

# 2016 ONPHA CONFERENCE

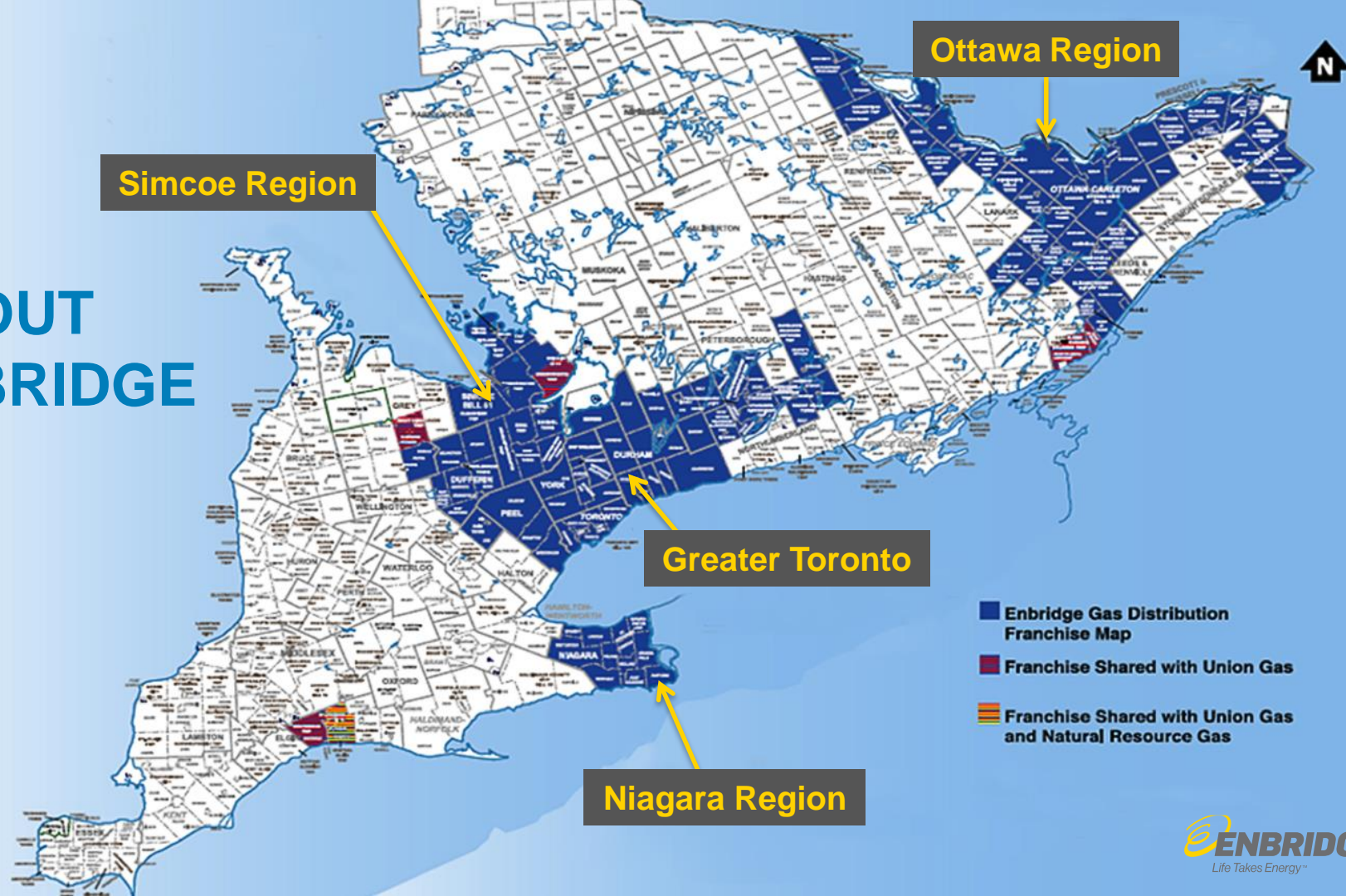
## From boiler room to boardroom: How natural gas savings can boost your bottom line

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Cam Black  
Energy Solutions Consultant  
Enbridge Gas Distribution

Derrick Finn  
P.Eng.  
Finn Projects

# ABOUT ENBRIDGE



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**Quick facts  
about energy  
efficiency at  
Enbridge Gas  
Distribution**

Enbridge promotes ways to help our customers use natural gas more efficiently through conservation programs know as “DSM” (*Demand Side Management*)




Enbridge is a North American leader in the design and development of conservation and energy efficiency programs.



