

ONTARIO POWER AUTHORITY

September 25, 2008



EB-2008-0150

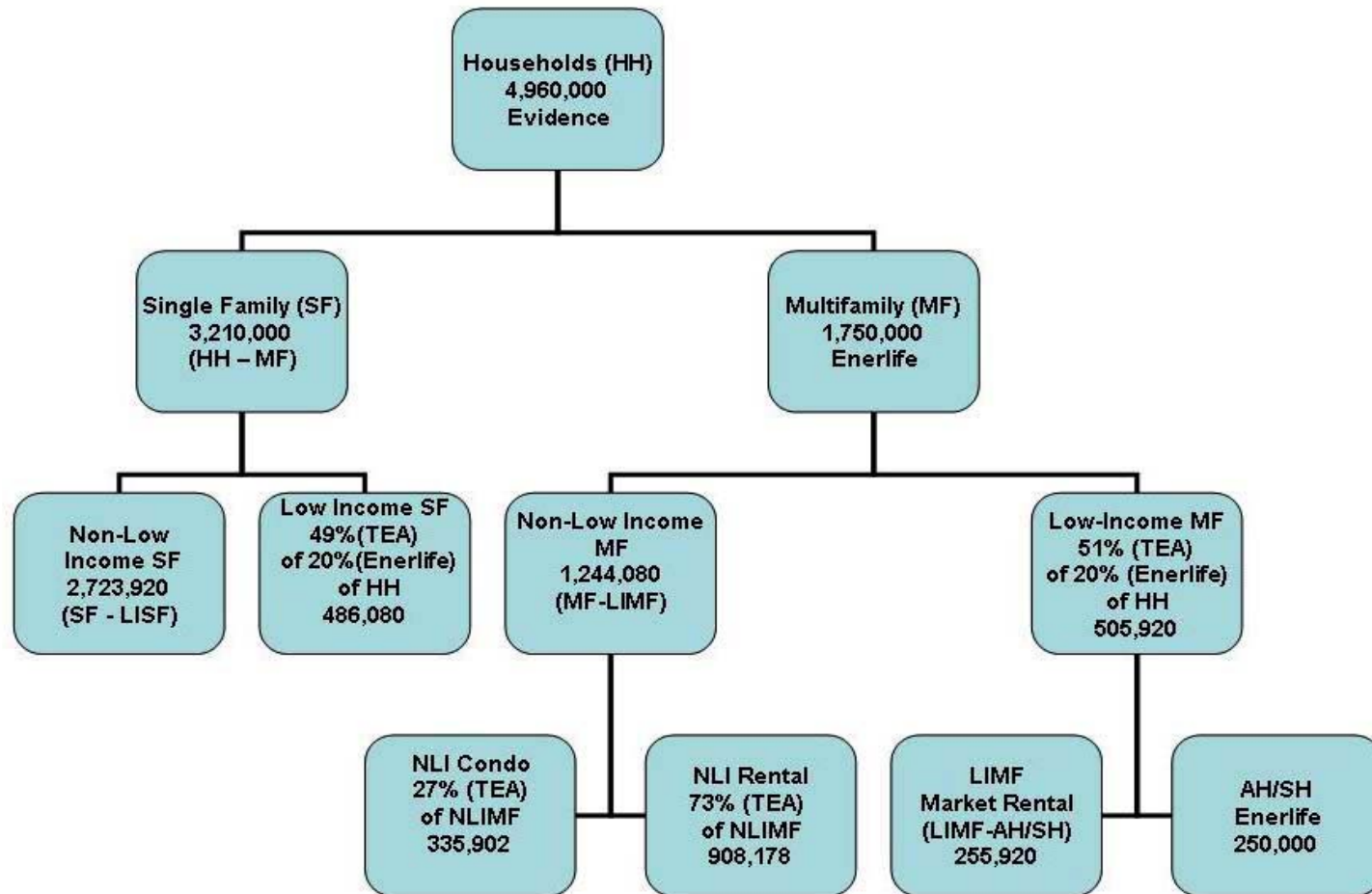
**Consultation on Issues Relating to Low Income Consumers
Stakeholder Conference: September 22-26, 2008**

Agenda

- Provide an Overview of OPA's activities pertaining to Low Income Sector including
 - Research
 - Pilot projects
 - Stakeholder consultation
- Supporting Program Initiatives
 - Multi-family Buildings
 - Single Family Homes

Sector Overview

Ontario Residential Dwelling Overview



(Source: EB-2007-0707, VECC Interrogatory Exhibit I-38-43)

