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Friday, December 7th, 2007

VIA COURIER

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, Suite 2700
Toronto, ON M4P 1E4

Re: Enbridge Gas Distribution Inc. ("Enbridge")
EB-2007-0893 DSM Variance Accounts

Enbridge is filing an application with the Ontario Energy Board (the "Board") for an order or orders approving the balances and clearance of certain Demand Side Management Variance Accounts into rates, as at April 1, 2008,

Enclosed please find two copies of the evidence filed by Enbridge. The application and evidence has also been submitted through the Board's Regulatory Electronic Submission System ("RESS"). A copy of the on-line confirmation RESS submission reference number has also been included in this package.

Please contact the undersigned if you have any questions.

Sincerely,

Bonnie Jean Adams

Bonnie Jean Adams

Encl.

EXHIBIT INDEX

A - ADMINISTRATION

EXHIBIT	TAB	SCHEDULE	DESCRIPTION
A	1	1	Index
		2	Application

EXHIBIT B – EVIDENCE AND SETTLEMENT PROPOSAL

EXHIBIT	TAB	SCHEDULE	DESCRIPTION
B	1	1	Overview and Summary of Application
	2	1	Settlement Proposal

EB-2007-0893

ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998,* S.O. 1998, c. 15, Sched. B, as amended;

AND IN THE MATTER OF an application by Enbridge Gas Distribution Inc. for an order or orders approving the balances and clearance of certain Demand Side Management Variance Accounts into rates, as at April 1, 2008

APPLICATION

1. Enbridge Gas Distribution Inc. ("Enbridge Gas Distribution" or the "Company") is an Ontario corporation with its head office in the City of Toronto. It carries on the business of selling, distributing, transmitting and storing natural gas within Ontario. The Company also undertakes Demand Side Management (DSM") activities.

2. Enbridge Gas Distribution hereby applies to the Ontario Energy Board (the "OEB" or the "Board"), pursuant to section 36 of the *Ontario Energy Board Act, 1998,* as amended (the "Act"), for an Order or Orders approving the final balances in the following accounts and the disposition of these balances:

2005 Lost Revenue Adjustment Mechanism Variance Account (2005 LRAM)	($832,271)
2005 Demand Side Management Variance Account (2005 DSMVA)	$697,550
2005 Shared Saving Mechanism Variance Account (2005 SSM)	$Nil
2006 Lost Revenue Adjustment Mechanism Variance Account (2006 LRAM)	($339,524)
2006 Demand Side Management Variance Account (2006 DSMVA - Operating)	$374,734
2006 Shared Saving Mechanism Variance Account (2006 SSM) (*Comprised of $10,929,075 for Resource Acquisition programs, plus $300,000 for Market Transformation)	$11,229,075 *

3. Enbridge Gas Distribution applies to the Board for such final and interim orders and/or accounting orders as may be necessary in relation to clearance of the accounts which are the subject of this Application, as at April 1, 2008. The Company further applies to the Board pursuant to the provisions of the Act and the Board's *Rules of Practice and Procedure* for such final and interim Orders and directions as may be necessary in relation to this Application and the proper conduct of this proceeding.

4. The persons affected by this Application are the customers of Enbridge Gas Distribution. It is impractical to set out the names and address of the customers because they are too numerous.

5. Enbridge requests that a copy of all documents filed with the Board by each party to this proceeding be served on the Applicant and the Applicant's counsel, as follows:

Mr. Robert Bourke
Manager Regulatory Proceedings
Enbridge Gas Distribution Inc.

Address for personal service:	500 Consumers Road Willowdale, ON M2J 1P8
Mailing Address:	P.O. Box 650 Scarborough, ON M1K 5E3
Telephone:	416.495-5616
Facsimile:	416.495-6072
E-mail:	robert.bourke@enbridge.com

Ms. Bonnie Jean Adams
Assistant Regulatory Coordinator
Enbridge Gas Distribution

Address for personal service: 500 Consumers Road
Willowdale, ON M2J 1P8

Mailing Address: P.O. Box 650
Scarborough, ON M1K 5E3

Telephone: 416.495-6409
Facsimile: 416.495-6072
E-mail: bonnie.adams@enbridge.com

And

The Applicant's counsel:

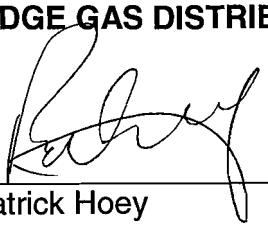
Mr. Dennis M. O'Leary
Aird & Berlis LLP

Address for personal service and
mailing address: Brookfield Place, Box 754
Suite 1800, 181 Bay Street
Toronto, ON M5J 2T9

Telephone: 416-865-4711
Facsimile: 416-863-1515
E-mail: doleary@airdberlis.com

Dated December 7, 2007, at Toronto, Ontario.

ENBRIDGE GAS DISTRIBUTION INC.



Per: Patrick Hoey

SUMMARY OF APPLICATION

1. Enbridge Gas Distribution Inc. ("Enbridge Gas Distribution" or the "Company") is applying to the Ontario Energy Board (the "OEB" or the "Board") pursuant to Section 36 of the *Ontario Energy Board Act, 1998,* as amended (the "Act") for an order or orders approving the final balances in certain 2005 and 2006 Demand Side Management ("DSM") Variance Accounts. The Company is also seeking the disposition of the balances in these accounts and the inclusion into rates, as at April 1, 2008. The accounts which are the subject of this application and the balances recorded are as follows:

2005 Lost Revenue Adjustment Mechanism Variance Account (2005 LRAM)	($832,271)
2005 Demand Side Management Variance Account (2005 DSMVA)	$697,550
2005 Shared Saving Mechanism Variance Account (2005 SSM)	$Nil
2006 Lost Revenue Adjustment Mechanism Variance Account (2006 LRAM)	($339,524)
2006 Demand Side Management Variance Account (2006 DSMVA - Operating)	$374,734
2006 Shared Saving Mechanism Variance Account (2006 SSM) (*Comprised of $10,929,075 for Resource Acquisition programs, plus $300,000 for Market Transformation)	$11,229,075 *

2. The aggregate impact of the balances recorded in the three 2005 accounts is ($134,721), which is a credit to ratepayers. The aggregate impact of the three 2006 accounts is $11,264,285. The net impact of clearing the accounts for both years is $11,129,564. It is this net amount which the Company seeks approval from the Board for clearance through to rates, as of April 1, 2008.

DSM Framework

3. The variance accounts which are the subject of this proceeding relate to DSM activities in fiscal 2005, the "stub" period in 2005 when the Company's fiscal year changed, and fiscal 2006. While the periods in question pre-date the application of the Natural Gas DSM Framework approved by the Board in the Natural Gas DSM Generic Issues proceeding (EB-2006-0021) ("Generic Proceeding") by its Decision with Reasons, dated August 15, 2006, the Company has, for the most part, followed the stakeholder consultation and the monitoring and evaluation requirements which were ultimately approved by the Board in the Generic Proceeding. More specifically, the DSM Consultative was continued during the period in question, and it selected an audit committee which provided feedback on the monitoring and evaluation reports and the independent audits which were completed.

4. The methodologies used by the Company to determine the amounts recorded in each of the DSMVA, LRAM and SSM were the subject of prior Board hearings and decisions. For the fiscal 2005 year, the Board accepted the settlement proposal entered into between the Company and participating parties that each of the SSM, LRAM, and DSMVA accounts and methodologies be continued on the terms previously approved for use in the RP-2002-0133 proceeding.[1] Due to the Company's change in year-end, it became necessary for the Board to deal with the impact on DSM as a result of this "stub" period. The Company proposed that the SSM, LRAM and DSMVA be used during the stub period on a pro-rated basis and that the evaluation report and audit relating to the Company's activity in fiscal 2005 be expanded to include the stub period. The Company also proposed that certain rules be applied in respect of the evaluation of the SSM during the

[1] Settlement Proposal, RF-2003-0203, Ex. N1-1-1, p. 36

stub period. The Board approved the Company's proposals for the stub period in its Decision with Reasons, dated November 1, 2004.[2]

5. DSM activities in fiscal 2006 were the subject of the Board's Partial Decision with Reasons, dated December 22, 2005.[3] The Board in this proceeding considered and approved a DSM budget for 2006, and the SSM incentive methodology for both resource acquisition programs and market transformation programs. The Board also considered and approved the methodology for the DSMVA. The LRAM methodology was not changed.

Summary of Facts and Events

6. Consistent with the various approvals by the Board, the Company's DSM programs were the subject of a monitoring and evaluation report in each of 2005 and 2006. Copies of these reports are attached as Appendices A and C. It should be noted that the 2005 Monitoring and Evaluation Report includes reporting on the "stub" period, being October 1, 2005 to December 31, 2005.

7. Each of the 2005 (15 months) and 2006 DSM program portfolios were the subject of an independent audit prepared by RLW Analytics. A copy of both subject years' Independent Audit and Final Reports, dated June 27, 2007, is attached at Appendices B and D.

8. The DSM Consultative has been provided with copies of each of the 2005 and 2006 Monitoring and Evaluation Reports. The Consultative chose an Audit Committee consisting of representatives from IGUA, CCC, and the Green Energy Coalition, in addition to the Company. As contemplated by the approved

[2] RP-2003-0203, pp. 58-60
[3] EB-2005-0001, EB-2005-0437

framework, the Audit Committee subsequently made recommendations in respect of the clearance of each of the 2005 and 2006 DSM variance accounts.

9. In addition, the 2005 and 2006 Independent Audits were the subject of a review and verification of the calculations underlying the proposed SSM and LRAM amounts undertaken by Kai Millyard Associates. A copy of the Kai Millyard Associates Final Reports for both years, dated September 10, 2007, are attached at Appendix E.

2005 and 2006 Lost Revenue Adjustment Mechanism Variance Accounts

10. The calculations supporting the 2005 LRAM (15 months) are set out in the attached 2005 Post Audit LRAM Calculation, attached at Appendix F. Similar calculations for 2006 are attached at Appendix G. For the 15 months which were the subject of the 2005 calculations, the volume variance between budget and actuals was 10,847,708 m^3. Calculated over the various rate classes, this variance generates a credit to ratepayers of $832,271 for the 15 months in question. For fiscal 2006, the volume variance was 5,629,257 m^3. This generates a credit to ratepayers of $339,524.

2005 and 2006 Demand Side Management Variance Accounts

11. The amounts recorded in these accounts, being $697,550 for 2005 (15 months) and $374,734 for 2006, are as set out and confirmed in the 2005 and 2006 Monitoring and Evaluation Reports (pages 34 and 33, respectively).

2005 and 2006 Shared Savings Mechanism Deferral Accounts

12. The 2005 Monitoring and Evaluation Report calculated an SSM of $977,032 (at page 30). It also calculated an SSM for Market Transformation initiatives at $300,000 (at page 31).

13. For 2006, the Monitoring and Evaluation Report calculated an SSM of $12,522,731 (at page 29).

Recommendations of the Audit Committee

14. As noted above, the results of the Company's 2005 and 2006 DSM programs have been considered by the Audit Committee and the DSM Consultative. Following its review of the Monitoring and Evaluation Reports and the Independent Audits, the Audit Committee made recommendations to the DSM Consultative and the Company. Specifically, the Audit Committee recommended a reduction in the SSM for 2005 from $977,032 to zero, and a reduction in respect of the 2006 SSM from $12,522,731 to $11,229,075. The SSM for 2006 includes $300,000 for the Energy Star Windows Market Transformation program given the success of the program as confirmed by the independent auditor, RLW Analytics Inc., in its letter dated September 7, 2007 (attached as Appendix H). The Audit Committee confirmed as appropriate and recommended acceptance of the proposed 2005 and 2006 LRAM and DSMVA amounts.

15. Both the DSM Consultative and the Company have agreed to accept the settlement recommendations of the Audit Committee. As a result of the settlement agreement which has been reached, the Company has recorded the above-noted agreed upon amounts in the relevant 2005 and 2006 variance accounts.

Proposal for Clearance

16. The net amount which the Company proposes for clearance through to rates is $11,129,564. The Company respectfully requests that these amounts be included in rates, effective April 1, 2008. It should be noted that the proposed April 1st clearance date is consistent with the Company's proposal in its incentive

regulation filing for the annual clearance of deferral and variance accounts on April 1st of each year.

17. The allocation methodology applicable to each of the 2005 and 2006 DSM Variance Accounts was filed as part of the Company's 2006 Rates Case (EB-2005-0001), at Exhibit A8, Tab 2, Schedule 1, pages 10 and 11, at paragraphs 41, 43 and 46. Specifically, this evidence noted that in respect of specific costs of DSM programs, the Fully Allocated Cost Study, filed in an earlier proceeding, classified to gas supply load balancing, DSM peak and DSM annual, using a 60/40 demand/commodity ratio. DSM support costs are classified to gas supply load balancing, peak and annual, using the same ratio. It is proposed that the 2005 and 2006 DSMVA be classified and allocated accordingly.

18. Consistent with the evidence, the Company proposes to clear the 2005 and 2006 LRAM to customer rate classes based on the variance between the forecast and actual DSM volumetric savings by rate class.

19. In respect of the 2005 and 2006 SSMVA, in accordance with the evidence, these accounts will be cleared to the customer rate classes based on the same proportions as the actual net benefits are allocated to each of the rate classes for the DSM Plan. This is consistent with how the costs are recorded in the SSMVA.

Benefits to Ratepayers

20. For the 15 months included in the 2005 period, the Company's DSM activities resulted in natural gas savings of 91.4 10^6m^3. Net TRC for the same time period totalled approximately $196 million.

21. In 2006, the Company's DSM activities generated natural gas savings of approximately 89.5 10^6m^3, in comparison to the target volumes of approximately 77.4 10^6m^3, representing a variance of about 15.6 percent. Net TRC generated

totalled approximately $180.6 million. As well, the Company was successful in transforming the Energy Star Windows market in its franchise area by 8 percent from 2005 levels.

22. These results mean that ratepayers benefit from resource bill reductions totalling approximately $376.7 million. These values are based upon the settlement recommended by the Audit Committee.

ENBRIDGE GAS DISTRIBUTION INC.

DEMAND SIDE MANAGEMENT

2005 MONITORING and EVALUATION REPORT

Prepared by:

Enbridge Gas Distribution Inc.,
DSM Planning and Evaluation Group

&

SeeLine Group Inc.

March, 2007

Table of Contents

1.0 Introduction

1.1 Background

In response to the Ontario Energy Board (the Board) Report in EBO 169-III, Enbridge Gas Distribution (the Company) has been delivering Demand Side Management (DSM) programs since 1995.

The Company later sought and was granted approval to be eligible to receive a financial incentive through the Shared Savings Mechanism (SSM) beginning in fiscal 1999 (F1999). In addition, through prior decisions of the Board, the DSM framework also includes a Lost Revenue Adjustment Mechanism (LRAM) and Demand Side Management Variance Account (DSMVA). The LRAM "is a mechanism to adjust for margins the utility loses if its DSM Program is more successful in the period after rates are set than was planned in setting the rates." [1] For 2005, the DSMVA allows the Company to exceed the DSM budget provided that the DSM programs meet the Board approved gas savings target.

The DSM Regulatory process involves several steps. The Company's DSM plan is first approved by the Ontario Energy Board. In 2005 the Company's DSM Plan was presented and approved by the Board as part of the Company's annual Rates Case.[2] The DSM plan provided detail on the DSM programs and measures, the planned budget expenditure, natural gas savings, and the associated societal benefits (TRC results).

The Monitoring & Evaluation Report is then generated annually as part of the requirements of qualifying for an incentive through the SSM. The Report is reviewed through an independent audit and the process culminates in the Company filing the SSM, LRAM and DSMVA claims with the Board.

1.2 Report Overview

This report presents the results of the Company's DSM program activity for F2005 as compared to the approved DSM plan. The Company's DSM portfolio of programs in 2005 included both resource acquisition programs and one market transformation program. The resource acquisition programs are of two types. Results for prescriptive programs are calculated based on deemed savings and related assumptions for specific DSM measures as approved by the Board in the DSM plan. Results for custom programs are based on engineering calculations for each individual site where efficiency improvements were made.

In addition to the Company's monitoring results it also incorporates results of third party evaluations undertaken for one prescriptive program, one market transformation program and custom projects spanning several programs in the Commercial and Industrial sectors.

[1] EBRO 495, Decision, Page 100
[2] RP-2003-0203, Exhibit A7

In addition to reporting the DSM program results, this report contains information in support of the Company's F2005 SSM claim and its F2005 Demand Side Management Variance Account (DSMVA) claim.

The year 2005 represents the final year of non-calendar year based reporting of DSM results. Fiscal 2005 encompasses the period October 1, 2004 to September 30, 2005. Starting in 2006, Enbridge will report its results on a calendar year basis. To accommodate the transition, this Report includes summarized reporting on the "Stub" period – October 1, 2005, to December 31, 2005. The results for the stub period are provided in Appendix C.

The F2005 Monitoring and Evaluation Report is organized into seven sections. **Section 2** provides an overview of program results. **Section 3** and **Section 4** detail results, along with the participants and net savings achieved in the year for Residential programs and Business Markets programs respectively. Program results are presented at both the sector level and the program level. **Section 5** discusses the results of the Total Resource Cost Test (TRC) and the Company's SSM claim for Resource Acquisition Programs. **Section 6** discusses results of the Market Transformation program and the associated SSM claim. **Section 7** provides the DSM costs and summary for the DSMVA. **Section 8** discusses evaluation research activities. **Appendix A** contains the Fiscal Budget and Actual Cost Effectiveness Results. **Appendix B** shows the detailed program assumptions. **Appendix C** provides the Stub period results. **Appendix D** includes the TRC Calculation Guidelines.

2.0 F2005 DSM Program Results Summary

2.1 Resource Acquisition Programs

The results for the F2005 DSM programs are summarized in **Table 2.1**. The portfolio of DSM programs in F2005 resulted in net annual natural gas savings of 81.3 10^6m^3, compared to the savings target of 76.9 10^6m^3, a variance of approximately 5.8%.

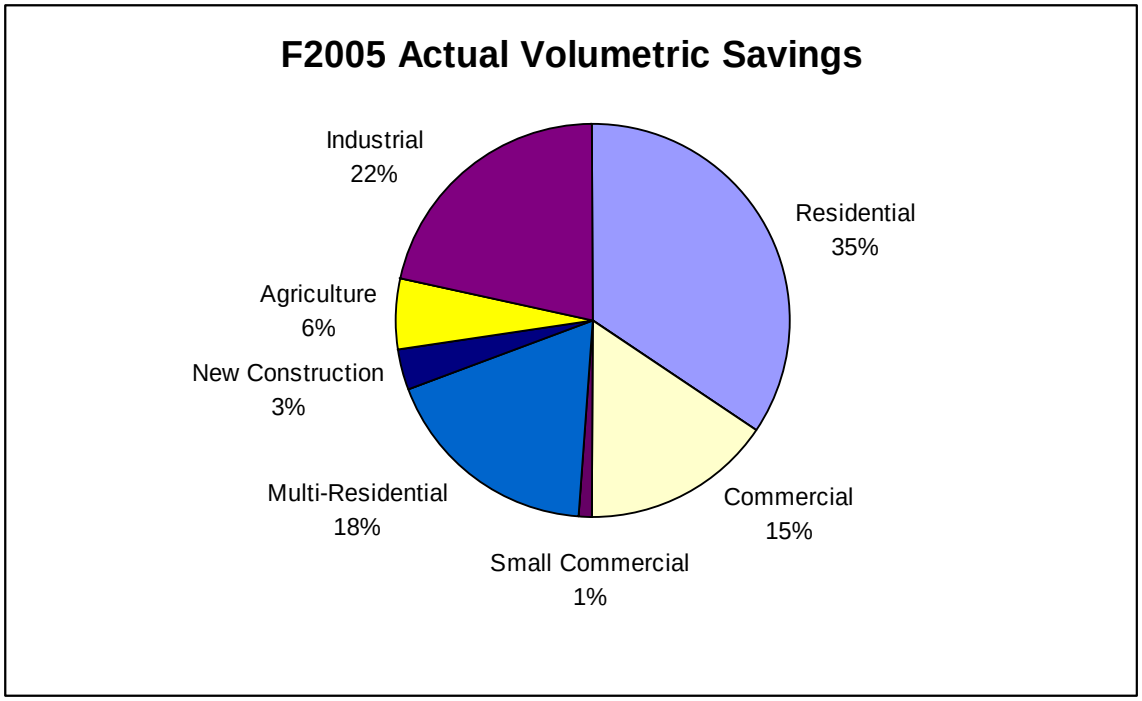
Table 2.1: Summary of F-2005 DSM Results

	Participants			F2005 Gas Savings (m3)				DSM Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (m3)	Var (%)	Budget	Actual	Var (%)
Residential	471,602	522,456	10.8%	30,088,300	28,111,960	(1,976,340)	-6.6%	$6,862,900	$7,452,046	8.6%
Commercial	632	366	-42.1%	12,985,620	12,491,368	(494,252)	-3.8%	$1,365,701	$1,043,128	-23.6%
Small Commercial	1,650	1,722	4.4%	812,302	1,073,645	261,343	32.2%	$149,500	$142,831	-4.5%
Multi-Residential	39,193	13,711	-65.0%	10,589,500	14,537,067	3,947,567	37.3%	$1,066,600	$1,884,247	76.7%
New Construction	20	38	90.0%	1,050,000	2,765,583	1,715,583	163.4%	$149,500	$455,495	204.7%
Agriculture	35	19	-45.7%	2,534,476	4,826,723	2,292,247	90.4%	$156,648	$157,638	0.0%
Industrial	118	81	-31.4%	18,850,124	17,589,613	(1,260,511)	-6.7%	$1,464,079	$865,282	-40.9%
All Sectors	513,250	538,393	4.9%	76,910,322	81,395,958	4,485,636	5.8%	$11,214,928	$12,000,668	7.0%

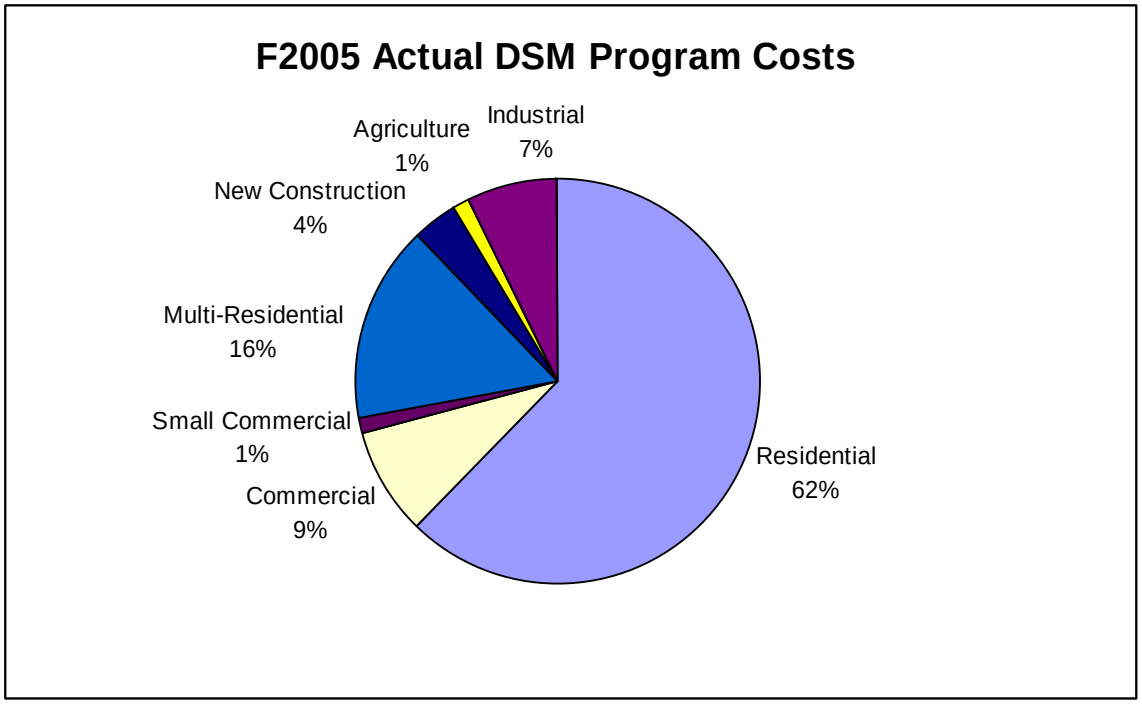
Definition of Participant: For the purposes of tracking, reporting and evaluating programs, the number of participants is a valid consideration and can offer insights regarding market share, remaining potential, etc. It is a particularly useful measure for the residential and mass market sectors where savings are prescriptive and the number of participants is the key variable. It is less useful for custom projects where savings opportunities are most often targeted based on the size or nature of the load, and not necessarily on the number of participants. One large customer may offer significantly more savings than many small ones. As such, using the number of participants as a key metric of program design or program performance can be inappropriate, particularly in the industrial and large commercial/institutional sectors.

As in the past, the Residential and the Industrial sectors were the largest contributors to DSM volumetric savings, delivering 35% and 22% of the total savings respectively, as summarized in **Graph 2.1**. However, neither achieved the program volumetric target. These decrements were off-set by exceptionally strong results in the New Construction, Agriculture, and Multi-Residential sectors. Costs are illustrated in **Graph 2.2**.

Graph 2.1: Summary of F-2005 DSM Results



Graph 2.2: Summary of F-2005 DSM Program Costs



The sector results are discussed in detail in Sections 3 and 4.

2.2 Market Transformation Program

In 2005 the Company initiated a market transformation program for windows in the low-rise residential housing sector. Progress was measured by the change in market share for ENERGY STAR windows relative to the market share in 2004 with a target of achieving a 10% increase in the sale of ENERGY STAR windows. In 2005 the sale of ENERGY STAR windows surpassed the 2004 market share by 17%. Additional details are provided in Section 3.7.

2.3 Other Commitments

In addition to commitments in the plan regarding specific programs, the Settlement Agreement for 2005 also called on the Company to:

> "… file a longer term strategic DSM plan on or before January 1, 2005 which plan will address, amongst other matters, lost opportunity markets, market transformation, low income customers, incentive mechanisms and audit protocols. The Company will consult DSM consultative members and solicit input on the terms of reference and scope of the new multi-year DSM plan and provide members an opportunity to review and comment on the draft plan before it is filed with the Board."[3]

This commitment was met with the filing of the Multi-Year plan for 2006-2008 in EB-2005-0001. The Plan documents include a DSM Strategic Plan that was developed in consultation with members of the DSM Consultative.[4]

[3] RP-2003-0302, Exhibit N1, Tab 1, Schedule 1, page 34
[4] EP-2005-0001, Exhibit A7, Tab 9, Schedule 1

3.0 Residential Programs and Performance

3.1 Residential Sector – F2005 Highlights

Five program areas were delivered in the Residential sector in F2005: Water Conservation, TAPS Partners, Equipment Replacement, Low Income and New Construction. Each program consisted of a number of component measures, as shown in **Table 3.1**.

In F2005, the total Residential volumetric savings were 28.1 $10^6 m^3$ which represents 35% of the total savings for the DSM Portfolio as a whole, making the Residential Sector programs the largest in the portfolio. This continues a trend from the past and the results are greater than those achieved in F2004, albeit somewhat below target.

In 2005 the Efficient Tank Purchase program was discontinued as a result of an increase to the minimum efficiency level for new tanks. Prior to 2005, the Company worked with manufacturers to ensure that the fleet average of all tanks sold or installed in the Company's franchise area achieved an energy factor of 0.65 or greater. The Company and Union Gas Ltd. jointly negotiated incentives with Ontario's three largest water heater manufacturers. These manufacturers in return agreed to maintain their water heater fleet at an average Efficiency Factor (EF) of 0.65 or better. With the raising of the minimum efficiency level, the Company no longer needed to support the market in this manner.

With the additional success of the Tank Temperature Setback initiative which concluded in 2003, the Company has been instrumental in transforming the new water heater tank marketplace to a greater level of efficiency which will be sustained by the implementation of the minimum efficiency standard.

Given the conclusion of the new water heater initiatives and their inherent savings (approximately 4.0 $10^6 m^3$ in 2004), the Company is encouraged by the continued strong results from the other Residential sector programs. While the sector in total did not achieve its target, much of the decrement stems from two program areas where the Company has already addressed issues related to uptake of the programs. The variance stems mainly from the combined effects of higher than anticipated participation in one program and the decision to cover the full incentive costs for the Furnace Replacement Program after Natural Resources Canada ceased its funding of the program. From a budgetary perspective, the residential programs operated at approximately 10% above budget.

Residential sector programs are prescriptive in nature, i.e., savings results are based on deemed savings per participant as approved in the DSM plan. Prescriptive programs in 2005 were monitored by tracking participants either through rebate applications to the Company or through records of business partners who deliver the programs. Results for the largest Residential sector program, TAPS, were reviewed through a third party evaluation to validate participant numbers.

The following sections examine each of the program areas in detail.

Table 3.1: Summary of F-2005 Residential Sector Results [5]

	Participants			Gas Savings (m3)				DSM O & M Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (m3)	Var (%)	Budget	Actual	Var (%)
DHW Tank Efficient Purchase	0	0	0.0%	0	0	0	0.0%	$0	$0	0.0%
Educational Program	0	0	0.0%	0	0	0	0.0%	$7,500	$0	-100.0%
Water Utilities - Showerhead	500	0	-100.0%	50,220	0	(50,220)	-100.0%	$5,000	$0	-100.0%
Water Heating Program - Heat Traps	2,000	0	-100.0%	146,000	0	-146,000	-100.0%	$145,000	$0	-100.0%
Total Water Heating & Conservation	**2,500**	**0**	**-100.0%**	**196,220**	**0**	**(196,220)**	**-100.0%**	**$157,500**	**$0**	**-100.0%**
TAPS Partners Program - Showerheads	100,600	125,018	24.3%	10,104,264	12,556,808	2,452,544	24.3%	$2,120,639	$4,282,913	n/a
TAPS Partners Program - Aerators	100,600	102,543	1.9%	1,847,016	1,882,689	35,673	1.9%	$365,361	$0	n/a
TAPS Partners Program - Pipe Wrap	100,000	106,474	6.5%	1,152,000	1,226,580	74,580	6.5%	$400,000	$0	n/a
TAPS Partners Program - Bag Test	125,000	152,519	22.0%	0	0	0	0.0%	$515,000	$0	n/a
TAPS Partners Program - Thermostats	0	0	0.0%	0	0	0	0.0%	$0	$0	n/a
Total TAPS Partners	**426,200**	**486,554**	**14.2%**	**13,103,280**	**15,666,078**	**2,562,798**	**19.6%**	**$3,401,000**	**$4,282,913**	**25.9%**
Furnace Replacement	7,000	8,808	25.8%	2,471,560	3,109,929	638,369	25.8%	$750,000	$1,735,139	131.4%
Enhanced Furnace Replacement	3,000	5,437	81.2%	1,714,176	3,106,658	1,392,482	81.2%	$575,000	$441,933	-23.1%
Thermostats - Householder ($15)	14,000	13,375	-4.5%	2,641,520	2,523,595	(117,925)	-4.5%	$290,000	$286,285	-1.3%
Home Rewards - Energuide for Houses	4,512	324	-92.8%	6,363,544	456,957	(5,906,588)	-92.8%	$438,400	$268,120	-38.8%
Thermostats	0	2,109	0.0%	0	2,563,110	2,563,110	0.0%	$0	$0	0.0%
Energuide for Natural Gas Fireplaces (P.4)standard	0	0	0.0%	0	0	0	0.0%	$15,000	$129	-99.1%
Total Equipment Replacement	**28,512**	**30,053**	**5.4%**	**13,190,800**	**11,760,248**	**(1,430,552)**	**-10.8%**	**$2,068,400**	**$2,731,605**	**32.1%**
Low Income Program -- Programmable Thermostats	2,000	2,037	1.9%	424,000	431,844	7,844	1.9%	$175,000	$314,633	79.8%
Low Income Program -- Showerheads	2,000	1,165	-41.8%	264,000	153,780	(110,220)	-41.8%	$134,000	$0	-100.0%
Low Income Program -- Pipe Wrap	2,000	1,180	-41.0%	24,000	14,160	(9,840)	-41.0%	$8,000	$0	-100.0%
Low Income Program -- Education/Training	0	0	0.0%	0	0	0	0.0%	$105,000	$0	-100.0%
Low Income Program -- Bag Test	2,000	1,291	-35.5%	0	0	0	0.0%	$28,000	$0	-100.0%
Total Low Income	**8,000**	**5,673**	**-29.1%**	**712,000**	**599,784**	**(112,216)**	**-15.8%**	**$450,000**	**$314,633**	**-30.1%**
R-2000 (Energuide)	30	19	-36.7%	24,000	15,200	(8,800)	-36.7%	$75,000	$75,000	0.0%
New Building Energy Efficiency	6,360	157	-97.5%	2,862,000	70,650	(2,791,350)	-97.5%	$711,000	$47,896	-93.3%
Total New Construction	**6,390**	**176**	**-97.2%**	**2,886,000**	**85,850**	**(2,800,150)**	**-97.0%**	**$786,000**	**$122,895**	**-84.4%**
Total Residential	**471,602**	**522,456**	**10.8%**	**30,088,300**	**28,111,960**	**(1,976,340)**	**-6.6%**	**$6,862,900**	**$7,452,046**	**8.6%**

[5] Note: Actuals include all TAPS costs.

3.2 Water Conservation

The water conservation efforts focus primarily on the delivery of low-flow showerheads and faucet aerators. The program relies heavily on third party contractors as its key delivery agents.

3.2.1 Water Utilities

In the past, Enbridge Gas Distribution has supplied low-flow showerheads to a variety of municipalities in support of their various water savings programs. The program was not offered in fiscal 2005 as the Company focused all of its water savings efforts on the TAPS Partners component.

3.2.2 Heat Traps

The Heat Trap program was not launched in 2005. Savings as determined from pilot studies and high incremental costs resulted in negative cost effectiveness results.

3.3 TAPS

Since F2000, the program has utilized service contractors to install conservation retrofits in existing homes and to build awareness of environmental and cost saving benefits among homeowners. Contracting "partners" are selected based on criteria outlined through a Request for Proposal process. Contractors with the best rating are chosen to deliver the program for one fiscal year and are evaluated throughout the year.

Contractors use various methods to recruit participants to the program, including canvassing neighbourhoods, telemarketing, and/or offering the TAPS package during service calls. The Company's communication material is provided to the contractor to illustrate to the customer the energy savings achieved through the program.

The TAPS Partners program involves installation of the following:

- up to two low-flow showerheads;
- foam pipe insulation leading to and from the hot water heater; and
- kitchen and bathroom aerators which are left for customers to install themselves.

Contractors are required to conduct a bag test to measure the flow rate on the customer's existing showerhead to pre-qualify the need for a new, low flow device.

TAPS Partners contractors reported the number of measures installed on a monthly basis. To validate these results, a follow-up telephone survey was conducted using a statistically significant random sample of customers. The follow-up surveys ultimately formed the basis for adjustments that were made to reflect installation and removal rates (Highlights of the TAPS research are provided in Section 8).

Net savings from TAPS Partners showerheads, pipe wrap and programmable thermostats was 15.6 $10^6 m^3$, representing more than 50% of the total Residential savings for the year. In total, savings from the program were significantly higher than budget due to higher participation rates. This stems from both a higher than expected number of participating households (approximately 164,000) and a greater number of showerheads and aerators installed per household.

3.4 Equipment Replacement and Envelope

3.4.1 Furnace and Boiler Replacement

This program aimed to increase the efficiency level of new furnaces purchased in the Residential market through offering customers a financial incentive. The Company provided an on-bill rebate to customers for the purchase and installation of a natural gas high efficiency heating system. For part of F2005, the Enbridge incentive of $100 was augmented to $200 through a partnership with Natural Resources Canada.

Rebate forms were provided to customers via the Web, bill inserts, and through voluntary contractor participation, including over 500 contractors and industry partners. Customers submitted proof of installation with their rebate coupons. The equipment was matched against NRCan's list of Energy Star™ qualified products. A summary of participants was sent to NRCan to recoup their half of the incentive costs.

In addition to the customer incentive, the Company provided contractor training and extensive promotion of the program. Participation was approximately 25% higher than budgeted.

Midway through the 2005 campaign, NRCan's contribution to the program was ceased due to funds being exhausted. The Company made a strategic decision to continue to honour the rebate at the full amount as advertised, resulting in significantly higher incentive costs than expected. In combination with the greater participation levels than anticipated, the program exceeded its budget by almost $1 Million dollars.

3.4.2 Enhanced Furnace Replacements

After two successful years as a pilot, the Enhanced Furnace Replacement program was operated as a full program in 2005. The program offered a split incentive of $75 to contractors who installed a high efficiency furnace with an electronically commutated (ECM) motor in either new or replacement applications and $100 to the participating customer. This furnace represents the highest potential efficiency for a residential style furnace and brings with it co-benefits in the form of electricity savings. Paralleling the Furnace Replacement Program, participation in this program significantly exceeded the budget. As proof of eligibility for the enhanced furnace incentive, contractors submitted invoices providing a breakdown of customer installations, including equipment make and model. These invoices represent the key tracking and reporting component of the Enhanced Furnace Replacement program.

3.4.3 Thermostats

This program aimed to increase the market penetration of programmable thermostats *via* a $15 rebate given to customers who purchased a programmable thermostat and installed it themselves. Programmable thermostats allow customers to pre-set the thermostat to automatically lower and raise temperatures according to a desired schedule. This results in savings in both the heating and cooling seasons. Rebate forms are provided to customers through the Web, bill inserts, and voluntary contractor participation.

Participants were tracked based on rebate coupons returned from customers. The program yielded results slightly below the budget but continues to be a strong performer.

3.4.4 Weatherization/Home Rewards

The Company has been offering a Weatherization or Home Rewards program since 2001. The Home Rewards program promotes improved home performance in the Residential market by encouraging customers to undertake a home energy audit, to implement retrofit measures as recommended by the audit and to undertake a second audit after the retrofit measures are installed to determine the home's new energy rating. The Company provides a customer incentive to support the cost of the audit. The rebate is conditional on the homeowner taking actions in the areas identified in the audit.

In October 2003, the Federal Government announced an EnerGuide for Houses (EGH) program that provided a homeowner incentive to help alleviate the cost barrier to implementation of the measures. The amount of the Federal incentive was determined by the improvement achieved in the home's energy rating resulting from the retrofit measures.

In December 2004 the Company changed the Enbridge incentive structure to provide $50 per participant and $25 for the contractor.

The program is delivered through the Green Communities Canada (GCC) member organizations across the franchise area. The audit involves a blower door test and the Hot2XP computer modeling provided by the EGH program. GCC submitted monthly participant reports that indicated the results of the pre-audit and post-audit ratings. Participants were tracked in 2 categories: those who received a programmable thermostat and those who did not.

Due to the timing of the re-launch and the subsequent adjustments in the marketplace, initial uptake of the program was slow, resulting in a significant decrement in number of participants and natural gas savings. It is noted that during the stub period, program participation has exceeded projections indicating that the program appears to be back on track.

3.5 Low Income TAPS

This was a new program offering in F2005. The Company provided TAPS service contractors with postal codes for low income areas. TAPS contractors then targeted these areas with a package of products including the standard showerhead, aerator and pipe wrap, augmented with programmable thermostats and two compact fluorescent light bulbs.[6] All products were provided free of charge to the customer.

The Low Income TAPS program visited 2,037 residences in F2005, slightly above the target number of visits. Of these, all but one received a programmable thermostat. Showerhead/aerator and pipe wrap installations were undertaken in approximately 60% of the homes while the remaining 40% declined the offer of the free measures.

[6] Note that for the purposes of this Report, showerheads and aerators are reported as a single measure: "showerhead". Savings and costs attributed to the lighting measures were allocated to EGD's business partners and are not reported here.

3.6 New Construction

Components in this suite of programs focus on improving the operating energy efficiency of new homes through the adoption of improvements to the building envelope, and high efficiency space and water heating systems.

3.6.1 R-2000 (Energuide)

This program promoted the building and certification of new homes to the R-2000 standard in construction through the provision of training, workshops and promotional materials to the industry. Specially trained builders design, build, test and certify homes to the R-2000 standard which greatly exceeds the current Canadian building codes. R-2000 homes save the homeowner between 30% and 40% in energy costs, as well as provide improved air quality and greater comfort than conventionally built homes.[7] R-2000 plays an important role in technology transfer regarding energy efficiency in new home construction.

The Company endorses and promotes energy conservation through the R-2000 Home program and the more advanced EnviroHome Program by supporting EnerQuality™ Corporation (the R2000 program delivery agent in Ontario) and individual builders. In addition, Enbridge Gas Distribution promotes the environmental and Indoor Air Quality elements of R-2000 EnviroHome buildings and participating builders receive marketing and training support from the Company.

The homes that were certified as R-2000 are submitted quarterly by EnerQuality™ Corporation for Natural Resources Canada. Only homes that were heated with natural gas and were in the Company's franchise area were reported as participants in the program.

Nineteen R-2000 homes were constructed in F2005, lower than the budgeted 30 homes, and the program remains a small component of the Residential sector results. The reasons for the relatively low uptake of the R-2000 initiative are the same as in past years. In Ontario's current tight real estate market, builders are unwilling to make the extra investment required for these homes to be built, certified and marketed. R-2000 homes continue to be niche products built by custom builders. The DSM costs for the R-2000 program were promotional and therefore were fixed in nature.

3.6.2 EnerGuide for New Homes

The EnerGuide for New Homes program was launched in 2005. This labeling program was developed by Natural Resources Canada and uses the highly visible branding of the EnerGuide label applied to new homes. EnerGuide is the official Government of Canada mark that rates the energy efficiency of products. The EnerGuide for New Homes program is a two-step program that first encourages builders to offer energy efficiency upgrades to potential buyers and then confirms those upgrades with a site visit and official report and label for display in the home. The label shows customers that a trusted third party evaluator has properly assessed the level of energy efficiency of the

[7] The features of R-2000 include a whole-house continuous ventilation system, advanced heating and cooling systems, energy efficient appliances and lighting, energy efficient windows and doors, a tighter building envelope, and higher levels of insulation.

house. In support of the program, the Company offers a $100 incentive plus related marketing assistance to eligible builders who participate.

Natural Resources Canada has contracted with EnerQuality to deliver the program and Enbridge Gas Distribution provides funding and marketing assistance to EnerQuality to facilitate the program. For 2005, EnerQuality provided estimates of first year participation in the Company's franchise. Unfortunately, the program was launched in mid-cycle for builders and did not receive the uptake expected by EnerQuality. Because of the large decrement in participation, the program was also significantly below budgeted spending levels.

3.7 Windows Market Transformation

A Windows Market Transformation Program was approved as part of the 2005 DSM plan. The overall goal of the program was to increase the market share for ENERGY STAR windows in the Company's franchise area by 10% from 2004 levels.

To meet the program objective, the Company developed four strategies:
- create awareness of the ENERGY STAR program with Window Manufacturers
- motivate manufacturers to participate as providers of ENERGY STAR windows by upgrading their product and pursuing certification
- assist manufacturers to promote ENERGY STAR windows to customers
- use the Enbridge brand to further promote ENERGY STAR windows in the marketplace

Implementation of these strategies involved activities with key window manufacturers as well as Company promotion of ENERGY STAR windows. Program activities with key window manufacturers included personal communication and meetings to encourage participation in the ENERGY STAR program, financial support to achieve ENERGY STAR qualification, and additional support to enable manufacturers to market Energy Star products to customers.

Through the Settlement Agreement for the 2005 DSM plan, the Company agreed to spend $300,000 on the Windows Market Transformation program.[8] In addition to working with manufacturers, the Company undertook extensive promotion of ENERGY STAR windows through presence at trade and consumer shows, production and distribution of print materials, development of a windows website, and print advertising in major daily newspapers.

An independent study was commissioned to determine the baseline market share in 2004 and, after year end, the market share for 2005. The study found that, in 2005 the sale of ENERGY STAR windows surpassed the 2004 market share by 17%. A summary of the Windows Market Transformation study is found in Section 8.

