

PROPOSED ACCELERATED PAY FOR PERFORMANCE (P4P) PROGRAM MODEL

EB-2021-0002 TECHNICAL CONFERENCE DAY 3 MARCH 2ND, 2022

REFERENCE:

UNDERTAKING NO. JT3.6: TO PROVIDE THE INCREMENTAL PROGRAM METRICS AND DIRECTIONAL BUDGET THAT WOULD BE NEEDED IN ORDER TO UNLOCK THESE BENEFITS FROM 2023 TO 2027

UNDERTAKING NO. JT3.6 (SUPPLEMENTAL): ON A BEST-EFFORTS BASIS, TO DESCRIBE A STARTING POINT FOR THE NEXT FIVE YEARS, FOR EXAMPLE WHAT TO DO IN EACH YEAR FROM 2023 TO 2027; HOW MUCH SHOULD THE BOARD BE PUTTING TOWARDS THIS AND WHAT WOULD THE SAVINGS BE?

This report presents best effort estimates of reasonably attainable incremental gas savings and associated budget costs for the period from 2023-2027 due to an accelerated Pay for Performance (P4P) DSM program across a number of documented commercial sector building types. The model is developed from previous evidence prepared by Enerlife as part of Enbridge Gas Pipeline Hearing EB-2012-0451.

We have developed the targets and budget metrics for the whole K-12 Schools segment where the best data are available. Table 1 presents the findings and Table 3 at the end shows the input values used. The attached spreadsheet is intended for use by EGD and other parties in testing the effects of modified inputs on savings and budget estimates.

Table 1 P4P Scorecard Metrics for K-12 Schools

Building Type	Total Gas Savings During Program (m3)	Total P4P Lifetime Gas Savings (m3)	Total Incentive Cost (\$)	Total Administrative Cost (\$)	Total Technical Cost (\$)	Total Participant Cost (\$)	Total Program Costs (\$)	Total Cost of Savings (\$/m3)	TRC-Plus Ratio
Schools (K-12)	23,898,880	119,494,398	8,364,608	1,194,944	1,194,944	4,596,421	15,350,917	0.13	2.50

This model targets high-potential schools accounting for 10% of the total and together achieving 20% of the total achievable potential for this market segment. We assumed 25% average savings in calculating the 2027 bonus incentive payment.

Table 2 shows equivalent empirically derived gas savings potential figures for 4 other commercial building segments to which the P4P model is equally applicable and could be extended during this 5-year plan. Similar benchmark distributions and high savings potential buildings are found in these segments and the P4P model is readily extended to all, potentially expanding the scale to as much as 15 times the K-12 Schools metrics. Commercial offices and hospitals are equally advanced to schools and would be prioritized, potentially increasing the scale of the program by more than 7 times.

Table 2 Empirically Derived Achievable Savings Potential for Commercial Sector Buildings

Building Type	Total Gas Savings Potential (m3/year)
Schools (K-12)	119,494,398
Commercial Office	849,505,380
Multi-Residential	778,713,265
Colleges	6,016,667
Hospitals	89,537,604
Total	1,753,729,710

These empirical gas savings potential estimates are based on actual energy use from the publicly reported data in Ontario's BPS (public sector) and EWRB (commercial) reporting programs. The benchmarking and target-setting methodology used to quantify achievable savings and identify the minority of high potential buildings which account for the majority of savings is documented in previous reports on Performance Based Conservation and individual programs as follows:

- *REALPAC 20 by '15: Achieving the Office Building Target of 20 ekWh/ft2/year by 2015. White paper, September 2009*
- *Performance-Based Conservation Pilot Project prepared by Toronto and Region Conservation Authority (TRCA) and Enerlife Consulting for the Independent Electricity System Operator (IESO) December 2018*
- *City of Toronto Tower Renewal STEP Program [Michael] <https://www.toronto.ca/community-people/community-partners/apartment-building-operators/sustainability-assessments/>*
- *Sustainable Schools 2021 Top Energy Performing School Boards Report <https://sustainableschools.ca/wp-content/uploads/2021/06/2021-SUS-Top-Energy-Performing-School-Boards-Report.pdf>*
- *Greening Health Care Targets Methodology White Paper April 2021 <https://greeninghc.com/publications/>*

Table 3 K-12 Schools P4P Input Metrics

Set Values			
Incentive Rate	0.3	\$/m3 incremental gas savings	
Bonus Incentive	0.2	\$/m3 incremental gas savings if 20% performance target is	Assume average achievement 25%
Length of Program	5	years	
EUL	5	years	Effective Useful Life
Admin Cost	20	\$/1000 m^3 gas saved	
Technical Costs	20	\$/1000 m^3 gas saved	
Participant Cost	0.8	\$/ft2	Net Equipment Cost
Percent of area to achieve 20% of total potential savings	10%		Targeting only high potential buildings
Avoided Costs	0.175	\$/m3	
TRC-Plus Non-Energy Benefits Multiplier	1.15		
Avoided Carbon Costs	0.104	\$/m3	See table in Sheet:

P4P Model for Gas Savings Potential and Program Costs

Rev0 March 16th, 2022

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Summary

Building Type	Total Gas Savings During Program (m3)	Total P4P Lifetime Gas Savings (m3)	Total Incentive Cost (\$)	Total Administrative Cost (\$)	Total Technical Cost (\$)	Total Participant Cost (\$)	Total Program Costs (\$)	Total Cost of Savings (\$/m3)	TRC-Plus Ratio
Schools (K-12)	23,898,880	119,494,398	8,364,608	1,194,944	1,194,944	4,596,421	15,350,917	0.13	2.50