Identifying Low Income Constituents

- Eligible to receive social benefits including:
 - Ontario Disability Support Program;
 - Ontario Works;
 - Guaranteed Income Supplement for Seniors;
 - Ontario Child Care Supplement for Working Families;
 - National Child Benefit Supplement; or
 - Allowance for Survivor;

OR:

- Meets income screening threshold table

Income Screening Threshold Table

Household size	Maximum gross annual income
One	\$32,000
Two	\$34,500
Three	\$37,000
Four	\$39,500
Four+	\$39,500 + \$2,500 for each additional occupant

Multi-Family Buildings

Stakeholder and Development Summary

Market Research

- Low Income Program Concepts- IndEco (09/2005)
- Energy Savings Technology Review: Low Income/Social Housing -SeeLine (02/2006)
- A Low Income Energy Efficiency Program – Toronto Environmental Alliance (03/2006)
- Electricity Conservation Potential in Private Rental Housing Sector – Enerlife (04/2006)

Consultation

- Low Income Multi-Residential Energy Efficiency Barriers and Strategies, (Feb. 2006)

Pilot Programs

- “Green Light Initiative” – Social Housing Services Corp.
 - OPA financial incentives via loan guarantee, interest buy-down, or lump sum
- Affordable Housing Energy Efficiency Program (MMAH)
 - New affordable housing – development of in-suite measures

Consultations

- Pilot program results and lessons learned – May 2007
- Program Design - June 2007

Multi-family Low Income Segmentation

1,750,000 (40% of residential dwellings)
residences in multi-unit buildings

- 12% (3,000 MW) of peak demand
 - 250,000 (15%) social housing units
 - 227,500 (13%) owner-occupied condominiums.
 - 388,000 (40%) of tenants in privately owned buildings) are low-income.*

- *Source: “Realizing the Electricity Conservation Potential in Ontario’s Private Rental Housing Sector with Particular Attention to Low-Income Households”, Enerlife Consulting, April 2006.

Multi-family Building Challenges

- Split incentives
- Tenant landlord relationships
- Access to capital
- Metering practices

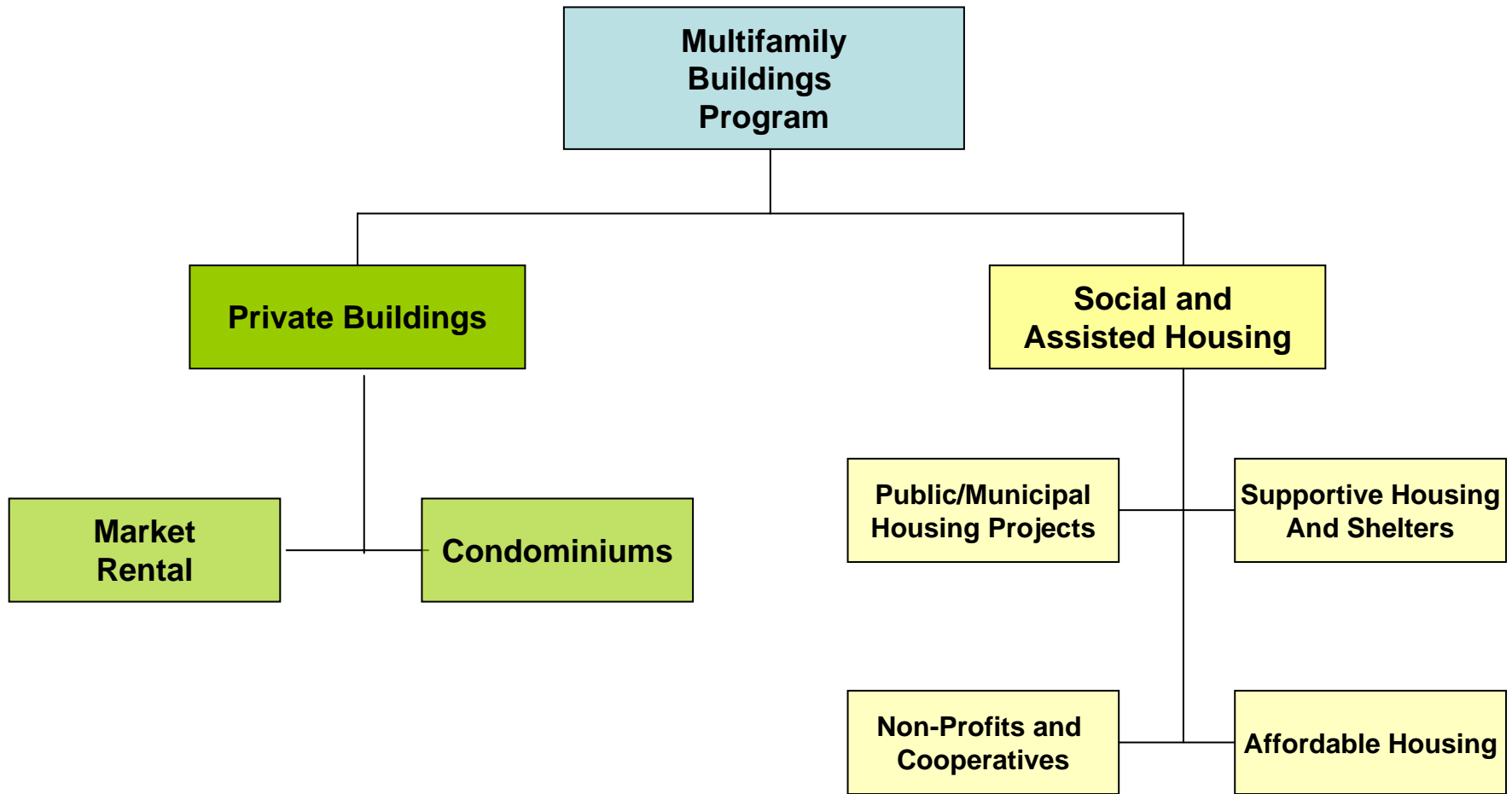
Multi-family Building - Features and Objectives