[8] RP-2003-0203, Exhibit N1, Tab 1, Schedule 1, page 34

4.0 Business Markets Programs and Performance

4.1 Business Markets - F2005 Highlights

Table 4.1 provides the results and expenditures for the major sectors in the Business Markets. In total the Business Markets over-achieved its projected savings target at a cost slightly above budget. Total savings for the Business Markets were 53.3 $10^6 m^3$ representing almost 66% of the total DSM savings. Within the Business Markets, the Industrial sector (including Agriculture) delivered the most savings, representing about 42% of total Business Market savings. However, the Industrial sector was slightly below target while many of the other sectors were above target. This continues the trend wherein the other sectors' results are beginning to account for a greater share of the Business Market. The Small Commercial, New Construction, Agriculture, and Multi-Residential sectors are notable for their significant overachievement of target.

Table 4.1: Summary of F-2005 Business Markets DSM Results

	Participants			F2005 Gas Savings (m3)				DSM Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (m3)	Var (%)	Budget	Actual	Var (%)
Commercial	632	366	-42.1%	12,985,620	12,491,368	(494,252)	-3.8%	$1,365,701	$1,043,128	-23.6%
Small Commercial	1,650	1,722	4.4%	812,302	1,073,645	261,343	32.2%	$149,500	$142,831	-4.5%
Multi-Residential	39,193	13,711	-65.0%	10,589,500	14,537,067	3,947,567	37.3%	$1,066,600	$1,884,247	76.7%
New Construction	20	38	90.0%	1,050,000	2,765,583	1,715,583	163.4%	$149,500	$455,495	204.7%
Total Commercial	41,495	15,837	-61.8%	25,437,422	30,867,662	5,430,240	21.3%	2,731,301	3,525,702	29.1%
Agriculture	35	19	-45.7%	2,534,476	4,826,723	2,292,247	90.4%	$156,648	$157,638	0.6%
Industrial	118	81	-31.4%	18,850,124	17,589,613	(1,260,511)	-6.7%	$1,464,079	$865,282	-40.9%
Total Industrial	153	100	-34.6%	21,384,600	22,416,336	1,031,736	4.8%	1,620,727	1,022,920	-37%
Total Business Markets	41,648	15,937	-61.7%	46,822,022	53,283,998	6,461,976	13.8%	4,352,028	4,548,622	4.5%

4.1.1 Custom Projects

Business Markets consist of the Commercial, Multi-Residential, Large New Construction and Industrial sectors.

The Company offers four commercial sector programs that are prescriptive in nature focusing on multi-residential water savings measures and small commercial space heating measures. As with prescriptive programs in the Residential sector, these are tracked through participant rebate applications or through business partner reporting.

However, most participants in Business Markets programs are classified and treated as "custom projects" for which the energy savings and incremental costs were determined on an individual project basis.

While the programs might be marketed under branded names such as "Steam Saver" or "Monitoring and Targeting", the savings, equipment costs and incentive payments are

tracked and reported through individual custom applications for each project wherein the incentive amount is determined using a per m^3 index. In any given year, the Company processes hundreds of these custom application projects.

An independent engineering review was undertaken to validate the savings estimates for custom projects. Summaries of the engineering reviews for custom projects in the Commercial and Industrial sectors are found in Section 8.

The 2003 Monitoring and Evaluation Report[9] identified the existence of distinct decision types in the business markets with respect to replacement and advancements. The tracking and evaluation of the 2005 custom projects relied on those definitions. In F2005, most projects fell into the advancement category and the savings and incremental costs were adjusted using the approach identified in the 2003 Monitoring and Evaluation Report.[10] This adjustment shortens the life over which the savings are claimed and correspondingly adjusts the incremental cost of the equipment to reflect the assumption that the investment would have been made at a future date.

The calculation of incremental costs for custom projects for the SSM calculation reflects the Settlement Agreement in the 2003 Rates Case. That is, for the purposes of the SSM calculation, the incremental costs estimated in the budget remain fixed while those associated with actual volumetric savings are drawn from the actual project records. The F2003 Settlement also identifies commonly-used measure lives that remain constant in both the budget and actual net benefits calculations.

In F2005, there were a total of 529 custom projects, consisting of 166 Commercial, 225 Multi-Residential, 38 Large New Construction, 81 Industrial, and 19 Agriculture.

There is a broad range of technologies and activities that comprise the custom project process in any given year. In 2005 boilers and related activities represent the largest percentage of projects undertaken. Also noteworthy are projects that focused on building envelope improvements, building controls, domestic hot water, Novitherm Panels and steam traps.

As outlined in the Settlement Agreement for the 2005 DSM plan, the Company agreed to spend "$300,000 of the budget on an efficient large boilers program with an associated volume target of 2.1 million m^3 for this program." The additional funding was directed to an increased incentive for high efficiency boilers which enabled increased uptake for this technology. Installations of high efficiency boilers were tracked through the HVAC and Schools programs as well as through the designated High Efficiency Boiler program. Together, the high efficiency boiler installations in these three programs met the objectives of the Settlement Agreement.

4.1.2 Implementation of Recommendations from Previous Audit

In 2005 several initiatives were undertaken to improve documentation and savings calculation methodology relating to custom projects. In addition, some recommendations regarding savings calculations for specific measures (Novitherm panels and Steam traps) were implemented in 2005. Together, these initiatives address many of the recommendations from the audits of the 2002 and 2003 DSM results.

[9] Original EB-2005-0001, Exhibit A7, Tab12, Schedule 1, Page 43-44.
[10] Ibid.

Custom project documentation
A Documentation Protocol for custom projects was introduced in 2005. The protocol outlines additional documentation that is required for each custom project. The increased documentation meets many of the audit recommendations and facilitates third party review of the custom project savings calculations.

ETools
Comprehensive ETools software was developed and introduced in 2005 for the Commercial sector. The ETools software enables the Company's Energy Solutions Consultants to readily estimate energy savings for a variety of energy efficiency measures. Among its many features ETools

- facilitates consistent savings calculations,
- allows for individual calculation of savings from various controls measures, and
- provides automatic default values for baseline cases.

Novitherm panels
Savings from installation of Novitherm panels are obtained from the panels themselves and from associated adjustment to the building's heating system controls. For 2005, savings of 10% are claimed conditional on documentation of the associated controls adjustments. In the absence of documentation, savings are calculated at 6.5%.

Steam traps
Beginning in 2005 uniform factors of 75% for leakage and 50% for overall loss are routinely applied to all steam trap projects.

4.2 Commercial Sector

4.2.1 Large Commercial

Table 4.2: Summary of F-2005 Commercial Program DSM Results

	Participants			F2005 Gas Savings (m3)				DSM Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (m3)	Var (%)	Budget	Actual	Var (%)
CM 1 Total Steam Saver	37	10	-73.0%	2,590,000	531,264	(2,058,736)	-79.5%	$229,500	$51,352	-77.6%
CM 2 Heat Recovery	10	8	-20.0%	504,000	3,604,346	3,100,346	615.1%	$49,000	$84,924	73.3%
CM 3 Total HVAC	86	46	-46.5%	4,221,620	5,450,389	1,228,769	29.1%	$339,730	$489,598	44.1%
CM 3.1 Hi-Effic.Boiler Program	114	15	-86.8%	1,995,000	843,440	(1,151,560)	-57.7%	$256,400	$67,100	-73.8%
CM 4.2 Total Schools	160	79	-50.6%	2,800,000	1,584,938	(1,215,062)	-43.4%	$308,571	$177,380	-42.5%
CM 9.0 General EEP Program	20	8	-60.0%	700,000	476,991	(223,009)	-31.9%	$70,000	$72,794	4.0%
CM Pre-rinse Spray	200	200	0.0%	0	0	0	0.0%	$40,000	$61,423	53.6%
CM.TRAN Commercial Promotion Activities	0	0	0.0%	0	0	0	0.0%	$40,000	$24,498	-38.8%
CM.MT Monitoring and Targeting	5	0	-100.0%	175,000	0	(175,000)	-100.0%	$32,500	$14,059	-56.7%
Total Commercial	632	366	-42.1%	12,985,620	12,491,368	(494,252)	-3.8%	$1,365,701	$1,043,128	23.6%

In 2005, the Company offered commercial sector programs across a variety of technology types and sectors[11]. Much of the activity focused on boilers, including boiler replacement, steam trap improvements and controls.

Overall, net savings achieved from the various projects completed in the Large Commercial sector were 12.5 $10^6 m^3$, slightly less than the budgeted amount.

The "Steam Saver" program saw a decrease in reported participation and savings in F2005. This is a result of the combined effects of a lower than expected number of audits, notably in the institutional segments. Also, some projects were reported under other Commercial programs.[12]

The Heat Recovery program repeated its very strong performance of F2004 as a result of much higher than expected per project savings while the HVAC program also experienced higher per project savings. This is a direct result of participants undertaking multiple measures and a more holistic approach to energy savings opportunities. The audit portion of the program has been particularly successful in demonstrating the potential savings to customers.

Uptake of condensing boilers continues to be hampered by relatively long payback periods and the tendency in the boiler marketplace to replace "like with like" technology.

Savings for the Schools program was significantly below budget, due to the "business cycle" in this sector.

The Monitoring and Targeting (M&T) Program did not achieve its target for F2005. Many of the savings opportunities identified by the M&T approach are inherently behavioural in nature and therefore particularly affected by the split incentive market barrier.

Costs for the suite of commercial programs were below budget while savings were higher than projected. This reflects the proportion of large projects in the portfolio, i.e., projects which are subject to a cap on the total incentive payment.

[11] In 2005, Commercial sector results are reported independently for Small Commercial, distinctly from the Commercial Sector

[12] The Company has recently initiated a project to re-define the components for the Commercial suite of programs that will eliminate definitional over-lap between programs.

4.2.2 Small Commercial

Table 4.3: Summary of F-2005 Small Commercial Program DSM Results

	Participants			F2005 Gas Savings (m3)				DSM Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (m3)	Var (%)	Budget	Actual	Var (%)
Small Commercial - Furnace Replacements	150	78	-48.0%	52,962	27,540	(25,422)	-48.0%	16,000	8,290	-48.2%
Small Commercial - Thermostats	500	99	-80.2%	94,340	18,679	(75,661)	-80.2%	8,500	2,365	-72.2%
Small Commercial Prescriptives- Pre-Rinse Spray Valve	1,000	1,545	54.5%	665,000	1,027,425	362,425	54.5%	125,000	132,176	5.7%
Small Commercial Prescriptives- Aerator	0	0	0.0%	0	0	0	0.0%	0	0	0.0%
Small Commercial Prescriptives- Thermostats	0	0	0.0%	0	0	0	0.0%	0	0	0.0%
Total Small Commercial	**1,650**	**1,722**	4.4%	**$812,302**	**$1,073,645**	**$261,343**	**32.2%**	**$149,500**	**$142,831**	-4.5%

The Small Commercial suite of programs are more closely aligned with the mass market programming approach. The programs are prescriptive in nature with uniform deemed savings for every participant. The furnace and thermostat elements of the programs achieved modest results, below what was projected.

In F2005, the Company expanded the Pre-Rinse valve initiative from the Pilot Program, originally launched in 2004. The F2004 results indicated that there was enough interest in the marketplace to support a full program. Participation in the program in F2005 was 50% higher than budgeted.

4.2.3 Multi-Residential Sector

Table 4.4: Summary of F-2005 Multi-Residential Program DSM Results

	Participants			F2005 Gas Savings (m3)				DSM Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (m3)	Var (%)	Budget	Actual	Var (%)
MR 4.0 Total Non profit	**48**	**12**	**-75.0%**	**1,848,000**	**546,370**	**(1,301,630)**	**-70.4%**	**$241,200**	**$75,366**	**-68.8%**
MR 5.0 Total Private	**125**	**213**	**70.4%**	**4,812,500**	**12,898,330**	**8,085,830**	**168.0%**	**$585,000**	**$1,716,934**	**193.5%**
MR 6.0 Water Conservation	**39,000**	**13,486**	**-65.4%**	**3,159,000**	**1,092,366**	**(2,066,634)**	**-65.4%**	**$140,400**	**$91,948**	**-34.5%**
Social Housing	**20**	**0**	**-100.0%**	**770,000**	**0**	**(770,000)**	**-100.0%**	**$100,000**	**$0**	**-100.0%**
Total Multi-Residential	**39,193**	**13,711**	**-65.0%**	**10,589,500**	**14,537,067**	**3,947,567**	**37.3%**	**$1,066,600**	**$1,884,247**	**76.7%**

With nearly 50% of the Multi-Residential building stock having been built prior to 1970, there is a large potential for energy savings, particularly from boiler plant upgrades and improvements to the building envelope. The Company continued delivery of two programs within the Multi-Residential sector: MultiCHOICE and Water Conservation and also added a new program focusing on social housing. This new program used a single delivery agent (Social Housing Services Corporation) and was intended to promote a full suite of potential technology-based solutions.

The MultiCHOICE program offered building owners solutions that addressed concerns related to energy performance and costs within Multi-Residential buildings. Projects were tailored to the individual needs of each building and could include one or more of the following technologies: building envelope, central space and hot water boilers, boiler controls, ventilation equipment, Novitherm insulating panels, and water conservation devices. The program

offered a stepped incentive structure to encourage customers to make incremental energy efficiency choices. An incentive of $\$0.05/m^3$ of gas saved was paid for up to two measures installed, and doubled to $\$0.10/m^3$ of gas saved for three or more measures implemented (up to a maximum of $30,000). There were 225 custom projects delivered in the Multi-Residential sector across a variety of technology types.

The Multi-Residential sector also included two water conservation programs that are treated on a prescriptive basis with individual suites counted as participants. There were approximately 13,500 Multi-Residential participants in the water conservation programs, less than half the budgeted expectation.

In total, the Multi-Residential sector achieved 14.5 10^6m^3 in volumetric savings in F2005, contributing approximately 27% of the total Business Markets portfolio savings. This strong result is approximately 37% above budget. Costs were approximately 76% higher than anticipated, driven in part by incentives paid in the MultiCHOICE programs

The private multi-residential program experienced a significant overachievement in both participants and savings, with the per project savings also being greater than anticipated. Take-up on the Audit program was much greater than anticipated as participants took advantage of the ability to assess their building energy use from a holistic perspective. This included both a “whole building” assessment and a portfolio examination. The higher incentive available for projects that included three or more measures resulted in many customers undertaking broader retrofits than initially considered. Strong support of the MULTI-Choice program by Sales and Marketing staff also helped to achieve the results.

As in the past, most of the projects were boiler installations with higher efficiency non-condensing boilers replacing standard atmospheric units. Higher efficiency condensing boiler uptake continues to be moderate, however the Company is encouraged that these units are receiving greater interest in the market. Novitherm Panels are also a strong performer in the Multi-Residential sector.

For Water Conservation, participation rates were lower than projected due to a decrease in activity by the various water conservation delivery partners.

Actual expenditures saw wide variations versus budgeted values across all programs. Much of this relates to the various participation rates. A significant over-expenditure occurred in the Boiler program driven by much greater participation and related incentive payments than anticipated.

4.2.4 Large New Construction

Table 4.5: Summary of F-2005 Large New Construction DSM Results

	Participants			F2005 Gas Savings (m3)				DSM Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (m3)	Var (%)	Budget	Actual	Var (%)
Large New Construction	20	38	90.0%	1,050,000	2,765,583	1,715,583	163.4%	$149,500	$455,495	204.7%

In 2005, as a result of research undertaken in 2004, the Large New Construction program was re-designed and re-launched. The new program consists of two distinct but linked program offerings.

The first is the Design Assistance Program component which facilitates an integrated design process involving the architect, engineer, building owner, and a Company approved design advisor. The program dovetails with NRCan's Commercial Building Incentive Program (CBIP), including the use of the EE4 modeling software and "Wizards". This component is similar to the original Design Advisory Program; however it uses a fixed incentive of $4,000 per project.

The second component is the New Building Construction program. This offering provides an incentive of $\$0.075/m^3$ for implementation of energy efficiency measures identified through the integrated design process.

The new program was launched in spring, 2005. However, given long construction lead times, the Company agreed to "grandfather" a number of projects eligible under the original DAP offering. As such, the majority of the 38 projects reported for F2005 were processed using the old program design parameters.

The interest in the Company's new building construction initiative(s) has been growing steadily since the original DAP program was launched. There is now a stable of design advisers in Ontario who are well versed with the modeling requirements of the Company and NRCan programs. In F2005, results for the program exceeded budgeted projections as there were both more participants than expected and larger savings per project. Costs were correspondingly higher than budgeted.

4.3 Industrial

4.3.1 Overview

Table 4.6: Summary of F-2005 Industrial Markets DSM Results

	Participants			F2005 Gas Savings (m3)				DSM Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (m3)	Var (%)	Budget	Actual	Var (%)
IN 1 Total Steam Saver	60	45	-25.0%	9,882,348	10,278,955	396,607	4.0%	$683,823	$407,154	-40.5%
IN 2 Heat Recovery	17	14	-17.6%	3,570,000	2,544,860	(1,025,140)	-28.7%	$231,100	$166,086	-28.1%
IN 3 HVAC	28	22	-21.4%	2,177,776	4,765,798	2,588,023	118.8%	$151,556	$251,647	66.0%
NEW HVAC Audit Programs	8	0	-100.0%	1,120,000	0	(1,120,000)	-100.0%	$165,600	$0	-100.0%
IN.MT Monitoring and Targeting	5	0	-100.0%	2,100,000	0	(2,100,000)	-100.0%	$148,000	$8,803	-94.1%
IN.TRAN Industrial Promotion Activities	0	0	0.0%	0	0	0	0.0%	$34,000	$20,279	-40.4%
Business Partner Devlopment	0	0	0.0%	0	0	0	0.0%	$50,000	$11,314	-77.4%
Total Industrial	118	81	-31.4%	18,850,124	17,589,613	(1,260,511)	-6.7%	$1,464,079	$865,282	-40.9%

4.3.2 Industrial Manufacturing

Overview

Industrial DSM programs delivered 81 projects with Actual net savings of 17.6 10^6m^3. Costs for the industrial programs were significantly below budget, reflecting the mix of program types, with those delivered under the Steam Saver program generating higher savings per dollar spent. As in the past, the majority of savings were from the Steam Saver program (approximately 58% of the total from this sector), which continues to be a very strong branded program for the Company.

Steam Saver

As indicated, approximately 58% of the Industrial DSM savings were attributed to the Steam Saver program. This component of the industrial program tracked very closely to expectations. It continues to be one of the strongest programs for the sector and was recognized as a “Best Practice” for DSM programs by the Canadian Energy Efficiency Alliance in 2004.

Heat Recovery

The Heat Recovery program did not meet expectations; savings were 29% below the target. During 2005, the Company re-examined the needs related to achieving heat recovery savings. The Company then developed a new Process Integration program which will facilitate marketing of heat recovery measures

HVAC

In total, the HVAC program met its volumetric target, significantly overachieving on the Infrared component. However, the HVAC boiler component did not meet expectations. The boiler component was expected to benefit from leads developed through HVAC audits. However, in 2005, much of the focus for HVAC audits was on commercial applications and the expected “leads” did not materialize for the industrial sector.

Monitoring and Targeting

This program was designed to help Industrial and Commercial customers achieve long-term efficiency improvements through energy monitoring and target setting. The Monitoring and Targeting ("M&T") process is a set of methods designed to accurately evaluate, target and report energy use performance to achieve a sustained improvement in energy performance. The M&T process uses metering and performance software as well as training and tools that provide employees with the ability to realize sustained energy improvements. M&T was promoted with other initiatives to large volume customers through direct mail, tradeshows, conference participation, and customer contact.

In previous years, the M&T program was used by a small number of manufacturers who achieved dramatic results. In spite of the evidence showing that savings can be significant from this type of program, uptake was again disappointing in F2005. Programs that rely on enabling technology instead of "end-of-pipe" solutions are often faced with unique barriers that traditional incentive-based approaches may not address. The Company is re-examining its commitment to this program.

4.3.3 Agriculture

Table 4.7: Summary of F-2005 Agriculture Program DSM Results

	Participants			F2005 Gas Savings (m3)				DSM Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (m3)	Var (%)	Budget	Actual	Var (%)
IN 4.0 Total Agriculture	35	19	-45.7%	2,534,476	4,826,723	2,292,247	90.4%	$156,648	$157,638	0.0%

The Agriculture program is primarily focused on the Greenhouse industry located in the Niagara region. Energy efficiency measures in this sector take into consideration the special needs of the utility's greenhouse customers. The Company offers a free walk-through audit with actionable follow-up recommendations as well as the standard industrial incentive of $ 0.05/m^3 of gas saved (up to a maximum of $30,000) to encourage implementation of energy saving measures.

The program incorporated many of the Industrial DSM initiatives, such as the steam trap audits, pipe insulation on steam and hot water transfer mains and distribution pipes, and upgrades to heating systems. In addition, it offered measures unique to the greenhouse sector, such as wall structure upgrades from single polyethylene or glass to double polyethylene, the installation of insulating curtains, and CO_2 dousing systems to displace natural gas used for stand-alone CO_2 burners.

In the F2004 Monitoring and Evaluation Report, the Company noted a declining trend in results starting in 2001. For F2005, the decrease in the number of participants in the programs continued, however, savings were actually higher than projected. This relates almost entirely to two very large projects undertaken in F2005. As in the past, most projects included multiple technologies with shade

curtains and boiler installations as the most prevalent measures in terms of participant rates.

Double polyethylene wall projects started to drop off in 2004 and this trend continued in 2005.

Boiler and shade curtain projects saw less participation, but greater per participant savings due to one or two exceptionally large projects. Generally, the theme identified in 2004, i.e., smaller projects with less per unit potential, still prevails.

5.0 Resource Acquisition Programs - TRC Benefits and SSM

5.1 Background

As directed by the Ontario Energy Board, the Company performs cost effectiveness screening tests on all of its programs to ensure that the programs are cost effective.

The key test for screening and approving programs is the Total Resource Cost Test (TRC) which measures the costs and benefits to society for any given DSM program. All programs are expected to pass this test. Benefits under the TRC test include the "avoided cost" of natural gas. Where a program also saves electricity or water, these savings are also specified and used to calculate the benefits of the program. Costs under the TRC test represent the incremental cost of the customer's energy efficient equipment or alternative and the costs to the utility to promote the program.

When the SSM was first approved, the Board determined that it should be based on the TRC test results. The Settlement Agreement in the 2003 Rates Case[13] further defined how the TRC results should be calculated. These guidelines remain in effect for 2005. Appendix D provides the full text of the guidelines.

5.2 Results by Sector and Program

This section presents the cost effectiveness results for the F2005 suite of programs. Results are presented at both the sector and program levels.

The results shown in this section are contrasted against the "pivot point", representing the target TRC net benefits for F2005. The pivot point reflects the volumetric targets and program assumptions in the Company's DSM plan for 2005.

The "variance" values are the increment or decrement from the pivot point. In F2005, the Company surpassed its targeted TRC results by approximately $6 Million. This reflects the combined impacts of higher savings results than projected, as well as the mix of programs, with more results coming from programs (or projects) which are inherently more cost effective.

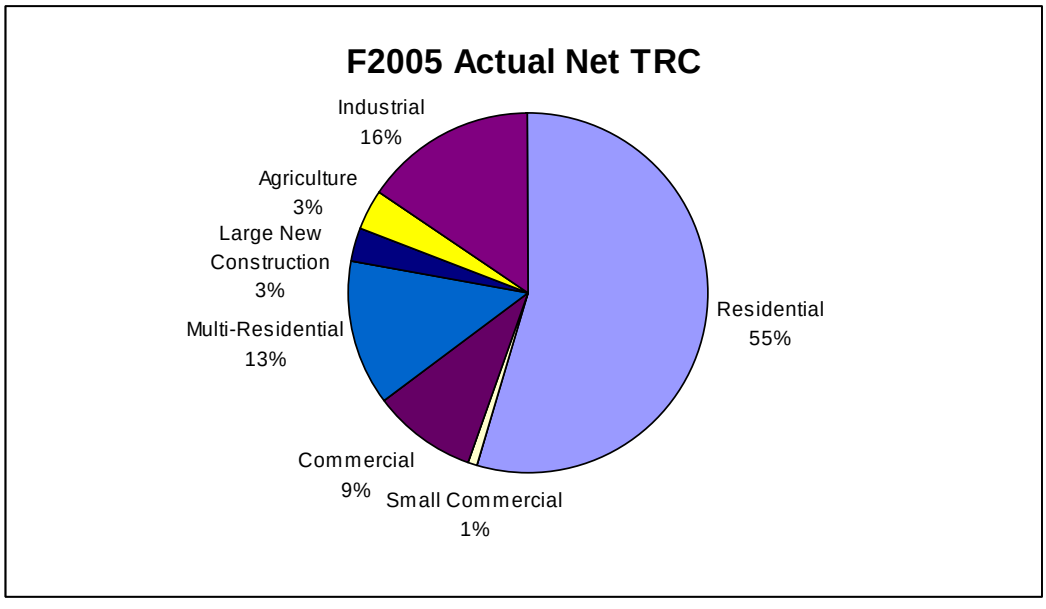
Table 5.1 provides the total TRC results and pivot point projection at the sector level.

[13] RP-2002-0133, Exhibit N1, Tab 1, Schedule 1, Page 68-71.

Table 5.1: Summary of F-2005 TRC Results

Program	Pivot Point	Actual NPV	Variance	Variance %
Residential	$85,311,112	$95,217,600	$9,906,488	11.6%
Small Commercial	$1,305,824	$1,536,290	$230,466	17.6%
Commercial	$16,260,841	$16,436,313	$175,472	1.1%
Multi-Residential	$30,793,826	$23,610,845	($7,182,982)	-23.3%
Large New Construction	$2,234,525	$5,587,117	$3,352,591	150.0%
Agriculture	$2,425,483	$6,047,017	$3,621,535	149.3%
Industrial	$33,165,979	$27,877,244	($5,288,735)	-15.9%
Total DSM Programs	**$171,497,590**	**$176,312,425**	**$4,814,835**	**2.8%**
Program Development	($533,855)	($402,630)	$131,225	24.6%
Market Transformation	$0	$0	$0	0.0%
Overheads	($3,295,123)	($2,813,225)	$481,898	14.6%
Total DSM Portfolio	**$167,668,612**	**$173,096,570**	**$5,427,958**	**3.2%**

Graph 5.1: F-2005 Actual TRC



Tables 5.2 to 5.8 present the detailed TRC results by sector and program.

Table 5.2: Residential Sector TRC Results

Program	Pivot Point	Actual NPV	Variance	Variance %
Residential				
Water Conservation	$228,751	$0	($228,751)	-100%
Heat Traps	$76,714	$0	($76,714)	-100%
Taps Partner	$54,052,756	$66,233,332	$12,180,576	23%
Equipment Replacement	$32,834,834	$27,693,394	($5,141,440)	-16%
Low Income	$1,817,233	$1,506,145	($311,088)	-17%
New Construction	($3,699,175)	($215,272)	$3,483,904	94%
Total Residential	**$85,311,112**	**$95,217,600**	**$9,906,488**	**12%**

The positive TRC result for the residential sector is driven primarily by the TAPS program, which experienced approximately 23% higher participation rates than projected. The rest of the programs in the residential portfolio experienced a TRC decrement versus the pivot point. In the Equipment Replacement and Thermal Envelope group, the furnace replacement programs showed positive TRC results while the negative results for EnerGuide for Houses contributed to the overall decrement for this group of programs.

Table 5.3: Small Commercial Sector TRC Results

Program	Pivot Point	Actual NPV	Variance	Variance %
Small Commercial				
Water Heating				
Furnace Replacements	$111,304	$57,308	($53,996)	-49%
Thermostats	$275,815	$53,719	($222,096)	-81%
Pre-Rinse Spray Valve	$918,705	$1,425,263	$506,558	55%
Aerator	$0	$0	$0	0%
Thermostats	$0	$0	$0	0%
Total Small Commercial	**$1,305,824**	**$1,536,290**	**$230,466**	**18%**

The small commercial sector TRC program results experienced a positive TRC largely due to increased participation in the Pre-rinse Spray valve program.

Table 5.4: Commercial Sector TRC Results

Program	Pivot Point	Actual NPV	Variance	Variance %
Commercial				
Comm.Steam Saver	$3,006,584	$593,026	($2,413,558)	-80%
Comm. Heat Recovery	$811,769	$4,746,929	$3,935,160	485%
Comm.HVAC	$5,587,811	$7,362,160	$1,774,349	32%
Hi-Effic.Boiler Program	$1,230,023	$1,675,721	$445,698	36%
Schools	$4,361,641	$1,131,607	($3,230,034)	-74%
General EEP Program	$1,070,410	$1,031,180	($39,230)	-4%
Pre-rinse Spray	($20,000)	($65,753)	($45,753)	-229%
Commercial Promotion Activities	($40,000)	($24,498)	$15,502	39%
Comm.Monitoring and Targeting	$252,603	($14,059)	($266,662)	-106%
Total Commercial	**$16,260,841**	**$16,436,313**	**$175,472**	**1%**

TRC results in the Commercial sector reflect the variation in volumetric savings achieved across the programs with overall results at 1% above projected.

Table 5.5: Multi-residential Sector TRC Results

Program	Pivot Point	Actual NPV	Variance	Variance %
Multi-Residential				
Non profit	$4,057,682	$309,111	($3,748,571)	-92%
Private	$10,712,946	$18,349,952	$7,637,006	71%
Water Conservation	$14,319,997	$4,951,782	($9,368,216)	-65%
Social Housing	$1,703,201	$0	($1,703,201)	-100%
Total Multi-Residential	**$30,793,826**	**$23,610,845**	**($7,182,982)**	**-23%**

The Multi-residential sector results are below projections, reflecting significant decrements in the Non-profit, Water Conservation and Social Housing programs.

Table 5.6: Large New Construction Sector TRC Results

Program	Pivot Point	Actual NPV	Variance	Variance %
Large New Construction	**$2,234,525**	**$5,587,117**	**$3,352,591**	**150%**

The Large New Construction TRC results reflect the combined effects of greater than anticipated participation and greater than anticipated per unit savings.

Table 5.7: Agriculture Sector TRC Results

Program	Pivot Point	Actual NPV	Variance	Variance %
Agriculture	**$2,425,483**	**$6,047,017**	**$3,621,535**	**149%**

The Agriculture sector results reflect the strong positive savings results achieved and the mix of programs within the sector.

Table 5.8: Industrial Sector TRC Results

Program	Pivot Point	Actual NPV	Variance	Variance %
Industrial				
Steam Saver	$15,944,543	$16,630,551	$686,007	4%
Heat recovery	$6,794,225	$5,129,657	($1,664,569)	-24%
HVAC	$3,851,909	$6,157,431	$2,305,523	60%
HVAC Audit Programs	$2,011,024	$0	($2,011,024)	-100%
Monitoring and Targeting	$4,648,277	($8,803)	($4,657,080)	-100%
Industrial Promotion Activities	($34,000)	($20,279)	$13,721	40%
Business Partner Development	($50,000)	($11,314)	$38,686	77%
Total Industrial	**$33,165,979**	**$27,877,244**	**($5,288,735)**	**-16%**

The HVAC and Steam Saver components exceeded their pivot point projections. The remainder of the industrial sector programs failed to achieve their TRC target. This relates to their underachievement on expected volumes. Note as well, that for some custom projects, higher than projected incremental customer equipment costs further contributed to the TRC decrement.

5.3 SSM Claim

The SSM provides for an incentive to the Company for DSM activities. For 2005, an incentive is awarded if the Company surpasses the planned TRC net benefits in any given year. The Settlement Agreement for the 2003 Rates Case also defines how the SSM is calculated. This SSM formula remains in effect for 2005.[14] Under this formula the incentive is calculated as a percentage of the TRC net benefits that are in excess of the TRC target or pivot point as follows:

> "The TRC savings target for 2003 is approximately $130 million. … the SSM incentive formula will be as follows.
> - For up to the first 10% of TRC savings over budget (up to and including 10%), the reward is 18% of those savings.
> - Plus for the second 10% of TRC savings over budget (10.01% - 20%), the reward is 15% of those savings.
> - Plus for the third 10% of TRC savings over budget (20.01% - 30%), the reward is 12% of those savings.
> - Plus for the fourth 10% of TRC savings over budget (30.01% - 40%), the reward is 9% of those savings.
> - Plus for all TRC savings that are in excess of 40% greater than budget TRC savings (greater than 40%), the reward is 6% of those savings."[15]

The program year 2005 involved both a 12 month period and a 3 month Stub period. In the Board Decision, the Board accepted the Company's proposal including the treatment of the SSM for the two periods as described.

[14] RP-2003-0203, Exhibit N1, Tab 1, Schedule 1, page 36.
[15] RP-2002-0133, Exhibit N1, Tab 1, Schedule 1, page 67-68.

- "If the TRC savings are achieved in both the Fiscal 2005 and Stub Periods, the SSM is proposed to be based upon the aggregate of the volumetric targets in the two periods (12 + 3 months), calculated to be 96.1 million cubic metres.
- If the TRC savings are achieved in Fiscal 2005 but not in the Stub Period, the SSM is based upon the volumetric target in the 12-month Fiscal 2005 period only, agreed to be 76.9 million cubic metres.
- If the TRC savings are not achieved in Fiscal 2005 but they are achieved in the Stub Period, the SSM is based upon the aggregate volumetric targets in the two periods (12 + 3 months) calculated to be 96.1 million cubic metres."[16]

In 2005, the Company achieved TRC savings in the Fiscal year (case #2 as described above). Hence, the SSM calculation below is based on the volumetric target in the 12-month Fiscal 2005 period only.

SSM Calculation

	Pivot Point	TRC	%	SSM Claim
Post ADR Pivot Point	$177,050,627			
Adjusted Pivot Point for measure life distribution	$167,668,612			
Actual TRC		$173,096,570		
1st 10% above Pivot Point		$5,427,958	18%	$977,032

For up to the first 10% of TRC savings over budget (up to and including 10%), the SSM is 18% of those savings.

[16] RP-2002-0133, Decision With Reasons, page 59.

6.0 Market Transformation and SSM

6.1 Windows Market Transformation Program Results

As reported earlier, the overall goal of the 2005 Windows Market Transformation program was to increase the market share for Energy Star windows in the Company's franchise area by 10% from 2004 levels.

The independent study commissioned to determine program results found that, in 2005 the sale of Energy Star windows surpassed the 2004 market share by 17%. A summary of the Windows Market Transformation study is found in Section 8.

6.2 SSM Claim

The terms for the SSM incentive for the Windows Market Transformation program were described in the Settlement Agreement as follows.

> "The Company will be eligible to claim an incentive of $300,000 if third party evaluation confirms that after 12 months the market share for Energy Star windows in the franchise area has increased 10 percentage points above the level at the start of the Test Year. For example if the evaluation demonstrated that the starting market share was 12%, to obtain the incentive the market share after 12 months would have to equal or exceed 22%. The post evaluation methodology shall be consistent with the methodology utilized to determine the base line market share."

Therefore, based on the program results, the Company is entitled to an SSM of $300,000.

7.0 DSM Cost Summary (DSM Variance Account)

As part of the RP-2003-0203 Settlement Proposal, Agreeing Parties accepted a 12 month DSM budget of $15.3 million ($14.8 million in addition to the F2004 carried forward amount of $533,000) to achieve a savings target of 76.9 $10^6 m^3$, which was later approved by the Board. The Board approved budget for the stub period was $3.7 million. The Settlement Proposal also enabled the Company to recover costs in excess of the Budget through the DSMVA, provided that the Company achieved the volumetric target, which it did.

The DSM costs are summarized in **Table 7.1**. Total DSM spending was $15.5 million for the fiscal year which was 1.0% higher than the Budget and $3.7 million for the stub period.

The DSM Costs recovered in rates were $14.8 million for the fiscal year and $3.7 million for the stub period ($18.5 million combined). The remaining costs to be recovered through the DSMVA are $19,197,550 less $18,500,000 or $697,550.

Table 7.1: DSM Costs and DSMVA Summary

DSM SUMMARY		2005 Settlement BUDGET	2005 ACTUAL	VAR ($) (UNFAV)FAV
Fiscal 2005				
Residential				
	Fixed	$866,520	$814,851	($51,669)
	Variable	$6,429,920	$7,067,351	$637,431
		$7,296,440	$7,882,202	$585,762
Business Markets				
	Fixed	$672,700	$655,911	($16,789)
	Variable	$3,519,738	$3,764,578	$244,840
		$4,192,438	$4,420,489	$228,051
Program Development				
	Fixed	$533,855	$402,630	($131,225)
Overheads				
	Fixed	$3,311,122	$2,813,225	($497,897)
Sub total				
	Fixed	$5,384,197	$4,686,617	($697,580)
	Variable	$9,949,658	$10,831,929	$882,271
Sub Total		**$15,333,855**	**$15,518,546**	**$184,691**
	TOTAL DSM F2005			
	Fixed	$5,384,197	$4,686,617	($697,580)
	Variable	$9,949,658	$10,831,929	$882,271
Total DSM F2005		**$15,333,855**	**$15,518,546**	**$184,691**
DSM Costs recovered in Rates			**$14,800,000**	
DSMVA recoverable			**$718,546**	

2005 Stub			
Total DSM S2005	**$3,700,000**	**$3,679,004**	**($20,996)**
DSM Costs recovered in Rates		**$3,700,000**	
(1/4 of the Rates recovered in F2005)			
DSMVA recoverable		**($20,996)**	

2005 15 Months			
Total DSM 2005	**$19,033,855**	**$19,197,550**	**$163,695**
DSM Costs recovered in Rates		**$18,500,000**	
DSMVA recoverable		**$697,550**	

8.0 Evaluation Research

8.1 TAPS Follow-Up Study

8.1.1 Background

The TAPS program dispatches participating contractors to customers' homes to install a variety of measures including showerheads, pipe wrap to be installed on water lines, going into and coming away from the hot water tank, and energy saving aerators for kitchen and bathroom faucets. As in previous years, the Company contracted with an independent market research firm to undertake a survey based evaluation of the 2005 TAPS program.

The focus of the study was verification of installation rates and contractor capability in the delivery of the program.

8.1.2 Purpose of the Study

The study was designed to verify installation rates that support the savings calculation and also to provide program management with process evaluation information to assist in ongoing program improvement. In this area the study provided a comparative assessment of the various contractors as well as customer feedback on program design and delivery.

8.1.3 Methodology

In 2005, over 164,000 customers participated in the TAPS program. For the survey the research team selected a sample of 16,519 TAPS customers who received a home visit from one of the eight TAPS contractors during fiscal 2005. From the sample, 2,824 customers were interviewed. The survey was developed to determine results related to program delivery, procedures, and installation and removal rates of energy saving measures by TAPS contractors as well as program success, gaps, and opportunities. Based on those customer interviews, results are presented with a margin of error of +/- 2 percentage points, with 95% confidence.

8.1.4 Results

TAPS program results are presented in relation to each energy savings measure as well as for installation and removal rates.

Overall the showerhead installation rate was found to be 91% with a removal rate of 2%. Subsequently a reduction factor of 11% was applied to the results for participants and volumes in both the fiscal 2005 and the stub 2005 periods. .

Households visited by TAPS contractors also received faucet aerators and pipe wrap. According to the interviews 74% of the aerators were installed either by the contractor or by the householder, with a removal rate of 1%. Similarly, of the households that indicated that they had received pipe wrap, 79% of those had it installed in their homes by the participating contractor or by the householder. There were no instances of removals pertaining to pipe wrap. Therefore the

participant numbers and volumes were reduced by 27% for aerators and 21% for pipe wrap in both the fiscal and stub 2005 periods.

The customer survey demonstrated that the TAPS program has substantial traction; 96% of those surveyed were satisfied with the service and 93% of participants indicated that it is important for Enbridge to provide these energy efficient products to their customers.

8.2 Engineering Review Custom Projects – Commercial Sector

8.2.1 Background

Enbridge Gas Distribution contracted Building Innovation Inc. (BII) to conduct an independent evaluation of Custom Projects in the Commercial Sector. This evaluation provides a third party assessment of the savings claims for 2005 submitted by the Company to the Ontario Energy Board (the Board).

8.2.2 Purpose of the Study

This study was designed to provide an objective opinion of the energy savings claimed in the Commercial DSM custom projects in 2005 through a review of a statistically representative sample of the projects. The Board's evaluation requirements for custom projects of LDCs were used as guidelines for this evaluation.

8.2.3 Methodology

This study followed the Board's custom project evaluation methodology. As such, it met the requirements to analyze a random sample of 10% of the Company's commercial custom projects representing at least 10% of the total volume savings with a study sample consisting of at least five projects. Ten projects were chosen at random from the top 20% of the projects sorted by volume. This included two projects from the Stub period. Thirty projects were chosen at random from the remaining 80% of the year's projects, including four projects from the Stub period. As well, the single largest file from the year was chosen. In total, forty Commercial projects were included in the sample. Together they represent 18% of the total volumetric savings claimed in the Commercial sector.

Each project in the sample was examined with focus on the validity of the savings estimation approach and accuracy of the calculations.

8.2.4 Results

Across the sample of Commercial custom projects, BII identified savings calculation anomalies in seventeen of the forty projects in the sample. The recommended adjustments result in a net change of (3.9%) in the proposed savings.

Table 8.2 summarizes the key results of the study.

Table 8.2: Study Results 2005 DSM Commercial Program

	2005	
	EGD Posted	BII Proposed
Projects Implemented	504	N/a
Projects Sampled	N/a	40
Sampled Projects with Calculation Discrepancies	N/a	17
Natural Gas Savings of Sampled Projects	8,226,989	7,908,626 (-3.9%)
Natural Gas Savings of Projects Implemented	45,600,212	43,821,803

Note: savings values are for gross savings exclusive of free ridership

8.3 Engineering Review Custom Projects – Industrial Sector

8.3.1 Background

Enbridge Gas Distribution contracted GENIVAR Ontario Inc. (Genivar) to conduct an independent evaluation of Custom Projects in the Industrial Sector. This evaluation provides a third party assessment of the savings claims for 2005 submitted by the Company to the Ontario Energy Board (the Board).

8.3.2 Purpose of the Study

This study was designed to provide an objective opinion of the natural gas, electricity, and water savings claimed through the Industrial DSM custom projects in 2005. The Board's evaluation requirements for custom projects of LDCs were used as guidelines for this evaluation.

8.3.3 Methodology

This study followed the Board's custom project evaluation methodology. As such, it analyzed a random sample of 10% of the Company's large industrial custom projects that represented at least 10% of the total volume savings and the study sample consisted of at least five projects. In total, five large industrial projects and 10 medium-small industrial projects were included in the sample. Together they represent 45.9% of the total volumetric savings claimed in the Industrial sector. Considering that some projects included multiple components a total of 21 custom initiatives from 2005 were examined. Additionally, it was determined that the samples would also be representative of diverse technology application types, industries, and the Company's service regions.

Each project in the sample was examined with focus on the validity of the savings estimation approach and accuracy of the calculations.

8.3.4 Results

The calculation anomalies identified by Genivar were small – occurring in 5 of the 21 custom initiatives reviewed in 2005. It should be noted that GENIVAR does not consider the variances to be statistically significant; they indicate that the Company's total DSM savings claim for the Industrial sector in 2005 is reasonable.

Table 8.3 summarizes the key results of the study.

Table 8.3: Study Results 2005 DSM Industrial Program

	2005	
	EGD Posted	GENIVAR Proposed
Projects Implemented	100	
Projects Sampled	N/a	15
Project Components	N/a	21
Sampled Projects with Calculation Discrepancies	N/a	6
Natural Gas Savings of Sampled Projects	14,699,914	14,647,015 (-0.4%)
Natural Gas Savings of Projects Implemented	32,026,457	EGD value reasonable

Note: savings values are for gross savings exclusive of free ridership

8.4 Energy Efficient and Energy Star Window Sales Trends 2004 - 2005

8.4.1 Background

Enbridge Gas Distribution contracted with Marbek Resource Consultants (Marbek) to conduct a study of sales trends and market shares for energy efficient (EE) and ENERGY STAR windows in the low-rise residential market in Ontario from 2004 through 2005. This study was undertaken to support the Company's ENERGY STAR Windows Market Transformation program.