Enbridge first launched DSM in 1995

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From 1995 to 2014, DSM has saved enough natural gas to heat 4 million homes for 1 year (9,600,000,000 cubic metres) and save customers over \$2.5 billion.



DSM efforts contribute towards  
the Province of Ontario's emission  
and reduction targets – 18 million tons  
of CO<sub>2</sub> since 1995.





Enbridge is committed to helping low income customers manage their energy bills by offering no cost programs to qualifying participants.

## In this session you will learn how to:

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- Implement comprehensive retrofits for gas, water and hydro
- Receive up to 98% funding with guaranteed savings

# Major Hurdles

There are two major hurdles to implementing energy efficiency retrofits:

## 1. Financing

- How to pay for Building Renewal
- How to protect your Reserve Fund



Building Renewal

Reserve Fund

## 2. Achieving Savings

- How to identify potential measures
- How to ensure the savings are realized and sustained

## So how is this done?

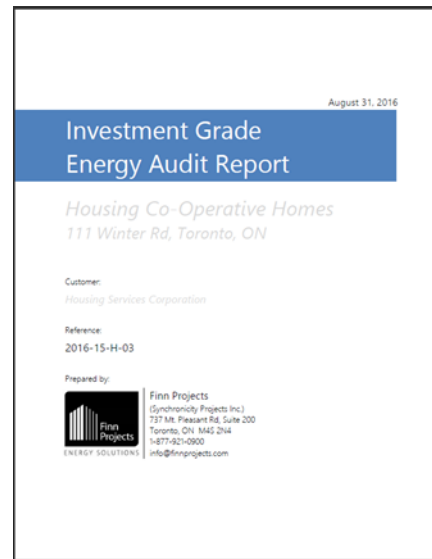
First, let's look at how the retrofit could be financed without impacting your reserve fund.

### ❑ Energy Savings Performance Agreement (ESPA)

- Developed by Toronto Atmospheric Fund (TAF)
- Delivered by TAF/Efficiency Capital:
  - Province wide
  - Up to 98% of projects costs
  - Up to a 10 year contract term
  - Non-debt
  - Guaranteed energy savings
  - Shared Savings

# Requirements for financing

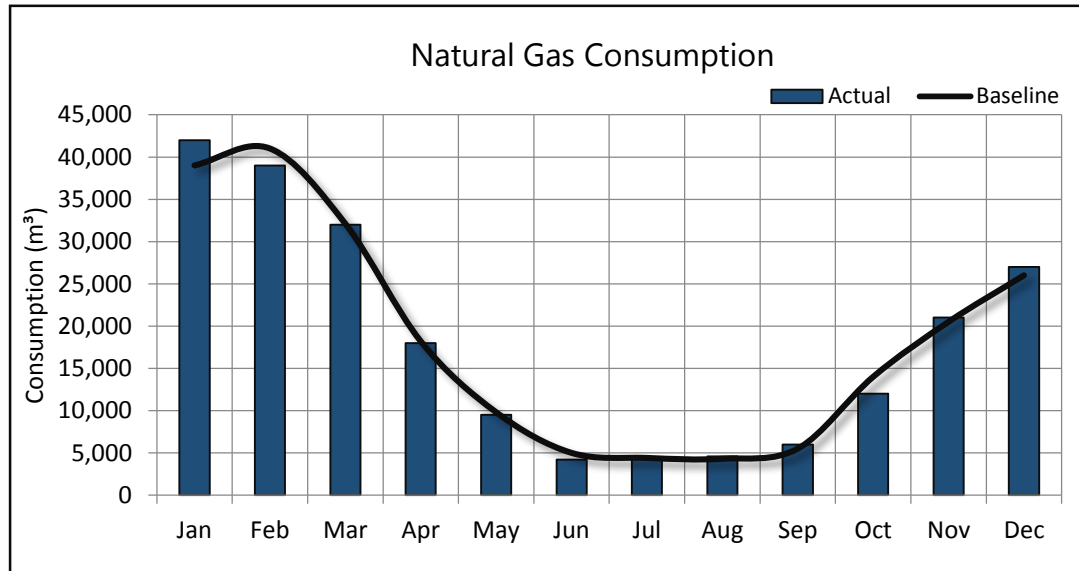
- Provide financial statements
- ASHRAE III Investment Grade Energy Audit
- Guaranteed Savings Insurance



