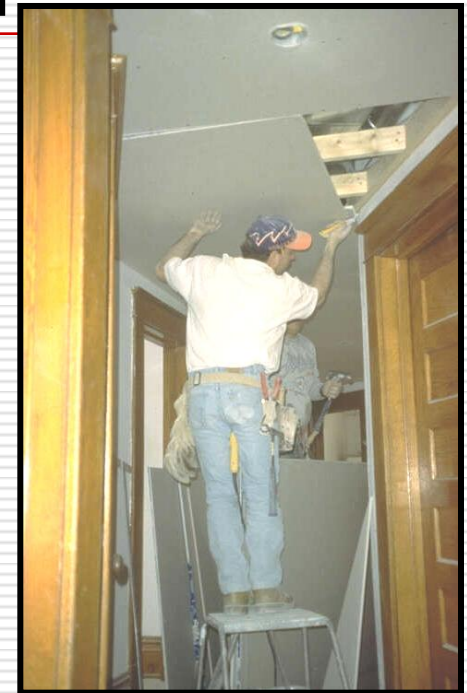


Low Income Energy Retrofits: A Green Communities perspective

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Green Communities Canada



Overview.

- about Green Communities
- involvement with low-income ee
 - conference this fall
- key findings from the OPA pilot



About Green Communities

- national association of 30+ community non profits that deliver environmental programs, services
- members determine own programs
- “in business together” – joint programs
 - walking/walkability
 - private well stewardship
 - pesticides
 - home energy efficiency



Low-income energy efficiency.

- beyond mid-class homeowners
 - large share of housing, least able to pay
- story so far – Canada lags behind
 - study with Équiterre
 - ongoing campaign
 - study w. VEIC on program design
 - Halifax conference in 2005
 - EGLIH – here and gone
 - provincial programs/OPA pilot
 - national conference, September

“Time for Action.”

- 29 September-1 October, Toronto
- focus:
 - barriers and solutions - effective programs – design & delivery - all sub-sectors
 - roadmap of national partnership - principles, relationships
- see: www.greencommunitiescanada.org.

OPA Pilot: what we learned.

- Energy Efficiency Assistance Program for Houses
- design and deliver program that targeted a narrowly defined group:
 - low income
 - single family
 - electrically-heated houses
 - owner-occupied or rental
 - tenant pays bill

Green Communities role.

- program design
 - eligibility and screening
 - audit protocol
 - retrofit contracting and management
 - verification and reporting
- recruitment and delivery
 - 1100 basic, 700 extended measures
 - build partnerships/infrastructure
- monitoring and evaluation

The service.

- energy audit, in-home education
- basic measures, installed during audit
- large measures, installed by contractor
- budget per house: \$400+\$1,850



Field Audit Tool

OPA Field Audit Tool Version 1.02

FileID: Name: Phone: Date: LDC:

Address: Town: Auditor:

Inventory: CAC: # WAC: DWH: # computers: # Frdgs: # Frzrs:

Heating fuel: Shwr flow before: After: Audit:

Basic or Expanded	Measure	Quantity	Cost	kWh Save	Cubic Meter Save	NPV	STATUS	Final Cost	Final NPV
	CFL15-replace 60w	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	CFL20-replace 75w	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	CFL25-replace 100w	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	CFL3-way	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	CFL-PAR30	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	DHW pipe wrap	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	DHW tank blanket	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	Kitchen aerator	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	Showerhead upgrade	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	DHW fuel switch	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="0"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	Refrigerator replacement-18 cu ft	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	Refrigerator removal only	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill OPA	<input type="text"/>	<input type="text"/>
	Drain water heat recovery	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	bill LDC	<input type="text"/>	<input type="text"/>
Custom	Measure	Custom Type	Cost	kWh Save	Cubic Meter Save	NPV	STATUS	Final Cost	Final NPV
15	Draft proofing	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	can't afford	<input type="text"/>	<input type="text"/>
16	Attic insulation	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	can't afford	<input type="text"/>	<input type="text"/>
17	Wall insulation	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	can't afford	<input type="text"/>	<input type="text"/>
18	Basement insulation	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	can't afford	<input type="text"/>	<input type="text"/>
19	Exposed floor insulation	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	can't afford	<input type="text"/>	<input type="text"/>
20	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
21	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
22	Other	<input type="text" value="0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Basic: Subtotal			<input type="text" value="0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text" value="\$0"/>	<input type="text" value="\$0"/>
Expanded: Subtotal			<input type="text" value="0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text" value="\$0"/>	<input type="text" value="\$0"/>
OPA Subtotal			<input type="text" value="0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text" value="\$0"/>	<input type="text" value="\$0"/>
LDC Subtotal			<input type="text" value="0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text" value="\$0"/>	<input type="text" value="\$0"/>
TOTALS			<input type="text" value="0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		<input type="text" value="\$0"/>	<input type="text" value="\$0"/>