8.4.2 Purpose of the Study

The study was designed to identify trends and changes in market share in the marketplace from 2004 to 2005. Increases in market share for EE and ENERGY STAR windows were originally identified as an indicator of success for the windows market transformation initiative in the Settlement Proposal for the 2005 DSM Plan dated June 17, 2004.[17] The resulting study fulfills the Company's reporting obligations with the Ontario Energy Board for the Windows Market Transformation program.

8.4.3 Methodology

The study encompassed two key activities:

- *An initial survey of selected manufacturers* on their 2004 EE and ENERGY STAR window sales to the Ontario low-rise residential market to establish the baseline; and,
- *A second survey of manufacturers to* gather information on EE and ENERGY STAR sales in 2005.

The 2004 survey was sent to 14 participants who collectively represent approximately 75% of the total low-rise residential market in the Province.

The survey questions were designed to identify the total sales volumes, the nature of the respective market (residential, new construction etc.), and the sales volume of EE and ENERGY STAR windows. The survey results were compiled in a database and analyzed.

8.4.4 Results

Results were derived for both new and existing Ontario residential markets. For the purposes of the study energy efficient windows were defined as having the same characteristics as ENERGY STAR but not certified as such.

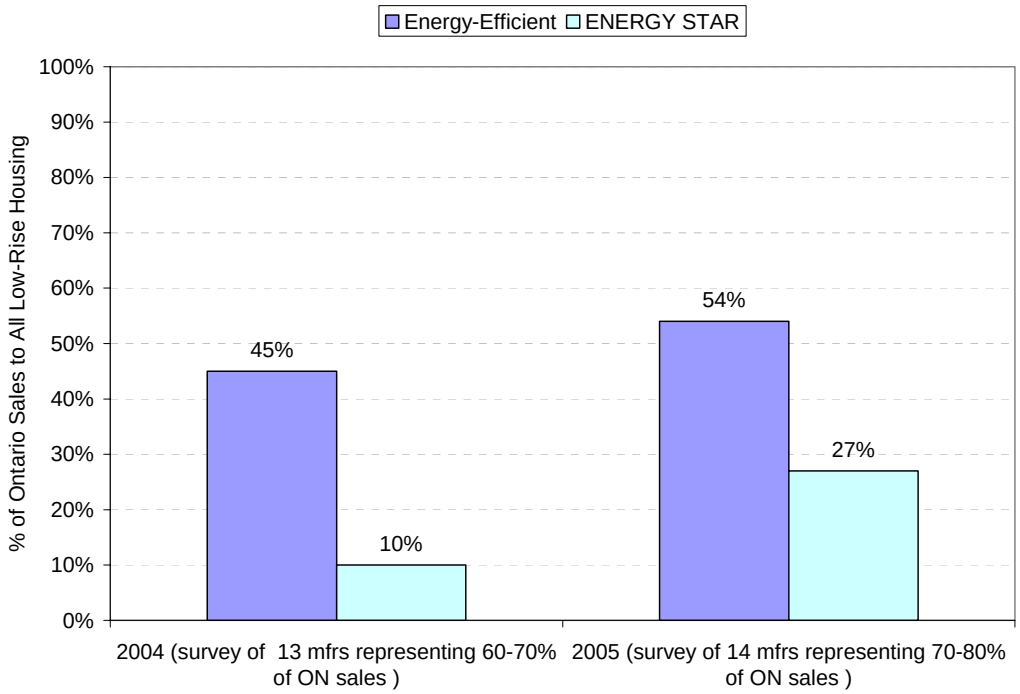
Both energy efficient and ENERGY STAR windows saw measurable increases in market share over the period 2004 to 2005, with energy efficient windows increasing from 45% to 54% while ENERGY STAR increased from 10% to 27% largely as a result of very strong growth in the existing housing market and adoption of the product. The data did not support an analysis of the Company's franchise on its own, however survey results indicate that results in the

[17] RP-2003-0203, Exhibit N1, Tab 1,Schedule 1, page 36

Company's franchise area would be equal to or greater than the Ontario wide results.

Graph 8.4 shows the market trends for EE and ENERGY STAR windows in the Province.

Graph 8.4: Trends in Energy-Efficient & ENERGY STAR Window Sales Penetration for All Low-Rise Residential Housing in Ontario



APPENDIX A – Cost Effectiveness Tables

2005 FISCAL BUDGET
Cost Effectiveness Screening

	Program Benefits				Program Costs			
Program	Net annual gas savings (m3)	Avoided Gas Costs	Other Avoided Costs (water, electricity)	Total Benefits @Zero Emissions	Utility Program Costs (Direct Costs)	Incremental Participant Equipment Costs	Total Costs	NPV Net Benefits @Zero Emissions
RESIDENTIAL								
Residential	30,088,300.32	76,624,700.96	36,725,369.20	113,350,070.16	$801,100	$27,237,858	$28,038,958	$85,311,112
SMALL COMMERCIAL								
Small Commercial	812,302.00	1,135,837.56	549,911.06	1,685,748.62	$27,000	$352,925	$379,925	$1,305,824
COMMERCIAL								
Commercial	12,985,620.03	30,830,059.03	-	30,830,059.03	$214,500	$14,354,718	$14,569,218	$16,260,841
MULTI-RESIDENTIAL								
Multi Residential	10,589,500.00	25,948,015.02	8,436,835.59	34,384,850.61	$65,000	$3,526,024	$3,591,024	$30,793,826
NEW CONSTRUCTION								
Large New Construction	1,050,000.00	3,380,237.61	-	3,380,237.61	$25,000	$1,120,712	$1,145,712	$2,234,525
AGRICULTURE								
Agriculture	2,534,476.00	3,920,951.52	-	3,920,951.52	$8,200	$1,487,269	$1,495,469	$2,425,483
INDUSTRIAL								
Industrial	18,850,123.60	41,096,722.20	-	41,096,722.20	$360,000	$7,570,744	$7,930,744	$33,165,979
Total DSM Programs	76,910,321.95	182,936,523.90	45,712,115.85	$228,648,640	$1,500,800	$55,650,250	$57,151,050	$171,497,590
Program Development & Market Transformation					$833,855	$0	$533,855	($533,855)
Overheads					$3,295,123	$0	$3,295,123	($3,295,123)
Total DSM Plan	76,910,321.95	182,936,523.90	45,712,115.85	$228,648,640	$5,629,778	$55,650,250	$60,980,028	$167,668,612

2005 FISCAL ACTUALS
Cost Effectiveness Results

	Program Benefits				Program Costs			
Program	Net annual gas savings (m3)	Avoided Gas Costs	Other Avoided Costs (water, electricity)	Total Benefits @Zero Emissions	Utility Program Costs (Direct Costs)	Incremental Participant Equipment Costs	Total Costs	NPV Net Benefits @Zero Emissions
RESIDENTIAL								
Residential	28,111,960.34	66,801,661.93	44,960,950.35	$111,762,612	$492,585	$16,052,427	$16,545,012	$95,217,600
SMALL COMMERCIAL								
Small Commercial	1,073,644.56	1,236,748.15	800,815.15	$2,037,563	$34,941	$466,332	$501,273	$1,536,290
COMMERCIAL								
Commercial	12,491,367.88	31,615,094.55	-	$31,615,095	$327,761	$14,851,021	$15,178,782	$16,436,313
MULTI-RESIDENTIAL								
Multi Residential	14,537,066.50	31,666,855.93	2,917,414.48	$34,584,270	$13,272	$10,960,154	$10,973,426	$23,610,845
NEW CONSTRUCTION								
Large New Construction	2,765,583.10	8,703,248.37	-	$8,703,248	$251,270	$2,864,861	$3,116,132	$5,587,117
AGRICULTURE								
Agriculture	4,826,723.30	9,601,082.67	-	$9,601,083	$11,135	$3,542,930	$3,554,065	$6,047,017
INDUSTRIAL								
Industrial	17,589,612.60	38,568,997.08	-	$38,568,997	$259,006	$10,432,747	$10,691,753	$27,877,244
Total DSM Programs	81,395,958.29	188,193,688.68	48,679,179.98	$236,872,869	$1,389,971	$59,170,472	$60,560,443	$176,312,425
Program Development & Market Transformation					$689,954	$0	$402,630	($402,630)
Overheads					$2,813,225	$0	$2,813,225	($2,813,225)
Total DSM Plan	81,395,958.29	188,193,688.68	48,679,179.98	$236,872,869	$4,893,151	$59,170,472	$63,776,299	$173,096,570

APPENDIX B – Stub Period Cost Effectiveness Tables

2005 STUB BUDGET

Cost Effectiveness Results

		Program Benefits			Program Costs			
Program	Program Name	Avoided Gas Costs	Other Avoided Costs (water, electricity)	Total Benefits @Zero Emissions	Utility Program Costs (Direct Costs)	Incremental Customer Equipment Costs	Total Costs	Net Benefits @Zero Emissions
RE2R35S	Educational Program	$0	$0	$0	$0	$0	$0	$0
RE2R36S	Water Utilities - Showerhead	$25,195	$36,055	$61,250	$500	$1,688	$2,188	$59,063
RE.MM.HTP	Heat Trap Program	$0	$0	$0	$0	$0	$0	$0
Total	**Existing Homes - Water Heating & Conservation**	**$25,195**	**$36,055**	**$61,250**	**$500**	**$1,688**	**$2,188**	**$59,063**
RE2R83S	TAPS Partner Program - Showerheads	$8,364,839	$13,110,231	$21,475,070	$27,000	$775,182	$802,182	$20,672,888
RE2R83S	TAPS Partner Program - Aerators	$1,529,057	$0	$1,529,057	$0	$121,218	$121,218	$1,407,839
RE2R38S	TAPS Partner Program - Pipe wrap	$594,320	$0	$594,320	$0	$159,360	$159,360	$434,960
RE2R38S	TAPS Partner Program - Bag Test	$0	$0	$0	$0	$180,000	$180,000	($180,000)
RE2R38S	TAPS Partner Program - Thermostats	$0	$0	$0	$0	$0	$0	$0
Total	**Existing Homes - Taps Partners**	**$10,488,215**	**$13,110,231**	**$23,598,446**	**$27,000**	**$1,235,760**	**$1,262,760**	**$22,335,686**
RE3R41S	Furnace Replacements	$2,017,381	$0	$2,017,381	$10,000	$520,000	$530,000	$1,487,381
RE3R42S	Enhanced Furnace Replacements	$2,040,464	$793,818	$2,834,282	$10,000	$1,395,000	$1,405,000	$1,429,282
RE3R44S	Thermostats - Householder ($15)	$2,964,649	$398,494	$3,363,143	$15,000	$318,175	$333,175	$3,029,968
RE3R44S	Thermostats - Contractors	$539,027	$72,454	$611,481	$0	$57,850	$57,850	$553,631
RE4R56S	Home Rewards - Energuide for Houses	$5,675,419	$326,672	$6,002,090	$10,000	$1,380,000	$1,390,000	$4,612,090
RE4R54S	Energuide for Natrual Gas Fireplaces	$0	$0	$0	$0	$0	$0	$0
Total	**Existing Homes - Equipment Replacement**	**$13,236,940**	**$1,591,437**	**$14,828,377**	**$45,000**	**$3,671,025**	**$3,716,025**	**$11,112,352**
SC.MM.LIHP	Low Income Program - Showerheads	$344,366	$456,313	$800,679	$7,000	$31,850	$38,850	$761,829
SC.MM.LIHP	Low Income Program - Pipewrap	$12,041	$0	$12,041	$0	$2,000	$2,000	$10,041
SC.MM.LIHP	Low Income Program - Bag Test	$0	$0	$0	$0	$2,000	$2,000	($2,000)
SC.MM.LIHP	Low Income Program - Educational Training	$0	$0	$0	$0	$0	$0	$0
SC.MM.LIHP	Low Income Program - Thermostats	$49,363	$0	$49,363	$3,000	$7,500	$10,500	$38,863
Total	**Low Income**	**$405,769**	**$456,313**	**$862,083**	**$10,000**	**$43,350**	**$53,350**	**$808,733**
RN4R58S	R-2000	$20,603	$0	$20,603	$3,000	$32,000	$35,000	($14,397)
RN4R59S	New Building Energy Efficiency	$2,303,390	$0	$2,303,390	$10,000	$3,180,000	$3,190,000	($886,610)
Total	**Residential New Construction**	**$2,323,994**	**$0**	**$2,323,994**	**$13,000**	**$3,212,000**	**$3,225,000**	**($901,006)**
SC3R41S	Small Commercial Furnace Replacements	$50,435	$0	$50,435	$5,000	$13,000	$18,000	$32,435
SC3R44S	Small Commercial Thermostats	$94,330	$12,679	$107,009	$2,500	$10,124	$12,624	$94,385
SC.MM.PRVP	Small Commercial Prscriptive Pre-Rinse Spray Valve	$260,704	$154,105	$414,809	$3,000	$85,500	$88,500	$326,309
SM.MM.ESME	Small Commercial Prscriptive Aerator	$0	$0	$0	$0	$0	$0	$0
SM.MM.TEDG	Small Commercial Thermostats	$0	$0	$0	$0	$0	$0	$0
Total	**Small Commercial**	**$405,468**	**$166,785**	**$572,253**	**$10,500**	**$108,624**	**$119,124**	**$453,129**
Total	**Residential**	**$26,885,581**	**$15,360,821**	**$42,246,402**	**$106,000**	**$8,272,446**	**$8,378,446**	**$33,867,956**

		Program Benefits			Program Costs			
Program	Program Name	Avoided Gas Costs	Other Avoided Costs (water, electricity)	Total Benefits @Zero Emissions	Utility Program Costs (Direct Costs)	Incremental Customer Equipment Costs	Total Costs	Net Benefits @Zero Emissions
CM 1.0	Steam Saver	$367,510	$0	$367,510	$8,000	$28,661	$36,661	$330,849
CM 2.0	Heat Recovery	$0	$0	$0	$5,000	$0	$5,000	($5,000)
CM 3.0	HVAC	$385,886	$0	$385,886	$10,000	$189,651	$199,651	$186,235
CM 3.1	Hi-Efficiency Boiler Program	$1,561,919	$0	$1,561,919	$5,000	$1,190,000	$1,195,000	$366,919
CM 4.2	Schools	$321,572	$0	$321,572	$3,000	$130,750	$133,750	$187,822
CM 9.0	General	$1,194,409	$0	$1,194,409	$6,000	$485,642	$491,642	$702,767
CM.FS	Pre-Rinse Spray Valves	$0	$0	$0	$6,000	$7,500	$13,500	($13,500)
CM.MT	Monitoring & Targeting	$0	$0	$0	$5,000	$0	$5,000	($5,000)
CM.TRAN	Promotional Activities	$0	$0	$0	$0	$0	$0	$0
Total	**Commercial**	**$3,831,296**	**$0**	**$3,831,296**	**$48,000**	**$2,032,204**	**$2,080,204**	**$1,751,091**
MR 4.0	Multi-Residential Non-Profit	$1,819,176	$0	$1,819,176	$0	$286,296	$286,296	$1,532,881
MR 6.0	Multi-Residential Private	$1,920,242	$0	$1,920,242	$0	$302,201	$302,201	$1,618,041
MR 5.0	Water Conservation	$1,605,347	$2,136,466	$3,741,813	$0	$115,549	$115,549	$3,626,264
Total	**Multi Residential**	**$5,344,765**	**$2,136,466**	**$7,481,231**	**$0**	**$704,046**	**$704,046**	**$6,777,186**
NC.30	Large New Construction (DAP)	$676,048	$0	$676,048	$4,500	$224,142	$228,642	$447,405
	Large New Construction	$845,059	$0	$845,059	$0	$280,178	$280,178	$564,881
Total	**Large New Construction**	**$1,521,107**	**$0**	**$1,521,107**	**$4,500**	**$504,321**	**$508,821**	**$1,012,286**
IN 1.0	Steam Saver	$6,499,389	$0	$6,499,389	$12,000	$1,104,173	$1,116,173	$5,383,216
IN 2.0	Heat Recovery	$0	$0	$0	$0	$0	$0	$0
IN 3.0	HVAC	$1,794,730	$0	$1,794,730	$14,000	$388,059	$402,059	$1,392,671
IN 3.1	HVAC Audit	$0	$0	$0	$0	$0	$0	$0
IN.MT	Monitoring & Targeting	$0	$0	$0	$0	$0	$0	$0
IN.TRAN	Promotional Activities	$0	$0	$0	$0	$0	$0	$0
IN.AGRI	Agriculture	$921,734	$0	$921,734	$1,300	$297,454	$298,754	$622,980
	Business Partner Development	$0	$0	$0	$15,000	$0	$15,000	($15,000)
Total	**Industrial**	**$9,215,853**	**$0**	**$9,215,853**	**$42,300**	**$1,789,686**	**$1,831,986**	**$7,383,867**
Total	**Business Markets**	**$19,913,020**	**$2,136,466**	**$22,049,487**	**$94,800**	**$5,030,256**	**$5,125,056**	**$16,924,431**
	Total DSM Programs	**$46,798,602**	**$17,497,287**	**$64,295,889**	**$200,800**	**$13,302,702**	**$13,503,503**	**$50,792,387**
	Total Program Development	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
	Total Market Research	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
	Portfolio Administraton	**$0**	**$0**	**$0**	**$739,633**	**$0**	**$739,633**	**($739,633)**
	Total DSM Plan	**$46,798,602**	**$17,497,287**	**$64,295,889**	**$940,433**	**$13,302,702**	**$14,243,136**	**$50,052,754**

2005 STUB ACTUAL
Cost Effectiveness Results

		Program Benefits			Program Costs			
Program	**Program Name**	**Avoided Gas Costs**	**Other Avoided Costs (water, electricity)**	**Total Benefits @Zero Emissions**	**Utility Program Costs (Direct Costs)**	**Incremental Customer Equipment Costs**	**Total Costs**	**Net Benefits @Zero Emissions**
RE2R35S	Educational Program	$0	$0	$0	$0	$0	$0	$0
RE2R36S	Water Utilities - Showerhead	$0	$0	$0	$0	$0	$0	$0
RE.MM.HTP	Heat Trap Program	$0	$0	$0	$338	$0	$338	($338)
Total	**Existing Homes - Water Heating & Conservation**	**$0**	**$0**	**$0**	**$338**	**$0**	**$338**	**($338)**
RE2R83S	TAPS Partner Program - Showerheads	$4,385,997	$6,874,184	$11,260,181	$19,398	$406,368	$425,766	$10,834,415
RE2R83S	TAPS Partner Program - Aerators	$658,931	$0	$658,931	$0	$52,238	$52,238	$606,694
RE2R38S	TAPS Partner Program - Pipe wrap	$274,948	$0	$274,948	$0	$73,724	$73,724	$201,224
RE2R38S	TAPS Partner Program - Bag Test	$0	$0	$0	$0	$104,100	$104,100	($104,100)
RE2R38S	TAPS Partner Program - Thermostats	$0	$0	$0	$0	$0	$0	$0
Total	**Existing Homes - Taps Partners**	**$5,319,877**	**$6,874,184**	**$12,194,061**	**$19,398**	**$636,430**	**$655,827**	**$11,538,233**
RE3R41S	Furnace Replacements	$3,021,027	$0	$3,021,027	($10,537)	$778,700	$768,163	$2,252,864
RE3R42S	Enhanced Furnace Replacements	$2,616,691	$1,017,992	$3,634,683	$16,560	$1,788,948	$1,805,508	$1,829,174
RE3R44S	Thermostats - Householder ($15)	$2,413,224	$324,374	$2,737,599	$11,435	$258,994	$270,429	$2,467,170
RE3R44S	Thermostats - Contractors	$66,300	$8,912	$75,212	$0	$7,116	$7,116	$68,097
RE4R56S	Home Rewards - Energuide for Houses	$526,679	$30,315	$556,994	$5,695	$128,064	$133,759	$423,235
RE4R56S	Home Rewards - Energuide for Houses w/o P-Stat	$3,783,337	$252,713	$4,036,050	$0	$1,067,568	$1,067,568	$2,968,482
RE4R54S	Energuide for Natrual Gas Fireplaces	$0	$0	$0	$0	$0	$0	$0
Total	**Existing Homes - Equipment Replacement**	**$12,427,259**	**$1,634,306**	**$14,061,565**	**$23,153**	**$4,029,390**	**$4,052,543**	**$10,009,022**
SC.MM.LIHP	Low Income Program - Showerheads	$51,390	$68,096	$119,486	$0	$4,753	$4,753	$114,733
SC.MM.LIHP	Low Income Program - Pipewrap	$2,626	$0	$2,626	$0	$704	$704	$1,922
SC.MM.LIHP	Low Income Program - Bag Test	$0	$0	$0	$0	$776	$776	($776)
SC.MM.LIHP	Low Income Program - Educational Training	$0	$0	$0	$0	$0	$0	$0
SC.MM.LIHP	Low Income Program - Thermostats	$150,557	$0	$150,557	$6,983	$22,875	$29,858	$120,699
Total	**Low Income**	**$204,572**	**$68,096**	**$272,668**	**$6,983**	**$29,108**	**$36,091**	**$236,577**
RN4R58S	R-2000	$0	$0	$0	$3,000	$0	$3,000	($3,000)
RN4R59S	New Building Energy Efficiency	$98,510	$0	$98,510	$137,614	$136,000	$273,614	($175,104)
Total	**Residential New Construction**	**$98,510**	**$0**	**$98,510**	**$140,613**	**$136,000**	**$276,613**	**($178,104)**
SC3R41S	Small Commercial Furnace Replacements	$16,139	$0	$16,139	$121	$4,160	$4,281	$11,858
SC3R44S	Small Commercial Thermostats	$4,312	$580	$4,892	$0	$463	$463	$4,429
SC.MM.PRVP	Small Commercial Prscriptive Pre-Rinse Spray Valve	$186,620	$147,590	$334,210	$11,693	$74,385	$86,078	$248,132
SM.MM.ESME	Small Commercial Prscriptive Aerator	$0	$0	$0	$0	$0	$0	$0
SM.MM.TEDG	Small Commercial Thermostats	$0	$0	$0	$0	$0	$0	$0
Total	**Small Commercial**	**$207,072**	**$148,170**	**$355,241**	**$11,814**	**$79,008**	**$90,822**	**$264,420**
Total	**Residential**	**$18,257,289**	**$8,724,756**	**$26,982,045**	**$202,298**	**$4,909,935**	**$5,112,233**	**$21,869,811**

		Program Benefits			Program Costs			
Program	**Program Name**	**Avoided Gas Costs**	**Other Avoided Costs (water, electricity)**	**Total Benefits @Zero Emissions**	**Utility Program Costs (Direct Costs)**	**Incremental Customer Equipment Costs**	**Total Costs**	**Net Benefits @Zero Emissions**
CM 1.0	Steam Saver	$82,641	$0	$82,641	$4,580	$34,514	$39,094	$43,547
CM 2.0	Heat Recovery	$0	$0	$0	$0	$0	$0	$0
CM 3.0	HVAC	$0	$0	$0	$193,003	$0	$193,003	($193,003)
CM 3.1	Hi-Efficiency Boiler Program	$365,401	$0	$365,401	$183	$172,160	$172,343	$193,058
CM 4.2	Schools	$726,585	$0	$726,585	$2,090	$873,052	$875,141	($148,556)
CM 9.0	General	$0	$0	$0	$10,087	$0	$10,087	($10,087)
CM.FS	Pre-Rinse Spray Valves	$0	$0	$0	$19,838	$0	$19,838	($19,838)
CM.MT	Monitoring & Targeting	$0	$0	$0	$18,653	$0	$18,653	($18,653)
CM.TRAN	Promotional Activities	$0	$0	$0	$0	$0	$0	$0
Total	**Commercial**	**$1,174,628**	**$0**	**$1,174,628**	**$248,433**	**$1,079,726**	**$1,328,159**	**($153,532)**
MR 4.0	Multi-Residential Non-Profit	$0	$0	$0	$0	$0	$0	$0
MR 6.0	Multi-Residential Private	$4,700,098	$0	$4,700,098	$5,000	$1,980,037	$1,985,037	$2,715,061
MR 5.0	Water Conservation	$330,140	$439,364	$769,504	$1,457	$23,763	$25,220	$744,284
Total	**Multi Residential**	**$5,030,238**	**$439,364**	**$5,469,602**	**$6,457**	**$2,003,800**	**$2,010,256**	**$3,459,346**
NC.30	Large New Construction (DAP)	$50,274	$0	$50,274	$25,087	$58,919	$84,006	($33,731)
Total	**Large New Construction**	**$50,274**	**$0**	**$50,274**	**$25,087**	**$58,919**	**$84,006**	**($33,731)**
IN 1.0	Steam Saver	$981,180	$0	$981,180	$42,142	$261,243	$303,385	$677,795
IN 2.0	Heat Recovery	$1,868,553	$0	$1,868,553	$7,500	$580,679	$588,179	$1,280,374
IN 3.0	HVAC	$998,325	$0	$998,325	$9,352	$255,123	$264,476	$733,849
IN 3.1	HVAC Audit	$0	$0	$0	$0	$0	$0	$0
IN.MT	Monitoring & Targeting	$0	$0	$0	$10,017	$0	$10,017	($10,017)
IN.TRAN	Promotional Activities	$0	$0	$0	$17,139	$0	$17,139	($17,139)
IN.AGRI	Agriculture	$2,327,020	$0	$2,327,020	$2,158	$841,613	$843,770	$1,483,249
	Business Partner Development	$0	$0	$0	$6,950	$0	$6,950	($6,950)
Total	**Industrial**	**$6,175,077**	**$0**	**$6,175,077**	**$95,258**	**$1,938,658**	**$2,033,916**	**$4,141,162**
Total	**Business Markets**	**$12,430,217**	**$439,364**	**$12,869,581**	**$375,235**	**$5,081,102**	**$5,456,337**	**$7,413,244**
	Total DSM Programs	**$30,687,506**	**$9,164,120**	**$39,851,626**	**$577,533**	**$9,991,038**	**$10,568,571**	**$29,283,056**
	Total Program Development	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
	Total Market Research	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
	Portfolio Administraton	**$0**	**$0**	**$0**	**$803,998**	**$0**	**$803,998**	**($803,998)**
	Total DSM Plan	**$30,687,506**	**$9,164,120**	**$39,851,626**	**$1,381,531**	**$9,991,038**	**$11,372,569**	**$28,479,058**

APPENDIX C – TRC Calculation Guidelines

The following guidelines were presented in the Settlement Proposal in the 2003 Rates Case.

"B. *Calculation of TRC Savings*[18]

(Partial Settlement)

There is a partial agreement to settle this issue on the following basis:

- The rules for the calculation and clearance of the SSM account need to be set out clearly in advance.

- The intent of the SSM is to create a performance incentive environment where the Company will be rewarded for achieving greater TRC benefits as a result of factors that it can influence, but not have the incentive fluctuate as a result of factors that are beyond its control.

- The SSM incentive is a function of: a) the difference between the budgeted TRC benefits and the actual TRC benefits; and b) the SSM's marginal incentive rates. For clarity, "actual TRC benefits" are defined as the updated estimate of TRC benefits resulting from the program using updated program performance data at year-end.

- For both budget and actual TRC benefit calculations the avoided gas costs will remain fixed at their original budget values.

- For budget TRC benefit calculations all the inputs will remain fixed at the values utilized in the volume budget approved by the Board except where there was a clear error in budget numbers (e.g., due to a mathematical error or inability by the Company to include updated information at the time the budget was prepared). In these exceptional cases, the most accurate information available at the time the budget was developed will be used.

- For all programmes, actual TRC benefits will be calculated using actual values for the following inputs: participants and utility programme costs.

- For prescriptive programmes, actual TRC benefits will be calculated using the budget values for: annual units savings for measures, measure lifetimes, customer incremental costs and free-rider rates.

- For custom programmes, actual TRC benefits will always be calculated using actual values for annual unit savings and customer incremental costs. Measure lives for the commonly-used commercial, industrial, agricultural and multi-family measures that have historically been called

[18] RP2002-03-14, Exhibit N1, Tab 1, Schedule 1, page 68-71

"custom measures" (which are identified in the table below) will be considered prescriptive. That is, the measure lives identified in the following table will be used for both budget and actual TRC net benefits calculations. Measure lives for efficiency measures not identified below will still be considered custom. That is, actual measure lives as estimated for a particular application not listed in the following table will be used to calculate actual TRC benefits (i.e. irrespective of what was in the budget).

Table 1: DSM Technologies and Measure Life

		Commercial	Industrial	Multi-Residential
Boiler Related				
	Boilers			
	DHW	10	na	15
	Industrial process	na	25[19]	na
	Space heating	25	25	25
	Combustion tune-up	5	5	na
	Controls	15	15	15
	Steam pipe /tank insulation	na	15	na
	Steam trap audit	3	3	na
Building Related				
	Building envelope	25	25	25
	Windows	25	25	25
	Greenhouse curtains	na	10	na
	Double Poly greenhouse	na	5	na
HVAC Related				
	Dessicant cooling	15	na	na
	Heat Recovery	15	15	na
	Infra-red heaters	10	10	na
	Make-up Air	15	15	15
	Novitherm Panels	15	na	15

- If expected per unit costs, savings, measure lives, free ridership or other efficiency measure characteristics change as a direct result of Company-initiated changes in program design or delivery strategy, TRC net benefits will be calculated using assumptions that are consistent with such changes.

- For 2003 only, a 30% free-rider rate will be used to calculate the actual free rider rate for custom projects.

[19] Note: boiler measure life was updated to 25 years in the 2006 DSM Plan, EB-2005-0001

- The Company will complete its research with respect to free-rider rates for custom projects and participate with the DSM Consultative to develop a methodology for establishing actual free-rider rates for custom projects in 2004 and subsequent years.

- The Company is in the process of reviewing the technologies included in custom projects with the goal of identifying the prescriptive aspects of those technologies. The Company will present its proposals on this matter to the DSM Consultative for review.

- The results of evaluation studies and other new information that could change an input value, which becomes available after Board approval of a DSM plan, will be used to adjust the input value for the next year's DSM plan. "

APPENDIX D – Assumption Table

Enbridge

DSM Program
2005 Independent Audit

Final Report
June 27, 2007

Prepared for:

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Table of Contents

Table of Tables

1. Introduction

1.1 Background

RLW Analytics, Inc. ("RLW") was asked by Enbridge Gas Distribution (Enbridge) and the DSM Audit Committee to conduct an audit of the 2005 DSM Program Portfolio. In 2005 Enbridge changed the date of the fiscal year. As a result this 2005 DSM audit spans a 15 month period that includes a 12 month "traditional" fiscal year (October 1, 2004 to September 30, 2005) and a 3 month "stub" period (October 1, 2005 to December 31, 2005).

Changes occurred within the DSM portfolio of programs. An existing low-flow showerhead offering was incorporated into the TAPS Program. Other offerings were brought online during the program year. The 2005 Evaluation Report also represents a transition year where substantive changes were made to the management of the portfolio. RLW reviewed both the 12-month fiscal year and three month stub period.

As described in the Terms of Reference, this audit is required as directed by the Ontario Energy Board ("OEB") to provide an independent audit of Enbridge's 2005 annual DSM evaluation report, which is the Company's documentation of program results, evaluation research, and the resulting calculation of the SSM amount.

1.2 Audit Goals

The primary goal of the 2005 audit as stated in the Terms of Reference is to recommend appropriate values that lead to the LRAM and SSM claims for the Company given a set of pre-approved assumptions, and to give confidence that the claims are reasonable." This audit is meant to provide Enbridge with recommended values that produce the Lost Revenue Adjustment Mechanism (LRAM) and Shared Savings Mechanism (SSM) claims in order for this information to provide evidential support for the DSM claim to the Ontario Energy Board (OEB). The key objectives of the DSM audit include the following:

1. Determine whether the 2005 tracking program procedures produce accurate counts, particularly for the programs that do not provide customer rebates;
2. Determine whether reported values for participation, costs and savings (gas, electricity and water) are accurate and adequately documented by program records, evaluation studies and other relevant data;
3. Determine that all assumptions are consistent with those approved in the forecast or that they properly reflect accepted recommendations from previous audits or new program designs;
4. Consider and respond to stakeholder comments on Enbridge's DSM reports for 2005;
5. Review of final reports of savings estimates from third party engineering consultants and then comment on the reasonableness of the results of the engineering review and any implications for the SSM and LRAM calculations;
6. Identify any assumptions underlying Enbridge's DSM program design strategy, and TRC calculation, that should be modified prospectively, based on the auditor's experience and knowledge of other studies or data;

7. Identify opportunities to enhance the assumptions used to calculate the SSM and LRAM that should be addressed in future evaluation work;
8. Work with Enbridge and the audit committee to resolve any relevant issues prior to completion of the audit;
9. Provide a report for 2005. The 2005 report is designed to clearly separate the fiscal year and stub period.
10. Incorporate any other matters considered by the auditor to be relevant to the assessment of Enbridge's SSM and LRAM claims.

The 2005 audit involved the following tasks:

1. **Tracking System Review.** Review Enbridge's procedures for tracking program participants; and determine whether they lead to accurate counts.

2. **Savings Review.** Determine whether Enbridge's reported actual values for participation, costs and savings (gas, electricity and water) are accurate and adequately documented by program records, evaluation studies and other relevant data. Also, determine that all other assumptions are consistent with those approved in the forecast or that they properly reflect recommendations from previous audits or new program designs.

3. **Prospective Assumptions Review.** Identify any assumptions underlying Enbridge's DSM program design strategy, Total Resource Cost ("TRC") calculation, and Shared Savings Mechanism ("SSM") calculation that should be modified prospectively, based on our experience and knowledge of other studies or data;

4. **Uncertainty Review.** Identify key areas of uncertainty in the assumptions used to calculate the SSM that should be addressed in future evaluation work; and

5. **Evaluation Report Review and Comment.** Consider and respond to stakeholder comments on the draft evaluation report.

6. **Comment on Engineering Review**. Review final reports from third party engineering consultants and comment on the reasonableness of the results of the engineering review and any implications for the SSM and LRAM calculations.

1.3 Methodology

For the 2005 audit, RLW Analytics implemented the following methodology:

1. Familiarize ourselves with the Enbridge programs and tracking systems
2. Interview Enbridge staff who input and manage the program data
3. Collect all appropriate tracking system data and materials

4. Review independent third party engineering consultants review of savings estimates for Industrial and Commercial custom projects and then comment on the reasonableness of the results of the engineering review and any implications for the SSM and LRAM calculations.
5. Review and analyze program data for accuracy, quality, and completeness, reviewed 6 random sample site report documentation to review processes.
6. Review and analyze all underlying values, assumptions, and algorithms that make up program report calculations and final outputs
7. Prepare this draft report that narrates the strategy and methodology of our approaches, provides a complete review and analysis of the program data and submitted reports, affirms proper and robust data and calculations, and provides recommendations, if any, on improvements in tracking program data and in savings calculations.

The process review looked at the flow of information through the program, how data was handled and analyzed, comprehensiveness of the documentation, and reporting of the performance in each business sector. This analysis includes:

- Review of a random sample of project files
- Review of the 2003 and 2004 DSM audit report for continuity and foundation
- Review of the Enbridge 2005 Monitoring and Evaluation Report
- Review of E-Tools documentation
- Review of program tracking systems
- Enbridge staff interviews
- Review of the Commercial Custom Project Estimated Savings Assessment
- Review of report by third party commercial program review consultant confirming accuracy of stated savings
- Review of 76 analysis summaries for commercial project random samples
- Review of the Industrial Custom Project Assessment
- Review of report by third party industrial program review consultant confirming accuracy of stated savings
- Review of proposed pilot project documentation----
- Third party consultant interviews

2. Enbridge Staff Interview Results

A total of ten program and sales managers were interviewed to look at their role and elements of the data tracking system, such as how it was designed or procured, who has access to the data, how often is the data recorded and saved, what quality control checks are conducted, what kind of reporting is generated from the tracking system, and what are the sources and ages of assumptions used in calculations.

The primary objectives of the programs are to provide DSM results, meet TRC targets, decrease customer electric, water and gas use, promote conservation of water and work towards market transformation for the technologies being promoted.

Interviewees were asked if they felt that the primary program objectives were being reached. All of the respondents felt that the majority of objectives were being met and some surpassed. Although one manager mentioned being shorthanded on installers which led to underachievement for that program.

The interviews revealed that the majority of program managers are satisfied with the current design of the program. Some improvements that were mentioned are: should do additional marketing and form more partnerships with NRCan (Natural Resources Canada) and others, provide more workshops for contractors, and incorporate more behavioral aspects for programmable thermostats training.

All sales and marketing managers have access to the program tracking data. Each sales representative has his/her own tracking data currently but will be using Etools and a centralized tracking system in the future. The tracking data is recorded and saved on a daily basis.

It is the auditor's view that the tracking system is undergoing continuous improvement and is moving in the proper direction with the increased use of the Etools software and a centralized tracking system approach for all the DSM programs. It is important for a DSM program to have a well maintained CRM system to support program data. Enbridge should continue the maintenance of their CRM system.

3. Program Tracking System and Process Comments

Two major changes were instituted for the F2005 program year. One being a documentation protocol for custom projects was introduced. The protocol provided a checklist of additional documentation that was required for each custom project. This increase in documentation provides additional support for claims and facilitates a more thorough third party review of custom project savings calculations. The second major change involved the development of the comprehensive ETools software for the commercial sector. The primary advantage of ETools is the ability it gives to provide consistent savings calculations, it allows for individual calculation for savings from various controls measures, and it provides automatic default values for baseline cases.

4. Residential Sector Audit Results

4.1 Task 1 and 2 – Tracking System and Savings Review

The review process for the residential programs included the following steps:

Activities

- Review of 2003 and 2004 DSM Audit reports
- Review of 2005 DSM Monitoring and Evaluation Report
- Review of program tracking systems
- Review of TAPS database and printouts
- Review of TRC spreadsheet
- Review of reports by third party consultants
- Enbridge staff interviews

Findings

The 2005 tracking procedures produce accurate counts and the reported values for participation, costs and savings (gas, electricity and water) are accurate and have been adequately documented by program records (both electronic and hard copy) and evaluation studies.

4.2 Task 3 and 4 – Prospective Assumptions and Uncertainty Review

Furnace Program Findings

There were approximately 4,500 furnace program participants in the stub period (October 1, 2005 to December 31, 2005). For the 2005 fiscal year (October 1, 2004 to September 30, 2005) there were approximately 12,300 participants in the furnace program. The following was the breakout of incentives for the participants:

- 100% received an Enbridge incentive
- 36% received an Enbridge incentive and a federal govt. incentive (NRCan)
- 17% received an Enbridge incentive and a mnfr. Incentive plus the NRCan incentive
- 47% received an Enbridge incentive alone

In a partnership with NRCan, Enbridge provided a $200 on-bill rebate to customers for the purchase and installation of a natural gas high efficiency heating system in F2004. In 2005 Enbridge continued to encourage customers to install high efficiency furnaces by offering a $100 on-bill rebate to customers. In addition, Enbridge underwent discussions with NRCan and Union Gas to secure additional funding and developed a province-wide program, whereby for a two month period the program had an extended funding offer of $200, $100 from Enbridge and $100 from NRCan. Midway through the 2005 campaign, NRCan contribution was ceased due to funds being exhausted. Enbridge made a decision to continue to honor the $200 customer incentive which resulted in higher incentive costs than expected. In addition there was greater participation levels than expected, thus the program exceeded its budget by nearly $1 Million dollars.

The auditor requested additional information from the program manager to determine the timing of various program incentives. The following is the summary reported to the auditor by the program manager. Incentives were phased in as follows:

- Jan 1, 2005 – Aug 31, 2005 EGD incentive of $100
- Sept 1, 2005 – Jan 31, 2006 EGD $100 + NRCan $100 = $200

Conclusion

In the DSM field, attribution has gained importance because shareholder financial incentives depend on attribution estimates for their determination. In many jurisdictions the estimate is based on assuming net-to-gross ratios to be 100% unless information is produced to the contrary.

EGD was the sole delivery agent for the furnace rebates and did all the marketing for all phases of the program, including the marketing for the manufacturers. EGD did leverage the NRCan logo and Energy Star logo through NRCan. It is likely that none of the results would have occurred without Enbridge involvement. It is the auditor's assessment that Enbridge is entitled to 100% attribution of furnace program savings.

Showerheads

The EGD savings assumption for Low-flow Showerheads was 132 m3 for 2005. This value includes both showerheads and aerators for each household.

The auditor compared other program and evaluation results to inform the showerhead program assumptions. The following are the results of those comparisons:

Utility/Study	Annual BTU Saving Estimate Per Unit	Source of Savings Estimate	Measure Life Estimate	Freeridership	Equipment Costs Or Rebate*
Enbridge	4,685,208	Load Research	12 years	10%	$24
PG&E	1,030,000	Load Research			
Affordable Comfort Study	2,100,000	Load Research			
MN Energy Challenge	2,350,000	Engineering Assumptions			
Nexant 2006 Market Study	5,790,000	Compilation of other resources	10 years		$6.20

The auditor performed research to determine what other utilities analysis results had discovered for showerhead programs. Savings estimates were reported in various forms, including (Therms, MCF, and BTU) and thus the auditor chose BTU's to report the findings. The source of the savings estimates were derived by load research, engineering assumptions and a compilation of results from many other programs. The results show a wide range of accepted savings estimates that are currently being used.

Some factors that have an impact on showerhead savings estimates include the length of an average shower, number of showers per week for a particular showerhead, ground supply water temperature, hot water heater temperature settings, ambient temperature where hot water heater is located, R-value of tank insulation, any existing pipe insulation, etc.

Conclusion

Based on the research results the auditor feels that the showerhead program assumptions are within an accepted range, although the auditor recommends a new study be performed that includes accurate flow-rate bag tests and a customer survey to determine the free-ridership rate for this measure. The auditor recommends retaining the 2005 savings assumption of 132

m3 for 1 showerhead and 2 aerators and does not recommend any changes to the SSM or LRAM for this measure for 2005. The savings assumption for future years should be reviewed when the results of the bag test and customer survey are completed.

Programmable Thermostats

EGD currently bases its savings estimates on a study completed in 1997 entitled "Impact of 1997 Programmable Thermostat Program".

The auditor compared other program and evaluation results to inform the programmable thermostat program assumptions. The following are the results of those comparisons:

Utility/Study	Annual BTU Saving Estimate Per Unit	Source of Savings Estimate	Measure Life Estimate	Freeridership	Equipment Costs or Rebate*
Enbridge	7,717,777	Load Research	18 years	11%	$65
Energy Star/Nexant	2,660,000	Engineering Estimates	15 years		
Gas Networks**	7,725,000	Survey supported billing analysis			
Public Service Company NM	Up to 2,001,000	On-Site Survey	10 years	23% to 50%	$25*

** Completed in 2006, 7000 participants, customers using programmable thermostats saved 6.8% on average, customers using manual thermostats increased their usage by 2,575,000 BTU.

The auditor performed research to determine what other utilities analysis results had discovered for programmable thermostat programs. These study results are not specific to the Enbridge service territory but are recent studies. Savings estimates were reported in various forms, including (Therms, MCF, and BTU) and thus the auditor chose BTU's to report the findings. The source of the savings estimates were derived by load research, engineering estimates, on-site surveys and a survey supported billing analysis.

The energy savings of programmable thermostats almost certainly varies by the thermal characteristics of the home; the home's heating system type and efficiency, the climate or region, and the ease of programming the thermostat (which effects homeowner ability to program and operate the programmable thermostat). Many U.S. programs that offer rebates for programmable thermostats have estimated savings in the range of 3% to 5%. A study recently completed for Gas Networks found customers saved 6.8% on average.

