 - Upfront capital costs of energy efficiency and water conservation home retrofits financed by Manitoba Hydro.
 - Targets older and less energy efficient homes since only improvements where utility cost savings are greater than the monthly repayment charges will be eligible.
 - Expected launch date is fall 2012.
- Regulatory/policy framework:
 - *Energy Savings Act* allows Manitoba Hydro to run an on-bill financing program with transferability.
- Financing:
 - Up to \$7,500/residence
 - 5 year maximum term at 3.9% interest



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Example: City of Nelson EcoSave Program

- Program administrator: City of Nelson and Nelson Hydro
- Program overview:
 - Loans for eligible energy efficiency upgrades will be repaid on homeowners' Nelson Hydro bi-monthly utility bill.
 - Launched in April 2012.
 - On-bill loans are non-transferable
 - Credit Union loans transferable
- Regulatory/policy framework:
 - Nelson Hydro is not a prescribed public utility under the *Clean Energy Act* and is not regulated by the BCUC for supplying their own municipality.
- Financing from Nelson Hydro and Nelson & District Credit Union:
 - Up to \$10,000/residence
 - 5 year or 10 year term at 3.5% interest rate
 - Credit Union offering similar interest rate



Example: BC Transferable On-Bill Financing

- Program administrator: Ministry of Energy and Mines and Public utilities (FortisBC/BC Hydro)
- Program overview:
 - Consultation period completed (Spring 2012)
 - New regulations under the *Clean Energy Act* will require BC utilities to implement BC's transferable on-bill financing for single family homes and row houses.
 - 2 Local financing pilots launching in November 2012. Province wide program launch is expected in 2014.
- Regulatory/policy framework:
 - *Clean Energy Act* requires BC energy utilities to provide financing for energy efficient upgrades.



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Example: Green Jobs-Green New York

- Program administrator: Green Jobs-Green New York (GJGNY)
- Program overview:
 - Two loan options: (1) On-bill recovery loans & (2) Unsecured loan.
 - On-bill recovery loans secured with a mortgage upon real property.
 - Loan is transferable.
 - On-Bill Financing available since January 2012.
- Regulatory/policy framework:
 - GJGNY Act of 2009 and Power New York Act of 2011.
- Financing
 - Lender: Energy Financial Solutions.
 - Up to \$25,000 USD for residential consumers.
 - Up to 15 year term.
 - 2.99% for on-bill recovery loan (as of April 2012).



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Example: UK Green Deal

- Program administrator: UK Department of Energy & Climate Change
- Program overview:
 - Private firms offer consumers energy efficiency improvements to their homes, community spaces and businesses.
 - Recoup payments through instalments on energy bill (attached to meter)
 - “Golden rule”: financing charge attached to energy bill cannot exceed the expected savings.
 - Guidance for local authorities: Report on plans to achieve results by April 2013
 - Expected launch date for Green Deal is October 2012.
- Regulatory/policy framework:
 - Energy Act 2011 enables Green Deal.
 - Following a consultation process, on July 2, 2012, the House of Commons passed secondary legislation in respect of the Green Deal.
 - The Government expects the completion of the framework for the Green Deal and ECO by October 2012.



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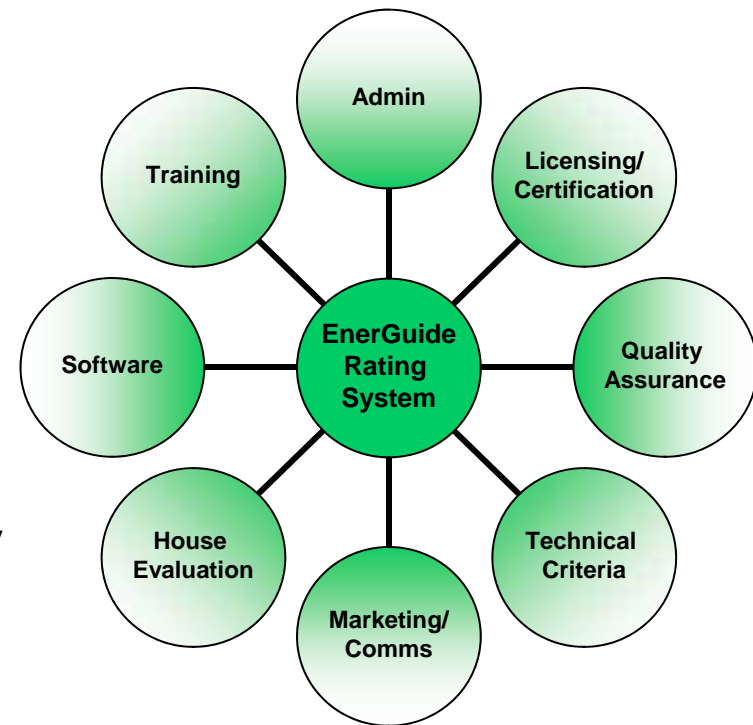
Developing an On-Bill Financing Program

- Key Factors to Consider:
 - Legislative, regulatory and policy context
 - Program design (i.e. program target, eligible measures, loan financing options, transferability, cost eligibility, use of NRCan ERS, community scale approach)
 - Funding source(s)
 - Linking whole-house energy retrofits to broader goals (utilities' and governments')
 - Integration of on-bill financing into a larger retrofit program
 - Ensure good homeowner value proposition
 - Continual improvement based on program evaluation
 - Selecting the loan offering by jurisdiction/utility to address local circumstances
- Options:
 - Utility Assisted On-Bill Financing
 - Utility Driven On-Bill Financing
 - Regulated, Utility Driven On-Bill Financing
- Pilot phase to inform longer term program implementation:
 - Need to test models
 - Sharing results is key
 - Pilots need to reflect regional and provincial/territorial circumstances



