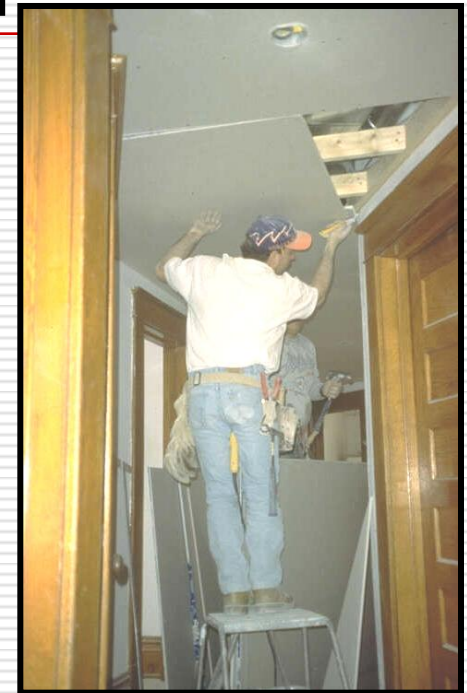


Low Income Energy Retrofits: A Green Communities perspective

Bruce Pearce, vice chair
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"/> | 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"/> |
| 21 | | <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"/> |
| 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 ...