Conclusion

Based on these research results the auditor feels that the programmable thermostat program assumptions should be reduced from the 8% savings estimate now being used by EGD down to something closer to 6.8% savings (as represented by the Gas Networks study recently completed in 2006) for the purposes of the LRAM. Although the Gas networks research is not

specific to the Enbridge service territory, it serves as a guide due to its recent context and use of actual billing analysis.

It is important to note that a new sample incorporating customer surveys and metering will help to inform any savings estimates and free rider rates for programmable thermostats. These surveys will help the company to understand further how customers use thermostats in their service territory.

Furnaces

The EGD savings assumption for the Furnace Replacement Program was 679 m3 for 2005.

The auditor compared other program and evaluation results to inform the furnace replacement program assumptions. The following table highlights those findings:

Utility/Study	Annual m3 Saving Estimate Per Unit	Source of Savings Estimate	Measure Life Estimate	Freeridership	Equipment Rebate
Enbridge	679	Billing Analysis	18	48%	$100
Energy Star	390		18		
Gaz metro	487	Impact Evaluation			$450
Gas Networks	508	Engineering Estimate			$100-$400

Conclusion

While the EGD prescriptive assumption for gas m3 savings is at the high end of savings reported from other jurisdictions, the auditor finds that savings estimates, measure life, freeridership, and equipment cost are found to be fair and appropriate at this time for both the Furnace Replacement Program and the Enhanced Furnace Replacement Program.

For LRAM purposes, the auditor recommends using savings estimate assumptions of 385 m3 for furnace replacements and 320 m3 for enhanced furnace replacements, as stated in the "Settlement Proposal Completely Settled Issues" document from the Generic Hearing as adopted by the Ontario Energy Board which more accurately reflect savings estimates experienced by other programs.

Conclusions

RLW is confident that stated savings are reasonable and fall within a statistically acceptable range of +/- 10.0%. This plus or minus value simply states that savings are reasonably accurate, but may be 10% greater than reported values or 10% less. This range represents acceptable performance within the industry. This statement is based upon:

- Review of the DSM 2005 Monitoring and Evaluation Report

- Review of program tracking systems
- Review of TAPS database and printouts
- Review of TRC spreadsheet
- The residential sector has a quality control element along with M&V components

Effect on SSM and LRAM

Several factors were reviewed that can impact the SSM and LRAM. The current assumptions for the programmable thermostat program may be overstating the savings impact for this measure. The auditor recommends reducing the current 8% savings reported by EGD to the 6.8% that has been discovered in recent analysis by the Gas Networks evaluation. In addition, the 679 m3 savings assumption for furnace replacement should be reduced to 385 m3 to more closely mirror other program findings. This will have the effect of reducing the LRAM for the residential sector. The auditor does not recommend any other changes to the SSM or the LRAM for the residential sector at this time.

4.3Task 5 - Respond to Stakeholder Comments

Energy Star for New Homes

The auditor finds that Enbridge only claims participants in the Energy Star for New Homes if it receives an invoice from the builder.

TAPS Partners Program Bag Test

In 2005 contractors were required to conduct a bag test but it was done on a pass/fail basis to qualify the installation of a new showerhead. The measured results of the test were not recorded. Moving forward from 2007 and onward Enbridge now has in place a protocol to measure and record actual GPM flow rates of the existing showerheads. The recorded flow rates are used to allocate showerhead savings into 1 of 3 savings categories.

4.4 Comments on the 2005 Monitoring and Evaluation Report

This section highlights auditor findings in the review of the 2005 third party engineering consultants' final reports of savings estimates and the DSM 2005 Monitoring and Evaluation Report.

Water Heating & Conservation Programs

A low-flow showerhead program was discontinued in 2005. Savings from showerheads were incorporated into the TAPS Partners program. A proposed heat trap pilot program was planned but not launched. This program was found not to be cost effective.

TAPS

TAPS is an example of an excellent program. Low-flow showerheads, pipe insulation, and sink aerators are offered to residential customers. The program utilizes outside contractors to recruit participants, measure the flow rate of existing shower heads via a bag test, and install the low-

flow showerheads and pipe insulation. Savings for this program were nearly 20.0% greater than budget estimates.

The strength of the program lies in the required monthly reporting of measure installation. Performance projections are further validated through random follow-up surveys by a third party. Follow-up surveys verify the installation and removal rates for each technology. This data led to an 11.0% reduction factor applied to showerheads in the 2005 and Stub periods. Aerators and pipe insulation were de-rated by 27.0% and 21.0% respectively for the same reasons.

Equipment Replacement and Weatherization

This category includes Furnace Replacements, Enhanced Furnace Replacements, Thermostats, and Home Rewards Weatherization.

The Furnace Replacement program provides an incentive to install new heating equipment. Savings and participants were 25.8% greater than budget estimates. Costs were exceeded by nearly one million dollars due to increased participation, additional rebates that were assumed by Enbridge after third party funding was withdrawn, and by training and promotion costs.

The Enhanced Furnace Replacements offers a split incentive between contractors and participating customers to install high efficient furnaces equipped with electronically commutated motors. Tracking and reporting is a function of invoices submitted in compliance with the program directives. Tracking data shows that total annual savings were 81.2% above budget estimates while costs were 23.1% below projections. No discussions were provided to explain the improved cost effectiveness when compared with budget estimates.

The thermostat program provides a $15 rebate to customers who purchase and install a programmable thermostat. Savings and costs for this program were close to budget estimates.

The Home Rewards Program encourages residential conservation through an energy audit that uncovers savings opportunities, installation of selected measures, and a second audit to re-evaluate the home's energy rating. This measure to verify, install, and re-measure and verify format is an excellent approach to conservation measures. The home audit requires blower door testing and computer modeling to estimate performance. Results are tracked in two categories; participants who received programmable thermostats and those who did not.

Launch dates and subsequent adjustments in the marketplace resulted in a slow startup for the program. This had an impact on program performance. Stub performance shows that the program is coming close to meeting program expectations.

Table 1 – Home Rewards 2005 and Stub Period Performance

	Participants			Gas Savings (m3)			DSM O&M Costs		
	Budget	Actual	% Var	Budget	Actual	Var (%)	Budget	Actual	Va r (%)
Home Rewards Plus Thermostats Stub	1,250	1,083	9.3%	1,762,950	1,338,816	9.3%	103,750	104,035	0.3%
Home Rewards Plus Thermostats 2005	5,762	3,516	-39.0%	8,126,494	4,358,883	-46.4%	542,150	372,155	-31.4%

Savings are reported across the two line items that differentiate between thermostat recipients. Costs are estimated in a single line item. Tracking data shows a combined 46.4% savings shortfall for the 2005 period. Savings are 9.3% above estimates in the Stub period. Table 1 also

shows that costs are within expectations during the Stub period. This confirms that the Home Reward Program is meeting expectations.

Low Income TAPS is a new offering for 2005. This program provides showerheads, aerators, pipe wrap, programmable thermostats, and two compact fluorescents at no charge to low income residents. Actual savings are 15.8% below budget estimates while costs are 30.1% lower than expected. Participation slightly exceeded [1.9%] the budget value. Two thousand and thirty seven residences were visited with 2,036 accepting the programmable thermostat. Program savings for thermostats are calculated using the 2,036 value, but the change in savings is too small to impact final results. Slightly over 40.0% of customers did not accept the showerheads or pipe wrap. No explanations were given for the lack of acceptance of the last two measures.

Remaining residential programs include R-2000 (EnerGuide) which is directed towards new construction. The performance of this program is affected by market economics and the reluctance of builders to make the extra investment. EnerGuide for new homes was launched in 2005. The full impact of this program will be seen in the 2006 evaluation.

Conclusions

The Enbridge residential programs are well constructed and professionally administrated. The DSM 2005 Monitoring and Evaluation Report is concise and provides an accurate assessment of program results. The residential programs are operating close to budget projections. Gas savings for the 2005 reporting period are 6.6% less than estimated while costs are 8.6% greater than budget projections. A significant part of the cost and savings variations are due to changes in program offerings and a lag in startup participation.

Table 2 – 2005 Stub Participants and Gas Savings

2005 Stub Period	Participants			Gas Savings (Net m3)			
	Budget	Actual	% Var	Budget	Actual	Var (m3)	Var (%)
Total TAPS	124,625	58,843	-52.8%	5,420,835	2,735,097	(2,685,738)	-49.5%
Total Equipment Repl.	11,000	10,281	-6.5%	4,409,770	4,180,160	(229,610)	-5.2%
Total Low Income	1,900	675	-64.5%	198,800	92,380	(106,420)	-53.5%
Total New Con.	1,598	68	-95.7%	721,900	30,600	(691,300)	-95.8%
Total Residential	**139,123**	**69,867**	**-49.8%**	**10,751,305**	**7,038,237**	**(3,713,068)**	**-34.5%**

Table 3 – 2005 Stub O&M Costs

2005 Stub Period	DSM Costs			
	Budget	Actual	Var ($)	Var (%)
Total TAPS	1,370,250	705,521	-664,729	-48.5%
Total Equipment Repl.	660,000	961,766	301,766	45.7%
Total Low Income	53,350	(6,641)	-59,991	-112.4%
Total New Con.	172,000	144,613	-27,387	-15.9%
Total Residential	**2,255,600**	**1,805,259**	**-450,341**	**-20.0%**

Table 2 and Table 3 above show the performance of the residential programs for the 2005 Stub period. Actual savings and participation were substantially below budget estimates for the Stub

period which ran from October 2005 through December 2005. Costs were also out of line with projections. This may be partially due to how budget values were allocated.

Table 4 below compares participation budget and actual values as percentage of the entire 2005 program. The column labeled "% 05 Budget" is the percentage of the Stub value compared to the entire 2005 participation budget estimate. The Stub period is three months or 25% of the year. However, goals set for residential sector programs were nearly twice the average as prorated by months of year. The goal of the Low Income Showerhead program was equivalent of nearly 65.0% of the entire 2005 program. Overall the portfolio budgeted volumes were approximately 25% of the yearly total budgeted volumes. The Company was not obliged to prorate each program to 25% of the fiscal values.

Table 4 – 2005 Stub Period Participant Values (Budget and Actual)

2005 Stub Programs	Budget	% 05 Budget	% 05 Actual	Actual	% Var
TAPS Partners Program - Showerheads	41,500	41.3%	33.2%	21,760	-47.6%
TAPS Partners Program - Aerators	41,500	41.3%	40.5%	17,884	-56.9%
TAPS Partners Program - Pipe Wrap	41,500	41.3%	39.0%	19,199	-53.7%
TAPS Partners Program - Bag Test	45,000	36.0%	29.5%	26,025	-42.2%
TAPS Partners Program - Thermostats	-			-	0.0%
2005 Stub Programs	**Budget**	**% 05 Budget**	**% 05 Actual**	**Actual**	**% Var**
Low Income Program -- Programmable Thermostats	100	5.0%	4.9%	305	205.0%
Low Income Program -- Showerheads	1,300	65.0%	111.6%	194	-85.1%
Low Income Program -- Pipe Wrap	500	25.0%	42.4%	176	-64.8%
Low Income Program -- Education/Training	-			-	0.0%
Low Income Program -- Bag Test	500	25.0%	0.0%	194	-61.2%
2005 Stub Programs	**Budget**	**% 05 Budget**	**% 05 Actual**	**Actual**	**% Var**
R2000/(New Building Energy Efficiency (Energuide))	8	26.7%	42.1%	-	-100.0%
New Building Energy Efficiency	1,590	25.0%	25.0%	68	-95.7%

The columns labeled "% 05 Actual" and "% 05 Budget" compare the Stub Period budget estimate with total annual actual participants for the entire 2005 program year. Again, most projections were substantially higher than the 25.0% of yearly total budgeted volumes. 41,500 participants were budgeted for the Stub Period. When compared with the 2005 results, the 41,500 participants budget for the *TAPS Partners Program – Aerators* is 41.3% of the entire 2005 participant budget for the same line item. That value is also 40.5% of actual participants for fiscal 2005. The table shows programs that were assigned budgets that were significantly higher than the 25.0% percentage. Performance in the Stub period is also affected by the potential reduced participation during the holiday season. The Stub period is a unique feature of the 2005 DSM program year. It was necessary due to changing reporting from a fiscal year to calendar year format. A weighted average approach taking seasonal impacts into effect should be considered if the need for prorated reporting occurs again.

Minor changes can be made to the reporting format. Including budget and actual data after each program heading will provide the reader the qualitative information without the need to flip back to Residential Sector Results Table. Program descriptive text either included partial data at the end of the section as in Section 3.3 of the Monitoring and Evaluation Report, the

TAPS program general description, or did not state the values at all. Section 3.4., Thermostats, is an example of this.

Expanded explanations of large variances from budget estimates are also required. Section 3.4.2, Enhanced Furnace Replacements, had excellent performance. Participation and savings exceeded budget estimates by 81.2% while costs came in 23.1% under budget. Analyzing why significant variances occur can help strengthen other offerings or prevent dramatic shortfalls.

The performance tables such as Table 3.1 from the DSM report show the challenge of tracking and reporting prescriptive programs with multiple fluctuating variables. Programs can end or ramp up during any given year. Participation and savings may fall while costs rise. Even the term participant is misleading. There were not 5,673 participants in the Low Income Program. There were actually 2,037 participants. The first value is the sum of all the measures installed at the sites. There is no real need to change the terminology. The labels do not change the final results. This just stresses the complexity of determining true program performance.

5. Custom Projects Tracking System and Savings Review (Commercial and Industrial Sector)

The review process for the commercial and industrial programs included the following steps:

Activities

- Review of 2003 and 2004 DSM Audit reports
- Review of 2005 DSM Monitoring and Evaluation Reports
- Review of E-Tools documentation
- Review of program tracking systems
- Review of sample project files
- Review of report by third party commercial program review consultant confirming accuracy of stated savings
- Review of 76 analysis summaries for commercial project random samples
- Review of report by third party industrial program review consultant confirming accuracy of stated savings
- Third party consultant interviews (commercial and industrial)
- Enbridge staff interviews

Findings -

Two files selected at random were reviewed for continuity of documentation and flow of information into Enbridge tracking spreadsheets.

One high school and one apartment complex was included in the random selection. Both files contained a copy of the check issued for payment upon completion of the project and requisition forms. Project applications, P&E Project review forms, and pricing documentation were also part of the files. Site data was compared with the corresponding data entries in the Enbridge tracking and reporting spreadsheet [SSM F2005 12 Month_Evaluation_Apr13.xls]. Boiler savings were increased in one location over initial calculations. Tracking data matched documented values, including the modified savings.

Each file also contained worksheets and gas history data from the E-Tools software. The E-Tools pages showed the client information, project descriptions, and gas billing history. The gas data for the high school was normalized and a baseline usage created by the E-Tools program. The conservation measure at both sites was limited to replacement of the heating boiler. A review was also made of the 37 Custom Commercial site reviews to add to the file review database.

The E-Tools output pages were reviewed in conjunction with hard copies of the E-Tools software descriptions and requirements. Additional information was gathered from the Custom Commercial review sheets and reviewers comments.

In addition to the two custom project files, the summaries of 37 Commercial Sector Custom files were also reviewed. These assessments were part of an independent analysis of the performance of the 2005 Commercial Program. The summaries show the input data linked to each site, savings estimates, and reviewer comments. These files provide an insight into the type of documentation included in the files and the value of the data in re-evaluating the projected savings.

It was noted that 75.0% is being used as the default combustion efficiency for baseline heating and domestic hot water systems. Twenty one sites, including the two random samples, had heating boiler replacements. Nine DHW replacements were identified. Fourteen of the twenty one heating boilers, or 66.7% of the population, have listed baseline efficiencies of 75.0%. Only one of the boilers has a baseline efficiency greater than 75.0% (80.0%). Six of the nine DHW boilers, again 66.7%, are rated with 75.0% baselines.

Sixty percent of the identified errors in gas savings in 2005 were linked to changes in E-Tools. Clearly, reviewers have the capacity to make changes to reported savings. Having access to site visits will provide evaluators to improve the accuracy in estimating variances. Evaluators do have access to the base case assumptions and input values for E-Tools calculations. RLW is confident that the 37.4% of the net gas savings linked to the E-Tools program commercial sites falls within in acceptable levels of performance.

Savings for the remaining commercial sites is calculated with third party software. The independent commercial auditor was not able to access or review most third party calculations with verification coming in the form of a letter of confirmation of accuracy from the firm responsible for the original calculations.

Conclusions

The 2005 tracking procedures produce accurate counts and the reported values for participation, costs and savings (gas, electricity and water) are accurate and have been adequately documented by program records (both electronic and hard copy) and evaluation studies.

6. Commercial Sector Audit Results

6.1 Task 3 and 4 – Prospective Assumptions and Uncertainty Review

Findings

E-Tools and Savings Calculation

The E-Tools software is a versatile tool that can provide quick and accurate results for a series of conservation measures. The strength of the tool is its ability to calculate annual efficiencies for heating system replacements. The tool normalizes annual gas usage and provides a projected heating baseline. E-Tools also calculates savings from modifications to ventilation and heating measures, envelope changes, pipe insulation, infrared heating, and other user specified measures.

Default Efficiencies

The RLW analysis shows that seasonal efficiency issues are the single largest contributor to savings variances. This efficiency issue can be easily fixed in the E-Tools software. Previously we discussed how 75.0% efficiency has become a prevalent default value. Enbridge just recently completed a study to examine the appropriate default value for boiler efficiency. The results indicate that 75% is the appropriate value and the distribution of values is weighted below 75%. The audit recommends that 75% continue to be used as the default average value in E-Tools.

Combustion efficiency testing would, of course, be ideal. RLW realizes that combustion testing is not always practical or possible. The source of baseline efficiency estimates should be noted. Any recent or pertinent testing information should be noted and used in place of default data. Many of the sites will not have that data.

Jacket Temperatures

A 130°F jacket temperature was identified in four of the six files presented for review. This represents only part of the jacket loss data. A default 90°F jacket temperature is used as the retrofit value. A corresponding 0.55% is added to the retrofit side of E-Tools to adjust for the 90°F temperature. ASHRAE Standard 90.1-2004 recommends that jacket losses be ≤0.75% of rated input. When viewed interactively, the adjustment represents a 1.0% improvement in efficiency over the baseline system. This is a reasonable value and is within acceptable ranges.

Four of the six sites drawn for our file review reported differential maintenance savings for boiler measures. Two sites were from 2005 and two from 2006. Two sites reported a 2.0% maintenance improvement while a 4.0% maintenance differential was applied to the remaining two sites. Savings reductions ranged from 1.4% to 4.0%. The average reduction was 2.4%.

Maintenance Savings

The number of sites in the total boiler improvement population with differential savings is not available in the information provided. The Commercial Audit summary sheets list seasonal efficiencies but not the components of those efficiencies.

The E-Tool program currently rates maintenance with terms such as "marginal" and "good". Reductions in efficiency linked with these terms are used to modify the seasonal efficiency values that estimate performance and savings. These terms do not show what factors are influencing the final estimated efficiencies. E-Tools should be modified to report the specific tasks and modifications that lead to the maintenance savings. These can include "annual service contract" or "installed alarm/monitoring point". This will provide a foundation for the maintenance savings claims. No differential savings should be taken for sites without specifying the tasks and modifications that lead to the maintenance savings

Baseline Accuracy

Accurate baseline data is essential for accurate savings calculations. Reported baseline information should be expanded and included as a separate file attachment. It is impossible to identify accurate baseline conditions once a measure is installed. The foundation for detailed reporting already exists. Text boxes in E-Tools allow the engineer to state boiler make and model numbers, efficiencies of the units, and descriptions of other equipment. Pumping is listed as continuous or intermittent in the text descriptions. Expanding the baseline information will provide reviewers the information to confirm savings. Baseline information should be standardized to include a description of the facility including the age, size, type of facility. Other baseline information should include:

- Daily operating schedules should be reported for a typical week. These schedules should be specific for each unit in the project. Some air handlers may operate continuously in a facility while others can operate for 80 hours per week at the same location. Some boilers may be seasonal while others may be linked with process use or reheating functions and operate all year. Major changes in occupancy or scheduling can have a dramatic impact upon ventilation loads.
- Pump horsepower will allow calculations for motor savings when changing from continuous to intermittent pumping.
- Boiler motor size and efficiency should be noted as well as the same information for forced draft fans. Additional savings are possible with burner motor operation. The installation of a forced draft fan results in an electrical penalty when the existing system did not have one.
- Significant gas savings is also linked with ventilation air that is preheated, heated, and/or reheated. The key variables of these airside systems must also be documented. These include the fan horsepower, total CFM, outside air percentage or CFM, supply air temperatures, and operating schedule discussed in the first bullet.

Conclusion

RLW is confident that stated savings are reasonable and will fall within a statistically acceptable range of +/- 20.0%. This plus or minus value simply states that savings are reasonably

accurate, but may be 20% greater than reported values or 20% less. While this is a wide range of variation, it is an acceptable level of performance in the industry. This statement is based upon:

- Independent engineers contracted to review commercial projects had the ability to perform data input and calculation variable reviews on 79.7% of commercial program gas savings (34.2.0% of total DSM program annual net savings)
- Review engineers had access to Enbridge Sales Engineers who work with Commercial customers on an ongoing basis.
- 65.0% of annual gas savings in the commercial sector was linked to boiler efficiency improvements which have been a core competency in past programs.
- Third party calculations, which have limited direct savings confirmation, are 20.3% of all commercial sector gas savings.
- Reported commercial savings reflect adjustments identified by the commercial program auditor.
- Remaining adjustments – improving baseline system efficiency accuracy and differential maintenance savings – affect the E-Tools boiler measure portion of annual commercial savings.

Effect on SSM and LRAM

Several factors were reviewed that can impact the SSM and LRAM. Based on the findings, the auditor does not recommend any change to SSM or LRAM values.

The default boiler efficiencies can affect savings by generating savings from a baseline that is too low when compared to actual conditions. The commercial program review engineer also commented on baseline efficiencies and reduced savings to compensate for understated baseline efficiencies. It is impossible to re-estimate additional baseline efficiencies because that condition was lost with the implementation of the boiler measure. A recently completed Enbridge study of combustion efficiency was conducted on a random sample of sites. The results of this study concluded that average efficiencies of the sample site tests was 75% with the distribution of weighted values falling below 75%. This test indicates that the 75% default value for combustion efficiency as used by Enbridge in 2005 projects is appropriate. Changes identified by the Commercial Program Auditors were incorporated into Enbridge final reported savings. No change in savings is recommended for SSM or LRAM relating to default combustion efficiency because of these factors.

RLW investigated the use of differential maintenance for projects using E-Tools. There were two primary causes for differential maintenance, maintenance alarms and maintenance contracts. The recommendation remains to improve documentation for maintenance factors that contribute to annual savings. E-Tools should be modified to report the specific tasks and modifications that lead to the maintenance savings. These can include "annual service contract" or "installed alarm/monitoring point". This will provide the required documentation for future maintenance savings claims. No change in saving is recommended for SSM or LRAM.

Jacket temperatures were also reviewed. The review found that the temperature differentials between base case and proposed equipment amount to approximately 1.0% are within an acceptable range. No changes in savings are recommended for jacket temperature differentials.

6.2 Task 5 – Respond to Stakeholder Comments

Conclusions

Advancements/Replacements

RLW also compared savings advancement and replacement projects. This was done by reviewing the project summary sheets for boiler replacements provided by the commercial program auditor. Estimated base case gas consumption is calculated by E-Tools for each site along with annual gas savings. Savings for advancements were 32.7% of estimated base case annual gas usage. Savings for replacement projects were 28.2% of base case usage. These values are for the combined 2005 and 2006 reporting years. There were 19 boiler advancement projects in 2005 and 2 replacements in the random sample summaries. In 2006 there were 21 boiler advancements and 2 boiler replacements. The advancement/replacement analysis was reviewed over the combined 2005/2006 period because of the limited replacement sites. Advancements had 4.5% greater savings than replacement projects from those samples for the combined 2005/2006 reporting periods. It is not possible to conclusively ascertain other influences on savings from the summary sheet review. Further review of the methodologies should be performed in future audits to identify and quantify any savings bias. This review should include surveys that directly question program participants and non-participants on advancements/replacements.

Engineering accommodates a wide range of acceptable options. There is no one right or wrong definition of what "advancements" are. That definition is a product of the needs of the customer compared with the needs of the utility. Is the assumption of the advancement of 10 years reasonable? Yes. Is the math for the analysis of economics appropriate? Yes. Are they optimum values? That's where the need to review the context is important.

There were no anomalies or errors noted in calculations reporting the economics of advancements. The 10 year time frame is somewhat of a grey area. The purpose of any conservation effort is to bring a benefit to the customer, utility company, and to the overall success of the mandates of regulatory boards. A certain level of flexibility in administering programs is permissible. The goal of the program is to provide optimum savings and incentives that fall within acceptable limits. The ten year value may appear high when viewed as a single point. When viewed as a value within an acceptable range that permits optimum participation while maintaining cost constraints, then this is an acceptable value.

Are incremental costs captured for induced water and electric savings?

Yes, the auditor went over how the data was entered and the information in their documentation and it supports that indeed the incremental costs were captured for induced water and electric savings.

Is the freerider rate for electric and water savings in custom projects appropriate? (30% currently)

The 30% estimate should be retained for the time being in lieu of substituting another value. Electric savings claimed in the custom projects are directly linked to the measures that produce

gas savings. Therefore, it is appropriate to use the same free ridership value. The auditor suggests, on a go forward basis from 2007, performing freerider interviews that will update freeridership in their territory.

Attribution of interaction with CBIP and large new construction projects

For the 2005 program year Enbridge's intention to claim full attribution from its programs was agreed to in the 2005 Settlement Agreement and approved by the Ontario Energy Board.
In addition, the Ontario Energy Board subsequently approved a TRC Guide for LDCs dated September 8, 2005 that reiterates its position on attribution. Page 16 of the TRC Guide states:

"The Board advises LDCs that they are allowed to claim 100% of the benefits associated with a CDM program in which they jointly market and deliver the program with a non-rate regulated third party"

Therefore the auditor recommends that the Company claim 100% attribution for the New Construction program as approved by the Energy Board in the 2005 DSM Plan.

Claims (if any) of savings associated with monitoring and targeting

The auditor found that there was no participation for monitoring and targeting in 2005

Use of extrapolated values for incremental costs in some custom projects

For New Construction projects, estimated incremental costs are provided at the design stage together with the calculated energy savings. Where the incremental costs were not provided by a design engineer, the Company took various approaches to provide estimated incremental costs. Where possible, estimated incremental costs for a project were derived from the unit incremental cost of various building components using the Incremental Cost Calculator. In a third pricing option, a flat rate of 25% of total estimated project costs was used. Finally, an average incremental cost per m3 for new construction might be applied. The use of extrapolated incremental costs per m3 should be avoided when more specific costs are available.

6.3 Task 6 – Comment on Engineering Review

An independent consultant was hired to verify the performance and savings of the Commercial Sector Custom Programs. Documentation shows that 431 files were present for the 2005 fiscal year with an additional 65 files in the Stub period. Gas savings were reported as 41 million m3 and 4 million m3 respectively.

The review consultant performed a comprehensive review of a random sample of the 2005 Commercial sector projects. The OEB mandates that the program review covers a minimum of 10% of total annual savings. Ten projects were randomly selected from the top 20% of sites sorted by annual savings with the single largest savings site selected manually. Eight of these sites were from the 2005 fiscal year with the remaining two drawn from the Stub period. An additional 30 sites were drawn from the Medium/Small tier of sites. Twenty six sites were drawn from the 2005 fiscal year population with the remaining four sites linked to the Stub period.

The independent consultant reviewed calculation methodology, assumptions, and any support data. The consultant worked to obtain missing data, reworked calculations, and provided adjusted estimates where possible. Enbridge subsequently incorporated the recommended adjustments to the individual projects in the Commercial sector results as reported in the 2005 DSM Monitoring and Evaluation Report.

The review output sheets for the 40 reviewed files were provided to RLW in a PDF file.

Savings were compiled according to savings tier for both the 2005 fiscal year and Stub period. Adjustment issues fell into six categories. These are reported as:

- Error in calculation
- Novitherm Panels
- Seasonal Efficiency
- Utility Balance
- Misfiled
- Load compensation
- Heat recovery effectiveness

RLW was able to expand upon the reporting with the information provided. The Custom Project Estimated Savings Assessment Summary provided savings insight according to Large and Small Customer tiers. RLW expanded the analysis to identify the percentage of saturation of the selected sites according to building type. The data was reviewed to see if the review process covers all facility types equitably.

Table 5 – Fiscal 2005 Site Distribution by Type

Year	***2005***	
Count of Building Type		
Building Type	**Total**	
Hospital	1	3.2%
Nursing Home	1	3.2%
Office	2	6.5%
Residential - Apartments	19	61.3%
Retail	1	3.2%
School	6	19.4%
Warehouses	1	3.2%
Grand Total	**31**	**100.0%**

Table 6 and Table 7 show the distribution of selected sites by building type. Residential apartments account for 61.3% of the random sample. Another 19.4% is linked with schools. This means that 80.7% of the evaluation is linked to just two market sectors. The Stub period shows a similar imbalance with 50.0% of sites falling into the apartment segment.

Table 6 – 2005 Stub Period Site Distribution by Type

Year	*Stub*	
Count of Building Type		
Building Type	**Total**	
Office	1	16.7%
Residential - Apartments	3	50.0%
Residential - Non Profit	1	16.7%
Retail	1	16.7%
Grand Total	**6**	**100.0%**

RLW then created tables to identify the sources of calculation errors. Errors with E-Tools were responsible for 60.0% of the identified corrections. Over 50.0% of the total adjustments were seasonal heating efficiency issues. Only five of the bulleted adjustments were present in the 2005 fiscal year and Stub period.

Table 7 – 2005 Calculation Methods Errors

Year	*2005*					
Count of Variance	*Calculation Method*					
Issue Text	**Combination**	**E-Tools**	**Spreadsheet / Manual Calculation**	**Third Party - Engineering**	**Grand Total**	**Percent of Total**
Error in Calculation	1	1	1	0	3	20.0%
Misfiled	0	0	0	1	1	6.7%
Seasonal Efficiency	0	5	2	0	7	46.7%
Seasonal Efficiency, Utility Balance	0	1	0	0	1	6.7%
Utility Balance	0	2	1	0	3	20.0%
Grand Total	**1**	**9**	**4**	**1**	**15**	**100.0%**
	6.7%	60.0%	26.7%	6.7%	100.0%	

The table of the Stub period has only two identified sites that had savings modified by the review consultant. Again, one was a seasonal efficiency adjustment in E-Tools.

Table 8 – 2005 Stub Calculation Method Errors

Year	*Stub*			
Count of Variance	*Calculation Method*			
Issue Text	**E-Tools**	**Third Party - Engineering**	**Grand Total**	**Percent of Total**
Novitherm	0	1	1	50.0%
Seasonal Efficiency	1	0	1	50.0%
Grand Total	**1**	**1**	**2**	**100.0%**
	50.0%	50.0%	100.0%	

The variances were also reviewed for the magnitude of the impact on savings. The combination site accounts for 70.3% of all savings adjustments. The size of this adjustment tends to overshadow the other corrections. The E-Tools seasonal efficiency corrections are still nearly three times greater than the next largest contributor.

Table 9 – 2005 Impact on Savings

Year	*2005*						
Sum of Variance	***Calculation Method***						
Issue Text	**Combination**	**E-Tools**	**Spreadsheet /Manual Calculation**	**Third Party - Engineering**	**Grand Total**	**Percent of Total**	**Average Variance Per Site**
Error in Calculation	-158,304	25,953	-21,751	0	-154,102	68.5%	-51,367
Misfiled	0	0	0	-15,803	-15,803	7.0%	-15,803
Seasonal Efficiency	0	-71,533	14,111	0	-57,422	25.5%	-8,203
Seasonal Efficiency, Utility Balance	0	15,682	0	0	15,682	-7.0%	15,682
Utility Balance	0	-8,092	-5,329	0	-13,421	6.0%	-4,474
Grand Total	**-158,304**	**-37,990**	**-12,969**	**-15,803**	**-225,066**	**100.0%**	**-15,004**
	70.3%	16.9%	5.8%	7.0%	100.0%		

Viewing the same data in the Stub period finds that the same efficiency issue accounts for over two thirds of savings adjustments.

Table 10 – 2005 Stub Impact on Savings

Year	*Stub*				
Sum of Variance	***Calculation Method***				
Issue Text	**E-Tools**	**Third Party - Engineering**	**Grand Total**	**Percent of Total**	**Average Variance Per Site**
Novitherm	0	-30,434	-30,434	32.6%	-30,434
Seasonal Efficiency	-62,863	0	-62,863	67.4%	-62,863
Grand Total	**-62,863**	**-30,434**	**-93,297**	**100.0%**	**-46,649**
	67.4%	32.6%	100.0%		

6.4 Conclusions Summary

Random Sampling Criteria

The method of random selection for site evaluation should also be changed. As the facility distribution shows, 80.0% of reviewed sites fall into two categories – apartments and schools. Neither of those two building types corresponds to the remaining facility types. Schools have distinct seasonal operating schedules and apartments have greater evening and weekend usage than most commercial sites. Adjusting total savings for the commercial sector according to these two end uses is not applicable.

RLW suggests that the random selection be made according to facility type and total utility bill. Other programs analyze savings performance according to the size of the utility bill and not the magnitude of savings. All sites would be ranked according to utility consumption. Random selection is made in each facility type according to tier. Savings are reported as weighted savings. Large consumers will have fewer sample points and smaller consumers will have more. This prevents large sites from skewing program results. The 158,304 m3 savings adjustment in the variance table above is a good example of how a single site can influence an entire population. This method will improve the relative precision of the reported data. Structuring the data sampling according to facility type and tier can be done while maintaining the 10% minimum sampling requirement from the OEB.

Adjusted Savings

Enbridge incorporated the adjustments to the individual projects as recommended by the engineering review in the Commercial sector results reported in the 2006 Monitoring and Evaluation Report. No adjustment was made across the sector.

Pilot Program Recommendations

The following Commercial Sector Recommendations are intended to be a blueprint for long term goals. The following topics are not recommended as immediate changes to be implemented in 2007 program evaluations.

These recommendations are designed to increase the accuracy of the savings verification tasks. Current savings verification audits for both the commercial and industrial sectors are limited to a review of file documents. Independent evaluators do not revisit the sites or contact site personnel by phone. Evaluators may not even have full access to calculations and spreadsheets. Results obtained from the M&V based review will be significantly different from current methodology, but these results are a more accurate snapshot of the persistence of the projected savings.

Consider the following recommendations as the foundation of a Pilot Program that investigates the feasibility of Measurement and Verification based Program Review. RLW suggests target milestones of creating a pilot program in 2008 and implementing the first M&V based reviews in 2009. Pilot goals should be to perform at least three M&V based reviews in the commercial and two in the industrial sectors for two years. The savings and performance variances would then be compared with similar randomly selected sites utilizing current review practices. The value of the difference in accuracy between the two reporting methodologies would then be compared with the costs and acceptance of the proposed procedures. The determination can then be made to expand or curtail the pilot effort.

a. *Implement Measurement and Verification Based Program Review*
   The next evolution of the Commercial Sector Custom Program should include site access to selected facilities. What is notable in the consultants review document is the lack of any adjustments attributed to schedule changes, operational modifications, removed or bypassed equipment, different capacities or quantities or efficiencies of installed equipment. These variables are only identifiable through detailed and comprehensive site visits.

   The DSM program already incorporates this approach in residential programs. The applicability of showerheads is based upon data obtained during the bag test. Savings persistence is confirmed with detailed phone interviews. The Home Rewards Program requires two energy audits with blower door tests and computer modeling to obtain savings. These are successful programs. Two issues must be addressed to proceed with this goal on the commercial level.

b. Site Access for Evaluation Purposes

First, follow up visits for the purpose of verifying projected savings should be included under the General Terms and Conditions of the Project Application. This should not be construed as an intrusion into the customers' time. It is common for utilities to make the incentive payments contingent upon acceptance of this point. This is, in essence, quality control by an objective third party to confirm that the work was completed and that the promised savings are being achieved. This approach will need to be phased in to reduce impact to customers and reduce the likelihood of customer rejection to allow an auditor on site.

c. Contractual Changes

Second, all calculations by third party engineers and contractors must be made available to program reviewers in accordance with the contract. It is not uncommon for utility companies to include CDs containing DOE2 data inputs or weather bin analyses directly into project data files.

When possible, measurement and verification (M&V) should include monitoring performance over a specific time. As an example, consider operational modifications to a large makeup air unit that resulted in significant gas savings. The file review may claim 4,000 annual hours. Our experience finds that monitoring the operation of that system may find the unit has been taken offline or now runs continuously. The tracking savings must now be modified to compensate for the change in operation..

7. Industrial Sector Audit Results

7.1 Task 3 and 4 - Prospective Assumptions and Uncertainty Review

Findings

Savings Calculation and Site Verification Issues

The Industrial Sector accounts for 25.6% of total DSM Program annual net gas savings. E-Tools is not used to calculate savings in industrial projects. All industrial projects are custom projects with savings calculated by third parties. Unlike the commercial sector, letters of savings confirmation were not used as a verification protocol. The industrial program auditor performed file reviews to verify input data and some calculations and corrections were made for some sites.

However, the evaluators did not have direct access to sites, site personnel, or working copies of spreadsheets. This is consistent with the Terms of Reference for this engineering review and for previous audits. Access to the sites and calculations by the evaluators is important for acceptance of savings through independent verification of operating schedules, capacities, actual power loads, or other key variables.

There are indirect factors that have an impact that is difficult to quantify. The file reviews include pricing and invoices that show that equipment was purchased an installed. A post installation review is conducted by Enbridge personnel that confirm the measures were installed and operational. Discussions with Enbridge find that their energy personnel have ongoing relationships with gas customers. This continued presence is important. While this is no substitute for independent confirmation of savings, an ongoing relationship with customers provide a format for addressing customer concerns about perceived problems with the installed measures.

Another factor for consideration is the complexity of the measures themselves. That very complexity often dictates what types of calculations are employed. RLW has direct experience in reviewing process measures, dedicated process boilers and chillers, compressed air systems, heat recovery systems, and other similar Industrial applications. Many vendor derived savings calculations are based upon direct measurements taken during a baseline period. It is not known what portion of the remaining industrial and third party commercial sites use this approach.

Conclusion

Despite the lack of field verification RLW believes that stated savings are reasonable and fall within a statistically acceptable range of +/- 20.0%. This plus or minus value simply states that savings are reasonably accurate, but may be 20% greater than reported values or 20% less. While this is a wide range of variation, it is an acceptable performance within the industry. This statement is based upon:

- Independent engineers contracted to review industrial projects reviewed file documentation for accuracy
- The industrial review engineer did not identify any serious errors on projects, calculations, or assumptions.
- No portion of savings was predicated upon receipt of a letter from the engineering company that calculated initial savings confirming savings were accurate.
- Industrial review engineers were able to review calculations for some sites
- Industrial review engineers had access to Enbridge Sales Engineers who work with industrial customers on an ongoing basis.
- A significant portion of industrial and agricultural projects included boiler replacements, efficiency upgrades, and steam system modifications. These are areas of core competency.

Effect on SSM and LRAM

Industrial sector sites were reviewed by an independent auditor. Savings variances were identified. RLW confirmed that all variances were accurately incorporated into the tracking software. The impacts of those changes were already incorporated into SSM and LRAM calculations as reported in the Company's 2005 DSM Monitoring and Evaluation Report. The SSM and LRAM calculations, including the corrected savings values, were reviewed by another third-party consultant. Based on these conducted reviews, RLW accepts these results as reasonable. Inclusion of customer site verification for future audits will be required to further

enhance assessment of savings. As discussed, Enbridge should phase this approach in for future periods.

7.2 Task 6 – Comment on Engineering Review

The Industrial and Agricultural Custom Program mirrors the Commercial Program in many ways. An independent consultant was contracted by Enbridge to perform the program review. The sites selected for the review consist of the five largest industrial application files plus 10 randomly selected sites from the small to medium size database. This yields 15 site evaluations for the 2005 fiscal year including the Stub period. This selection meets the criteria set by the OEB for no fewer than five sites that represent at least 10.0% of total volume savings. There were 100 total industrial projects in the 2005 fiscal program and 27 in the Stub period. Calculations were performed for both customer tiers.

RLW was able to expand upon the program data. Table 11 shows the projects in the 2005 fiscal year. Savings are broken out for all projects, large and small industrial sites, and large and small agriculture customers. The table shows individual measures. Some sites have more than one measure. An (m) after the project code indicated the main account. An (a) refers to auxiliary measures within that account.

Table 11 – 2005 Fiscal Year Industrial and Agricultural Projects

Project No.	Annual Gas Savings (m3/year)	Adjusted Annual Gas Savings (m3/year)	Savings Variance (m3/year)	Project Type	Category
AGRI.021 (m)	3,196,339	3,196,339	0	Agr - Curtain	Large
AGRI.021 (a)	108,748	108,748	0	Linkageless Boiler Controls	Large
AGRI.021 (a)	271,872	271,872	0	Condensing Flue Economizers	Large
AGRI.021 (a)	430,628	64,670	-365,958	Insulated Piping	Large
AGRI.021 (a)	1,542,240	1,542,240	0	Heat Storage Tower	Large
STS.038	2,520,000	2,520,000	0	Steam - Ind Process	Large
STS.012	1,500,000	1,877,232	377,232	Steam - Boiler Repl	Large
HVAC.010	1,138,768	1,138,768	0	HVAC	Large
STS.026	1,113,522	1,113,522	0	Steam - Traps	Large
STS.023	201,577	201,577	0	Steam - Traps	Small/Med
STS.031	127,272	127,272	0	Steam - Boiler Repl	Small/Med
STS.036	397,684	397,684	0	Steam - Ind Process	Small/Med
HR.008	293,630	379,665	86,035	Heat Recovery	Small/Med
HVAC.002	514,497	308,698	-205,799	HVAC - IR	Small/Med
STS.044	317,169	317,649	480	HVAC	Small/Med
AGRI.008	316,128	371,789	55,661	Agr - Boilers	Small/Med
AGRI.003	176,409	176,409	0	Agr - Curtain	Small/Med
Totals - 2005 Ind/Agric	**14,166,483**	**14,114,134**	**-52,349**	**-0.37% Variance**	
Totals - 2005 Large Industrial	**6,272,290**	**6,649,522**	**377,232**	**6.01% Variance**	
Total - 2005 Small/Med Industrial	**1,851,829**	**1,732,545**	**-119,284**	**-6.44% Variance**	
Totals - 2005 Large Agricultural	**5,549,827**	**5,183,869**	**-365,958**	**-6.59% Variance**	
Total - 2005 Small/Med Agricultural	**492,537**	**548,198**	**55,661**	**11.30% Variance**	

Table 12 lists the projects according to project type. This is then compared with the total projects in 2005 for that project type. The selection process reviewed 5 of seven agricultural boilers, 1 of 14 heat recovery projects, and 2 of 18 steam trap projects.

Table 12 – 2005 Project Types

Program	Project Type	Number of 2005 Participants	Number of 2005 Projects Reviewed	Percent of Participants
Steam Saver	Steam Traps	18	2	11.1%
Steam Saver	Boiler Replacement	9	2	22.2%
Steam Saver	Boiler Advancement	4	0	0.0%
Process	Process	14	2	14.3%
Heat Recovery	Heat Recovery	14	1	7.1%
HVAC	HVAC & Infrared	22	3	13.6%
Agriculture	Curtains & Double Poly	12	2	16.7%
Agriculture	Boilers	7	5	71.4%
		100	**17**	**17.0%**

Table 13 shows gas savings according to project type. Nearly all of the agricultural savings were covered in the file review. Ten percent of heat recovery savings and 26.0% of HVAC projects were covered under the review.