- Eligibility - Existing building stock > 6 units
- Access - Dedicated stream for each of low income/social housing providers and market rate
- Delivery - Multiple delivery partners for province-wide access;
- Program Targets by end of 2010:
 1. 100 MW Peak Demand Reduction
 2. 1,500 buildings/90,000 units (5% of the market)
- Program Objectives
 1. Common Area and in-suite efficiency measures
 2. Promote “building as a system” to maximize per site project savings;
 3. Reach tenants with energy efficiency education materials supported by the building operator.

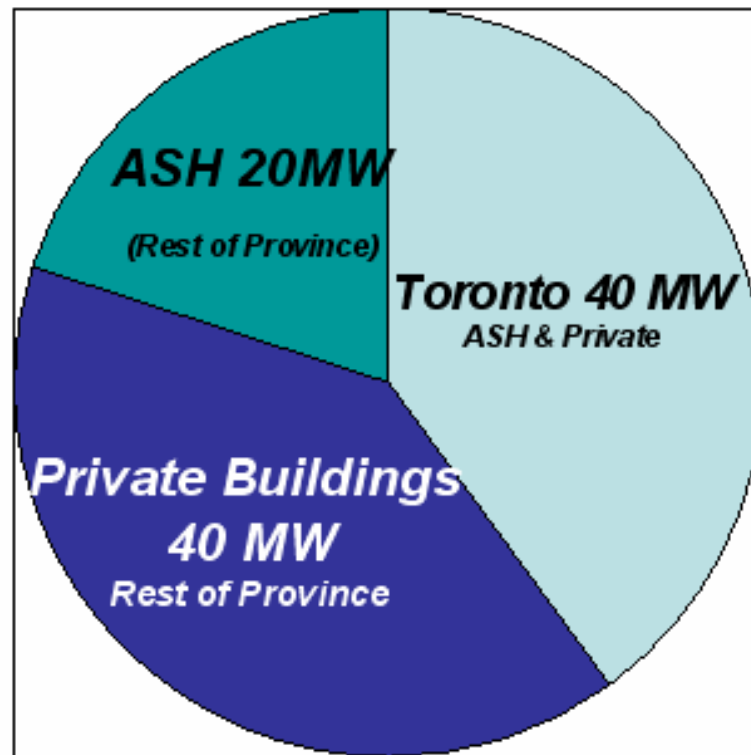
Multi-family Building - Program Elements

Eligible Measures	Incentives	Program Resources	Training and Education	Marketing and Communication	Measurement and Verification
<ul style="list-style-type: none"> • Lighting • Appliance /Dx • HVAC • Grey water heat recovery • Non-electric DHW • Fans • Non-electric chillers • Electricity to 'other' conversion of boilers, domestic hot water, HVAC systems • Occupancy sensors • Solar DHW booster 	<ul style="list-style-type: none"> • Prescriptive fixed \$/measure • Custom projects; \$0.07 per kWh • Energy audit supplement - \$35 per unit • Tenant education (\$0.07 per kWh) • <u>Assisted/social housing</u> • Gap fund • Loan guarantee facility 	<ul style="list-style-type: none"> • Referrals to 3rd party service providers • Funding and financing sources • Training programs • Inquiries/redirect • Benchmarking tools 	<ul style="list-style-type: none"> • Resident Education 	<ul style="list-style-type: none"> • Target marketing • Outreach • Website • Case studies and best practices 	<ul style="list-style-type: none"> • Project level savings • Total benefits • 3rd party project evaluation