# Finding opportunities for the building

- Understand your building's energy and water uses and costs
- How much, when and where?
- Understand your building's operation
- Building temperatures, fresh air supply (MAU), DHW production, DCW pumping, lighting, etc.
- Recognize how to reduce usage & costs
  - What can be optimized?
  - What can we switch off, or eliminate?

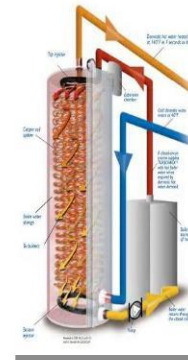
# Establish weather - corrected baseline



If you don't know how much you've been using,  
how will you know how much you're saving?

# ASHRAE III Energy Audit

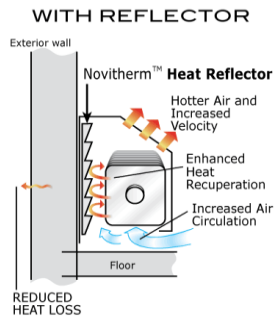
- HVAC systems
- DHW system
- Controls
- Lighting
- Building envelope
- Water usage





# In-Suite

- Lighting
- Water usage
- Heating
- Building Envelope
- Appliances



# ASHRAE III Energy Audit

- Interview operating & maintenance staff
- Hours of operation
- Operating parameters
- Measure specific flows & power draws
- Contractor pricing



# ASHRAE III Savings Summary

Ref #	Description of Energy Saving Measures	Estimated Annual Utility Savings			Annual Cost Savings	Cost of Retrofit	Available Incentives	Net Cost of Retrofit	Simple Payback Years
		Elec. kWh	Gas m <sup>3</sup>	Water m <sup>3</sup>					
8.1	Replace the Domestic Hot Water System with Condensing Boilers		54,310		\$18,700	\$230,400	-\$21,700	\$208,700	11.2
8.2	Replace the Domestic Cold Water Booster Pump System with a New Unit complete with Variable Speed Drives	47,200			\$6,400	\$53,500	-\$9,450	\$44,050	6.9
8.3	Install New Make-Up Air Units complete with Variable Speed Drives	46,400	40,800		\$20,300	\$278,300	-\$25,600	\$252,700	12.4
8.4	Install a CO Detection System to Operate the Garage Exhaust Fans	25,350			\$3,900	\$41,300	-\$2,550	\$38,750	9.9
8.5	Replace the Top-Loading Washing Machines with Front-Loading Models		15,510	2,260	\$12,550	\$55,900		\$55,900	4.5
8.6	Lighting Retrofit	196,500			\$26,550	\$188,800	-\$14,700	\$174,100	6.6
8.7	Install Ultra High Efficiency Toilets & Low-Flow Showerheads and Aerators		29,940	16,440	\$62,800	\$187,100	-\$4,050	\$183,050	2.9
8.8	Weatherstrip the Exterior Doors & Implement Air Sealing Measures in the Apartments	8,600	30,490		\$11,650	\$85,900		\$85,900	7.4
9	Training & Resident Awareness	28,450	8,890	1,100	\$10,400	\$15,000	-\$3,150	\$11,850	1.1
Total Estimated Savings		352,500	179,940	19,800	\$173,250	\$1,136,200	-\$81,200	\$1,055,000	6.1
Annual Baseline Utilities (at same rates as savings)		2,845,612	889,779	110,309	\$1,043,462				
Percent Reduction		12.4%	20.2%	17.9%	16.6%				

- Fixed capital cost
- Guaranteed savings
- Includes engineering, M&V, etc.