Table 13 – 2005 Gas Savings According to Project Type

Program	Project Type	Annual Gas Savings (m3/year)	Adjusted Annual Gas Savings (m3/year)	Adjusted Savings as Percent of Actuals
Steam Saver	Steam Traps	3,518,702	1,315,099	37.4%
Steam Saver	Boiler Replacement	3,788,943	2,004,504	52.9%
Steam Saver	Boiler Advancement	736,352	0	0.0%
Process	Process	6,640,224	2,917,684	43.9%
Heat Recovery	Heat Recovery	3,635,514	379,665	10.4%
HVAC	HVAC & Infrared	6,808,283	1,765,115	25.9%
Agriculture	Curtains & Double Poly	4,290,913	3,372,748	78.6%
Agriculture	Boilers	2,604,406	2,359,319	90.6%
	Totals	**32,023,337**	**14,114,134**	**44.1%**

Two sites and a total of four measures were analyzed for the Stub period (Table 14). All projects fell into the small category and no savings variances were uncovered.

Table 14 – 2005 Stub Period Gas Savings

Project No.	Annual Gas Savings (m3/year)	Adjusted Annual Gas Savings (m3/year)	Savings Variance (m3/year)	Project Type	Category
STS.060 (a)	121,000	121,000	0	Steam - Boiler Adv	Small/Med
STS.060 (m)	70,000	70,000	0	Heat Recovery - Scrubber	Small/Med
STS.060 (m)	192,000	192,000	0	Heat Recovery - Economizer	Small/Med
HVAC.019	150,431	150,431	0	HVAC	Small/Med
Totals - 2005 Stub	**533,431**	**533,431**	**0**	**0.00% Variance**	

Conversations with the review consultant find that this is also a file only review. No site visits were made and no customers were contacted over the phone. All savings verifications were based upon the data presented in the data file. The file review resulted in a 0.4% reduction in savings when compared with 2005 finalized values.

7.3 Task 6 – Conclusions Summary

Random Sample

RLW suggests that the random selection be made according to facility type and total utility bill. Other programs analyze savings performance according to the size of the utility bill and not the magnitude of savings. All sites would be ranked according to utility consumption. Random selection is made in each facility type according to tier. Savings are reported as weighted savings. Large consumers will have fewer sample points and smaller consumers will have more. This prevents large sites from skewing program results. The 158,304 m3 savings adjustment in the variance table in the Commercial sector is a good example of how a single site can influence an entire population. This method will improve the relative precision of the reported data. Structuring the data sampling according to facility type and tier can be done while maintaining the 10% minimum sampling requirement from the OEB.

Adjusted Savings

The independent engineering review recommended adjustments to some individual industrial projects. Enbridge subsequently incorporated the recommended adjustments to the individual projects in the Industrial program results as reported in the 2005 DSM Monitoring and Evaluation Report. No adjustment was made across the sector.

Pilot Program Recommendations

The same comments and recommendations made in the Commercial Custom Section apply here. The industrial program needs to evolve to permit savings to be reconciled with actual operation. Reviewers need access to the facility to confirm savings promised to the customer. Production data had to be provided during the engineering phase to calculate the program savings. The same data should be accessible to reviewers. Measures labeled as "process" are approximately 20.0% of total program savings. This leaves 80.0% of non mission critical loads. Confidentiality agreements are common in industrial projects to protect sensitive data.

The same three key points highlighted in the commercial section should be implemented to expand the industrial program review process. A contractual obligation to permit independent review of program savings is required as is access to all calculation documentation. Monitoring is still recommended even if it is limited to non-process loads.

8. Other Findings

DSM Cost Summary Evaluation

The DSM Costs and DSMVA Summary are derived directly from financial data from a cost center that acts as the central hub for all program related costs. Costs associated with the various programs are stored and maintained in this central cost center from a variety of parties that participate in the process. Hence, program expenditures are compiled on an ongoing basis throughout the course of the year. At the end of the year, an analyst compiles all program costs collectively per residential or non-residential sector. From here the program costs of each sector are cumulatively assessed. Accordingly, the DSM cost summary outlines costs per sector as opposed to costs per programs in each sector. On a monthly basis throughout the year, an

analyst reviews costs per each sector and formulates the DSMVA based upon the financial standings per sector. To determine the monthly DSMVA, the analyst simply subtracts the actual program costs per month from the budgeted program costs per month. Upon review, if the monthly DSMVA does not equal zero, Enbridge utilizes funds from a deferral account to balance the difference. For instance, if the DSMVA is positive then the additional funds are put into the deferral account. Likewise, if the DSMVA is negative then funds are taken from the account and added to the appropriate program sector to zero-out the difference and balance the budget.

An analyst working closely with the cost center data feels that the system is running effectively and believes that in order to meet current project objectives it is as streamlined as possible. The 2005 and 2006 Fiscal years and the 2005 stub period were all consistently managed in the same manner. The auditor agrees that the system is being run effectively and is streamlined for ease of use.

Savings and SSM / LRAM Claim Verification

The 2005 TRC calculations take into account the various market sector elements appropriately. In the 2005 case, analysis indicates that the financial variable inputs have been incorporated and link within the database correctly. The organization and management of the databases that maintain the TRC calculations are transparent and efficiently organized. The variables used are justified based upon the implemented programs and the SSM rule-sets established by the OEB. Beyond the recommendations and points mentioned in a memo dated May 15, 2007 from Kai Millyard Associates, the auditor finds that financial input values for each of the various market sectors in the 2005 report follow a linear path that reflect the intentions of the OEB and as such, the interpretations of the resulting SSM awards are reasonable.

Table 15 summarizes all of the audit recommendations for the 2005 Evaluation.

Program	Recommendation
Residential	Report formatting should include budget and actual data after each program heading
	Expand descriptive text
	Provide explanations of large variances from budget estimates
Commercial and Industrial	Obtain and document on-site sources of boiler efficiency data whenever possible to reduce reliance on default values. A recent combustion efficiency study was completed for EGD that found the average combustion boiler efficiency to be 74.6%. A 75% default value can be used with confidence for the E-Tools software.
	Baseline documentation should be expanded to include all variables that drive savings in measures
	Obtain weekly and seasonal operating schedules that pertain to all components addressed in the measures, where possible
	Calculation variables should be standardized for each site when calculations are provided by multiple vendors
	Print hard copies of all input values from E-Tools for inclusion in the project file to facilitate review
	Where possible require that independent audit program evaluators are reporting results in categories that correspond with the structure of the data maintained by Enbridge
	Structure the customer database so that the random sample represents a fair distribution of all market sectors
	Create a weighted sample to report savings to balance performance between large and small participants
	Implement a pilot prgram with 5 sites (3 commercial and 2 industrial) to verify savings according to M&V format. A sample of projects should be assessed thru a site visit, this should be phased in over time. A full site audit should incorporate a full review of all calculations and documentation Limited monitoring as deemed necessary should be performed
	Continued reassessment of the 30% freeridership
	Move the Monitoring and Targeting Program from the Industrial Sector to the Commercial Sector. Offer the new program as a pilot drawing upon retrocommissioning methodology.

Table 15 – 2005 Audit Recommendation Summary

ENBRIDGE GAS DISTRIBUTION INC.

DEMAND SIDE MANAGEMENT

F2006 MONITORING and EVALUATION REPORT

Prepared by:

Enbridge Gas Distribution Inc.,
DSM Planning and Evaluation Group

March, 2007

Table of Contents

1.0 Introduction

Enbridge Gas Distribution Inc. ("the Company") has been delivering DSM programs to its customers since 1995 in response to the Report of the Ontario Energy Board (the Board) in EBO 169-III. In 1999, the Company sought and was granted approval to receive a financial incentive in the form of the Shared Savings Mechanism (SSM). In addition, through prior decisions of the Board, the DSM framework also includes a Lost Revenue Adjustment Mechanism (LRAM) and Demand Side Management Variance Account (DSMVA). The LRAM "is a mechanism to adjust for margins the utility loses if its DSM Program is more successful in the period after rates are set than was planned in setting the rates." [1] The DSMVA allows the Company to exceed the DSM budget in a given year provided that the Company meets the Board approved target. It also allows for the return to ratepayers of any unspent budget amounts.

The DSM Regulatory process involves several steps. The Company's DSM plan is first approved by the Ontario Energy Board. In 2006 the Company's DSM Plan was presented and approved by the Board as part of the Company's annual Rates Case.[2] The DSM plan provided detail on the DSM programs and measures, the planned budget expenditure, natural gas savings, and the associated societal benefits (TRC results).

The Monitoring & Evaluation Report is then generated annually as part of the requirements of qualifying for an incentive through the SSM. The Report is reviewed through an independent audit and the process culminates in the Company filing the SSM, LRAM and DSMVA claims with the Board.

1.1 Report Overview

This report presents the results of the Company's DSM program activity for 2006 as compared to the approved DSM plan. 2006 represents the first year of Calendar Year-based reporting of DSM results. The Company's DSM portfolio of programs in 2006 included both resource acquisition programs and one market transformation program. The resource acquisition programs are of two types. Results for prescriptive programs are calculated based on deemed savings and related assumptions for specific DSM measures as approved by the Board in the DSM plan. Results for custom programs are based on engineering calculations for each individual site where efficiency improvements were made.

In addition to the Company's monitoring results, this report also incorporates results of third party evaluations undertaken for one prescriptive program, one market transformation program, and for custom projects spanning several programs in the Commercial and Industrial sectors.

In addition to reporting the DSM program results, this report contains information in support of the Company's 2006 SSM claim and its 2006 DSMVA claim.

[1] EBRO 495, Decision, Page 100
[2] EB-2005-0001

The Report is structured as follows:

- Section 2 – 2006 DSM Program Results Summary
- Section 3 – Residential Programs and Performance
- Section 4 – Business Market Results and Performance
- Section 5 – Resource Acquisition Programs TRC Net Benefits and SSM
- Section 6 – Market Transformation Program and SSM
- Section 7 – DSM Cost Summary (DSM Variance Account)
- Section 8 – Evaluation Research Summary
- Appendix A – Budget and Actual Cost Effectiveness results
- Appendix B – Assumption Table
- Appendix C - TRC Calculation Guidelines

2.0 2006 DSM Program Results Summary

Within its portfolio of DSM programs, the Company strives to ensure that the vast majority of customer classes are provided access to energy efficiency programs that are cost-effective and to provide the appropriate incentives to maximize participation.

The breakdown of natural gas m^3 savings results and actual O&M spending by sector are as follows:

Table 2.1: 2006 DSM Program Results

	Number of Participants			2006 Net Gas Savings			DSM Fixed & Variable Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (%)	Budget	Actual	Var (%)
RESIDENTIAL	**387,045**	**337,903**	**-13%**	**26,967,630**	**26,586,404**	**-1%**	**7,159,660**	**8,769,829**	**22%**
COMMERCIAL	**32,942**	**34,071**	**3%**	**27,247,561**	**38,783,195**	**42%**	**3,376,864**	**4,586,969**	**36%**
Large Commercial	391	221	-43%	14,335,300	15,830,908	10%	1,739,336	1,911,185	10%
Small Commercial	1,650	1,891	15%	1,352,815	2,205,361	63%	186,500	198,460	6%
Multi-Residential	30,850	31,923	3%	9,382,446	17,792,746	90%	1,083,288	2,007,920	85%
Large New Construction	51	36	-29%	2,177,000	2,954,180	36%	367,740	469,403	28%
INDUSTRIAL	**173**	**151**	**-13%**	**23,212,309**	**27,656,011**	**19%**	**2,465,585**	**2,154,040**	**-13%**
Agriculture	38	33	-13%	2,751,717	2,575,937	-6%	234,030	412,567	76%
Industrial Manufacturing	135	118	-13%	20,460,593	25,080,074	23%	2,231,555	1,741,473	-22%
TOTAL -- All Sectors	**420,160**	**372,125**	**-11%**	**77,427,500**	**93,025,610**	**20%**	**13,002,109**	**15,510,838**	**19%**

Definition of Participant: For the purposes of tracking, reporting and evaluating programs, the number of participants is a valid consideration and can offer insights regarding market share, remaining potential, etc. It is a particularly useful measure for the residential sector where savings are prescriptive and participation is a key variable. It is less useful for custom projects where savings opportunities are targeted based on the size or nature of the load, not necessarily on the number of participants. One large customer may offer significantly more savings than many small ones. As such, using the number of participants as a key metric of program design or program performance can be inappropriate, particularly in the industrial and large commercial/institutional sectors. Furthermore, as part of the budget/planning exercise for the business markets, Enbridge Gas Distribution uses an approach that starts with an estimate of potential savings, not number of participants. In some cases, that value is allocated to participants based on per participant estimates and may be further disaggregated across multiple programs. This can result in budget participant values that are not whole numbers and corresponding variance calculations that appear to be incorrect. The reader is cautioned about the interpretation of the participant variance values in Section 4 below.

The Company exceeded its annual volumetric savings target by 20%, and its total DSM budgeted spending (including overheads, research, and program development) by $375,000.

While the Residential sector continues to realize the largest volume of savings compared to the Commercial, Multi-residential or Industrial sectors, these other sectors have gained additional ground. In Business Markets, the bulk of the savings above target was generated by the Multi-Residential component which surpassed its volumetric savings target by 90%. Likewise, Large New Construction and Industrial Manufacturing contributed 36% and 23%, respectively, above expected levels. Collectively, Business Market sectors contributed 70% to the total savings realized by 2006 DSM programs while the Residential sector contributed 30%.

The costs, on the other hand, show a converse sectoral dominance where Residential costs accounted for close to 60% of program spending. This is consistent with previous

years where the delivery of programs to residential customers reflects higher costs per m^3. Within Business Markets, the Multi-Residential sector exceeded its budget by the highest margin, reflecting the additional volumetric savings achieved. Although the Industrial sector exceeded its savings target by 19%, it was under spent by 13%. The Industrial sector is characterized by very large projects and, because of the capped incentive that applies, incentive costs were disproportionately lower than the gas savings.

2.1 Market Transformation Program

In 2006 the Company continued the market transformation program for windows in the low-rise residential housing sector. Progress was measured by the change in market share for Energy Star windows relative to the market share in 2005. The program's objective was to achieve a 5% increase in the sale of Energy Star windows in 2006.

Analyses are currently being conducted; results for this program will be provided when available.

Chart 2.1: Distribution of Savings

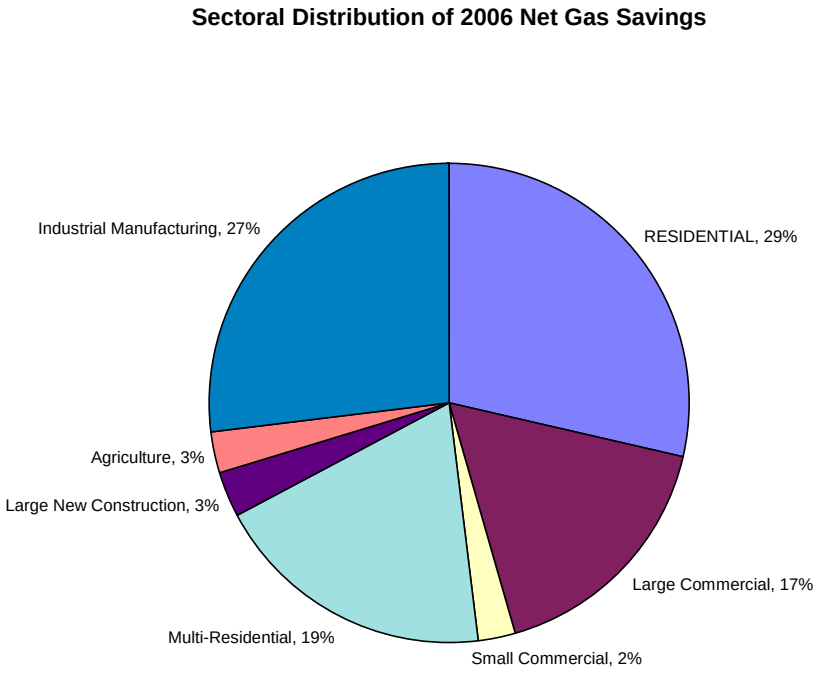
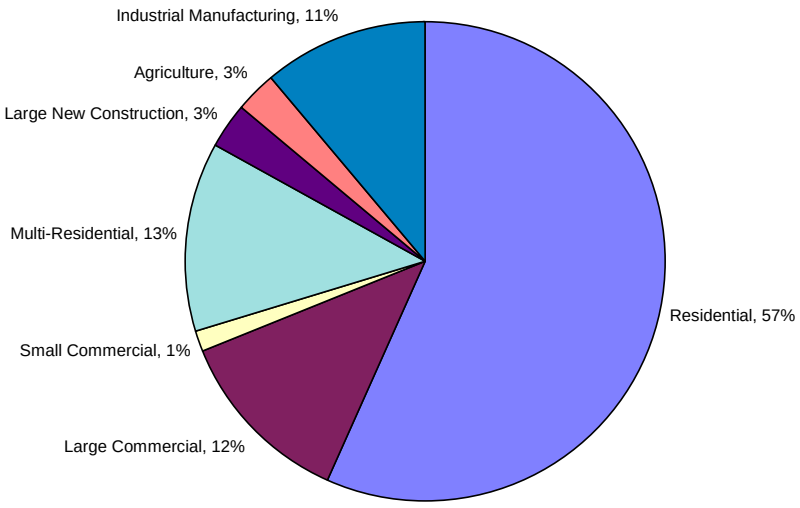


Chart 2.2: Distribution of Program Spending



3.0 Residential Programs and Performance

3.1 Residential Sector 2006 Highlights

Programs in this sector are grouped in the following areas: programs for Existing Homes, for Low Income, and for New Construction. Existing Homes being the largest category, this is further broken into program areas aligned with end uses: Water Heating, Water Conservation, TAPS, Equipment Replacement, and Thermal Envelope Improvements.

Programs in the retrofit market (existing homes) brought in over 90% of the total volumetric savings in this sector, although these results were just above the target. Within this market, only the Equipment Replacement set of programs demonstrated strong results. Costs were aligned with the savings results except for the Water Conservation programs which showed costs over budget and lower-than-anticipated savings.

Low Income programs quickly gained momentum in 2006 and ended the year by exceeding their volumetric targets by 50%.

On the other hand, New Construction programs fell short of their budget volumes by 59%, leaving a substantial part of the cost allocation untouched.

Table 3.1 shows detailed Residential results.

Residential programs are prescriptive in nature, i.e., savings results are based on deemed savings per participant as approved in the DSM plan. Prescriptive programs in 2006 were monitored by tracking participants, either through rebate applications to the Company or through records of business partners who deliver the programs. Results for the largest Residential sector program, TAPS, were reviewed through a third party evaluation to validate participant numbers.

The following sections examine each of the program areas in detail.

Table 3.1: Detailed Residential Results

RESIDENTIAL SECTOR PROGRAMS	Number of Participants			2006 Net Gas Savings			DSM Fixed & Variable Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (%)	Budget	Actual	Var (%)
Existing Homes									
Water Heating	*5,400*	-	*-100%*	*850,200*	-	*-100%*	*$ 421,500*		*-100%*
Energy Star Efficient Purchase WH Program	-	-		-	-		$ -	$ -	
Heat Traps	3,000	-	-100%	219,000	-	-100%	$ 204,000	$ -	-100%
Tankless Water Heating	150	-	-100%	30,450	-	-100%	$ 45,000	$ -	-100%
Waste Water Heat Recovery	2,250	-	-100%	600,750	-	-100%	$ 172,500	$ -	-100%
Water Conservation	*2,400*	-	*-100%*	*135,936*	-	*-100%*	*$ 64,400*	*$ -*	*-100%*
Education Program	2,000	-	-100%	95,760	-	-100%	$ 60,000	$ -	-100%
Water Utilities - Showerhead	400	-	-100%	40,176	-	-100%	$ 4,400		-100%
TAPS Partner Program	*333,100*	*270,756*	*-19%*	*13,423,320*	*11,572,687*	*-14%*	*$ 3,481,000*	*$ 4,088,802*	17%
TAPS Partner Program - Showerheads	103,100	90,856	-12%	12,248,280	10,793,693	-12%			
TAPS Partner Program - Pipe wrap	102,000	67,621	-34%	1,175,040	778,994	-34%			
TAPS Partner Program - Bag Test	128,000	112,279	-12%						
Equipment Replacement	*25,504*	*40,879*	*60%*	*5,200,160*	*8,945,786*	*72%*	*$ 1,664,435*	*$ 3,630,297*	*118%*
Furnace Replacements	7,175	11,775	64%	1,436,435	2,357,355	64%	$ 767,500	$ 2,340,493	205%
Enhanced Furnance Replacement	3,075	11,046	259%	885,600	3,181,248	259%	$ 588,125	$ 951,835	62%
Thermostats	15,254	18,058	18%	2,878,125	3,407,183	18%	$ 308,810	$ 337,969	9%
Thermal Envelope Improvements	*7,661*	*6,781*	*-11%*	*4,976,514*	*4,120,542*	*-17%*	*$ 724,575*	*$ 578,042*	*-20%*
Home Rewards - Energuide for Houses	3,294	-	-100%	2,322,863	-	-100%	$ 397,050	$ -	-100%
Home Rewards w/o Program. Thermo	4,367	6,781	55%	2,653,651	4,120,542	55%	$ 327,525	$ 578,042	76%
Total - Existing Homes	***374,065***	***318,416***	***-15%***	***24,586,130***	***24,639,016***	***0%***	***6,355,910***	***8,297,140***	***31%***
Low Income									
TAPS Partner Program - Showerhead	2,500	5,229	109%	330,000	690,228	109%	$ 393,750	$ 286,176	-27%
TAPS Partner Program - Pipewrap	2,500	5,348	114%	30,000	64,176	114%			
TAPS Partner Program - Bag Test	2,500	5,332	113%						
Prog. Thermostats	2,500	2,732	9%	530,000	579,184	9%			
Total - Low Income	***10,000***	***18,641***	***86%***	***890,000***	***1,333,588***	***50%***	***393,750***	***286,176***	***-27%***
New Construction									
R-2000	30	11	-63%	24,000	8,800	-63%	$ 40,000	$ 25,000	-38%
New Building Energy Efficiency Initiative	2,550	180	-93%	1,147,500	81,000	-93%	$ 319,500	$ 80,675	-75%
EnergyStar Houses	400	655	64%	320,000	524,000	64%	$ 50,500	$ 80,838	60%
Total - New Construction	***2,980***	***846***	***-72%***	***1,491,500***	***613,800***	***-59%***	***410,000***	***186,513***	***-55%***
TOTAL RESIDENTIAL	**387,045**	**337,903**	***-13%***	**26,967,630**	**26,586,404**	***-1%***	**7,159,660**	**8,769,829**	***22%***

3.2 Existing Homes – Water Heating

Water heating programs were identified in the DSM plan for 2006. However, heat traps, tankless water heating, and waste water heat recovery programs were not launched because demonstrated savings from pilot studies, as well as high incremental costs, rendered the programs cost-ineffective at that time.

3.3 Existing Homes – Water Conservation

3.3.1 Education Program

This program includes the distribution, through participating schools, of kits containing a low flow showerhead, air sealing gaskets, compact fluorescent lights (CFLs), weather stripping, and an information booklet on energy saving measures. It was not delivered in 2006 as the Company focused its water savings efforts on the TAPS Partners initiative.

3.3.2 Water Utilities

In the past, the Company supplied low-flow showerheads to a variety of municipalities in support of their various water savings programs. The program was not offered in 2006 as the Company focused its efforts on the TAPS Partners initiative.

3.4 TAPS

The TAPS program has been delivering energy efficiency measures to residential customers in the Company's franchise area since 2000. Contractors acting on behalf of the Company install energy efficiency retrofits in existing homes, building awareness of environmental and cost saving benefits among homeowners. The measures are:

- Up to two low-flow showerheads installed
- Foam pipe installation to and from the hot water heater
- Kitchen and bathroom aerators left for customers to install themselves
- A bag test to pre-qualify the need for a low-flow showerhead

Contractors are selected based on criteria outlined through a Request for Proposal (RFP) process and they are evaluated throughout the year. They report the number of measures installed on a monthly basis. These reports are validated to ensure accuracy and to determine installation and participant removal rates.

In 2006, to improve program efficiency, the Company provided contractors with do-not-contact lists containing information regarding previous installations in their designated area. This enhancement reduces administrative burden and provides greater focus for the contractor. While canvassing neighborhoods, telemarketing, or during service calls, contractors consult their do-not-contact lists to determine which customers are eligible for potential participation. The list is updated quarterly for participants who have received TAPS in the current year and for new postal codes.

Invoices from contractors are further examined to check the list of addresses claimed against a list of valid addresses. Contractors are paid only on the basis of valid data.

Quarterly follow-up surveys were also carried out on a statistically valid random sample of participants to validate installation by the contractor and determine whether

participants removed energy-saving devices after installation. (See Section 8 for a summary of the TAPS Follow-up Survey.)

Delivery agents reached 19% fewer participants than expected, with volumes 14% below budget. Costs were 17% above budget because of advanced purchases of inventory.

3.5 Existing Homes – Equipment Replacement / Space Heating

3.5.1 Furnace Replacement

In 2006 the Company continued the Furnace Replacement Program, promoting high efficiency furnaces and providing incentive rebates to customers who purchased these units. Through a partnership with Natural Resources Canada (NRCan), the incentive was increased from $100 to $200 for a limited period, January 1 to March 31. The Company continued to promote and operate the program and NRCan reimbursed the Company $100 for each installation.

In addition, from February to March 2006, the Company promoted the program through furnace equipment manufacturers who provided an additional $150 per installation. Participants who purchased high efficiency furnaces in January received $200 as a rebate. In the months of February and March, the participants received a $350 incentive.

Before the end of its commitment, NRCan's funds were exhausted from the significant uptake in participation. As in 2005, the Company honoured the rebate at the full amount to the end of the period as advertised, thereby increasing its incentive costs beyond budgeted levels. When both campaigns ended, the Company continued to deliver the program at the regular $100 incentive level.

Rebate forms were provided to customers through the Web, bill inserts, direct mail, system expansion, contractor coupons, and various other media.

Colour-coded rebate forms were processed to show the different incentive levels. Customers submitted proof of installation with their rebate coupons, which included manufacturer make and model information. Partners were invoiced based on participation in the different campaigns.

Participation and associated gas savings were 64% above target for the Furnace Replacement program. Program costs were disproportionately higher than budget, by 205% because of the unbudgeted increase in incentive costs per participant that was required to cover the full cost of the higher incentive commitment for the full advertised period to March 31st after NRCan's withdrawal from the program.

3.5.2 Enhanced Furnace Replacements

This program broadens the Furnace Replacement program to provide an additional incentive to contractors for up-selling customers to a high efficiency furnace with an electronically commutated (ECM) motor in either new or replacement applications. Participants continue to receive the $100 rebate and contractors receive $75.

In 2006, contractors were more successful in promoting the ECM equipped furnaces. Participation and savings were 259% above target.

Participants are counted towards the Enhanced program when a rebate application is received and the participant's address appears on the contractor's invoice list. The $100 rebate is counted in the Furnace Replacement program while the contractor incentive of $75 is retained in this program.

3.5.3 Thermostats

This program was designed to increase the market penetration of programmable thermostats through a $15 rebate given to customers who purchased a programmable thermostat and installed it themselves. Programmable thermostats allow customers to pre-set the thermostat to automatically lower and raise temperatures according to a desired schedule. This results in savings in both the heating and cooling seasons. Rebate forms are provided to customers through the Web, bill inserts, and voluntary contractor participation.

Participants and savings were 18% above target and costs exceeded budget by 9%.

3.6 Existing Homes – Thermal Envelope Improvements

3.6.1 Home Rewards/EnerGuide for Houses

The Company has been offering a Weatherization or Home Rewards program since 2001. The Home Rewards program promotes improved home performance in the Residential market by encouraging customers to undertake a home energy audit, to implement retrofit measures as recommended by the audit and to undertake a second audit after the retrofit measures are installed to determine the home's new energy rating. The Company provides a customer incentive to support the cost of the audit. The rebate is conditional on the homeowner taking actions in the areas identified in the audit.

In October 2003, the Federal Government announced an EnerGuide for Houses (EGH) program that provided a homeowner incentive to help alleviate the cost barrier that impedes implementation of the measures. The amount of the Federal incentive was determined by the improvement achieved in the home's energy rating resulting from the retrofit measures.

The program is delivered through the Green Communities Canada (GCC) member organizations across the franchise area. The audit involves a blower door test and the Hot2XP computer modeling provided by the EGH program. GCC submitted monthly participant reports that indicated the results of the pre-audit and post-audit ratings.

The program had originally been budgeted with two incentive options for customers who completed a B audit assessment and qualified for a federal grant, a programmable thermostat or a $50 rebate. Upon implementation, the Company decided to offer only the $50 rebate.

In May 2006, the EnerGuide for Houses Retrofit Incentive Program was cancelled by the Federal government. Property owners who had a pre-retrofit evaluation performed prior to May 13, 2006 would still be entitled to a post-retrofit evaluation and be able to qualify for a grant until March 31, 2007.

Net Savings for Home Rewards were below anticipated levels by 17% and costs showed a similar decrement. The Company's lower-than-target results are partly due to the cancellation of the EnerGuide for Houses program as participation in the Company's program was contingent on the participant qualifying for the Federal program incentive.

The program was tracked through monthly reports received through participating service organizations that performed the audits for Enbridge customers who subsequently qualified for a federal grant. Results were validated to ensure no duplicates were counted.

3.7 Low Income

3.7.1 Low Income TAPS

This program was delivered on the basis of United Way low income postal codes and through relationships with the Toronto Housing Corporation and the EnviroCentre's social housing network in Ottawa. Similar to the TAPS Partners program, contractors delivered a package of products consisting of installation of up to two low-flow showerheads, foam pipe installation to and from the hot water heater, kitchen and bathroom aerators left for customers to install themselves and a bag test to pre-qualify the need for a low-flow showerhead. In addition, for the Low Income TAPS program, contractors also installed a programmable thermostat. All products were provided at no cost to the participants.

Participation in low income TAPS was 86% above anticipated levels, enabling gas savings 50% above target.

3.8 Residential New Construction

3.8.1 R-2000

This program promoted the building and certification of new homes to the R-2000 construction standard through the provision of training, workshops and promotional materials to the industry. Specially trained builders design, build, arrange for testing and certification of their homes to the R-2000 standard which greatly exceeds the current Canadian building codes. The R-2000 label corresponds with an EnerGuide rating of 80 or greater. R-2000 homes save the homeowner between 30% and 40% in energy costs, as well as provide improved air quality and greater comfort than conventionally built homes. Features include a whole-house continuous ventilation system, advanced heating and cooling systems, energy efficient appliances and lighting, energy efficient windows and doors, a tighter building envelope, and higher levels of insulation.

In Ontario, the R2000 program is delivered by EnerQuality Corporation. The Company endorsed and promoted energy conservation through the R-2000 Home program by supporting EnerQuality™ Corporation. This support enables EnerQuality to provide marketing and training support for participating builders.

The homes certified as R-2000 are tracked and submitted quarterly by EnerQuality™ Corporation.

Results were lower than target by 63%. Similarly, costs were below budget by 38%.

3.8.2 New Building Energy Efficiency / EnerGuide for New Houses

The EnerGuide for New Houses program encourages builders to incorporate efficiency measures at the design stage and to rate their homes according to the EnerGuide label as determined by NRCan's HOT2000 or Hot 2XP software tools. The $100 incentive is provided to the builder for every home that qualifies.

Program results are obtained from lists of EGNH homes by city and by builder from NRCan reports. Invoices received from the builder are checked against this list and paid accordingly.

As in previous years, the challenge continues to be in the enlistment of builders. The results speak to this particular challenge as participation is 93% below anticipated levels.

3.8.3 Energy Star for New Homes

In conjunction with EnerQuality Corporation and NRCan, the Company promoted the development of an Energy Star for New Homes label, through the adoption of building envelopment improvements and energy efficient appliance installation. As with EnerGuide for New Houses, this is a builder-incentive program. The Energy Star label approximates an EnerGuide rating of 78.

The Energy Star for New Homes program was the only offering in the Residential New Construction category that surpassed its targets as the program has gained much builder momentum. EnerQuality credits this development to the fact that the program was designed with production builders in mind. Compared to the R-2000 label, qualifying for Energy Star involves less administrative effort as well as lower enrolment and evaluation fees. Participation and savings were 64% over targets and costs were 60% over budget. The results reflect the completion in 2006 of labeled homes from builders who signed up in 2005.

Program results are obtained from NRCan lists of ESNH homes by city and by builder. Invoices received from the builder are checked against this list and paid accordingly.

3.9 Windows Market Transformation

The Windows Market Transformation Program was first approved as part of the 2005 DSM plan and continued again in 2006. The overall goal of the 2006 program was to increase the market share for Energy Star windows in the Company's franchise area by 5% from 2005 levels.

To meet the program objective, the Company developed four strategies:

- create awareness of the Energy Star program with Window Manufacturers
- motivate manufacturers to participate as providers of Energy Star windows by upgrading their product and pursuing certification
- assist manufacturers to promote Energy Star windows to customers
- use the Enbridge brand to further promote Energy Star windows in the marketplace

Implementation of these strategies involved activities with key window manufacturers as well as Company promotion of Energy Star windows. Program activities with key window manufacturers included personal communication and meetings to encourage

participation in the Energy Star program, financial support to achieve Energy Star qualification, and additional support to enable manufacturers to market Energy Star products to customers. In addition to working with manufacturers, the Company undertook extensive promotion of Energy Star windows through presence at trade and consumer shows, print materials, a windows website, and print advertising in major daily newspapers.

An independent study was commissioned to determine the baseline market share in 2004 and, after year end, the market share for 2005. The 2005 market share became the baseline for the 2006 program. A similar study is being undertaken in 2007 to determine 2006 results after year end. Results will be published when available.

4.0 Business Market Results and Performance

4.1 Business Markets 2006 Highlights

The Company implemented a number of program and process initiatives in 2006 in Business Markets in an effort to better align Marketing and Sales functions in the Company as they pertain to DSM delivery, to enhance incentives for participants to pursue more DSM activity, to improve the documentation of custom savings, and, finally, to enable the recognition of all benefits associated with gas-saving DSM projects.

In 2006 the Company realigned programs in the Commercial component of the Business Markets along functional sectors. In the past, commercial programs were grouped by technological applications such as Steam Saver, Heat Recovery, or HVAC. Beginning in 2006, commercial programs are grouped by target market: Long Term Care, Municipalities, Universities, Schools, Hospitals, Hotels, Restaurants, Warehouses, Retail, Offices and Other sectors.

This alignment allows program delivery to be more customer-focused rather than technology or solution-based. The shift has enabled more engagement with trade associations through workshops and sponsorship at annual conferences, and has extended the reach of programs through targeted education and promotion to groups with common interests and problems. It has also leveraged access to market intelligence that is specific to sectors, ensuring trends are identified and associated energy needs are addressed. And finally, it facilitates better integration with the Company's Sales group.

Building success in the Multi-residential sector, the MultiCHOICE program was extended to other commercial and industrial programs to encourage participants to make incremental energy efficiency choices. An incentive of $\$0.05/m^3$ of gas was paid for up to two measures installed, and doubled to $\$0.10/m^3$ of gas saved for three or more measures implemented (up to a maximum of $30,000). In commercial sectors with large capital projects, the $30,000 incentive cap proved to be a barrier. As a result, in 2006, the Company raised the capped incentive cap to $100,000 for the Hospital, Long Term Care, Universities, and Colleges sectors.

In May 2005, the Company established a formal Documentation Protocol that provided specific guidelines for the Company's Energy Solutions Consultants (ESCs) regarding documentation required to substantiate energy savings and incremental costs. This initiative streamlined the tracking process, minimized individual follow-up required on additional information, and ensured that the custom project information available to facilitate the evaluation and audit process was much more complete.

In the process of identifying opportunities for gas savings through custom projects, ESCs frequently encounter additional opportunities, where the gas measure also enables additional electricity or water savings. Although the Company has been providing customized solutions to its larger gas users, it has not claimed the associated electricity and water savings. Consequently, its past DSM results have been somewhat understated. In April 2006, the Company sought and was granted confirmation from the Board to account for electricity and water savings arising from these custom projects.

Following the Board's confirmation, the Company engaged in ESC training and a subsequent update to the ETools software to ensure consistent and appropriate calculations of electricity savings, particularly in the Commercial sector. In addition, the Documentation Protocol established in 2005 was expanded to include similar documentation requirements for electricity and water savings.

The results shown in the Tables in this Section do not include induced savings from electricity and water. The benefits from induced savings are included in the TRC results as reported in Section 5.

This Section presents the results of DSM programs in the Commercial and Industrial sectors. Tables 4.1 and 4.2 detail the results for each.

4.1.1 Custom Projects

Business Markets consist of the Commercial, Multi-Residential, Large New Construction and Industrial sectors.

The Company offers four commercial sector programs that are prescriptive in nature focusing on multi-residential water savings measures and small commercial space heating measures. As with prescriptive programs in the Residential sector, these are tracked through participant rebate applications or through business partner reporting.

However, most participants in Business Markets programs are classified and treated as "custom projects" for which the energy savings and incremental costs were determined on an individual project basis.

While the programs might be marketed under branded names such as "Steam Saver" or "Monitoring and Targeting", the savings, equipment costs and incentive payments are tracked and reported through individual custom applications for each project wherein the incentive amount is determined using a per m^3 index. In any given year, the Company processes hundreds of these custom application projects.

An independent engineering review was undertaken to validate the savings estimates for custom projects. Summaries of the engineering reviews for custom projects in the Commercial and Industrial sectors are found in Section 8.

The 2003 Monitoring and Evaluation Report[3] identified the existence of distinct decision types in the business markets with respect to replacement and advancements. The tracking and evaluation of the 2006 custom projects relied on those definitions. For advancement projects the savings and incremental costs were adjusted using the approach identified in the 2003 Monitoring and Evaluation Report.[4] This adjustment shortens the life over which the savings are claimed and correspondingly adjusts the incremental cost of the equipment to reflect the assumption that the investment would have been made at a future date.

The calculation of incremental costs for custom projects for the SSM calculation reflects the Settlement Agreement in the 2003 Rates Case. That is, for the purposes of the SSM

[3] Original EB-2005-0001, Exhibit A7, Tab12, Schedule 1, Page 43-44.
[4] Ibid.

calculation, the incremental costs estimated in the budget remain fixed while those associated with actual volumetric savings are drawn from the actual project records. The F2003 Settlement also identifies commonly-used measure lives that remain constant in both the budget and actual net benefits calculations.

Table 4.1: Business Markets Summary Results

	Number of Participants			2006 Net Gas Savings			DSM Fixed & Variable Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (%)	Budget	Actual	Var (%)
COMMERCIAL	**32,942**	**34,071**	**3%**	**27,247,561**	**38,783,195**	**42%**	**3,376,864**	**4,586,969**	**36%**
Large Commercial	391	221	-43%	14,335,300	15,830,908	10%	1,739,336	1,911,185	10%
Small Commercial	1,650	1,891	15%	1,352,815	2,205,361	63%	186,500	198,460	6%
Multi-Residential	30,850	31,923	3%	9,382,446	17,792,746	90%	1,083,288	2,007,920	85%
Large New Construction	51	36	-29%	2,177,000	2,954,180	36%	367,740	469,403	28%
INDUSTRIAL	**173**	**151**	**-13%**	**23,212,309**	**27,656,011**	**19%**	**2,465,585**	**2,154,040**	**-13%**
Agriculture	38	33	-13%	2,751,717	2,575,937	-6%	234,030	412,567	76%
Industrial Manufacturing	135	118	-13%	20,460,593	25,080,074	23%	2,231,555	1,741,473	-22%
TOTAL BUSINESS MARKETS	**33,115**	**34,222**	**3%**	**50,459,870**	**66,439,206**	**32%**	**5,842,449**	**6,741,009**	**15%**

Table 4.2: Detailed Commercial Results

COMMERCIAL SECTOR PROGRAMS	Number of Participants			2006 Net Gas Savings			DSM Fixed & Variable Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (%)	Budget	Actual	Var (%)
Large Commercial									
Long Term Care	22	3	-86%	773,500	86,584	-89%	$ 92,665	$ 13,711	-85%
Municipalities	59	31	-47%	3,115,000	2,457,331	-21%	$ 357,634	$ 227,614	-36%
Universities	44	9	-80%	1,505,000	632,416	-58%	$ 175,349	$ 93,334	-47%
Schools	96	118	23%	3,024,000	2,853,576	-6%	$ 323,724	$ 318,952	-1%
Hospitals	17	15	-12%	630,000	6,884,152	993%	$ 65,794	$ 635,870	866%
Hotels	6	3	-50%	192,500	323,940	68%	$ 30,357	$ 72,455	139%
Restaurants	4	6	50%	140,000	17,812	-87%	$ 42,827	$ 246,329	475%
Warehouses	15	4	-73%	525,000	70,645	-87%	$ 67,997	$ 5,054	-93%
Retail	13	4	-69%	367,500	173,174	-53%	$ 48,512	$ 46,207	-5%
Offices	69	17	-75%	2,452,800	1,477,984	-40%	$ 312,505	$ 149,274	-52%
Market Development Other	46	11	-76%	1,610,000	853,292	-47%	$ 171,972	$ 102,385	-40%
Business Partner Development							$ 50,000	$ -	-100%
Total - Large Commercial	***391***	***221***	***-43%***	***14,335,300***	***15,830,908***	***10%***	***1,739,336***	***1,911,185***	***10%***
Small Commercial									
Furnance Replacement / Space Conditioning	150	40	-73%	51,975	13,860	-73%	$ 18,000	$ 5,000	-72%
Programmable Thermostat	500	41	-92%	94,340	7,736	-92%	$ 8,500	$ 819	-90%
Rinse N' Save	1,000	1,810	81%	1,206,500	2,183,765	81%	$ 125,000	$ 148,993	19%
EnerGuide for SMEs (Pilot)							$ 17,500	$ 11,395	-35%
Technology Edge (Pilot)							$ 17,500	$ 32,254	84%
Total - Small Commercial	***1,650***	***1,891***	***15%***	***1,352,815***	***2,205,361***	***63%***	***186,500***	***198,460***	***6%***
Multi-Residential									
Non profit	27	25	-7%	1,039,500	685,351	-34%	$ 124,922	$ 67,406	-46%
Private	157	244	55%	5,859,000	14,408,929	146%	$ 851,033	$ 1,768,593	108%
Water Conservation	30,666	31,654	3%	2,483,946	2,698,466	9%	$ 107,333	$ 171,921	60%
Total - Multi-Residential	***30,850***	***31,923***	***3%***	***9,382,446***	***17,792,746***	***90%***	***1,083,288***	***2,007,920***	***85%***
Large New Construction	***51***	***36***	***-29%***	***2,177,000***	***2,954,180***	***36%***	***367,740***	***469,403***	***28%***
TOTAL COMMERCIAL	**32,942**	**34,071**	***3%***	**27,247,561**	**38,783,195**	***42%***	**3,376,864**	**4,586,969**	***36%***

4.2 Commercial Sector

4.2.1 Overview

The Commercial sector exceeded its volumetric target by the largest margin compared to other sectors in the 2006 DSM portfolio. Its success was driven by the Multi-Residential component, as well as other sub sectors in the Large Commercial grouping. The sector's costs were similarly exceeded because of the related increase in variable costs (incentives).

4.2.2 Large Commercial

Capital infusion in the Large Commercial sector, particularly for the "MUSH" subgroup consisting of Municipalities, Universities, Schools, and Hospitals, saw renewed activity and interest in pursuing capital projects. Incentive caps were increased for most of the hospital and university sector, enabling greater customer participation than would have been possible with the lower incentive cap.

Hospitals were able to realize substantial savings from their boiler upgrades and related efficiencies for the dependent make-up air units. Pre-rinse spray nozzles, kitchen ventilation, and air doors were measures in the Restaurant sector that enabled a much larger base of participation as well as savings beyond target.

While the involvement in Schools was significant, and participation was 23% higher than anticipated, the projects fell short of the volumetric savings expected (6% below). Most of the measures implemented were for boiler upgrades and controls. Participants in particular school boards were more concerned with backup or redundant capacity rather than maximizing energy efficiency.