Market Segments



Multi-Family Building - MW Targets



Multi-family Building - Eligible Measures

- In suite
 - Appliance Retirement (refrigerators, dryers, etc.)
 - Ceiling fans
 - Occupancy sensors
- Lighting
- HVAC (Heating, Ventilation, Air Conditioning)
- Drain Water heat recovery
- Alternative Energy Measures (Fuel-Switching)
 - Heating
 - Solar thermal DHW
 - Ground source heat pumps

Multi-family Building Prescriptive Measures List

- Exit signs
- Energy Star CFLs
- T8 fixtures (standard and high performance)
- T5 fixtures
- Metal Halide fixtures
- Occupancy Sensors
- Photocell and Timer for Lighting Control
- Programmable Thermostats for Electric Baseboard Heaters
- Programmable Thermostats with Occupancy Sensors
- *MMAH developed in suite measures:*
 - Energy Star Clothes Washer
 - Natural Gas Dryer
 - Energy Star Dishwasher
 - Energy Star Refrigerator
 - Energy Star Ceiling Fans
- *Alternative Energy Measures*
 - Non-electric Chillers
 - Ground Source Heat Pumps
 - Non-electric Central Instantaneous Service Hot Water Heater
 - Solar Hot Water Collectors
 - Non-electric Central Storage Tank Water Heater
 - Drain Water Heat Recovery
 - Domestic Hot Water Recirc Pump Control

Multi-family Building - Financial Incentives to Participants

- Prescriptive List: \$/measure
- Custom: \$0.07 per kWh
- Energy Audit: \$35 per dwelling unit
- Resident education incentive: 10% of the energy savings, @ \$0.07 per kWh
- For assisted and social housing
 - Loan Guarantee (pool up to \$5,000,000 total for program duration)
 - Gap fund (\$3,000,000)

Low Income Single Family Homes

Low Income Single Family Homes pilot

- **Pilot Program**

- Informed by initiatives including US Weatherization Assistance Program
- EnviroCentre and Green Communities for design and delivery in 25 communities (2007)
- Green\$aver jointly delivered electric and gas (Enbridge) pilot in Toronto

- **Low Income Stakeholder Consultation**

- Pilot program results (Feb 22/2008)
 - Two delivery models:
 - 1) Alternate “Standard Offer” model
 - 2) Program Manager to oversee delivery agents
- Discussions with Enbridge Gas Distribution and Union Gas (March/08)