NRCan's Value Proposition: EnerGuide Rating System

- EnerGuide Rating System (ERS) is a proven and reliable systems to support on-bill financing:
 - Measurement based on standard operating conditions allows comparison between homes
 - Access to certified energy advisors (EA) provides homeowners with independent third party advise
 - Energy efficiency improvements are verified by EA
 - Access to historical data (more then one million homes)
 - Homeowners receive an energy efficiency label
- Standardized systems available across Canada
- Extensive support to partners' programs at no cost
- Designed to support “whole house” approach



EnerGuide Rating System (ERS)

- Proven and reliable system available across Canada
- Performed in over 1 million homes since 1998
- Standardized rating and written recommendations using the “house as a system” principle
- Supports the processing of grants and incentives in many provinces and territories (LiveSmart BC; Nelson EcoSave)
- Qualifies homeowners for rebates in mortgage insurance premiums and extended amortizations through CMHC and Genworth Financial
- Provide independent advise to homeowners on importance of energy efficiency



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Next Generation ERS

HOMEOWNER INFORMATION SHEET

ENERGUIDE RATING

MyEnerGuide Rating: 82 GJ/year

Home File Area: 2284' (2011) sq
 Energy Intensity: 0.24 GJ/m²/year
 Evaluated by: Ontario Energy Consulting
 (905) 763-8600
 File Number: 4199866738
 Made on: December 9, 2010
 Year Built: 2008
myenerguide.gc.ca

HOW ENERGY IS USED IN YOUR HOME

Your MyEnerGuide Rating is calculated as follows:

- Annual Energy Consumption: 72 GJ/year
- On-site Renewable Energy: 10 GJ/year
- Result: MyEnerGuide Rating: 82 GJ/year

1. Your Annual Energy Consumption is the estimated total amount of energy your house uses in a year. Amongst many things, the calculation of this amount takes into consideration the size of your house and the energy through your windows. Your house normally 21 GJ of propane gas per year which reduces the amount of energy you need to purchase to heat your house to a comfortable temperature.

2. On-site sources of renewable heat generation (e.g. solar water heaters) offset the amount of off-site energy you need to purchase to heat your house or hot water. On-site renewable power generation systems (e.g. solar photovoltaics) or wind power you sell or additional sources of electricity that offset your electricity bill.

Total Estimated On-Site Renewable Generation	10 GJ
Annual Energy Consumption	72 GJ
Result: MyEnerGuide Rating	82 GJ

3. Your MyEnerGuide Rating is the estimated amount of energy the house requires from off-site sources as listed in the table below, identified by your house's energy systems. Your utility bill may be higher or lower than the estimated energy consumption. This is because these amounts are based on standardized conditions and air temperatures as defined in the program on page 2.

Total Estimated On-Site Renewable Generation	10 GJ	Electricity	100%
Annual Energy Consumption	72 GJ	Gas	100%
Result: MyEnerGuide Rating	82 GJ	Electricity	100%

Homeowners that heat through their "heating envelope", which includes exposed floors, windows, doors, the quality of your insulation, or heating ducts to reduce the heat loss, your house is a candidate.

my ENERGUIDE RATING

Home evaluated by: Nova Scotia Energy Consulting
 File Number: 9030904596
 Rated on: Aug 17, 2010

For your detailed Homeowner Information Sheet, visit myenerguide.gc.ca

186 GJ/year (150 houses)

Use most off-site energy

▲94 Houses built to the 2010 R6 building code

▲0 Use least off-site energy (0 GJ = 100 on the old ERS scale)

Energy Intensity: 0.82 GJ/m²/year

ANNUAL ENERGY CONSUMPTION	100 GJ
On-site renewable energy production	- 0 GJ
Energy from off-site sources	= 100 GJ
Electricity	91
Gas	10
MyEnerGuide Rating	100 GJ

Breakdown of Annual Energy Consumption

A. Space heating	50%
B. Space cooling	0%
C. Water heating	10%
D. Ventilation	0%
E. Lights & appliances	15%
F. Other electric	25%

Annual Greenhouse Gas Emissions: 13 tonnes

Your utility bills may be higher or lower than the energy consumption on this label. This is because standard assumptions have been made regarding how many people live in your house and how the house is operated. Any changes to the house could affect the rating.

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- A trusted rating system is essential to support market transformation & innovative financing
- Over 280 stakeholders and experts have been engaged through an inclusive and transparent process
- Improved labels, factsheets and reports
- A new interactive myenerguide website is being developed to allow homeowners to:
 - View their file and run 'what if' scenarios
 - Access energy efficiency publications
 - Increase the energy literacy of buyers of new/existing homes



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Conclusion and Next Steps

- The time is right for on-bill pilots/programs:
 - Governments are looking for alternatives and/or complements for incentives programs
 - On-bill financing is a powerful tool for deep energy savings (whole home approach) requiring larger investments
 - Pilots are already happening and momentum is being established



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Save the Dates

Oct. 15-17, 2012

AESP' s Fall Conference
Long Beach, CA

Jan. 28-31, 2013

AESP' s 23rd National
Conference & Expo
Orlando, FL

Apr. 29-May 1, 2013

AESP' s Spring Conference
Dallas, TX

For more information - www.aesp.org