Other sectors in the Large Commercial grouping fell short of their volumetric targets and the associated costs are reflective of the shortfall. In the Warehouse and Retail sectors where a significant portion of properties are rented or leased, occupants or tenants are not motivated to pursue capital projects and neither are owners who do not reap the benefits of bill savings. In other sectors, natural gas is a smaller component of their energy costs, thereby making it harder to pursue opportunities for savings.

4.2.3 Small Commercial

The Small Commercial programs in 2006 provided similar measures to those in the Residential sector (Energy Efficient Furnaces and Programmable Thermostats) together with the Rinse 'N Save program, which promotes the use of a low-flow pre-rinse spray valve. Rinse 'N Save achieved results close to target while the Furnace Replacement and Programmable Thermostat components were significantly below targets.

4.2.4 Multi-Residential

Non-Profit
In 2006 the Company worked with the management of the Social Housing Service Corporation (SHSC) to promote measures such as high efficiency boilers, controls and ventilation. In addition, the Company funded building energy audits and made incentives available for building retrofits.

In 2006, 25 buildings in the Company's franchise area were involved in the audit and retrofit program through SHSC. Savings were 34% below target and costs were 46% below budget.

Private

Over 200 building audits were conducted in 2005 to identify energy efficiency opportunities in the Multi-Residential sector. Prior to 2005, most of the energy savings stemmed from boiler plant upgrades and improvements to the building envelope. Through the comprehensive audits, more applications have been identified. In addition, because audits were conducted on the customer's portfolio of multi-residential buildings, the Company's program reach has been extended more effectively.

In 2006, participation was up 55% from anticipated levels, while savings were above target by 146%. Program spending doubled as a result of higher participation and savings, although the incentive cap remained at $30,000.

Water Conservation

The Water Conservation program for multi-residential buildings involved the provision of showerheads as an additional measure for any existing retrofit project as part of the MultiCHOICE service offering. In Toronto, this program is offered in partnership with the City of Toronto's Multi-Unit Water Efficiency Program where the showerheads are installed by City-approved WESCOs (Water/Energy Service Company).

For showerheads that are part of MultiCHOICE, savings are claimed but not incented on an m^3 basis as part of the EEP process. Showerhead orders are received and paid out of the program's budget; the showerhead itself is the incentive to the participant.

The Company has also developed a front load washer program to reduce gas and water consumption for laundry facilities in multi-residential buildings. The Company provides a $75 incentive to route operators who own and service the laundry facilities for installation of each front load washer. Through a partnership with the City of Toronto, the City provides a $125/washer incentive for route operators and claims the water savings while the Company claims the gas savings and provides the $75 incentive.

Front Load Washer results are tracked through reports submitted by route operators who deliver the program. The City of Toronto assembles the list of addresses where measures were installed and the Company ensures that they are gas customers with gas water heaters. Results are claimed and invoiced on the basis of the Company's verification. For measures outside Toronto, the Company receives the list of addresses directly from route operators.

There were 31,061 showerheads and 593 front load washers provided to multi-residential dwellings in 2006. Together, both programs exceeded their savings target by 9% and costs by 60%.

4.2.5 Large New Construction

The New Construction program for Business Markets encourages the design and construction of new buildings to higher levels of energy efficiency and environmental performance than required in the Model National Energy Code for Buildings (the Code).

The redesigned Design Assistance program provides monetary assistance ($4,000 cap) in the design phase of a building to simulate options that will achieve savings above the Code. In addition, through the Company's New Building Construction Program (NBCP) incentives are provided at $0.075 per m^3 for implementation of the energy efficient design, with an incentive cap of $15,000 per project. Incentives are paid in two parts to ensure design measures are installed in full as well as to provide some cost relief while the project is underway.

The program re-design has enabled greater participation through an expanded list of design advisers who can provide design assistance. As before, simulations are generated by the EE4 tool developed by NRCan. In addition to the savings calculation, the current documentation requires the provision of associated incremental costs for measures implemented according to design.

Gas savings were 36% higher than target in 2006 and costs were 28% above budget.

In previous years, the paucity of incremental cost information has made it necessary with some projects to apply average costs for similar buildings in order to determine a TRC calculation. By requiring the incremental costs to be part of the information provided by the advisor, incremental cost data has improved. However, as 2006 is the first year with the new program design, a significant portion of projects still lack the incremental cost information. It has been necessary to augment this information with average costs applied to efficiency measures based on work done by an independent consultant.

In addition to the Design Assistance and NBCP approaches, participants in the New Construction category also include those that took part in the old Design Advisory Program (DAP). As well, new buildings that are part of a commercial program sector (e.g. a new school) are counted in Large New Construction, and not in the sector results.

Because of the lag involved in new construction, some projects under the old DAP were grandfathered in 2006. The previous program paid the incentive up front at the design stage based on the square footage of the building up to a maximum of $7,800. DAP savings were claimed in 2006 with the completion of the building although incentives had been paid in previous years.

4.3 Industrial Sector

4.3.1 Overview

In spite of the lower-than-budgeted participation in 2006, actual savings were 19% higher which indicates larger projects. Costs were lower in relation to savings (13% below budget) because of larger projects that were subject to the incentive cap.

4.3.2 Industrial - All

Across the program offerings, energy audits are the primary vehicle for identifying opportunities in this sector. The audit can be a basic walk-through conducted by a Company ESC, or a more extensive audit by a third party business partner depending on the complexity of the operation. In either case, the Company makes the initial determination to assess the appropriate scale of the audit and also subsidizes the cost of the audit. The ESC then works with the customer to develop an implementation plan based on the audit results.

Steam Saver
The Steam Saver program continues to provide an on-site assessment of the steam plant and distribution system including components such as pressure reducing valves and steam traps. It aims to assist large volume gas users to identify improvements to reduce steam system losses. Some measures include steam trap and insulation surveys, optimal boiler sizing, and steam pressure reductions. Steam Saver projects resulted in 3.2 $10^6 m^3$ of gas savings, and costs that were 63% below budget. The calculation of savings for steam trap projects follows the recommendations of the 2004 Audit.

HVAC
Through HVAC Energy Audits, the Company provides customers with a comprehensive approach to improve building heating efficiency, air distribution systems, and indoor air quality levels. The end-result is a report that identifies potential problems and provides alternative solutions with associated budget costs, energy savings, and payback. In addition to funding the audit, the Company also supports implementation of the recommended measures through the custom project incentive. HVAC solutions dominated the savings for the industrial suite of programs, exceeding the target by 112%.

Monitoring & Targeting
By providing monitoring equipment and software, the Company enables the participant to monitor long-term energy efficiency improvements and set targets to promote continuous improvement. Monitoring and Targeting enables customers to take control of energy performance by applying basic management processes to energy use. Savings were 8% below target for this component.

Heat Recovery and Process Efficiency
The approach for Heat Recovery has been towards process integration. Because of the comprehensive nature of this approach, savings are most often identified through an audit. In most cases, heat recovery involves extracting heat from flue gases, from wastewater, or from waste steam. Although this component did not have specific budget values attached, actual results were tracked on the basis of evident heat recovery

Table 4.3: Detailed Industrial Results

INDUSTRIAL SECTOR PROGRAMS	Number of Participants			2006 Net Gas Savings			DSM Fixed & Variable Costs		
	Budget	Actual	Var (%)	Budget	Actual	Var (%)	Budget	Actual	Var (%)
Industrial Manufacturing									
Steam Saver	47	34	-28%	7,741,173	3,169,800	-59%	$ 1,187,960	$ 436,813	-63%
HVAC	45	44	-2%	3,499,997	7,420,364	112%	$ 533,657	$ 441,850	-17%
Monitoring & Targeting	5	2	-60%	2,100,000	1,935,868	-8%	$ 59,295	$ 115,272	94%
Heat Recovery	-	20		-	4,191,064		$ -	$ 249,559	
Process Efficiency	38	18	-53%	7,119,424	8,362,978	76%	$ 450,643	$ 497,978	11%
Total - Industrial Manufacturing	***135***	***118***	***-13%***	***20,460,593***	***25,080,074***	***23%***	***$ 2,231,555***	***$ 1,741,473***	***-22%***
Agriculture	***38***	***33***	***-13%***	***2,751,717***	***2,575,937***	***-6%***	***$ 234,030***	***$ 412,567***	***76%***
TOTAL INDUSTRIAL	**173**	**151**	***-13%***	**23,212,309**	**27,656,011**	***19%***	**2,465,585**	**2,154,040**	***-13%***

applications. To make variance explanations relevant, the results of this component are addressed with Process Efficiency programs.

The Process Efficiency offering is similar to Heat Recovery in that the audit consists of a thorough review of the customer's industrial process to identify areas for energy efficiency improvements. Twenty projects were identified with heat recovery savings and 18 for other process efficiency improvements. Together, both groupings exceeded the process efficiency target by 76%.

4.3.3 Agriculture

The Agriculture program targets the greenhouse industry, located primarily in Niagara, where program participants are typically flower growers. The Company provides a walk-through audit and also pays up to $5,000 for a more extensive third-party audit. This is in addition to the incentives offered for implementation of energy efficiency measures. Measures installed are similar to those in previous years – energy curtains, pipe insulation, controls, and boiler upgrades.

The sector's actual results lag 2006 targets. Annual gas savings were 6% lower than budget, and costs were above budget because a larger proportion of projects qualified for the higher incentive of $\$0.10/m^3$.

5.0 Resource Acquisition Programs TRC Benefits and SSM

5.1 Background

This section presents the cost effectiveness results for the 2006 DSM portfolio. Results are presented at both the sector and program level.

The Total Resource Cost (TRC) test is a cost-effectiveness test that values the energy savings resulting from DSM programs for society. The benefits are measured on the basis of discounted avoided gas, electricity, and water costs over the period for which the measure is in place. Costs include utility fixed costs associated with program delivery and the customers' incremental equipment cost. The TRC is expressed as a net amount; when benefits exceed costs, a program is cost-effective.

Results are contrasted against the budgeted pivot point which represents the TRC net benefits for the portfolio plan for 2006 as approved in the Board's Decision. Plan details include volumetric targets, portfolio budget, and related assumptions for equipment cost, free ridership and measure lives.

When the SSM was first approved, the Board determined that it should be based on the TRC test results. The Settlement Agreement in the 2003 Rates Case[5] further defined how the TRC results should be calculated. These guidelines remain in effect for 2006. Appendix C provides the full text of the guidelines.

5.2 TRC Results by Sector and Program

Table 5.1 provides the total TRC results at the sector level and Chart 5.1 shows the relative contribution of each sector to the net TRC program results. Tables 5.2, 5.3, and 5.4 provide detailed TRC results at the program level for the Residential, Commercial, and Industrial sectors.

In 2006, 64% of the Actual TRC Benefits were from the delivery of Business Market programs. Industrial Manufacturing, Large Commercial, and Multi-Residential programs were the dominant contributing sectors. The Residential sector was short of its TRC target by $2.6 million. Program Development, Market Research, and Overhead activities expended less than budgeted amounts.

[5] RP-2002-0133, Exhibit N1, Tab 1, schedule 1, page 68-71

Table 5.1: Summary of 2006 TRC Results

	TRC Benefits			
	Pivot Point	Actual NPV	Variance	Variance %
Residential	$ 74,865,594	$ 72,265,437	$ (2,600,157)	-3%
Large Commercial	$ 17,149,677	$ 29,655,730	$ 12,506,053	73%
Small Commercial	$ 2,120,471	$ 3,501,187	$ 1,380,716	65%
Multi-Residential	$ 27,307,304	$ 41,683,267	$ 14,375,963	53%
Large New Construction	$ 2,818,645	$ 8,904,585	$ 6,085,940	216%
Industrial Manufacturing	$ 27,936,247	$ 45,305,239	$ 17,368,991	62%
Agriculture	$ 3,598,389	$ 3,127,481	$ (470,908)	-13%
2006 TOTAL DSM PROGRAMS	**$ 155,796,327**	**$ 204,442,926**	**$ 48,646,599**	**31%**
Program Development	$ (584,500)	$ (100,231)	$ 484,269	-83%
Market Research	$ (676,705)	$ (81,178)	$ - $ 595,528	-88%
Overhead	$ (3,663,597)	$ (3,092,913)	$ - $ 570,684	-16%
2006 TOTAL DSM PORTFOLIO	**$ 150,871,525**	**$ 201,168,605**	**$ 50,297,080**	**33%**

Chart 5.1: Sectoral Distribution

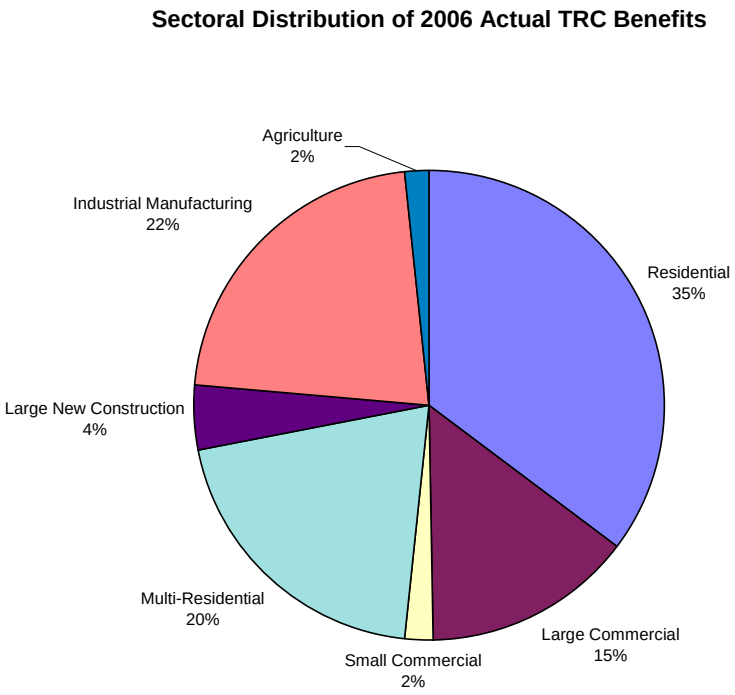


Table 5.2

RESIDENTIAL SECTOR PROGRAMS	TRC Benefits			
	Pivot Point	Actual NPV	Variance	Variance %
Existing Homes				
Water Heating	*$ 127,858*		*$ (127,858)*	*-100%*
Energy Star Efficient Purchase WH Program	$ -	$ -	$ -	
Heat Traps	$ 125,271		$ (125,271)	
Tankless Water Heating	$ (29,076)	$ -	$ 29,076	
Waste Water Heat Recovery	$ 31,663	$ -	$ (31,663)	
Water Conservation	*$ 55,827,673*	*$ 48,371,176*	$ (7,456,496)	*-13%*
Education Program	$ 377,633	$ -	$ (377,633)	
Water Utilities - Showerhead	$ 188,211	$ -	$ (188,211)	
TAPS Partner Program - Showerheads	$ 54,732,743	$ 48,132,873	$ (6,599,870)	
TAPS Partner Program - Pipe wrap	$ 1,056,086	$ 700,133	$ (355,953)	
TAPS Partner Program - Bag Test	$ (527,000)	$ (461,830)	$ 65,170	
Equipment Replacement	*$ 10,804,178*	*$ 15,393,131*	$ 4,588,953	*42%*
Furnace Replacements	$ 2,097,877	$ 3,472,253	$ 1,374,376	
Enhanced Furnance Replacement	$ 612,904	$ 2,315,267	$ 1,702,362	
Thermostats	$ 8,093,397	$ 9,605,612	$ 1,512,215	
Thermal Envelope Improvements	*$ 7,696,514*	*$ 5,260,301*	$ (2,436,213)	*-32%*
Home Rewards - Energuide for Houses	$ 3,755,605	$ -	$ (3,755,605)	
Home Rewards w/o Program. Thermo	$ 3,940,908	$ 5,260,301	$ 1,319,392	
Total - Existing Homes	***74,456,223***	***69,024,608***	***(5,431,614)***	***-7%***
New Construction				
R-2000	$ (84,632)	$ (41,365)	$ 43,267	
New Building Energy Efficiency Initiative	$ (1,560,990)	$ (161,950)	$ 1,399,040	
EnergyStar Houses	$ (605,600)	$ (983,881)	$ (378,281)	
Total - New Construction	***(2,251,223)***	***(1,187,197)***	***1,064,026***	***47%***
Low Income				
TAPS Partner Program - Showerhead	$ 1,430,319	$ 2,978,343	$ 1,548,024	
TAPS Partner Program - Pipewrap	$ 26,963	$ 57,679	$ 30,716	
TAPS Partner Program - Bag Test	$ (50,000)	$ (21,328)	$ 28,672	
Prog. Thermostats	$ 1,253,312	$ 1,413,331	$ 160,019	
Total - Low Income	***2,660,594***	***4,428,026***	***1,767,432***	***66%***
TOTAL RESIDENTIAL	**74,865,594**	**72,265,437**	**(2,600,157)**	***-3%***

Within the residential sector, the Equipment Replacement suite of programs surpassed their pivot or budget TRC amounts by the largest margin. Unlike the TAPS Partners program which failed to meet its program pivot point, the TAPS Low Income program delivered to Low Income recipients was very successful.

Table 5.3

COMMERCIAL SECTOR PROGRAMS	Net TRC Benefits Pivot Point	Actual NPV	Variance	Variance %
Large Commercial				
Long Term Care	$ 688,572	$ 67,242	$ (621,330)	
Municipalities	$ 5,509,071	$ 6,084,079	$ 575,008	
Universities	$ 723,416	$ 14,357	$ (709,059)	
Schools	$ 4,710,926	$ 734,323	$ (3,976,602)	
Hospitals	$ 739,040	$ 17,513,901	$ 16,774,861	
Hotels	$ 448,115	$ 647,690	$ 199,574	
Restaurants	$ 11,722	$ (195,459)	$ (207,181)	
Warehouses	$ 857	$ 108,714	$ 107,857	
Retail	$ 202,448	$ 71,621	$ (130,828)	
Offices	$ 1,231,233	$ 3,099,665	$ 1,868,433	
Market Development Other	$ 2,934,277	$ 1,509,596	$ (1,424,681)	
Business Partner Development	$ (50,000)	$ -	$ 50,000	
Total - Large Commercial	***17,149,677***	***29,655,730***	***12,506,053***	***73%***
Small Commercial				
Furnance Replacement / Space Conditioning	$ (26,533)	$ (6,275)	$ 20,257	
Programmable Thermostat	$ 266,910	$ 21,969	$ (244,941)	
Rinse N' Save	$ 1,915,094	$ 3,511,580	$ 1,596,486	
EnerGuide for SMEs (Pilot)	$ (17,500)	$ (11,395)	$ 6,105	
Technology Edge (Pilot)	$ (17,500)	$ (14,691)	$ 2,809	
Total - Small Commercial	***2,120,471***	***3,501,187***	***1,380,716***	***65%***
Multi-Residential				
Non profit	$ 1,173,032	$ 823,795	$ (349,237)	
Private	$ 15,705,842	$ 29,331,695	$ 13,625,853	
Water Conservation	$ 10,428,430	$ 11,527,776	$ 1,099,347	
Total - Multi-Residential	***27,307,304***	***41,683,267***	***14,375,963***	**53%**
Large New Construction	***2,818,645***	***8,904,585***	***6,085,940***	***216%***
TOTAL COMMERCIAL	**49,396,096**	**83,744,769**	**34,348,672**	***70%***

Within the Commercial sector, Hospitals and Private multi-residential buildings contributed 88% of the total Commercial TRC benefits above the pivot point.

Table 5.4

INDUSTRIAL SECTOR PROGRAMS	Net TRC Benefits Pivot Point	Actual NPV	Variance	Variance %
Industrial Manufacturing	***$ 27,936,247***	***$ 45,305,239***	***$ 17,368,991***	***62%***
Agriculture	***$ 3,598,389***	***$ 3,127,481***	***$ (470,908)***	***-13%***
TOTAL INDUSTRIAL	**31,534,636**	**48,432,719**	**16,898,083**	***54%***

The Industrial Manufacturing suite of programs brought in the highest margin of net TRC at $17.4 million compared to Large Commercial at $12.5 million and Multi-residential at $14.4 million.

5.3 SSM Claim

The SSM provides for an incentive to the Company for DSM activities. The Board Decision for the 2006 DSM plan stipulated a change to the SSM calculation so that the Company can qualify for an incentive at 75% of the pivot point.

In its Partial Decision for EB-2005-0001, the Ontario Energy Board put forth a change in the formula for calculating SSM.

The SSM for 2006 is structured as follows[6]:

- The SSM will be available for all TRC savings in excess of 75% of the established TRC target.
- For TRC savings between 75% and 99.9% of the TRC target, an SSM amount of 18% of TRC savings in excess of 75%, plus,
- For TRC savings between 100% and 109.9% of the TRC target, an SSM amount of 15% of TRC savings in excess of 100%, plus,
- For TRC savings between 110% up to 120% of the TRC target, an SSM amount of 12% of TRC savings in excess of 110%, plus,
- For every subsequent increase of 10% over the TRC target, the marginal SSM rate shall decline by a further 3% until it equals 3%.

In accordance with the 2006 SSM formula, the 2006 SSM claim calculation is detailed below in Table 5.5.

Table 5.5: 2006 SSM Claim

SSM Calculation

	Pivot Point	Actual TRC	%	SSM Claim
Post ADR Pivot Point	$148,068,264			
Adjusted Pivot Point for measure life distribution	$150,871,525			
75% of Adjusted Pivot Point		$113,153,644		
25% of Adjusted Pivot Point		$37,717,881	18%	$6,789,219
1st 10% above Pivot		$15,087,153	15%	$2,263,073
2nd 10% above Pivot		$15,087,153	12%	$1,810,458
3rd 10% above Pivot		$15,087,153	9%	$1,357,844
balance to Total Actual		$5,035,622	6%	$302,137
Total Actual TRC		$201,168,605		***$12,522,731***

[6] Ontario Energy Board, EB-2005-0001, EB-2005-0437 Partial Decision with Reasons, December 22, 2005, page 10.

6.0 Market Transformation Program and SSM

6.1 Windows Market Transformation Program Results

As reported earlier, the goal of the 2006 Windows Market Transformation program was to increase the market share for Energy Star windows in the Company's franchise area by 5% from 2005 levels.

An independent study has been commissioned to determine program results. The study results will be published when available.

6.2 SSM Claim

Information regarding the SSM claim will be provided when the study results are available.

7.0 DSM Cost Summary (DSM Variance Account)

As part of its EB-2005-0001 Decision, the Board agreed that "for the purposes of the variance account going forward … excess spending less than 20 percent of the Board approved budget may be recovered, but only where the Company has achieved its TRC target[7]." The calculation is detailed in Table 7.1.

Program spending exceeded budget amounts in both Residential and Business Markets as a result of considerable uptake in program participation. The overage was offset somewhat by lower-than-anticipated labor and consulting overhead costs. Overall, program results translated into societal benefits that exceeded the TRC target by $50 million.

The Company proposes to clear an additional $374,735 in DSM costs as a result of delivering successful DSM programs in 2006. This represents a 2% variance from the Board-approved budget.

Table 7.1: 2006 DSMVA Claim

DSM SUMMARY	2006 BUDGET	2006 ACTUAL	VARIANCE
RESIDENTIAL MARKETS			
FIXED	$1,533,400	$1,117,725	$415,675
VARIABLE	$6,499,560	$8,333,651	($1,834,091)
	$8,032,960	$9,451,376	($1,418,417)
BUSINESS MARKETS			
TOTAL BUSINESS			
FIXED	$1,315,601	$1,123,414	$840,566
VARIABLE	$4,640,348	$5,439,335	($937,301)
	$5,955,949	$6,562,749	($96,735)
P&E			
PROGRAM DEVELOPMENT	$584,500	$ 100,231	$484,269
MARKET RESEARCH	$676,705	$81,178	$595,528
OVERHEADS	$3,663,597	$3,092,913	$570,684
	$4,924,802	$3,274,321	$1,650,481
TOTAL			
FIXED	$7,773,803	$5,515,460	$2,258,343
VARIABLE	$11,139,908	$13,772,986	($2,633,078)
TOTAL DSM	**$18,913,711**	**$19,288,446**	**($374,735)**
DSM COSTS RECOVERED IN RATES:		**$18,913,711**	
DSMVA RECOVERABLE:		**$374,734**	

[7] Ontario Energy Board, EB-2005-0001, EB-2005-0437 Partial Decision with Reasons, December 22, 2005, page 18.

8.0 Evaluation and Research Summary

8.1 2006 TAPS Follow-Up Study

8.1.1 Background

The TAPS program dispatches participating contractors to customers' homes to install a variety of measures including showerheads, pipe wrap (to be installed on water lines going into and coming away from the hot water tank), and energy saving aerators for kitchen and bathroom faucets. As in previous years, the Company contracted with an independent market research firm to undertake a survey based evaluation of the 2006 TAPS program.

The focus of the study was verification of installation rates and contractor capability in the delivery of the program.

8.1.2 Purpose of the Study

The study was designed to verify installation rates that support the savings calculation and also to provide program management with process evaluation information to assist in ongoing program improvement. In this area the study provided a comparative assessment of the various contractors as well as customer feedback on program design and delivery.

8.1.3 Methodology

In 2006, there were 11 contractors. EGD conducted quarterly evaluations ("Waves") of the TAPS program to determine its effectiveness in delivering the suite of energy savings measures to targeted residential customers. During this time frame over 119,000 customers participated in the TAPS program. For the survey, the research team selected a sample of 77,699 TAPS customers who received a home visit from one of the eleven TAPS contractors. From the sample, 3,800 customers overall were interviewed. The survey was developed to determine results related to program delivery, procedures, and installation and removal rates of energy saving measures by TAPS contractors as well as program success, gaps, and opportunities. Based on those customer interviews, results are presented with a margin of error of +/- 3 percentage points, with 95% confidence.

8.1.4 Results

TAPS program results are presented in relation to each energy savings measure as well as for installation and removal rates. The summary of installation and removal rate results by quarter are outlined in the charts below:

Showerheads

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Not Installed	19%	11%	13%	14%
Removal	3%	3%	3%	1%
Total	22%	14%	16%	15%

Aerators

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Not Installed	31%	31%	26%	27%
Removal	1%	3%	2%	2%
Total	32%	34%	28%	29%

Pipe Wrap

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Not Installed	40%	36%	40%	40%
Removal	0%	0%	1%	0%
Total	40%	36%	41%	40%

The participant numbers and volumes for each energy efficiency device in each respective quarter were reduced by the totals indicated.

8.2 Engineering Review Custom Projects – Commercial Sector

8.2.1 Background

Enbridge Gas Distribution contracted Building Innovation Inc. (BII) to conduct an independent evaluation of Custom Projects in the Commercial Sector. This evaluation provides a third party assessment of the savings claims for 2006 submitted by the Company to the Ontario Energy Board.

8.2.2 Purpose of the Study

This study was designed to provide an objective opinion of the energy savings claimed in the Commercial DSM custom projects in 2006 through a review of a statistically representative sample of the projects. The Board's evaluation requirements for custom projects of LDCs were used as guidelines for this evaluation.

8.2.3 Methodology

This study followed the Board's custom project evaluation methodology. As such, it met the requirements to analyze a random sample of 10% of the Company's Commercial custom projects representing at least 10% of the total volume savings and with a sample consisting of at least five projects. Ten projects were chosen at random from the top 20% of the projects sorted by volume. Thirty projects were chosen at random from the remaining 80% of the year's projects. As well, the single largest file from the year was chosen. In total, forty Commercial projects were included in the sample. Together they represent 17% of the total volumetric savings claimed in the Commercial sector.

Each project in the sample was examined with the focus on the validity of the savings estimation approach and accuracy of the calculations.

8.2.4 Results

Across the sample of Commercial custom projects, BII identified savings calculation anomalies in eight of the forty projects in the sample. The recommended adjustments resulted in a net change of (3.2%) in the proposed savings.

Table 8.1 summarizes the key results of the study.

Table 8.1
Study Results 2006 Commercial Program

	2006	
	EGD Posted	BII Proposed
Projects Implemented	671	N/a
Projects Sampled	N/a	40
Sampled Projects with Calculation Discrepancies	N/a	8
Natural Gas Savings of Sampled Projects	7,204,115	6,969,729 (-3.2%)
Natural Gas Savings of Projects Implemented	48,743,996	47,184,188

Note: savings values are for gross savings exclusive of free ridership

8.3 Engineering Review Custom Projects – Industrial Sector

8.3.1 Background

Enbridge Gas Distribution contracted GENIVAR Ontario Inc. (Genivar) to conduct an independent evaluation of Custom Projects in the Industrial Sector. This evaluation provides a third party assessment of the savings claims for 2006 submitted by the Company to the Ontario Energy Board.

8.3.2 Purpose of the Study

This study was designed to provide an objective opinion of the natural gas, electricity, and water savings claimed through the Industrial DSM custom projects in 2006. The Board's evaluation requirements for custom projects of LDCs were used as guidelines for this evaluation.

8.3.3 Methodology

This study followed the Board's custom project evaluation methodology. As such, it analyzed a random sample of 10% of the Company's large industrial custom projects that represented at least 10% of the total volume savings with the study sample consisting of at least five projects. In total, five large industrial projects and 10 medium-small industrial projects were included in the sample. Together they represent 39.7% of the total volumetric savings claimed in the Industrial sector. Considering that some projects included multiple components, a total of 25 custom initiatives from 2006 were examined. Additionally, it was determined that the samples would also be representative of diverse technology application types, industries, and the Company's service regions.

Each project in the sample was examined with focus on the validity of the savings estimation approach and accuracy of the calculations.

8.3.4 Results

The calculation anomalies identified by Genivar were small – occurring in 5 of the 25 custom initiatives reviewed in 2006. It should be noted that GENIVAR does not consider the variances to be statistically significant; they indicate that the Company's total DSM savings claim for the Industrial sector in 2006 is reasonable.

Table 8.2 summarizes the key results of the study.

Table 8.2
Extrapolation of Sample to DSM Industrial Program

	2006	
	EGD Posted	GENIVAR Proposed
Projects Implemented	238	N/a
Projects Sampled	N/a	15
Project Components	N/a	25
Sampled Projects with Calculation Discrepancies	N/a	5
Natural Gas Savings of Sampled Projects	15,948,045	15,852,762 (-0.6 %)
Natural Gas Savings of Projects Implemented	40,168,186	EGD value reasonable

Note: savings values are for gross savings exclusive of free ridership

8.4 Energy Efficient and Energy Star Window Sales Trends 2004 - 2005

8.4.1 Background

Enbridge Gas Distribution contracted with Marbek Resource Consultants (Marbek) to conduct a study of sales trends and market shares for energy efficient (EE) and Energy Star windows in the low-rise residential market in Ontario from 2005 through 2006. This study was undertaken to support the Company's Energy Star Windows Market Transformation program.

8.4.2 Purpose of the Study

The study was designed to identify trends and changes in market share in the marketplace from 2005 to 2006. Increases in market share for EE and Energy Star windows were originally identified as an indicator of success for the windows market transformation initiative in the Settlement Proposal for the 2005 DSM Plan dated June 17, 2004.[8] The resulting study fulfills the Company's reporting obligations with the Ontario Energy Board for the Windows Market Transformation program in 2006.

8.4.3 Methodology

The study encompassed two key activities:

- *An initial survey of selected manufacturers* on their 2005 EE and Energy Star window sales to the Ontario low-rise residential market. This survey provided the results for the 2005 Market Transformation program and served to establish the baseline for the 2006 program; and,
- *A second survey of manufacturers* to gather information on EE and Energy Star sales in 2006.

The 2006 survey was sent to 14 participants who collectively represent approximately 75% of the total low-rise residential market in the province.

The survey questions were designed to identify the total sales volumes, the nature of the respective market (residential, new construction etc.), and the sales volume of EE and Energy Star windows.

8.4.4 Results

Results will be published when available.

[8] RP-2003-0203, Exhibit N1, Tab 1,Schedule 1, page 36

APPENDIX A – Budget and Actual Cost Effectiveness

2006 BUDGET

Cost Effectiveness Results

		Program Benefits			Program Costs			
Program	Program Name	Avoided Gas Costs	Other Avoided Costs (water, electricity)	Total Benefits @Zero Emissions	Utility Program Costs (Direct Costs)	Incremental Customer Equipment Costs	Total Costs	Net Benefits @Zero Emissions
RE.MM.HTP	Heat Trap Program	$389,271	$0	$389,271	$24,000	$240,000	$264,000	$125,271
RE.MM.TWH	Tankless Water Heater	$75,924	$0	$75,924	$30,000	$75,000	$105,000	-$29,076
RE.MM.WWHR	Waste Water Heat Recovery	$1,497,913	$0	$1,497,913	$60,000	$1,406,250	$1,466,250	$31,663
Total	**Existing Homes - Water Heating**	**$1,963,108**	**$0**	**$1,963,108**	**$114,000**	**$1,721,250**	**$1,835,250**	**$127,858**
RE2R35S	Educational Program	$191,242	$256,390	$447,633	$10,000	$60,000	$70,000	$377,633
RE2R36S	Water Utilities - Showerhead	$80,236	$115,376	$195,611	$2,000	$5,400	$7,400	$188,211
RE2R83S	TAPS Partner - Showerhead	$24,461,066	$32,570,237	$57,031,303	$71,600	$2,226,960	$2,298,560	$54,732,743
RE2R38S	TAPS Partner - Pipe Wrap	$1,447,766	$0	$1,447,766	$0	$391,680	$391,680	$1,056,086
RE2R38S	TAPS Partner - Bag Test	$0	$0	$0	$15,000	$512,000	$527,000	($527,000)
Total	**Existing Homes - Water Conservation**	**$26,180,310**	**$32,942,003**	**$59,122,313**	**$98,600**	**$3,196,040**	**$3,294,640**	**$55,827,673**
RE3R41S	Furnace Replacements	$4,013,377	$0	$4,013,377	$50,000	$1,865,500	$1,915,500	$2,097,877
RE3R42S	Enhanced Furnace Replacements	$2,474,353	$1,509,552	$3,983,904	$50,000	$3,321,000	$3,371,000	$612,904
RE3R44S	Programmable Thermostats - ($15)	$8,041,436	$1,014,405	$9,055,841	$80,000	$882,444	$962,444	$8,093,397
Total	**Existing Homes - Equipment Replacement**	**$14,529,166**	**$2,523,956**	**$17,053,122**	**$180,000**	**$6,068,944**	**$6,248,944**	**$10,804,178**
RE4R56S	Home Rewards - Energuide for Houses	$7,294,518	$790,120	$8,084,637	$150,000	$4,179,032	$4,329,032	$3,755,605
RE4R56S	Home Rewards - w/o Prog. Thermo	$8,333,297	$1,047,496	$9,380,793	$0	$5,439,885	$5,439,885	$3,940,908
Total	**Existing Homes - Thermal Envelope Improvements**	**$15,627,814**	**$1,837,616**	**$17,465,430**	**$150,000**	**$9,618,916**	**$9,768,916**	**$7,696,514**
RN4R58S	R-2000	$75,368	$0	$75,368	$40,000	$120,000	$160,000	($84,632)
RN4R59S	New Building Energy Efficiency	$3,603,510	$0	$3,603,510	$64,500	$5,100,000	$5,164,500	($1,560,990)
RN.MM.ESH	Energy Star Houses (New)	$1,004,900	$0	$1,004,900	$10,500	$1,600,000	$1,610,500	($605,600)
Total	**Residential New Construction**	**$4,683,777**	**$0**	**$4,683,777**	**$115,000**	**$6,820,000**	**$6,935,000**	**($2,251,223)**
SC3R41S	Furnace Replacements/Space Conditioning	$145,217	$0	$145,217	$3,000	$168,750	$171,750	($26,533)
SC3R44S	Programmable Thermostats	$263,585	$33,250	$296,835	$1,000	$28,925	$29,925	$266,910
SC.MM.PRVP	Rinse N' Save	$1,293,116	$931,978	$2,225,094	$25,000	$285,000	$310,000	$1,915,094
SM.MM.ESME	Small Commercial Energuide SME's	$0	$0	$0	$17,500	$0	$17,500	($17,500)
SM.MM.TEDG	Small Commercial Technology Edge	$0	$0	$0	$17,500	$0	$17,500	($17,500)
Total	**Small Commercial**	**$1,701,918**	**$965,228**	**$2,667,146**	**$64,000**	**$482,675**	**$546,675**	**$2,120,471**
SC.MM.LIHP	Low Income - Homeowner Plus Program	$261,218	$105,303	$366,521	$60,000	$32,250	$92,250	$274,271
SC.MM.LIHP	Low Income - Homeowner & Tenant Program	$1,915,600	$772,222	$2,687,823	$65,000	$236,500	$301,500	$2,386,323
Total	**Low Income**	**$2,176,818**	**$877,526**	**$3,054,344**	**$125,000**	**$268,750**	**$393,750**	**$2,660,594**

		Program Benefits			Program Costs			
Program	Program Name	Avoided Gas Costs	Other Avoided Costs (water, electricity)	Total Benefits @Zero Emissions	Utility Program Costs (Direct Costs)	Incremental Customer Equipment Costs	Total Costs	Net Benefits @Zero Emissions
S.BM.CM.LTCAR	Long Term Care	$2,122,533	$0	$2,122,533	$12,261	$1,421,700	$1,433,961	$688,572
S.BM.CM.MUN	Municipalities	$8,264,647	$0	$8,264,647	$29,076	$2,726,500	$2,755,576	$5,509,071
S.BM.CM.UNIV	Universities	$3,949,272	$0	$3,949,272	$14,256	$3,211,600	$3,225,856	$723,416
S.BM.CM.SCH	Schools	$9,092,645	$0	$9,092,645	$26,319	$4,355,400	$4,381,719	$4,710,926
S.BM.CM.HOS	Hospitals	$1,629,889	$0	$1,629,889	$5,349	$885,500	$890,849	$739,040
S.BM.CM.HTL	Hotel/Motels	$506,481	$0	$506,481	$8,309	$50,056	$58,365	$448,115
S.BM.CM.RES	Restaurants	$361,549	$0	$361,549	$27,827	$322,000	$349,827	$11,722
S.BM.CM.WHS	Warehouses	$1,219,138	$0	$1,219,138	$10,781	$1,207,500	$1,218,281	$857
S.BM.CM.RET	Retail	$956,515	$0	$956,515	$7,692	$746,375	$754,067	$202,448
S.BM.CM.OFF	Offices	$6,766,960	$0	$6,766,960	$49,547	$5,486,180	$5,535,727	$1,231,233
S.BM.MD	Market Development Other	$4,576,477	$0	$4,576,477	$0	$1,642,200	$1,642,200	$2,934,277
S.BM.BP	Business Partner Development	$0	$0	$0	$50,000	$0	$50,000	($50,000)
Total	**Commercial**	**$39,446,105**	**$0**	**$39,446,105**	**$241,417**	**$22,055,011**	**$22,296,428**	**$17,149,677**
MR 4.0	Multi-Residential Non-Profit	$3,004,579	$0	$3,004,579	$12,422	$1,819,125	$1,831,547	$1,173,032
MR 6.0	Multi-Residential Private	$16,983,629	$0	$16,983,629	$73,437	$1,204,350	$1,277,787	$15,705,842
MR 5.0	Water Conservation	$4,923,795	$5,863,426	$10,787,222	$0	$358,792	$358,792	$10,428,430
Total	**Multi Residential**	**$24,912,003**	**$5,863,426**	**$30,775,430**	**$85,859**	**$3,382,267**	**$3,468,126**	**$27,307,304**
S.BM.CM.NC	Large New Construction	$6,666,135	$0	$6,666,135	$37,740	$3,809,750	$3,847,490	$2,818,645
Total	**Large New Construction**	**$6,666,135**	**$0**	**$6,666,135**	**$37,740**	**$3,809,750**	**$3,847,490**	**$2,818,645**
S.BM.IND.ALL	Industrial	$45,659,522	$0	$45,659,522	$630,585	$17,092,690	$17,723,275	$27,936,247
S.BM.IND.AGR	Agriculture	$5,902,314	$0	$5,902,314	$20,000	$2,283,925	$2,303,925	$3,598,389
Total	**Industrial**	**$51,561,836**	**$0**	**$51,561,836**	**$650,585**	**$19,376,615**	**$20,027,200**	**$31,534,636**
Total DSM Programs		**$187,272,173**	**$44,132,230**	**$231,404,402**	**$1,737,201**	**$76,531,468**	**$78,268,669**	**$155,796,327**
Total Program Development		**$0**	**$0**	**$0**	**$584,500**	**$0**	**$584,500**	**($584,500)**
Total Market Research		**$0**	**$0**	**$0**	**$676,705**	**$0**	**$676,705**	**($676,705)**
Portfolio Administraton		**$0**	**$0**	**$0**	**$3,663,597**	**$0**	**$3,663,597**	**($3,663,597)**
Total DSM Plan		**$187,272,173**	**$44,132,230**	**$231,404,402**	**$6,662,003**	**$76,531,468**	**$83,193,471**	**$150,871,525**

	RE.MM.FLAXW	Front Load Axis Washer	$0	$0	$0		$111,800	$0	$111,800	($111,800)
	RE.MM.ESW	Energy Star Windows	$0	$0	$0		$330,000	$0	$330,000	($330,000)
	RE.MM.HPC	Home Performance Contractors	$0	$0	$0		$100,000	$0	$100,000	($100,000)
	RE4R54S	Fireplaces	$0	$0	$0		$15,000	$0	$15,000	($15,000)
	SC.MM.LIHP	Low Income Education/training/worshops/support	$0	$0	$0		$130,000	$0	$130,000	($130,000)
		Boiler Market Transformation	$0	$0	$0		$300,000	$0	$300,000	($300,000)
	Total Market Transformation		**$0**	**$0**	**$0**		**$1,973,600**	**$0**	**$1,973,600**	**($986,800)**

	Total DSM Plan plus Market Transformation	**$187,272,173**	**$44,132,230**	**$231,404,402**		**$8,635,603**	**$76,531,468**	**$85,167,071**	**$149,884,725**