# Implementation

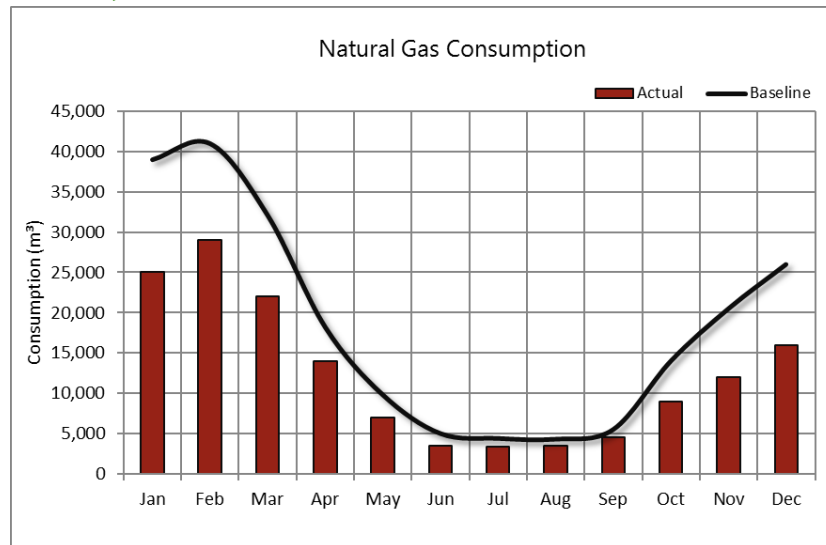
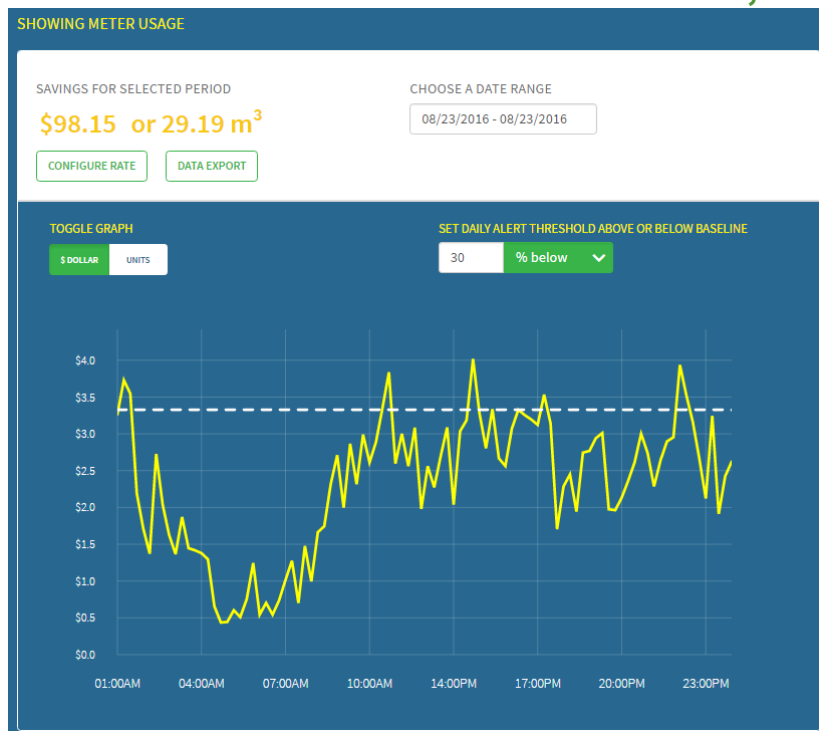
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## ESPA Contract includes:

- Incentive Applications
- Savings Insurance
- Engineering Drawings & Specifications
- Project Management
- Commissioning
- Monitoring of Utility Use
- Savings Measurement & Verification (M&V)

# Realize and Sustain Savings

## Measure, Measure, Measure



- Real-time Metering
- Quarterly Reporting

## Review our Objectives

# Address the 2 major hurdles to implementing Energy Efficiency Retrofits:

### 1. Financing

- How to pay for the building renewal
- How to protect your reserve fund

### 2. Achieving Savings

- How to identify potential measures
- How to ensure the savings are realized and sustained

# Thank You



Cam Black  
Enbridge Gas Distribution  
cam.black@enbridge.com  
416-758-4748



Derrick Finn, P.Eng.  
Finn Projects  
info@finnprojects.com  
416-921-0900 x 222