Schools (K-12)

Year	Total Building Area (sq. ft)	Gas Savings Potential (m^3/year)	Gas Savings Benchmark	Percentage of Potential Savings Achieved	Annual Gas Savings (m^3)	Incentive Cost (\$)
2023	287,276,330	119,494,398	Top Quartile	0%	-	-
2024		119,494,398	Top Quartile	5%	5,974,720	1,792,416
2025		119,494,398	Top Quartile	10%	11,949,440	1,792,416
2026		119,494,398	Top Quartile	15%	17,924,160	1,792,416
2027		119,494,398	Top Quartile	20%	23,898,880	1,792,416
2027 (Bonus)					5,974,720	1,194,944
Total				20%	23,898,880	8,364,608
Lifetime Savings					119,494,398	

Building Type	Startup Cost (\$)	Annual Technical Support Cost (\$)	Annual Administrative Costs (\$)	Participant Costs	Total Annual Cost (\$)	Cost of Gas Savings (\$/m^3)
2023	100,000	-	-	-	100,000	
2024	-	119,494	119,494	1,149,105	3,180,510	0.53
2025	-	238,989	238,989	1,149,105	3,419,499	0.29
2026	-	358,483	358,483	1,149,105	3,658,488	0.20
2027	-	477,978	477,978	1,149,105	3,897,476	0.16
Total	100,000	1,194,944	1,194,944	4,596,421	10,854,496	0.45

UNLOCK THESE BENEFITS FROM 2023 TO 2027

EXAMPLE WHAT TO DO IN EACH YEAR FROM 2023 TO 2027; HOW MUCH SHOULD THE BOARD BE PUTTING TOWARDS THIS AND WHAT WOULD THE SAVINGS B

TRC-Plus Analysis

What is it and how does it work?

TRC-PLUS is a resource cost plus test that compares the benefits which included: avoided natural gas consumption and any potential electricity or water savings, and the costs which include: program costs and customer costs. There is an additional 15% added for non-energy benefits which include health, comfort and climate benefits which is applied as a direct increase in the program benefits. A TRC-plus ratio greater than 1 means the program is cost-effective for society and

Benefit

Appendix A: 2020 Avoided Costs

A1. EGD RATE ZONE 2020 AVOIDED COSTS

The inflation factor used is 1.61%. The discount rate is 5.67%. Avoided costs are presented in nominal dollars.

GAS AVOIDED COSTS							
		RESIDENTIAL/COMMERCIAL				INDUSTRIAL	
		WATER HEATING (\$/M ³)		SPACE HEATING (\$/M ²)		BASELOAD (\$/M ²)	
YEAR	EUL	RATE	NPV	RATE	NPV	RATE	NPV
2020	1	0.124	0.124	0.146	0.146	0.125	0.125
2021	2	0.134	0.250	0.165	0.302	0.141	0.258
2022	3	0.134	0.370	0.163	0.448	0.143	0.387
2023	4	0.144	0.492	0.174	0.596	0.153	0.517
2024	5	0.150	0.613	0.181	0.741	0.160	0.645
2025	6	0.159	0.733	0.190	0.885	0.169	0.773
2026	7	0.168	0.854	0.200	1.029	0.178	0.901
2027	8	0.174	0.973	0.206	1.169	0.184	1.026
2028	9	0.183	1.090	0.216	1.308	0.194	1.151

^From Enbridge Annual 2020 DSM Report

AVOIDED CARBON COSTS		
RESIDENTIAL/COMMERCIAL/INDUSTRIAL		
(\$/M ³)		
EUL	RATE	NPV
1	0.059	0.059
2	0.078	0.133
3	0.096	0.220
4	0.099	0.305
5	0.101	0.388
6	0.103	0.464
7	0.104	0.539
8	0.106	0.611
9	0.106	0.680
10	0.109	0.747
11	0.111	0.811
12	0.113	0.872
13	0.115	0.932
14	0.117	0.988
15	0.119	1.043
16	0.120	1.098
17	0.122	1.147
18	0.124	1.195
19	0.126	1.242
20	0.128	1.287
21	0.131	1.330
22	0.133	1.372
23	0.135	1.412
24	0.137	1.450
25	0.139	1.487
26	0.141	1.523
27	0.144	1.557
28	0.146	1.590
29	0.148	1.622
30	0.151	1.652

Costs

Equipment Costs: assume negligible as this program targets operation/low cost savings
See sheet: 'Cost Analysis'

TRC-Plus Ratio

(Avoided Costs*1.15)/Total Program Cost

Sources

<https://www.oeb.ca/sites/default/files/Enbridge-Draft-2020-DSM-Annual-Report-20210401.pdf>
<https://www.enbridgegas.com/-/media/Extranet-Pages/Regulatory-Filings/RateCases/Other-Regulatory-Proceedings/EB-2021-0002---Multi-Year-DSM-Plan--2022-2027/Inte>
https://www.auditor.on.ca/en/content/reporttopics/envother/env19_other/2019_EnergyConservationProgressReport_AppendixD.pdf
https://www.oeb.ca/documents/cases/RP-2004-0203/cdm_trcguide_021006.pdf

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