2006 ACTUAL
Cost Effectiveness Results

			Program Benefits			Program Costs			
Program	Program Name	Avoided Gas Costs	Other Avoided Costs (water, electricity)	Total Benefits @Zero Emissions	Utility Program Costs (Direct Costs)	Incremental Customer Equipment Costs	Total Costs	Net Benefits @Zero Emissions
RE.MM.HTP	Heat Trap Program	$0	$0	$0	$12,714	$0	$12,714	-$12,714
RE.MM.TWH	Tankless Water Heater	$0	$0	$0	$0	$0	$0	$0
RE.MM.WWHR	Waste Water Heat Recovery	$0	$0	$0	$0	$0	$0	$0
Total	**Existing Homes - Water Heating**	**$0**	**$0**	**$0**	**$12,714**	**$0**	**$12,714**	**-$12,714**
RE2R35S	Educational Program	$0	$0	$0	$0	$0	$0	$0
RE2R36S	Water Utilities - Showerhead	$0	$0	$0	$0	$0	$0	$0
RE2R83S	TAPS Partner - Showerhead	$21,556,107	$28,702,245	$50,258,352	$162,989	$1,962,490	$2,125,479	$48,132,873
RE2R38S	TAPS Partner - Pipe Wrap	$959,798	$0	$959,798	$0	$259,665	$259,665	$700,133
RE2R38S	TAPS Partner - Bag Test	$0	$0	$0	$0	$449,116	$449,116	($449,116)
Total	**Existing Homes - Water Conservation**	**$22,515,904**	**$28,702,245**	**$51,218,150**	**$162,989**	**$2,671,270**	**$2,834,260**	**$48,383,890**
RE3R41S	Furnace Replacements	$6,586,413	$0	$6,586,413	$52,661	$3,061,500	$3,114,161	$3,472,253
RE3R42S	Enhanced Furnace Replacements	$8,888,358	$5,422,604	$14,310,962	$66,015	$11,929,680	$11,995,695	$2,315,267
RE3R44S	Programmable Thermostats - ($15)	$9,519,618	$1,200,873	$10,720,491	$70,224	$1,044,655	$1,114,879	$9,605,612
Total	**Existing Homes - Equipment Replacement**	**$24,994,389**	**$6,623,477**	**$31,617,866**	**$188,900**	**$16,035,835**	**$16,224,735**	**$15,393,131**
RE4R56S	Home Rewards - Energuide for Houses	$0	$0	$0	$0	$0	$0	$0
RE4R56S	Home Rewards - w/o Prog. Thermo	$12,939,795	$813,267	$13,753,062	$45,805	$8,446,956	$8,492,761	$5,260,301
Total	**Existing Homes - Thermal Envelope Improvements**	**$12,939,795**	**$813,267**	**$13,753,062**	**$45,805**	**$8,446,956**	**$8,492,761**	**$5,260,301**
RN4R58S	R-2000	$27,635	$0	$27,635	$25,000	$44,000	$69,000	($41,365)
RN4R59S	New Building Energy Efficiency	$254,365	$0	$254,365	$56,316	$360,000	$416,316	($161,950)
RN.MM.ESH	Energy Star Houses (New)	$1,645,524	$0	$1,645,524	$9,405	$2,620,000	$2,629,405	($983,881)
Total	**Residential New Construction**	**$1,927,524**	**$0**	**$1,927,524**	**$90,721**	**$3,024,000**	**$3,114,721**	**($1,187,197)**
SC3R41S	Furnace Replacements/Space Conditioning	$38,725	$ -	$38,725	$0	$ 45,000.00	$45,000	($6,275)
SC3R44S	Programmable Thermostats	$21,614	$ 2,726.54	$24,340	$0	$ 2,371.85	$2,372	$21,969
SC.MM.PRVP	Rinse N' Save	$2,340,540	$ 1,686,879.56	$4,027,420	($10)	$ 515,850.00	$515,840	$3,511,580
SM.MM.ESME	Small Commercial Energuide SME's	$0	$0	$0	$11,395	$0	$11,395	($11,395)
SM.MM.TEDG	Small Commercial Technology Edge	$0	$0	$0	$14,691	$0	$14,691	($14,691)
Total	**Small Commercial**	**$2,400,879**	**$1,689,606**	**$4,090,485**	**$26,076**	**$563,222**	**$589,297**	**$3,501,187**
SC.MM.LIHP	Low Income - Homeowner Plus Program	$3,075,758	$1,835,432	$4,911,191	$107,434	$ 375,730.50	$483,165	$4,428,026
SC.MM.LIHP	Low Income - Homeowner & Tenant Program	$0	$0	$0	$0	$ -	$0	$0
Total	**Low Income**	**$3,075,758**	**$1,835,432**	**$4,911,191**	**$107,434**	**$375,731**	**$483,165**	**$4,428,026**

		Program Benefits			Program Costs			
Program	Program Name	Avoided Gas Costs	Other Avoided Costs (water, electricity)	Total Benefits @Zero Emissions	Utility Program Costs (Direct Costs)	Incremental Customer Equipment Costs	Total Costs	Net Benefits @Zero Emissions
S.BM.CM.LTCAR	Long Term Care	$190,577	$0	$190,577	$7,620	$115,715	$123,335	$67,242
S.BM.CM.MUN	Municipalities	$6,513,469	$1,697,149	$8,210,618	$33,047	$2,093,492	$2,126,538	$6,084,079
S.BM.CM.UNIV	Universities	$1,637,627	$276,457	$1,914,084	$23,917	$1,875,810	$1,899,727	$14,357
S.BM.CM.SCH	Schools	$8,215,751	$438,030	$8,653,782	$11,500	$7,907,959	$7,919,459	$734,323
S.BM.CM.HOS	Hospitals	$17,646,459	$2,284,620	$19,931,079	$76,355	$2,340,823	$2,417,178	$17,513,901
S.BM.CM.HTL	Hotel/Motels	$845,853	$1,399,580	$2,245,433	$7,475	$1,590,269	$1,597,743	$647,690
S.BM.CM.RES	Restaurants	$46,000	$16,245	$62,245	$246,329	$11,375	$257,704	($195,459)
S.BM.CM.WHS	Warehouses	$164,051	$0	$164,051	$9	$55,327	$55,337	$108,714
S.BM.CM.RET	Retail	$449,292	$0	$449,292	$0	$377,671	$377,671	$71,621
S.BM.CM.OFF	Offices	$3,951,969	$511,541	$4,463,510	$38,631	$1,325,213	$1,363,844	$3,099,665
S.BM.MD	Market Development Other	$2,334,476	$0	$2,334,476	$24,225	$800,655	$824,880	$1,509,596
S.BM.BP	Business Partner Development	$0	$0	$0	$0	$0	$0	$0
Total	**Commercial**	**$41,995,524**	**$6,623,622**	**$48,619,145**	**$469,107**	**$18,494,308**	**$18,963,416**	**$29,655,730**
MR 4.0	Multi-Residential Non-Profit	$1,857,377	56,346	$1,913,723	$9	$1,089,919	$1,089,928	$823,795
MR 6.0	Multi-Residential Private	$40,164,928	1,355,996	$41,520,925	$28,712	$12,160,518	$12,189,230	$29,331,695
MR 5.0	Water Conservation	$5,349,028	6,804,344	$12,153,372	$22,017	$603,579	$625,595	$11,527,776
Total	**Multi Residential**	**$47,371,333**	**$8,216,687**	**$55,588,020**	**$50,737**	**$13,854,016**	**$13,904,753**	**$41,683,267**
S.BM.CM.NC	Large New Construction	$9,045,917	2,463,570	$11,509,487	$258,632	$2,346,270	$2,604,902	$8,904,585
Total	**Large New Construction**	**$9,045,917**	**$2,463,570**	**$11,509,487**	**$258,632**	**$2,346,270**	**$2,604,902**	**$8,904,585**
S.BM.IND.ALL	Industrial	$55,929,763	5,432,291	$61,362,054	$248,065	$15,808,750	$16,056,816	$45,305,239
S.BM.IND.AGR	Agriculture	$5,136,337	26,758	$5,163,095	$76,672	$1,958,942	$2,035,614	$3,127,481
Total	**Industrial**	**$61,066,100**	**$5,459,049**	**$66,525,149**	**$324,737**	**$17,767,692**	**$18,092,430**	**$48,432,719**
Total DSM Programs		**$227,333,124**	**$62,426,955**	**$289,760,078**	**$1,737,852**	**$83,579,301**	**$85,317,153**	**$204,442,926**
Total Program Development		**$0**	**$0**	**$0**	**$100,231**	**$0**	**$100,231**	**($100,231)**
Total Market Research		**$0**	**$0**	**$0**	**$81,178**	**$0**	**$81,178**	**($81,178)**
Portfolio Administraton		**$0**	**$0**	**$0**	**$3,092,913**	**$0**	**$3,092,913**	**($3,092,913)**
Total DSM Plan		**$227,333,124**	**$62,426,955**	**$289,760,078**	**$5,012,173**	**$83,579,301**	**$88,591,474**	**$201,168,605**

	RE.MM.FLAXW	Front Load Axis Washer	$0	$0	$0		$68,801	$0	$68,801	($68,801)
	RE.MM.ESW	Energy Star Windows	$0	$0	$0		$321,131	$0	$321,131	($321,131)
	RE.MM.HPC	Home Performance Contractors	$0	$0	$0		$84,694	$0	$84,694	($84,694)
	RE4R54S	Fireplaces	$0	$0	$0		$8,461	$0	$8,461	($8,461)
	SC.MM.LIHP	Low Income Education/training/worshops/support	$0	$0	$0		$0	$0	$0	$0
		Boiler Market Transformation	$0	$0	$0		$20,200	$0	$20,200	($20,200)
	Total Market Transformation		**$0**	**$0**	**$0**		**$1,006,573**	**$0**	**$1,006,573**	**($503,287)**

	Total DSM Plan plus Market Transformation	**$227,333,124**	**$62,426,955**	**$289,760,078**		**$6,018,747**	**$83,579,301**	**$89,598,047**	**$200,665,318**

APPENDIX B – TRC Calculation Guidelines

The following guidelines were presented in the Settlement Proposal in the 2003 Rates Case.

"B. *Calculation of TRC Savings*[9]

(Partial Settlement)

There is a partial agreement to settle this issue on the following basis:

- The rules for the calculation and clearance of the SSM account need to be set out clearly in advance.

- The intent of the SSM is to create a performance incentive environment where the Company will be rewarded for achieving greater TRC benefits as a result of factors that it can influence, but not have the incentive fluctuate as a result of factors that are beyond its control.

- The SSM incentive is a function of: a) the difference between the budgeted TRC benefits and the actual TRC benefits; and b) the SSM's marginal incentive rates. For clarity, "actual TRC benefits" are defined as the updated estimate of TRC benefits resulting from the program using updated program performance data at year-end.

- For both budget and actual TRC benefit calculations the avoided gas costs will remain fixed at their original budget values.

- For budget TRC benefit calculations all the inputs will remain fixed at the values utilized in the volume budget approved by the Board except where there was a clear error in budget numbers (e.g., due to a mathematical error or inability by the Company to include updated information at the time the budget was prepared). In these exceptional cases, the most accurate information available at the time the budget was developed will be used.

- For all programmes, actual TRC benefits will be calculated using actual values for the following inputs: participants and utility programme costs.

- For prescriptive programmes, actual TRC benefits will be calculated using the budget values for: annual units savings for measures, measure lifetimes, customer incremental costs and free-rider rates.

- For custom programmes, actual TRC benefits will always be calculated using actual values for annual unit savings and customer incremental costs. Measure lives for the commonly-used commercial, industrial, agricultural and multi-family measures that have historically been called "custom measures" (which are identified in the table below) will be considered prescriptive. That is, the measure

[9] RP2002-03-14, Exhibit N1, Tab 1, Schedule 1, page 68-71

lives identified in the following table will be used for both budget and actual TRC net benefits calculations. Measure lives for efficiency measures not identified below will still be considered custom. That is, actual measure lives as estimated for a particular application not listed in the following table will be used to calculate actual TRC benefits (i.e. irrespective of what was in the budget).

Table 1: DSM Technologies and Measure Life

		Commercial	Industrial	Multi-Residential
Boiler Related				
	Boilers			
	DHW	10	na	15
	Industrial process	na	25[10]	na
	Space heating	25	25	25
	Combustion tune-up	5	5	na
	Controls	15	15	15
	Steam pipe /tank insulation	na	15	na
	Steam trap audit	3	3	na
Building Related				
	Building envelope	25	25	25
	Windows	25	25	25
	Greenhouse curtains	na	10	na
	Double Poly greenhouse	na	5	na
HVAC Related				
	Dessicant cooling	15	na	na
	Heat Recovery	15	15	na
	Infra-red heaters	10	10	na
	Make-up Air	15	15	15
	Novitherm Panels	15	na	15

- If expected per unit costs, savings, measure lives, free ridership or other efficiency measure characteristics change as a direct result of Company-initiated changes in program design or delivery strategy, TRC net benefits will be calculated using assumptions that are consistent with such changes.

- For 2003 only, a 30% free-rider rate will be used to calculate the actual free rider rate for custom projects.

- The Company will complete its research with respect to free-rider rates for custom projects and participate with the DSM Consultative to develop a

[10] Note: boiler measure life was updated to 25 years in the 20006 DSM Plan, EB-2005-0001

methodology for establishing actual free-rider rates for custom projects in 2004 and subsequent years.

- The Company is in the process of reviewing the technologies included in custom projects with the goal of identifying the prescriptive aspects of those technologies. The Company will present its proposals on this matter to the DSM Consultative for review.

- The results of evaluation studies and other new information that could change an input value, which becomes available after Board approval of a DSM plan, will be used to adjust the input value for the next year's DSM plan. "

APPENDIX C – Detailed Program Assumptions

Enbridge

DSM Program
2006 Independent Audit

Final Report
June 27, 2007

Prepared for:

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Table of Contents

Table of Tables

1. Introduction

1.1 Background

RLW Analytics, Inc. ("RLW") was asked by Enbridge Gas Distribution (Enbridge) and the DSM Audit Committee to conduct an audit of the 2006 DSM Program Portfolio. 2006 represents the first year of calendar year reporting by Enbridge.

As described in the Terms of Reference, this audit is required as directed by the Ontario Energy Board ("OEB") to provide an independent audit of Enbridge's 2006 annual DSM evaluation report, which is the Company's documentation of program results, evaluation research, and the resulting calculation of the SSM amount.

1.2 Audit Goals

The primary goals of the 2006 audit as stated in the Terms of Reference "is to recommend appropriate values that lead to the LRAM and SSM claims for the Company given a set of pre-approved assumptions, and to give confidence that the claims are reasonable." This audit is meant to provide Enbridge with recommended values that produce the Lost Revenue Adjustment Mechanism (LRAM) and Shared Savings Mechanism (SSM) claims in order for this information to provide evidential support for the DSM claim to the Ontario Energy Board (OEB). The key objectives of the DSM audit include the following:

1. Determine whether the 2006 tracking program procedures produce accurate counts, particularly for the programs that do not provide customer rebates;
2. Determine whether reported values for participation, costs and savings (gas, electricity and water) are accurate and adequately documented by program records, evaluation studies and other relevant data;
3. Determine that all assumptions are consistent with those approved in the forecast or that they properly reflect accepted recommendations from previous audits or new program designs;
4. Consider and respond to stakeholder comments on Enbridge's DSM reports for 2006;
5. Review of final reports of savings estimates from third party engineering consultants and then comment on the reasonableness of the results of the engineering review and any implications for the SSM and LRAM calculations;
6. Identify any assumptions underlying Enbridge's DSM program design strategy, and TRC calculation, that should be modified prospectively, based on the auditor's experience and knowledge of other studies or data;
7. Identify opportunities to enhance the assumptions used to calculate the SSM and LRAM that should be addressed in future evaluation work;
8. Work with Enbridge and the audit committee to resolve any relevant issues prior to completion of the audit;
9. Provide a report for 2006.
10. Incorporate any other matters considered by the auditor to be relevant to the assessment of Enbridge's SSM and LRAM claims.

The 2006 audit involved the following tasks:

1. **Tracking System Review.** Review Enbridge's procedures for tracking program participants; determine whether they lead to accurate counts, particularly for programs that do not provide customer rebates.

2. **SSM/LRAM Savings Review.** Determine whether Enbridge's reported actual values for participation, costs and savings (gas, electricity and water) are accurate and adequately documented by program records, evaluation studies and other relevant data. Also, determine that all other assumptions are consistent with those approved in the forecast or that they properly reflect recommendations from previous audits or new program designs.

3. **Prospective Assumptions Review.** Identify any assumptions underlying Enbridge's DSM program design strategy, Total Resource Cost ("TRC") calculation, and Shared Savings Mechanism ("SSM") calculation that should be modified prospectively, based on our experience and knowledge of other studies or data;

4. **Uncertainty Review.** Identify key areas of uncertainty in the assumptions used to calculate the SSM that should be addressed in future evaluation work; and

5. **Evaluation Report Review and Comment.** Consider and respond to stakeholder comments on the draft evaluation report.

6. **Comment on Engineering Review**. Review final reports from third party engineering consultants and comment on the reasonableness of the results of the engineering review and any implications for the SSM and LRAM calculations.

1.3 Methodology

For the 2006 audit, RLW Analytics implemented the following methodology:

1. Familiarize ourselves with the Enbridge programs and tracking systems
2. Interview Enbridge staff who input and manage the program data
3. Collect all appropriate tracking system data and materials
4. Review independent third party engineering consultants review of savings estimates for Industrial and Commercial custom projects and then comment on the reasonableness of the results of the engineering review and any implications for the SSM and LRAM calculations.
5. Review and analyze program data for accuracy, quality, and completeness, reviewed 6 random sample site report documentation to review processes.
6. Review and analyze all underlying values, assumptions, and algorithms that make up program report calculations and final outputs
7. Prepare this draft report that narrates the strategy and methodology of our approaches, provides a complete review and analysis of the program data and submitted reports,

affirms proper and robust data and calculations, and provides recommendations, if any, on improvements in tracking program data and in savings calculations.

This process review looked at the flow of information through the program, how data was handled and analyzed, comprehensiveness of the documentation, and reporting of the performance in each business sector. This analysis includes:

- Review of a random sample of project files
- Review of the 2003 and 2004 DSM audit reports for continuity and foundation
- Review of the Enbridge 2005 and 2006 Monitoring and Evaluation Reports
- Review of E-Tools documentation
- Review of documentation protocols, DSM sales reference manual & fact sheets
- Review of program tracking systems
- Enbridge staff interviews
- Review of the Commercial Custom Project Estimated Savings Assessment
- Review of report by third party commercial program review consultant confirming accuracy of stated savings
- Review of 76 analysis summaries for commercial project random samples
- Review of the Industrial Custom Project Assessment
- Review of report by third party industrial program review consultant confirming accuracy of stated savings
- Review of proposed pilot project documentation
- Third party consultant interviews

2. Enbridge Staff Interview Results

A total of ten program and sales managers were interviewed to look at their role and elements of the data tracking system, such as how it was designed or procured, who has access to the data, how often is the data recorded and saved, what quality control checks are conducted, what kind of reporting is generated from the tracking system, and what are the sources and ages of assumptions used in calculations.

The primary objectives of the programs are to provide DSM results, meet TRC targets, decrease customer electric, water and gas use, promote conservation of water and work towards market transformation for the technologies being promoted.

Interviewees were asked if they felt that the primary program objectives were being reached. All of the respondents felt that the majority of objectives were being met and some surpassed.

The interviews revealed that the majority of program managers are satisfied with the current design of the program. Some improvements that were mentioned are: should do additional marketing and form more partnerships with NRCan (Natural Resources Canada) and others (there was increased activity in 2006), provide more workshops for contractors, and incorporate more behavioral aspects for programmable thermostats training.

A couple of program highlights that were mentioned were: In 2006 the TAPS program implemented a "do not call" list which minimized duplicates by about 54%. Enbridge performed research with Union Gas and worked together to improve some program assumptions, and made a change from technology to sector based programs.

All sales and marketing managers have access to the program tracking data. Each sales representative has his/her own tracking data currently but will be using Etools and a centralized tracking system in the future. Each program manager reviews the database to check for errors or omissions. The tracking data is recorded and saved on a daily basis and additionally the monthly reports now show all program activity in aggregate form.

It is the auditor's view that the tracking system is undergoing continuous improvement and is moving in the proper direction with more use of the Etools software and a centralized tracking system for all the DSM programs. It is important for a DSM program to have a well maintained CRM system to support program data. Enbridge should continue the maintenance of their CRM system.

3. Program Tracking System and Process Comments

Significant changes occurred in the Business Markets Sector. In the past, commercial programs were grouped according to their technological applications. Reporting shifted to a target market approach in 2006. Large commercial customers are now analyzed according to their vertical market – schools, hospitals, and offices, etc. A small commercial program handles prescriptive programs that focus upon space conditioning, programmable thermostats, and a low-flow pre-rinse spray valve application. Multi-residential programs and large new construction are tracked independently.

4. Residential Sector Audit Results

The review process for the residential programs included the following steps:

4.1 Task 1 and 2 – Tracking System and Savings Review

Activities

- Review of 2003 and 2004 DSM Audit reports
- Review of 2005 and 2006 DSM Monitoring and Evaluation Reports
- Review of program tracking systems
- Review of TRC spreadsheet
- Reviewed TAPS database and printouts
- Review of reports by third party consultants
- Enbridge staff interviews

Findings

The 2006 tracking procedures produce accurate counts and the reported values for participation, costs and savings (gas, electricity and water) are accurate and have been adequately documented by program records (both electronic and hard copy) and evaluation studies.

4.2 Task 3 and 4 – Prospective Assumptions and Uncertainty Review

Furnace Program Findings

There were 11,775 furnace replacements and 11,046 enhanced furnace replacements giving a total of 22,821 participants in the furnace program for 2006. The following was the breakout of incentives for the participants:

- 100% received an Enbridge incentive
- 36% received an Enbridge incentive and a federal govt. incentive (NRCan)
- 17% received an Enbridge incentive and a mnfr. Incentive plus the NRCan incentive
- 47% received an Enbridge incentive alone

In a partnership with NRCan, Enbridge provided a $200 on-bill rebate to customers for the purchase and installation of a natural gas high efficiency heating system in F2004. In 2005 Enbridge continued to encourage customers to install high efficiency furnaces by offering a $100 on-bill rebate to customers. In addition, Enbridge underwent discussions with NRCan and Union Gas to secure additional funding and developed a province-wide program, whereby for a two month period the program had an extended funding offer of $200, $100 from Enbridge and $100 from NRCan. Midway through the 2005 campaign, NRCan contribution was ceased due to funds being exhausted. Enbridge made a decision to continue to honor the $200 customer incentive which resulted in higher incentive costs than expected. In addition there was greater participation levels than expected, thus the program exceeded its budget by nearly $1 Million dollars.

The auditor requested additional information from the program manager to determine the timing of various program incentives. The following is the summary reported to the auditor by the program manager. Incentives were phased in as follows:

- Jan 1, 2005 – Aug 31, 2005 EGD incentive of $100
- Sept 1, 2005 – Jan 31, 2006 EGD $100 + NRCan $100 = $200
- Feb 1, 2006 – Mar 31, 2006 EGD $100 + NRCan $100 + Mnfr $150 = $350
- April 1, 2006 – Dec 31, 2006 EGD $100

Conclusion

In the DSM field, attribution has gained importance because shareholder financial incentives depend on attribution estimates for their determination. In many jurisdictions the estimate is based on assuming net-to-gross ratios to be 100% unless information is produced to the contrary.

EGD was the sole delivery agent for the furnace rebates and did all the marketing for all phases of the program, including the marketing for the manufacturers. EGD did leverage the NRCan logo and Energy Star logo through NRCan. It is often not possible to measure attribution rates; however, it is likely that none of the results would have occurred without Enbridge involvement. It is the auditor's assessment that Enbridge is entitled to 100% attribution of furnace program savings.

Low-Flow Showerheads

The EGD savings assumption for Low-flow Showerheads was 132 m3 for 2006. This value includes both showerheads and aerators for each household. The "Settlement Proposal Completely Settled Issues" document from the Generic Hearing as adopted by the Ontario Energy Board recommends the new assumptions for 2007 through 2009 per showerhead be 91 m3 per for customer installed and 115 m3 for contractor installed low-flow showerheads. The

same document recommends a savings assumption for faucet aerators of 14 m3 per aerator. The savings for 1 showerhead and 2 aerators would then total 143 m3.

The auditor compared other program and evaluation results to inform the showerhead program assumptions. The following are the results of those comparisons:

Utility/Study	Annual BTU Saving Estimate Per Unit	Source of Savings Estimate	Measure Life Estimate	Freeridership	Equipment Costs Or Rebate*
Enbridge	4,685,208	Load Research	12 years	10%	$24
PG&E	1,030,000	Load Research			
Affordable Comfort Study	2,100,000	Load Research			
MN Energy Challenge	2,350,000	Engineering Assumptions			
Nexant 2006 Market Study	5,790,000	Compilation of other resources	10 years		$6.20

The auditor performed research to determine what other utilities analysis results had discovered for showerhead programs. Savings estimates were reported in various forms, including (Therms, MCF, and BTU) and thus the auditor chose BTU's to report the findings. The source of the savings estimates were derived by load research, engineering assumptions and a compilation of results from many other programs. The results show a wide range of accepted savings estimates that are currently being used.

Some factors that have an impact on showerhead savings estimates include the length of an average shower, number of showers per week for a particular showerhead, ground supply water temperature, hot water heater temperature settings, ambient temperature where hot water heater is located, R-value of tank insulation, any existing pipe insulation, etc.

Conclusion

Based on the research results the auditor feels that the showerhead program assumptions are within an accepted range, although the auditor recommends a new study be performed that includes accurate flow-rate bag tests and a customer survey to determine the free-ridership rate for this measure. The auditor recommends retaining the 2006 savings assumption of 132 m3 for 1 showerhead and 2 aerators and does not recommend any changes to the SSM or LRAM for this measure for 2006. The savings assumption for future years should be reviewed when the results of the bag test and customer survey are completed.

Programmable Thermostats

EGD currently bases its savings estimates on a study completed in 1997 entitled "Impact of 1997 Programmable Thermostat Program".

The auditor compared other program and evaluation results to inform the programmable thermostat program assumptions. The following are the results of those comparisons:

Utility/Study	Annual BTU Saving Estimate Per Unit	Source of Savings Estimate	Measure Life Estimate	Freeridership	Equipment Costs or Rebate*
Enbridge	7,717,777	Load Research	18 years	11%	$65
Energy Star/Nexant	2,660,000	Engineering Estimates	15 years		
Gas Networks**	7,725,000	Survey supported billing analysis			
Public Service Company NM	Up to 2,001,000	On-Site Survey	10 years	23% to 50%	$25*

** Completed in 2006, 7000 participants, customers using programmable thermostats saved 6.8% on average, customers using manual thermostats increased their usage by 2,575,000 BTU.

The auditor performed research to determine what other utilities analysis results had discovered for programmable thermostat programs. These study results are not specific to the Enbridge service territory but are recent studies. Savings estimates were reported in various forms, including (Therms, MCF, and BTU) and thus the auditor chose BTU's to report the findings. The source of the savings estimates were derived by load research, engineering estimates, on-site surveys and a survey supported billing analysis.

The energy savings of programmable thermostats almost certainly varies by the thermal characteristics of the home; the home's heating system type and efficiency, the climate or region, and the ease of programming the thermostat (which effects homeowner ability to program and operate the programmable thermostat). Many U.S. programs that offer rebates for programmable thermostats have estimated savings in the range of 3% to 5%. A study recently completed for Gas Networks found customers saved 6.8% on average.

Conclusion

Based on these research results the auditor feels that the programmable thermostat program assumptions should be reduced from the 8% savings estimate now being used by EGD down to something closer to 6.8% savings (as represented by the Gas Networks study recently completed in 2006) for the purposes of the LRAM. Although the Gas networks research is not specific to the Enbridge service territory, it serves as a guide due to its recent context and use of actual billing analysis.

It is important to note that a new sample incorporating customer surveys and metering will help to inform any savings estimates and free rider rates for programmable thermostats. These surveys will help the company to understand further how customers use thermostats in their service territory.

An EGD study will be performed to update the program assumptions in the EGD service territory.

Furnaces

The EGD savings assumption for the Furnace Replacement Program was 385 m3 for 2006. The "Settlement Proposal Completely Settled Issues" document from the Generic Hearing as adopted by the Ontario Energy Board recommends the assumptions for 2007 through 2009 per furnace replacement be 385 m3 and 320 m3 for enhanced furnace replacements.

The auditor compared other program and evaluation results to inform the furnace replacement program assumptions. The following table highlights those findings:

Utility/Study	Annual m3 Saving Estimate Per Unit	Source of Savings Estimate	Measure Life Estimate	Freeridership	Equipment Rebate
Enbridge	385	Load Research	18	48%	$100
Energy Star	390		18		
Gaz metro	487	Impact Evaluation			$450
Gas Networks	508	Engineering Estimate			$100-$400

Conclusion

While the EGD prescriptive assumption for gas m3 savings is at the low end of savings reported from other jurisdictions, the auditor finds that savings estimates, measure life, freeridership, and equipment cost are found to be fair and appropriate at this time for both the Furnace Replacement Program and the Enhanced Furnace Replacement Program. The auditor recommends using 385 m3 for furnace replacements and 320 m3 for enhanced furnace replacements which accurately reflect savings estimates experienced by other programs.

Conclusions

RLW is confident that Residential Program claims are reasonable and stated savings fall within a statistically acceptable range of +/- 10.0%. This plus or minus value simply states that savings are reasonably accurate, but may be 10% greater than reported values or 10% less. This range of variation represents acceptable performance within the industry. This statement is based upon:

- Review of the DSM 2005 and 2006 Monitoring and Evaluation Report
- Review of program tracking systems, TAPS database and printouts
- Review of the TRC spreadsheet
- The residential sector has a quality control element along with M&V components

Effect on SSM and LRAM

Several factors were reviewed that can impact the SSM and LRAM. The current assumptions for the programmable thermostat program may be overstating the savings impact for this measure.

The auditor recommends reducing the current 8% savings reported by EGD to the 6.8% that has been discovered in recent analysis by the Gas Networks evaluation. This will have the effect of reducing the LRAM for the residential sector slightly. Enbridge will be conducting additional research for this program in the near future. The auditor does not recommend any other changes to the SSM or the LRAM for the residential sector at this time.

4.3 Task 5 - Respond to Stakeholder Comments

Energy Star for New Homes

The auditor finds that Enbridge only claims participants in the Energy Star for New Homes if it receives an invoice from the builder.

TAPS Partners Program Bag Test

In 2006 contractors were required to conduct a bag test but it was done on a pass/fail basis to qualify the installation of a new showerhead. The measured results of the test were not recorded. Moving forward from 2007 and onward Enbridge now has in place a protocol to measure and record actual GPM flow rates of the existing showerheads. The recorded flow rates are used to allocate showerhead savings into 1 of 3 savings categories.

Comments on 2006 Monitoring and Evaluation Report

This section highlights auditor findings in the review of the 2006 Monitoring and Evaluation Report.

Water Heating & Conservation Programs

Three water heating programs were considered under the 2006 DSM plan. These programs – heat traps, tankless water heating, and waste water heat recovery – were not launched. Research found these programs not to be cost effective. It was noted that the heat trap pilot was the only project carried over from the 2005 submittal. DSM costs for the heat trap pilot were $145,000 in 2005 and $204,000 in 2006. Total costs for the two years are $350,000 for this unlaunched offering. Education Programs encouraging conservation through schools and a low-flow showerhead program also had fixed costs in 2006 with no savings. The report states that these programs were deferred to participation in the TAPS program. Total costs for 2005 and 2006 for these programs amount to $76,900.

TAPS

Performance of the TAPS program slipped from 2005 levels. In 2005 the program exceeded budget participation by 14.2% and savings by 19.6%. Costs were 25.9% above projections. In 2006 participation fell 12.0% short of expectations and gas savings were 14.0% below budget estimates. Costs were 17.0% above estimates. Participant goals were close to 2005 levels in the 2006 budget.

This program is beginning to show the signs of market saturation. This is evident by the need of a do-not-contact list provided to installation contractors. The list is being update quarterly. This

is still a great example of a well structured program. Savings are calculated prescriptively, showerheads are installed on the basis of flow testing, and quarterly follow-up surveys verify savings persistence.

Equipment Replacement and Space Heating

This category includes Furnace and Boiler Replacement, Enhanced Furnace Replacements, and Thermostats. This program performed well and shows excellent continuity and growth when compared to 2005 values. Enhanced Furnace Replacements exceeded participation and savings estimates by 259.0% while costs rose 62.0%.

The Thermostat program provides a $15 rebate to homeowners that install a programmable thermostat. This program achieved positive performance in 2006 while it fell slightly short of goals in 2005. Furnace replacements performed 64.0% better than budget estimates while costs were 205.0% greater. These high costs were due to unbudgeted incentive increases assumed by Enbridge after third party funding was withdrawn. Equipment Replacement and Space Heating offerings are well structured programs with significant savings potential.

Thermal Envelope Improvements

This category consists of the Home Rewards Program. The Home Rewards Program encourages residential conservation through an energy audit that uncovers savings opportunities, installation of selected measures, and a second audit to re-evaluate the home's energy rating. This measure and verify, install, and re-measure and verify format is an excellent approach to conservation measures. The home audit requires blower door testing and computer modeling to estimate performance. Results are tracked in two categories; participants who received programmable thermostats and those who did not. In 2005, launch dates and subsequent adjustments in the marketplace resulted in a slow startup for the program. Actual savings were 17.0% below budget estimates for 2006 with costs 20.0% lower than planned. The cost reduction is partly due to the cancellation of the EnerGuide for Houses program.

Low-Income Taps

This program provides showerheads, aerators, pipe wrap, and programmable thermostats at no charge to low income residents. The program evolved in 2006. Budget participants were raised by 500 over the 2005 value. Actual savings and participation were more than double project estimates. Costs came in at 27.0% lower than budget figures as some costs were aggregated with the core TAPS program.

New Construction

Three programs comprise the New Construction heading in 2006. The R-2000 program provides certification of homes that greatly exceed current building codes. Results were lower than target by 63.0% with costs 38.0% below budget. The performance of this program has been historically affected by market economics and the reluctance of builders to make the extra investment. EnerGuide for New Homes was launched in 2005. This program encourages builders to incorporate efficiency measures at the design stage into new homes. Building performance is rated through modeling software. Enlistment of builders has been a historical problem. Participation is 93.0% below expected values. The Energy Star for New Homes program exceeded budget expectations by 64.0%. The Energy Star rating program targets

production builders and has lower enrolment and evaluation fees than the R-2000 and EnerGuide programs.

4.4 Conclusions

The Enbridge residential programs are well constructed and professionally administrated. The DSM 2006 Monitoring and Evaluation Report is concise and provides an accurate assessment of program results. Performance reported was expanded to 7 residential programs sectors in 2006. These include: Water Heating, Water Conservation, TAPS, Equipment Replacement, Thermal Envelope Improvements, Low-Income TAPS, and New Construction. Gas savings for the 2006 reporting period are 1.0% less than estimated while costs are 22.0% greater than budget projections. A significant part of the cost variance is linked to the unbudgeted Furnace Replacement costs.

Reporting Changes

Minor changes can be made to the reporting format. Including budget and actual data after each program heading will provide the reader the qualitative information without the need to flip back to the Residential Sector Results Table. An example of this modification is:

3.5.2 Enhanced Furnace Replacements
Budget Gas Savings: 1,714,176 m3
Actual Gas Savings: 3,106,658 m3
Variance: 82.0%

Expanded Descriptions

Expanded explanations of large variances from budget estimates should be provided in all cases. Participation in Low-Income TAPS was 86% above anticipated levels enabling gas savings to be 50.0% above the target. Costs were 27.0% below budget. Critiquing each programs performance helps evaluators understand why targets were exceeded or not met. The critiques also provide direction to program administrators in determining future goals.

5. Custom Projects Tracking System and Savings Review (Commercial and Industrial Sector)

5.1 Task 1 and 2 – Tracking System and Savings Review

The review process for the commercial and industrial programs included the following steps:

Activities

- Review of 2003 and 2004 DSM Audit reports
- Review of 2005 and 2006 DSM Monitoring and Evaluation Reports
- Review of E-Tools documentation
- Review of program tracking systems
- Review of 4 sample project files

- Review of Terms of Reference and report by third party commercial program review consultant confirming accuracy of stated savings
- Review of 76 analysis summaries for commercial project random samples
- Review of Terms of Reference and report by third party industrial program review consultant confirming accuracy of stated savings
- Third party consultant interviews (commercial and industrial)
- Enbridge staff interviews

Findings

In addition to files selected for the engineering review, four files selected at random were reviewed for continuity of documentation and flow of information into Enbridge tracking spreadsheets.

The sampled files include a greenhouse from the agricultural program, a theater from new construction, an office from the municipal sector, and an apartment from the private multi-residential sector. The files contained a copy of the check issued for payment upon completion of the project and requisition forms. Project applications, P&E Project review forms, and pricing documentation were also part of the files. Site data was compared with the corresponding data entries in the Enbridge tracking and reporting spreadsheet (2006 Evaluation Spreadsheet for Audit.xls). Tracking data matched documented values.

Calculations were performed with E-Tools on the apartments and office. The new construction project utilized an EE4 model simulation.

The output summaries of an additional 40 detailed engineering reviews were also evaluated. These assessments were part of a PDF file provided by a review consultant as support data to a review of the Commercial Sector Custom Projects. These file summaries provide the input values and assumptions applied to each of the reviewed sites. Reviewer comments and suggestions were also included in the summaries. This information provides RLW additional tools to review data flow through the system and continuity of assumptions and criteria throughout the sites.

Similar site-by-site summaries were not provided in the review of the 2006 Industrial Sector Custom projects. All reporting variances were included in a single table with explanations for the changes. No documentation was provided to show input parameters for individual sites. The reviewer was contacted for further background information.

The RLW analysis shows that seasonal efficiency issues are the single largest contributor to savings variances. This efficiency issue can be easily fixed in the E-Tools software. Previously we discussed how 75.0% efficiency has become a prevalent default value. Enbridge just recently completed a study to examine the appropriate default value for boiler efficiency. The results indicate that 75% is the appropriate value and the distribution of values is weighted below 75%. The audit recommends that 75% continue to be used as the default average value in E-Tools.

Conclusions

The 2006 tracking procedures produce accurate counts and the reported values for participation, costs and savings (gas, electricity and water) are accurate and have been

adequately documented by program records (both electronic and hard copy) and evaluation studies.

6. Commercial Sector Audit Results

6.1 Task 3 and 4 – Prospective Assumption and Uncertainty Review

Findings

E-Tools and Savings Calculation

The E-Tools software is a versatile tool that can provide quick and accurate results for a series of conservation measures. The strength of the tool is its ability to calculate annual efficiencies for heating system replacements. The tool normalizes annual gas usage and provides a projected heating baseline. E-Tools also calculates savings from modifications to air side units, envelope changes, pipe insulation, infrared heating, and other user specified measures.

The Commercial Sector sites, without the Multi-Residential Water Conservation Programs which were addressed in the prescriptive residential program, account for 36.4% (33,978,368 m3) of total annual net gas savings. Review of the Commercial Audit Summary files finds that 85.5% of the savings evaluated were calculated with E-Tools. This means that E-Tools is representative of 31.0% of total annual net gas savings (28,797,463 m3) and 85.0% of estimated Commercial gas savings. Over 65.0% (24,477,843+ m3) of the gas savings linked to these E-Tools reviews is affected by the boiler efficiency measures. While site visits are not part of the verification process, the evaluators are still able to view and change input data to the E-Tools program. This is especially true in the boiler efficiency calculations.

All of the variances in gas savings in 2006 were linked to changes in E-Tools with most of the changes coming in the area that represents over 65% of commercial program gas savings. Clearly, reviewers have the capacity to make changes to reported savings. Having access to site visits will provide evaluators to improve the accuracy in estimating variances. Evaluators do have access to the base case assumptions and input values for E-Tools calculations. RLW is confident that the 31.0% of the net gas savings linked to the E-Tools program commercial sites falls within acceptable levels of performance.

Savings for the remaining commercial sites is calculated with third party software. The independent commercial auditor was not able to access or review most third party calculations with verification coming in the form of a letter of confirmation of accuracy from the firm responsible for the original calculations. Third party calculations represent 5.4% (5,081,905 m3) of total program annual net gas savings.

Default Efficiencies

Thirteen of nineteen 2006 heating projects had baseline efficiencies of 75.0% or less. The initial thought was that a default deficiency was being used too often as a default in place of more accurate data obtained in the field. The Commercial Audit also noted boiler efficiencies as a potential problem. Savings adjustments at several sites were based upon raising baseline efficiencies that were deemed too low. Combustion efficiency testing would, of course, be ideal. RLW realizes that combustion testing is not practical or possible. However, this data may be

available from sources in the facility. Large facilities may monitor boiler operation as part of routine operation. Service records may also exist showing the results of recent servicing and maintenance. All documented efficiencies should be obtained and included in the project files.

These summaries are essentially duplications of findings in the 2005 review. The review of the 2006 Commercial Program by the independent evaluator found that efficiency issues were less prevalent than in the 2005 review. Still, efficiency issues were 25.0% of total changes and 27.1% of gas adjustments. Previously we discussed how 75.0% efficiency has become a prevalent default value.

Enbridge just recently completed a study to examine the appropriate default value for boiler efficiency. The results indicate that 75% is the appropriate value and the distribution of values is weighted below 75%. The audit recommends that 75% continue to be used as the default average value in E-Tools.

Jacket Temperatures

A 130°F jacket temperature was identified in four of the six files presented for review. This represents only part of the jacket loss data. A default 90°F jacket temperature is used as the retrofit value. A corresponding 0.55% is added to the retrofit side of E-Tools to adjust for the 90°F temperature. ASHRAE Standard 90.1-2004 recommends that jacket losses be ≤0.75% of rated input. When viewed interactively, the adjustment represents a 1.0% improvement in efficiency over the baseline system. This is a reasonable value and is within acceptable ranges.

Maintenance Savings

Four of the six sites drawn for our file review reported differential maintenance savings for boiler measures. Two sites were from 2005 and two from 2006. Two sites reported a 2.0% maintenance improvement while a 4.0% maintenance differential was applied to the remaining two sites. Savings reductions ranged from 1.4% to 4.0%. The average reduction was 2.4%.

The number of sites in the total boiler improvement population with differential savings is not available in the information provided. The Commercial Audit summary sheets list seasonal efficiencies but not the components of those efficiencies.

The E-Tool program currently rates maintenance with terms such as "marginal" and "good". Reductions in efficiency linked with these terms are used to modify the seasonal efficiency values that estimate performance and savings. These terms do not show what factors are influencing the final estimated efficiencies. E-Tools should be modified to report the specific tasks and modifications that lead to the maintenance savings. These can include "annual service contract" or "installed alarm/monitoring point". This will provide a foundation for the maintenance savings claims. No differential savings should be taken for sites without specifying the tasks and modifications that lead to the maintenance savings.

Baseline Accuracy

Accurate baseline data is essential for accurate savings calculations. Reported baseline information should be expanded and included as a separate file attachment. It is impossible to identify accurate baseline conditions once a measure is installed. The foundation for detailed reporting already exists. Text boxes in E-Tools allow the engineer to state boiler make and

model numbers, efficiencies of the units, and descriptions of other equipment. Pumping is listed as continuous or intermittent in the text descriptions. Expanding the baseline information will provide reviewers the information to confirm savings. Baseline information should be standardized to include a description of the facility including the age, size, type of facility. Other baseline information should include:

- Daily operating schedules should be reported for a typical week. These schedules should be specific for each unit in the project. Some air handlers may operate continuously in a facility while others can operate for 80 hours per week at the same location. Some boilers may be seasonal while others may be linked with process use or reheating functions and operate all year. Major changes in occupancy or scheduling can have a dramatic impact upon ventilation loads.
- Pump horsepower will allow calculations for motor savings when changing from continuous to intermittent pumping.
- Boiler motor size and efficiency should be noted as well as the same information for forced draft fans. Additional savings are possible with burner motor operation. The installation of a forced draft fan results in an electrical penalty when the existing system did not have one.
- Significant gas savings is also linked when ventilation air is preheated, heated, and/or reheated. The key variables of these airside systems must also be documented. These include the fan horsepower, total CFM, outside air percentage or CFM, supply air temperatures, and operating schedule discussed in the first bullet.

Reporting Savings by Facility Type

In 2006 the Commercial Sector Programs were realigned to report savings by facility type. Savings in previous years were reported to technology: Steam Saver, Heat Recovery, and HVAC are examples. Target groups in 2006 include Long Term Care, Municipalities, Universities, Schools, Hospitals, Hotels, Restaurants, Warehouses, Retail, Offices, and Other Sectors. This restructuring of the program is a positive evolution and will result in better reporting for both the customer and Enbridge.

The review of total annual savings across market groups shows a significant imbalance between projected and actual performance. Nine of the eleven market sectors fell significantly short of goal. Only two markets, municipalities (-21%) and schools (-6%) had shortfalls of less than 25%. Two sites exceeded budget goals. Hotels performed 68% above budget and hospitals attained savings over ten times greater than expected (993%). Total savings for the Large Commercial Sector exceeded budget savings by 10%. This 10% variance is misleading considering the wide range of variances among market sectors.

There is not a solid correlation between Net Gas Savings variances and differences between projected and anticipated participation. In 2006, Hospitals exceeded gas savings by 6.35 m3 while participants fell 12% short of goal. Likewise, Hotels fell 50% short of participants while savings were 68% above target. Four participants were expected in the Restaurant Market. Six participated. Savings were 87% short of goal. The remaining driving variable is the budgeted gas savings in m3/participant.