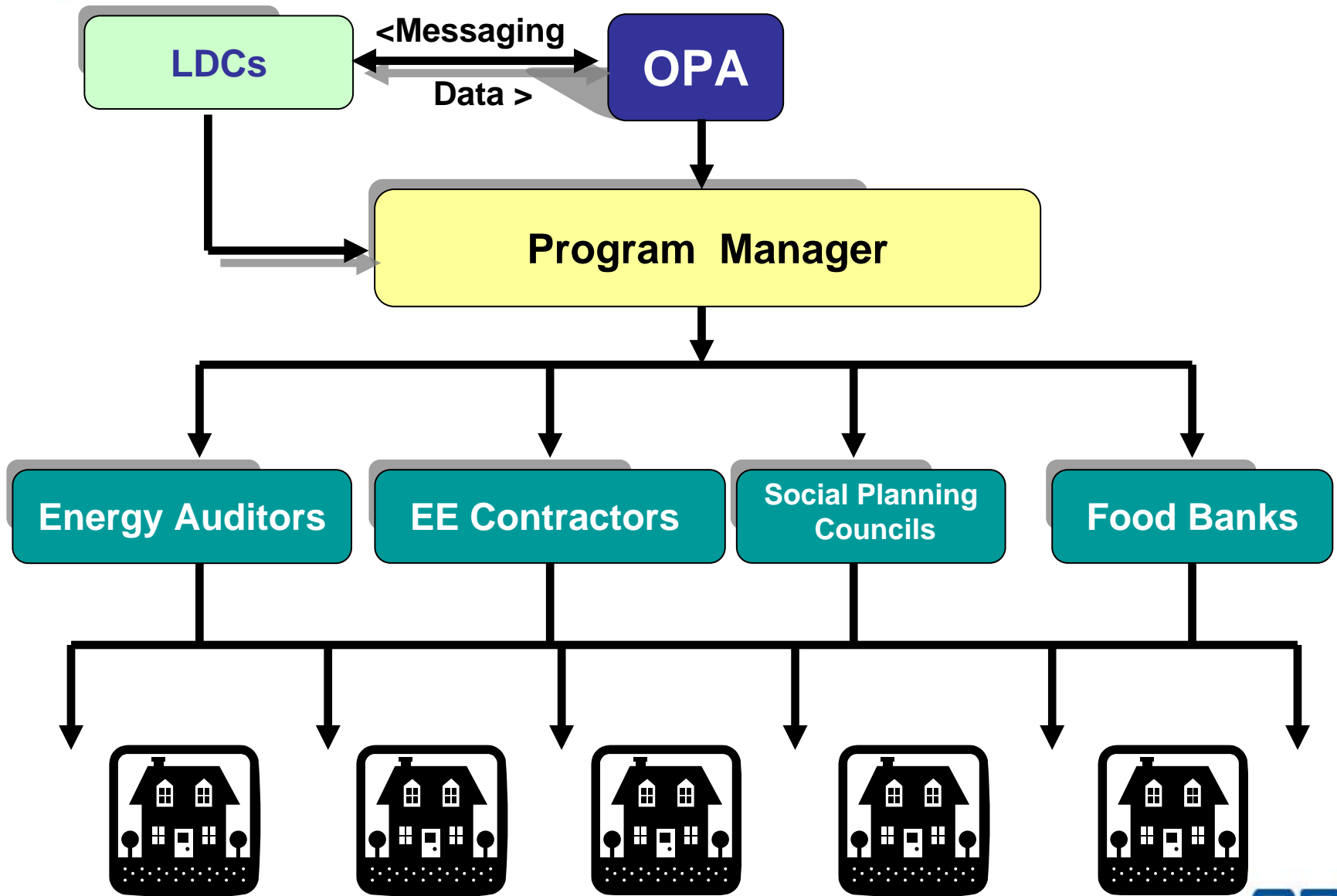
Low Income Single Family Homes Overview

- Direct installation of measures (<5 units)
 - Lights, appliance replacement, controls
 - Weatherization (weather stripping, insulation)
- 3-year term
 - Participant target: 6,400 houses
 - Demand/Energy reduction targets:
 - 0.5 MW (summer), 3.5 MW (winter)
 - 14.0 GWh

Low Income Single Family Homes Measures List

- **“Basic Measure” :**
 - (i) Compact fluorescent bulbs;
 - (ii) Pipe insulation (electric hot water tank);
 - (iii) Water heater tank wrap (electric hot water tank);
 - (iv) Faucet aerator (electric hot water tank);
 - (v) Low flow showerhead (electric hot water tank); and
 - (vi) Programmable thermostat (electric furnace).
- **“Extended Measure” :**
 - (i) Attic insulation;
 - (ii) Wall insulation;
 - (iii) Draft proofing;
 - (iv) ENERGY STAR® qualified refrigerator (retire old refrigerator and replace with ENERGYSTAR® qualified refrigerator);
 - (v) ENERGY STAR® qualified room air conditioners (retire old room air conditioner and replace with ENERGY STAR® qualified room air conditioner); and
 - (vi) Fuel switching measures such as: electric baseboard heaters converted to hydronics system.

Implementation Network



Related Low-Income Initiatives

Additional Low-Income Sector Initiatives

- **Multi-faceted initiatives & points of access for low-income:**
 - Multi-Family Building - 30MW, 115.2 GWh, 42,300 units
 - Low Income Single Family - 0.5 MW, 14.0 GWh, 6400 homes
 - New Construction - 2.5 MW, 100 buildings
 - Supply Chain - Energy Efficiency Contractor Network (Conservation Fund)

- **FRPO - Explore enhancements to deliver incremental energy savings.**
 - **Sample of 20 rental buildings with ~ 3000 dwelling units. Impact of :**
 - Measurement and monitoring benchmarking
 - Assessment of impact of tenant education
 - Impact of sub-metering of electricity
 - In-suite appliance replacement
 - Inform long-term approach to private rental housing energy conservation
 - Building labeling
- **Toronto Community Housing Corporation (TCHC) – Impact of resident behaviour**
 - **Evaluate outcomes directly from community engagement, staff training and tenant education. Assess impact where:**
 - Tenants pays utilities
 - Landlord pays utilities
 - Engage community based agencies to support housing providers.