Database management software

Home > List Participants

10TR-00049 / Jack Sparrow : [Retrofit Completed]

Customer Info | Household Info | Landlord | Notes | Files | Assign Audit | Project Details

Measure	Installed	Costs	KWH	NPV	Status	Work Order Issued	Installed	Verified	Payment Authorized
CFL3-way	3	\$ 45	91	\$ 6	bill OPA				
Basic		\$ 60	122	\$ 7					
Refrigerator replacement-15 cu ft	1	\$ 605	600	\$ 7	bill OPA	29-Oct-2007	15-Nov-2007	14-Dec-2007	19-Dec-2007
Attic insulation	1	\$ 1255	2856	\$ 2756	bill OPA	29-Oct-2007	27-Nov-2007	14-Dec-2007	19-Dec-2007
Draft proofing	1	\$ 160	1152	\$ 1267	bill OPA	29-Oct-2007	27-Nov-2007	14-Dec-2007	19-Dec-2007
Extended		\$ 2020	4608	\$ 4030					
Job Total		\$ 2080	4730	\$ 4037					

»Edit Date(s)

Audit completed	30-Aug-2007
Retrofit completed	19-Dec-2007
Software	FAT 1.05T
Audit invoiced	30-Sep-2007
Retrofit invoiced	--

Results: large savings

- participation low, but participants pleased
- installation contractors satisfied
- half houses that needed “retrofits”- 2,436 kWhr/yr of savings
- results compare well with 7 U.S. studies



Challenge: marketing

- narrow eligibility, single fuel, locations
- social agencies provided few leads
- limited potential in senior-owned homes
- private renters hard to reach - barriers
- working poor hard to reach

1. Serve multi-fuel, social housing.

- serve all space heating fuels
- include social housing
 - ➔ facilitates marketing
 - ➔ economies of scale
 - ➔ baseload electric savings in non-electric homes
 - ➔ oversubscription to target high users

2. Expand LDC role.

- more active participation from electricity local distribution companies (LDCs)
 - identify potential participants
 - identify high users

3. Make longer-term commitment.

- three-year commitment will enable:
 - investment to deliver more measures
 - momentum and growth in marketing



4. Address health and safety.

- H&S issues can block efficiency upgrades
- add resources, partnerships to address:
 - leaky hot water tanks
 - furnaces w/cracked heat exchangers
 - gas combustion safety issues



5. Target key subgroups.

- target marketing to those most in need and with least efficient houses:
 - working poor
 - disability support recipients
 - private landlords and tenants



6. Don't require tenant-pay.

- don't require tenant to pay power bill
 - increase pool of eligible households
 - discriminates against some low income families
 - increases savings to help reach goals
 - landlords can be invited to contribute

7. Adopt neighbourhood delivery.

- neighbourhood blitz
 - poverty by postal code
 - install simple measures in all homes - no application, income screening
 - screen for houses with deeper potential
 - audit, weatherization where warranted



8. Use 'smart protocols.'

- standardized decision tools vs. audit
 - EnerGuide for Houses (Hot 2000) audits high cost, ill-suited
 - produce poor savings estimates
 - smart protocols easily added to OPA software

What lies ahead?

- province-wide program roll-out
- gas, possibly other fuels added
- one-window approach (we hope!)
- GCC expects to bid for program management, local delivery
- integrated, bundled approach, multi-fuel, partnerships, scaling up ...