RLW reviewed the input variables and found a lack of diversity among program technologies when compared according to facility type. For example, savings of 50,000 m3/participant is allocated for General EEP measures across all facility types. Equipment and operations vary

considerable between schools, hospitals, hotels, and warehouses. Yet, all budgeted savings are predicated upon a 50,000 m3 savings performance. Similarly High Efficiency Boilers carry a 25,000 m3/participant savings for municipalities and universities. There is a significant difference between boilers in municipalities and central heating plants that serve universities.

These values are a carryover from the transition in 2006 to a market based reporting format. Many of the figures still represent the technology driven metric that was part of previous program years. Enbridge Gas is currently reviewing these savings values, along with other program modifications, to identify diversity of potential savings that is unique to each market sector. RLW is confident that the proposed changes will level out performance in the future and provide a stable foundation for future generated savings.

Conclusion

RLW is confident that stated savings are reasonable and fall within a statistically acceptable range of +/- 20.0%. This plus or minus value simply states that savings are reasonably accurate, but may be 20% greater than reported values or 20% less. While this is a wide range of variation, it is an acceptable level of performance within the industry. This statement is based upon:

- Independent engineers contracted to review commercial projects had the ability to perform data input and calculation variable reviews on 85.0% of commercial program gas savings (31.0% of total DSM program annual net savings)
- Review engineers had access to Enbridge sales Engineers who work with Commercial customers on an ongoing basis.
- 65.0% of annual gas savings in the commercial sector was linked to boiler efficiency improvements which have been a core competency in past programs.
- Third party calculations, which have limited direct savings confirmation, are 15.0% of all commercial sector gas savings and 5.4% of total DSM program annual net gas savings.
- Reported commercial savings reflect adjustments identified by the commercial program auditor.
- Remaining adjustments – improving baseline system efficiency accuracy and differential maintenance savings – affect the 65.0% E-Tools boiler measure portion of annual commercial savings.

Effect on SSM and LRAM

Several factors were reviewed that can impact the SSM and LRAM. Based on the findings, the auditor does not recommend any change to SSM or LRAM values.

The default boiler efficiencies can affect savings by generating savings from a baseline that is too low/high when compared to actual conditions. The commercial program review engineer also commented on baseline efficiencies and reduced savings to compensate for understated baseline efficiencies in some individual cases. It is impossible to re-estimate additional baseline efficiencies because that condition was lost with the implementation of the boiler measure. A recently completed Enbridge study of combustion efficiency was conducted on a random sample of sites. The results of this study concluded that average efficiencies of the sample site tests was 75% with the distribution of weighted values falling below 75%. This test indicates that the 75% default value for combustion efficiency as used by Enbridge in 2006 projects is

appropriate. Changes identified by the Commercial Program Auditors were incorporated into Enbridge final reported savings. No change in savings is recommended for SSM or LRAM relating to default combustion efficiency because of these factors.

RLW investigated the use of differential maintenance for projects using E-Tools. There were two primary causes for differential maintenance, maintenance alarms and maintenance contracts. The recommendation remains to improve documentation for maintenance factors that contribute to annual savings. E-Tools should be modified to report the specific tasks and modifications that lead to the maintenance savings. These can include "annual service contract" or "installed alarm/monitoring point". This will provide the required documentation for future maintenance savings claims. No change in saving is recommended for SSM or LRAM.

Jacket temperatures were also reviewed. The review found that the temperature differentials between base case and proposed equipment amount to approximately 1.0% are within an acceptable range. No changes in savings are recommended for jacket temperature differentials.

6.2 Task 5 – Respond to Stakeholder Comments

Conclusions

Advancements/Replacement

RLW also compared savings advancement and replacement projects. This was done by reviewing the project summary sheets for boiler replacements provided by the commercial program auditor. Estimated base case gas consumption is calculated by E-Tools for each site along with annual gas savings. Savings for advancements were 32.7% of estimated base case annual gas usage. Savings for replacement projects were 28.2% of base case usage. These values are for the combined 2005 and 2006 reporting years. There were 19 boiler advancement projects in 2005 and 2 replacements in the random sample summaries. In 2006 there were 21 boiler advancements and 2 boiler replacements. The advancement/replacement analysis was reviewed over the combined 2005/2006 period because of the limited replacement sites. Advancements had 4.5% greater savings than replacement projects from those samples for the combined 2005/2006 reporting periods. It is not possible to conclusively ascertain other influences on savings from the summary sheet review. Further review of the methodologies should be performed in future audits to identify and quantify any savings bias. This review should include surveys that directly question program participants and non-participants on advancements/replacements.

Engineering accommodates a wide range of acceptable options. There is no one right or wrong definition of what "advancements" are. That definition is a product of the needs of the customer compared with the needs of the utility. Is the assumption of the advancement of 10 years reasonable? Yes. Is the math for the analysis of economics appropriate? Yes. Are they optimum values? That's where the need to review the context is important.

There were no anomalies or errors noted in calculations reporting the economics of advancements. The 10 year time frame is somewhat of a grey area. The purpose of any conservation effort is to bring a benefit to the customer, utility company, and to the overall success of the mandates of regulatory boards. A certain level of flexibility in administering programs is permissible. The goal of the program is to provide optimum savings and incentives

that fall within acceptable limits. The ten year value may appear high when viewed as a single point. When viewed as a value within an acceptable range that permits optimum participation while maintaining cost constraints, then this is an acceptable value.

Are incremental costs captured for induced water and electric savings?

Yes, the auditor went over how the data was entered and the information in their documentation and it supports that indeed the incremental costs were captured for induced water and electric savings.

Is the freerider rate for electric and water savings in custom projects appropriate? (30% currently)

The 30% estimate should be retained for the time being in lieu of substituting another value. Electric savings claimed in the custom projects are directly linked to the measures that produce gas savings. Therefore, it is appropriate to use the same free ridership value. The auditor suggests, on a go forward basis, performing freerider interviews that will update freeridership in their territory.

Extrapolated Savings and Documentation

Some of the New Construction projects estimated incremental costs are provided at the design stage together with the calculated energy savings. Where the incremental costs were not provided by the Design Advisor, the Company took various approaches to estimate incremental costs. Where possible, estimated incremental costs for a project were derived from the unit incremental cost of various building components using the Incremental Cost Calculator. Alternatively, a flat rate of 25% of total estimated project cost was used. Finally, an average incremental cost per m3 for new construction might be applied. Average incremental costs were applied for one New Construction site in 2006.

Extrapolating incremental costs from other similar projects should be avoided when more specific costs are available. Extrapolated costs were only applied to one site in 2006 and had minimal impact on program performance.

New Prescriptive Measures

RLW received hard copies of the supporting documentation for the front-loading washers and kitchen ventilation systems late in the evaluation process. RLW reviewed the documentation provided for the Multi-Residential High-Efficiency Clothes Washer Pilot Project. This documentation included the data obtained from monitoring at six locations in the City of Toronto. Water savings, gas savings, and electric savings were compiled for the project and this data was used to create per-machine/per-year savings estimates. These calculations were reviewed. RLW found no errors in the methodology and believes that the estimates can be used for prescriptive savings estimates.

RLW reviewed the reports and documentation that support the assumptions behind the kitchen ventilation program. The study documents kitchen ventilation at a hotel in California. The study reports savings based upon measurements taken over both pre and post exhaust modifications. Ventilation loads are industry specific. The results of the California study will be applicable to

similar applications in Enbridge territory. RLW finds the results of that report accurate and can be used with the appropriate Ontario weather modifications.

The support documents for the air doors could not be located by the utility. Those savings were removed from consideration.

Attribution of interaction with CBIP and large new construction projects

The impacts of attribution were outlined in the 2005 audit report. For the 2006 program year Enbridge included its intention to claim full attribution from its programs. Attribution was a significant point of discussion in the 2006 DSM Plan proceeding. The concept of "centrality" was introduced by Enbridge and approved by the Ontario Energy Board in EB-2005-0001. The Ontario Energy Board approved full attribution for Enbridge's program except for EnerGuide for Homes where 50% attribution was applied by the Ontario Energy Board.

In addition, the Ontario Energy Board subsequently approved a TRC Guide for LDCs dated September 8, 2005 that reiterates its position on attribution. Page 16 of the TRC Guide states:

"The Board advises LDCs that they are allowed to claim 100% of the benefits associated with a CDM program in which they jointly market and deliver the program with a non-rate regulated third party"

Therefore the auditor recommends that the Company claim 100% attribution for the new construction program as approved by the Ontario Energy Board in the 2006 DSM Plan.

Explanation for the significant variance between the SSM claim in 2005 and the claim for 2006

There was a significant variance between the SSM claim for 2005 and 2006; the auditor found that it was a direct result of OEB mandated changes to the way the SSM claims were calculated from 2005 to 2006. Further, Enbridge implemented their DSM portfolio in accordance with the OEB approved plan.

6.3 Task 6 – Comment on Engineering Review

An independent consultant was hired to verify the performance and savings of the Commercial Sector Custom Programs. Documentation shows that 519 files were present for the 2006 reporting year. Gas savings were reported as 48 million m3.

The review consultant performed a comprehensive file review of a random sample of 2006 Commercial Sector Custom Projects. The OEB mandates that the program review covers a minimum of 10% of total annual savings. Ten projects were randomly selected from the top 20% of sites sorted by annual savings with the single largest savings site selected manually. An additional 30 sites were drawn from the Medium/Small tier of sites. The random sample conforms to OEB directives.

The independent consultant reviewed calculation methodology, assumptions, and support data. The consultant worked to obtain missing data, reworked calculations, and provided adjusted estimates where possible. Enbridge subsequently incorporated the recommended adjustments to the individual projects in the Commercial sector results as reported in the 2006 Monitoring and Evaluation Report.

The review output sheets for the 40 reviewed files were provided to RLW in a PDF file. These sites represent 38.9% of 2006 Net Gas Savings for the Large and Small Commercial Sectors.

Savings were compiled according to savings tier for the 2006 reporting year. Adjustment issues fell into seven categories. These are reported as:

- Error in calculation
- Novitherm Panels
- Seasonal Efficiency
- Utility Balance
- Misfiled
- Load compensation
- Heat recovery effectiveness

RLW was able to expand upon the reporting with the information provided. The Custom Project Estimated Savings Assessment Summary provided savings insight according to Large and Small Customer tiers. RLW expanded the analysis to identify the percentage of saturation of the selected sites according to building type. The data was reviewed to see if the review process covers all facility types equitably.

The Commercial Sector data was sorted and analyzed according to building type. Notations were made to show new construction and Retrofit projects. Tables were also generated sorting the sampled sites according to Calculation methodology with notations showing what adjustments were made to annual savings. This reporting format differed from the Industrial/Agricultural audit. Results were reported according to Project Type for the Large and Small Project designations. RLW worked with the reporting formats presented by each of the engineering contractors. The results of the evaluation audits were compared to Enbridge actual program data for both programs.

Table 1 shows the distribution of selected sites by building type. Residential apartments account for 59.0% of the random sample. Another 12.8% is linked with schools. This means that 71.8% of the evaluation is linked to just two market sectors. Those two facility types account for nearly 40.0% of provided savings. The table also shows that 84.9% of provided savings falls into three facility types that represent 69.2% of the sample population.

Table 1 – 2006 Site Distribution by Type and Gross Savings

Year	*2006*			
Building Type	**Total Sites**	**Percent of Total**	**Provided m3 Annual Savings**	**Percent of m3 Savings**
Church	1	2.6%	6,282	0.1%
Community Center	2	5.1%	39,368	0.6%
Courthouse	1	2.6%	44,592	0.6%
Garage	1	2.6%	480,675	6.9%
Hospital	2	5.1%	2,287,621	32.6%
Hotel/Motel	2	5.1%	1,043,718	14.9%
Office	1	2.6%	145,898	2.1%
Residential - Apartments	23	59.0%	2,618,429	37.4%
Retail	1	2.6%	178,246	2.5%
School	5	12.8%	165,062	2.4%
Grand Total	**39**	**100.0%**	**7,009,891**	**100.0%**

Table 2 is a consolidation of data taken from the "Actual" tab in the "2006 Evaluation Spreadsheet for Audit.xls" spreadsheet. A comparison of Tables 3 and 4 show the discrepancies between the basic reported and tracking criteria. One new market sector, Long Term Care, is not represented in the random selection shown in Table 3. Universities and Restaurants are also missing from the analysis. The evaluation audit lists a church which falls into the Market Development Other category. The Community and Courthouse are listed independently instead of carrying the Municipal designation.

2006 represents the first year with the transition to tracking performance by building type or market sector. Guidelines should be established to require that future program audits conform to the Enbridge tracking format. Random samples need to include all market sectors and be weighted to assure proper saturation of sites and savings.

Table 2 – 2006 Evaluation Spreadsheet Actuals

Program codes	Program Measure	Net annual gas savings	Net kWh	Net Water m3
S.BM.CM.LTCAR	Long Term Care	86,584	-	-
S.BM.CM.MUN	Municipalities	2,457,331	2,378,499	-
S.BM.CM.UNIV	Universities	632,416	322,280	9,240
S.BM.CM.SCH	Schools	2,853,576	627,517	-
S.BM.CM.HOS	Hospitals	6,884,152	3,382,103	-
S.BM.CM.HTL	Hotels	323,940	2,054,065	1,651
	General EEP	158,169	-	-
	Multi Choice	165,772	2,054,065	1,651
S.BM.CM.RES	Restaurants	17,812	24,049	-
	Kitchen Ventilation	7,505	10,049	-
	Air Doors	10,308	14,000	-
S.BM.CM.WHS	Warehouses	70,645	-	-
S.BM.CM.RET	Retail	173,174	-	-
S.BM.CM.OFF	Offices	1,477,984	725,953	2,899
S.BM.MD	Market Development Other	853,292	-	-
Total Commercial		15,830,908	9,514,465	13,790
MR 4.0	Non profit	685,351	83,414	-
MR 5.0	Private	14,408,929	1,870,275	-
MR 6.0	Water Conservation	2,698,466	163,312	1,056,695
	Showerheads	2,515,941	-	1,056,695
	Front Load Washers	182,525	163,312	-
Total Multi-Residential		17,792,746	2,117,002	1,056,695

RLW then created tables to identify the sources of calculation errors. Errors with E-Tools were responsible for 100.0% of the identified corrections. The reasons for savings variances were uniformly spread across six issues as identified in Table 3. Seasonal efficiency issues and calculation errors were the most common reasons for savings adjustments.

Table 3 – 2006 Calculation Methods Errors

Year	***2006***				
Count of Variance	***Calculation Method***				
Issue Text	**E-Tools**	**Spreadsheet / Manual Calculation**	**Third Party - Engineering**	**Grand Total**	**Percent of Total**
Error in Calculation	2	0	0	2	25.0%
Heat Recovery Effectiveness	1	0	0	1	12.5%
Load Compensation	1	0	0	1	12.5%
Novitherm	1	0	0	1	12.5%
Seasonal Efficiency	2	0	0	2	25.0%
Utility Balance	1	0	0	1	12.5%
Grand Total	**8**	**0**	**0**	**8**	**100.0%**
	100.0%	0.0%	0.0%	100.0%	

The variances were also reviewed for the magnitude of the impact on savings as shown in Table 4. All of the savings variances were attributed to the E-Tools software with most resulting from calculation problems.

Table 4 – 2006 Impact on Gross Savings

Year	*2,006*					
Sum of Variance	***Calculation Method***					
Issue Text	**E-Tools**	**Spreadsheet/Manual Calculation**	**Third Party - Engineering**	**Grand Total**	**Percent of Total**	**Average Variance Per Site**
Error in Calculation	-175,501	0	0	-175,501	74.9%	-87,751
Heat Recovery Effectiveness	21,496	0	0	21,496	-9.2%	21,496
Load Compensation	-20,436	0	0	-20,436	8.7%	-20,436
Novitherm	-13,475	0	0	-13,475	5.7%	-13,475
Seasonal Efficiency	-63,424	0	0	-63,424	27.1%	-31,712
Utility Balance	16,954	0	0	16,954	-7.2%	16,954
Grand Total	**-234,386**	**0**	**0**	**-234,386**	**100.0%**	**-29,298**
	100.0%	0.0%	0.0%	100.0%		

6.4 Conclusions

Random Sampling Criteria

The method of random selection for site evaluation should also be changed. As the facility distribution shows, 71.8% of reviewed sites fall into two categories – apartments and schools. This is only slightly less than the 80.0% saturation in the 2005 report for the same two building types. Neither of those two building types corresponds to the remaining facility types. Schools have distinct seasonal operating schedules and apartments have greater evening and weekend usage than most commercial sites. Adjusting total savings for the commercial sector according to these two end uses is not applicable.

RLW suggests that the random selection be made according to facility type and total utility bill. Other programs analyze savings performance according to the size of the utility bill and not the magnitude of savings. All sites would be ranked according to utility consumption. Random selection is made in each facility type according to tier. Savings are reported as weighted savings. Large consumers will have fewer sample points and smaller consumers will have more. This prevents large sites from skewing program results. This method will improve the relative precision of the reported data. Structuring the data sampling according to facility type and tier can be done while maintaining the 10% minimum sampling requirement from the OEB.

Adjusted Savings

Enbridge incorporated the adjustments to the individual projects as recommended by the engineering review in the Commercial sector results reported in the 2006 Monitoring and Evaluation Report. In addition, apartments and schools account for 71.8% of reviewed sites in 2006, adjusting total savings for the commercial sector according to the performance of these two facility types is not applicable. No adjustment was made across the sector.

Pilot Program Recommendations

The following Commercial Sector Recommendations are intended to be a blueprint for long term goals. The following topics: *Implement Measurement & Verification (M&V) Based Program Review, Site Access for Evaluation Purposes, and Contractual Changes* are not recommended as immediate changes to be implemented in 2007 program evaluations.

These recommendations are designed to increase the accuracy of the savings verification tasks. Current savings verification audits for both the commercial and industrial sectors are limited to a review of file documents. Independent evaluators do not revisit the sites or contact site personnel by phone. Evaluators may not even have full access to calculations and spreadsheets. Results obtained from the M&V based review will be significantly different from current methodology, but these results are a more accurate snapshot of the persistence of the projected savings.

Consider the following recommendations as the foundation of a Pilot Program that investigates the feasibility of Measurement and Verification based Program Review. RLW suggests target milestones of creating a pilot program in 2008 and implementing the first M&V based reviews in 2009. Pilot goals should be to perform at least three M&V based reviews in the commercial and two in the industrial sectors for two years. The savings and performance variances would then be compared with similar randomly selected sites utilizing current review practices. The value of the difference in accuracy between the two reporting methodologies would then be compared with the costs and acceptance of the proposed procedures. The determination can then be made to expand or curtail the pilot effort.

a. Implement Measurement & Verification Based Program Review

The entire Commercial Sector Review was mostly a paper only approach. File documentation was reviewed and missing data tracked down. However, the review of nine third party engineering sites consisted of the acceptance of a letter from a professional engineer confirming the accuracy of the original calculations. One site was dropped from the 40 random samples because the confirmation letter was not received. The program auditors quoted a list of limitations inherent to their review. "Site visits and verification of completed work was not completed. Independent utility analysis and utility balance were not completed. Code compliance reviews and design reviews were not completed for proposed measures." Also, in summary, savings calculations were not reviewed in all cases but simply accepted as correct upon receipt of a letter confirming accuracy from the firm that did the study. The evaluation audit is a confirmation of the accuracy of engineering estimates for a limited sample of projects. Actual performance of the installed measures in 2006 was not verified through post installation site visits and monitoring.

The measurement task is limited to simple monitoring functions. RLW realizes that it is not cost effective or possible to monitor all measures. We are not recommending sub-metering gas feeding boilers, process loads, or absorption chillers. Certain measures can be verified by measuring equipment. Simple time-of-use loggers will confirm operational schedules of air handling units when gas savings are based upon reducing operating hours. A clamp on amp meter can show staged operation of a burner and cycle time. A regression analysis of that data against outside air temperature can provide an operating profile for an entire year. Additional information can be obtained directly from a sites energy management system. Screen captures of operating schedules can be used as proof of operation. Trend logs can also provide essential performance data.

b. Site Access for Evaluation Purposes

The next evolution of the Commercial Sector Custom Program should include site access to selected facilities. What is notable in the consultants review document is the lack of any adjustments attributed to schedule changes, operational modifications, removed or bypassed equipment, different capacities or quantities or efficiencies of installed equipment. These variables are only identifiable through detailed and comprehensive site visits.

The DSM program already incorporates this approach in residential programs. The applicability of showerheads is based upon data obtained during the bag test. Savings persistence is confirmed with detailed phone interviews. The Home Rewards Program requires two energy audits with blower door tests and computer modeling to obtain savings. These are successful programs. Two issues must be addressed to proceed with this goal on the commercial level.

c. Contractual Changes

First, follow up visits for the purpose of verifying projected savings should be included under the General Terms and Conditions of the Project Application. This should not be construed as an intrusion into the customers' time. It is common for utilities to make the incentive payments contingent upon acceptance of this point. This is, in essence, quality control by an objective third party to confirm that the work was completed and that the promised savings are being achieved. This approach will need to be phased in to reduce impact to customers and reduce the likelihood of customer rejection to allow an auditor on site.

Second, all calculations by third party engineers and contractors must be made available to program reviewers in accordance with the contract. It is not uncommon for utility companies to include CDs containing DOE2 data inputs or weather bin analyses directly into project data files.

When possible, measurement and verification (M&V) should include monitoring performance over a specific time. As an example, consider operational modifications to a large makeup air unit resulted in significant gas savings. The file review may claim 4,000 annual hours. Our experience finds that monitoring the operation of that system may find the unit has been taken offline or now runs continuously. The tracking savings must now be modified to compensate for the change in operation.

7. Industrial Sector Audit Results

7.1 Task 3 and 4 – Prospective Assumptions and Uncertainty Review

Activities and Findings

Savings Calculation and Site Verification Issues

The Industrial Sector accounts for 29.7% of total DSM Program annual net gas savings. E-Tools is not used to calculate savings in industrial projects at this time, E-Tools is being designed for the industrial sector but is not yet complete. All industrial projects are custom projects with savings calculated by third parties. Unlike the commercial sector, letters of savings confirmation were not used as a verification protocol. The industrial program auditor performed file reviews to verify input data and some calculations. Corrections were made for four sites utilizing spreadsheet calculations. Corrections were also made at one site using a combination of methodologies.

However, the evaluators did not have direct access to sites, site personnel, or working copies of spreadsheets. This is consistent with the Terms of Reference for this engineering review and the protocol for previous audits. Access to the sites and calculations by the evaluators is important for the acceptance of savings through independent verification of operating schedules, capacities, actual power loads, or other key variables.

There are indirect factors that have an impact that is difficult to quantify. The file reviews include pricing and invoices that show that equipment was purchased and installed. A post installation review is conducted by Enbridge personnel that confirm the measures were installed and operational. Discussions with Enbridge find that their energy personnel have ongoing relationships with gas customers. This continued presence is important. While this is no substitute for independent confirmation of savings, an ongoing relationship with customers provide a format for addressing customer concerns about perceived problems with the installed measures.

Another factor for consideration is the complexity of the measures themselves. That very complexity often dictates what types of calculations are employed. RLW has direct experience in reviewing process measures, dedicated process boilers and chillers, compressed air systems, heat recovery systems, and other similar Industrial applications. Many vendor derived savings calculations are based upon direct measurements taken during a baseline period. It is not known what portion of the remaining industrial and third party commercial sites use this approach.

Monitoring and Targeting

Monitoring and targeting is included in the Industrial Sector. For 2006 annual gross savings were 1.94 m3. This was 8.0% below budget. Monitoring and targeting had no participation in 2005 and only 2 participants for 2006. Implementing a monitoring and targeting program in the Industrial sector is an ambitious challenge. Industrials are the most volatile of sectors. Plant personnel are often hesitant to implement changes especially if process loads are even indirectly evolved.

RLW recommends that the Monitoring and Targeting Program be redeployed to the Commercial sector. Many utilities are beginning to offer Retrocommissioning Programs. These offerings are almost exclusively directed to the commercial sector customers. Enbridge has extensive experience working with the commercial customers. Restructuring the program to incorporate Retrocommissioning elements will create a product that will be appropriate to the large commercial customers. Participation will be greater and more cost effective to Enbridge.

Freeridership

The way freeridership is determined should be re-evaluated for all commercial and industrial custom programs. A default 30.0% freeridership is currently applied to all custom programs and technologies. Freeridership for efficient replacement boilers will be far greater than custom heat recovery technology. Freeridership is also driven by market demographics.

RLW recommends that freeridership should be determined through a survey of customers using carefully crafted questions designed to probe the motivation behind the installation of a set of measures.

The questionnaire is filled out by third party interviewers, preferably during a site visit. This links back to gaining access to facilities once projects are completed. This access is important not only to verify savings, but to understand the marketplace dynamics that influence future conservation scope and direction. The freeridership also relies upon an accurate random sample of projects that is comprehensive and weighted by the size of the utility bill and not projected savings.

Conclusion

Despite the lack of field verification RLW believes that stated savings are reasonable and fall within a statistically acceptable range of +/- 20.0%. This plus or minus value simply states that savings are reasonably accurate, but may be 20% greater than reported values or 20% less. While this is a wide range of variation, it is an acceptable performance within the industry. This statement is based upon:

- Independent engineers contracted to review industrial projects reviewed file documentation for accuracy
- The industrial review engineer did not identify any serious errors on projects, calculations, or assumptions.
- No portion of savings was predicated upon receipt of a letter from the engineering company that calculated initial savings confirming savings were accurate.
- Industrial review engineers were able to review calculations for some sites
- Industrial review engineers had access to Enbridge Sales Engineers who work with industrial customers on an ongoing basis.
- A significant portion of industrial and agricultural projects included boiler replacements, efficiency upgrades, and steam system modifications. These are areas of core competency.

Effect on SSM and LRAM

Industrial sector sites were reviewed by an independent auditor. Savings variances were identified. RLW confirmed that all variances were accurately incorporated into the tracking

software. The impacts of those changes were incorporated into SSM and LRAM calculations as reported in the Company's DSM Monitoring and Evaluation Report. The SSM and LRAM calculations, including the corrected savings values, were reviewed by another third-party consultant. Based on these conducted reviews, RLW accepts these results as reasonable. Inclusion of customer site verification for future audits would be required to further enhance assessment of savings. As discussed, Enbridge should phase this approach in for future periods.

7.2 Task 5 – Respond to Stakeholder Comments

Claims of savings associated with monitoring and targeting

The goals for the 2006 Monitoring and Targeting Program were not aggressive – only 5 anticipated customers with a budget just shy of $60,000. The auditor recommends removing this program from the industrial sector and moving it into the commercial program side.

7.3 Task 6 – Comment on Engineering Review

The Industrial and Agricultural Custom Program mirrors the Commercial Program in many ways. An independent consultant was contracted by Enbridge to perform the program review. The sites selected for the review consist of the five largest industrial application files plus 10 randomly selected sites from the small to medium size database. This yields 15 site evaluations for the 2006 calendar year. This selection meets the criteria set by the OEB for no fewer than five sites that represent at least 10.0% of total volume savings. There were 238 total industrial projects in the 2006 program year. Calculations were performed for both large and small customer tiers.

The independent engineering review recommended adjustments to some individual industrial projects. Enbridge subsequently incorporated the recommended adjustments to the individual projects in the Industrial program results as reported in the 2006 Monitoring and Evaluation Report.

Table 5 shows the projects in the 2006 program year. All large projects came from the industrial category. The table shows individual measures. Some sites have more than one measure. An (m) after the project code indicated the main account. An (a), (b), or (c) refers to auxiliary measures within that account. Large industrial projects had the greatest total annual gas savings of all the industrial program sectors despite accounting for only five sites and six measures.

Table 5 – 2006 Industrial and Agricultural Projects

Project No.	Annual Gas Savings (m3/year)	Adjusted Annual Gas Savings (m3/year)	Savings Variance (m3/year)	Program Type	Category
IND.ALL.023.06	2,127,043	2,127,043	0	Monitoring & Targeting	Large
IND.ALL.036.06	2,350,000	2,033,000	-317,000	Process Efficiency	Large
IND.ALL.088.06	1,226,153	1,226,153	0	HVAC	Large
IND.ALL.105.06	4,711,776	4,711,776	0	Process Efficiency	Large
IND.ALL.114.06 (a)	1,066,403	1,066,403	0	Process Efficiency	Large
IND.ALL.114.06 (m)	1,130,306	1,130,306	0	Heat Recovery	Large
IND.AGR.005.06 (m)	99,960	99,960	0	Agriculture	Small/Med
IND.AGR.005.06 (a)	14,104	14,104	0	Agriculture	Small/Med
IND.AGR.005.06 (b)	62,680	62,680	0	Agriculture	Small/Med
IND.AGR.005.06 (c)	131,762	131,762	0	Agriculture	Small/Med
IND.AGR.027.06	4,187	4,187	0	Agriculture	Small/Med
IND.AGR.027.06	291,103	174,381	-116,722	Agriculture	Small/Med
IND.AGR.027.06	48,416	48,416	0	Agriculture	Small/Med
IND.AGR.027.06	5,620	5,620	0	Agriculture	Small/Med
IND.AGR.027.06	31,220	31,220	0	Agriculture	Small/Med
IND.ALL.034.06	452,676	452,676	0	Heat Recovery	Small/Med
IND.ALL.009.06	549,278	549,278	0	HVAC	Small/Med
IND.ALL.070.06	322,351	322,351	0	HVAC	Small/Med
IND.ALL.074.06	91,379	91,379	0	HVAC	Small/Med
IND.ALL.092.06	450,220	450,220	0	Process Efficiency	Small/Med
IND.ALL.106.06	164,088	114,800	-49,288	Process Efficiency	Small/Med
IND.ALL.006.06	260,372	260,372	0	Steam Saver	Small/Med
IND.ALL.022.06 (m)	332,571	158,832	-173,739	Process Efficiency	Small/Med
IND.ALL.022.06 (a)	17,887	236,399	218,512	Process Efficiency	Small/Med
IND.ALL.022.06 (b)	6,490	32,444	25,954	Steam Saver	Small/Med
Totals - 2006 Ind/Agric	**15,948,045**	**15,535,762**	**-412,283**	**-2.59% Variance**	
Totals - 2006 Large Industrial	**12,611,681**	**12,294,681**	**-317,000**	**-2.51% Variance**	
Total - 2006 Small/Med Industrial	**2,647,312**	**2,668,751**	**21,439**	**0.81% Variance**	
Totals - 2006 Agricultural	**689,052**	**572,330**	**-116,722**	**-16.94% Variance**	

The review consisted of grouping projects into Large and Small project designations. These sites were further grouped by technology type. RLW reviewed the Industrial/Agricultural sites using the presented reporting format. Table 7 shows the selected sites included in the review, their program type, and size designation. Total savings are also provided by project size as well as industrial or agriculture sector.

Table 6 – 2006 Project Types

Project Type	Number of 2006 Projects	Number of 2006 Projects Reviewed	Percent of Projects
Steam Saver	52	2	3.8%
Process Efficiency	23	7	30.4%
Monitoring & Targeting	5	1	20.0%
HVAC	62	4	6.5%
Heat Recovery	23	2	8.7%
Agriculture	73	9	12.3%
	238	**25**	**10.5%**

The next table shows gas savings according to project type. Approximately 75.0% of all Process and Monitoring & Targeting savings were reviewed in 2006. Only 6.5% of Steam Saver savings was analyzed.

Table 7 – 2006 Gas Savings According to Project Type

Project Type	Annual Gas Savings (m3/year)	Percent of Total Program	Adjusted Annual Gas Savings (m3/year)	Adjusted Savings as Percent of Actuals
Steam Saver	4,665,866	11.6%	292,816	6.3%
Process Efficiency	7,200,304	17.9%	8,771,430	121.8%
Monitoring & Targeting	2,736,557	6.8%	2,127,043	77.7%
HVAC	10,615,323	26.4%	2,189,161	20.6%
Heat Recovery	11,159,639	27.8%	1,582,982	14.2%
Agriculture	3,790,497	9.4%	572,330	15.1%
Totals	**40,168,186**	**100.0%**	**15,535,762**	**38.7%**

Conversations with the review consultant find that this is also a file-only review. No site visits were made and no customers were contacted over the phone. All savings verifications were based upon the data presented in the data file. The reviewers did not have complete and total access to all calculations, spreadsheets, facility models, or other engineering data. The file review resulted in a 2.6% reduction in savings when compared with 2006 finalized values. This small variance is not what is expected from an industrial and agricultural program. Industrial measures have many variables that can dramatically change estimated performance.

7.4 Conclusions

Random Sample

RLW suggests that the random selection be made according to facility type and total utility bill. Other programs analyze savings performance according to the size of the utility bill and not the magnitude of savings. All sites would be ranked according to utility consumption. Random selection is made for each facility type according to tier. Savings are reported as weighted savings. Large consumers will have fewer sample points and smaller consumers will have more. This prevents large sites from skewing program results. The 317,000 m3 savings adjustment in the variance table above is a good example of how a single site can influence an entire population. This method will improve the relative precision of the reported data. Structuring the data sampling according to facility type and tier can be done while maintaining the 10% minimum sampling requirement from the OEB.

Adjusted Savings

The independent engineering review recommended adjustments to some individual industrial projects. Enbridge subsequently incorporated the recommended adjustments to the individual projects in the Industrial program results as reported in the 2006 Monitoring and Evaluation Report. No adjustment was made across the sector.

Pilot Program Recommendations

The same comments and recommendations made in the Commercial Custom Section apply here. The industrial program needs to evolve to permit savings to be reconciled with actual

operation. Reviewers need access to the facility to confirm savings promised to the customer. They also need access to all engineering documents, spreadsheets, calculations, and support data. Production data had to be provided during the engineering phase to calculate the program savings. The same data should be accessible to reviewers. Measures labeled as "process" are approximately 20.0% of total program savings. This leaves 80.0% of non mission critical loads. Confidentiality agreements are common in industrial projects to protect sensitive data.

The same three key points highlighted in the commercial section should be implemented to expand the industrial program review process. A contractual obligation to permit independent review of program savings is required as is access to all calculation documentation. Monitoring is still recommended even if it is limited to non-process loads.

The program audit reduced annual savings by 2.6%. This adjustment is too small to significantly affect LRAM or SSM calculations. Additional variance above or below this may result from actual field conditions. Additional variations could only be identified by comprehensive site visits, complete documentations review, and applicable monitoring and verification of installed measures. Although the auditor does not recommend that the audit protocol be amended for this audit, the adoption of additional field verification has been recommended for future audits.

Incremental Water and Electric Cost Savings

Incremental water and electric cost savings were reviewed in several ways. Individual files and file reviews from the auditing engineers were analyzed to confirm that incremental water and sewer costs were being considered. Additional electric savings were identified in the Commercial Program audit. They expanded electrical savings by over 900,000 kWh across five sites. Additional savings of 7,021,399 kWh were identified in 14 industrial sites. Incremental costs were also discussed in a phone interview with Enbridge personnel. The input values for water and electricity were identified and the information was tracked through the spreadsheet.

RLW believes that incremental water and electric costs are being captured and reported. The entries in the tracking spreadsheet accurately report these incremental factors. It is still possible to expand the interaction of these factors and expand total savings benefits. The Commercial Auditor noted that four sites in the random sample suggested that electrical savings were available. However, they were unable to capture these savings due to a lack of reportable data.

RLW makes a recommendation to expand the quantity of baseline data. For example, stated pump operation changes from constant operation to incremental operation. Electric savings results from this modification. However, the pump horsepower and estimated motor load must be included in the file data. Expanding the baseline data acquired during the initial site visits and printing all variables for inclusion in the data file will expand these opportunities.

8. Other Findings

DSM Cost Summary Evaluation

The DSM Costs and DSMVA Summary are derived directly from financial data from a cost center that acts as the central hub for all program related costs. Costs associated with the various programs are stored and maintained in this central cost center from a variety of parties that participate in the process. Hence, program expenditures are compiled on an ongoing basis

throughout the course of the year. At the end of the year, an analyst compiles all program costs collectively per residential or non-residential sector. From here the program costs of each sector are cumulatively assessed. Accordingly, the DSM cost summary outlines costs per sector as opposed to costs per programs in each sector. On a monthly basis throughout the year, an analyst reviews costs per each sector and formulates the DSMVA based upon the financial standings per sector. To determine the monthly DSMVA, the analyst simply subtracts the actual program costs per month from the budgeted program costs per month. Upon review, if the monthly DSMVA does not equal zero, Enbridge utilizes funds from a deferral account to balance the difference. For instance, if the DSMVA is positive then the additional funds are put into the deferral account. Likewise, if the DSMVA is negative then funds are taken from the account and added to the appropriate program sector to zero-out the difference and balance the budget.

An analyst working closely with the cost center data feels that the system is running effectively and believes that in order to meet current project objectives it is as streamlined as possible. The 2005 and 2006 Fiscal years and the 2005 stub period were all consistently managed in the same manner. The auditor agrees that the system is being run effectively and is streamlined for ease of use.

Savings and SSM/LRAM Claim Verification

The 2006 TRC calculations take into account the various market sector elements appropriately. In the 2006 case, analysis indicates that the financial variable inputs have been incorporated and link within the database correctly. The organization and management of the databases that maintain the TRC calculations are transparent and efficiently organized. The variables used are justified based upon the implemented programs and the SSM rule-sets established by the OEB. Beyond the recommendations and points mentioned in a memo dated May 15, 2007 from Kai Millyard Associates, the financial input values for each of the various market sectors in the 2006 report follow a linear path that reflects the intentions of the OEB and as such, the interpretations of the resulting SSM awards.

The OEB stipulated a change for the 2006 DSM plan and SSM calculation from that of the previous year, allowing the company to qualify for incentives at 75% above the pivot point. As documented in the 2006 DSM report, the algorithm that determines the appropriate SSM claims, according to 10% incremental steps in TRC savings, does follow the conditions set by the OEB. The auditor had further conversations with Enbridge and feels the data that corresponds to the resulting TRC and therefore total SSM claim follows logical calculations in the database from which they were derived, and as such the auditor feels the SSM awards are reasonable.

Table 8 summarizes all of the audit recommendations for the 2006 Evaluation.

Program	Recommendation
Residential	Report formatting should include budget and actual data after each program heading
	Expand descriptive text
	Provide explanations of large variances from budget estimates
Commercial and Industrial	Obtain and document on-site sources of boiler efficiency data whenever possible to reduce reliance on default values. A recent combustion efficiency study was completed for EGD that found the average combustion boiler efficiency to be 74.6%. A 75% default value can be used with confidence for the E-Tools software.
	Baseline documentation should be expanded to include all variables that drive savings in measures
	E-Tools should be modified to report the specific tasks and modifications that lead to the maintenance savings.
	Obtain weekly and seasonal operating schedules that pertain to all components addressed in the measures, where possible
	Calculation variables should be standardized for each site when calculations are provided by multiple vendors
	Print hard copies of all input values from E-Tools for inclusion in the project file to facilitate review
	Where possible require that independent audit program evaluators are reporting results in categories that correspond with the structure of the data maintained by Enbridge
	Structure the customer database so that the random sample represents a fair distribution of all market sectors
	Create a weighted sample to report savings to balance performance between large and small participants
	Implement a pilot prgram with 5 sites (3 commercial and 2 industrial to verify savings according to M&V format. A sample of projects should be assessed thru a site visit, this should be phased in over time. A full site audit should incorporate a full review of all calculations and documentation Limited monitoring as deemed necessary should be performed
	Continued reassessment of the 30% freeridership
	Move the Monitoring and Targeting Program from the Industrial Sector to the Commercial Sector. Offer the new program as a pilot drawing upon retrocommissioning methodology.
	Continue the transition to market sector reporting started in 2006. Continue to adjust budget estimated values to be in accordance with the new format.

Table 8 – 2006 Summary of Audit Recommendations

ENBRIDGE GAS DISTRIBUTION
F2005 DSM AUDIT
TRC, SSM & LRAM VERIFICATION

FINAL REPORT

PREPARED FOR ENBRIDGE GAS DISTRIBUTION

10 SEPTEMBER 2007

INTRODUCTION

This project consisted of two discrete tasks as a part of the audit of the F2005 DSM year at Enbridge Gas Distribution.

1) Review and verify the accuracy of all calculations leading up to the proposed SSM and LRAM amounts.

2) Verify that the calculations are consistent with the OEB-approved method.

Fiscal 2005

The Board-approved post-ADR volume target was 76.9[1] million m^3, valued at $177.8 million in TRC net benefits. This target is shown in Table 1 below.

The Evaluation Report estimates the gas savings at 81.4 million m^3, proposes an adjusted target at $167.7 million and estimates Actual savings at $173.1 million, producing an SSM of $0.977 million, using the declining block incentive structure approved for 2005.

The screening inputs provided by the Company in the 2005 Evaluation Report were used to replicate the TRC and SSM calculations. With the clear rules for this process from the 2003 rates case the process was expedited in comparison to past years.

Correcting errors

A number of clerical errors were identified in the entries making up the Budget and Actual cases and once corrected the Company's SSM claim was revised to $901,722. At this stage the calculations are reproducible from the inputs provided.

1. RP-2003-0203 ADR Agreement, N1/T1/S1 p 34.

Budget adjustment

The 2005 Evaluation Report estimates the pivot point about $10 million lower than in the Board-approved version. In my view the adjustment was not consistent with the Board-approved rules. The Committee and Company agreed and the Company withdrew the adjustment, raising the Budget TRC amount to $177.5 million. Since this target is higher than the $173.1 million in Actual net benefits, the Company withdrew its application for an SSM for the 2005 year.

RLW Analytics report

The RLW Analytics Audit Report recommended no changes to inputs that would affect the shareholder incentive.

Further analysis & adjustments

Further discussion and analysis were undertaken by the Company and the Committee members on a number of unresolved issues, and a series of additional changes were agreed upon for the SSM case, as follows:

- Custom projects which included maintenance alarms were deemed to include some incremental costs not previously included, which were added. Savings from maintenance contracts were deleted.

- TRC net benefits from all custom projects that did not have other adjustments (ie. advancements) were discounted by 7.5% to account for issues not dealt with by the evaluation and auditing work in 2005.

The effect of these adjustments on the TRC net benefits for the 2005 year was a reduction to $168.5 million.

The resulting gas savings and TRC net benefits are shown in Table 1 below.

Enbridge Gas Distribution F2005 **Table 1**

Program	Initial BUDGET ADR	Final BUDGET	ACTUAL	Initial BUDGET ADR	Final BUDGET	ACTUAL
	Net annual gas savings	Net annual gas savings	Net annual gas savings	NPV DSM Plan	NPV DSM Plan	NPV DSM Plan
Residential Retrofit & Replacement						
Program Total	27,202,300	27,202,300	28,026,110	$ 89,216,001	$ 88,946,183	$ 95,641,774
Residential New Construction						
Program Total	2,886,000	2,886,000	85,850	$ (3,699,175)	$ (3,699,175)	$ (215,272)
Commercial						
Program Total	13,801,702	13,801,702	12,755,548	$ 20,794,134	$ 20,794,134	$ 16,844,099
Multi-Residential						
Program Total	10,589,500	10,589,500	14,287,907	$ 30,690,885	$ 30,690,885	$ 23,042,478
Large New Construction		-				
Program Total	1,050,000	1,050,000	2,558,164	$ 2,234,525	$ 2,234,525	$ 5,334,165
Industrial						
Program Total	21,384,600	21,384,600	20,774,798	$ 41,923,272	$ 41,923,272	$ 30,641,220
PROGRAMS DSM PLAN	76,914,102	76,914,102	78,488,379	$ 181,109,642	$ 180,839,824	$ 171,277,150
Overheads				$ 3,295,123	3,295,123	2,813,225
Total NPV DSM PLAN				**$ 177,814,519**	**$ 177,544,701**	**$ 168,463,925**

Lost revenues

Lost-revenue recovery is intended to keep the utility financially indifferent to the effect of lost sales, regardless of the success of its DSM programs. Therefore, actual savings amounts are intended to be the basis for calculating the amount of lost revenues.

The savings estimate generated for the shareholder incentive calculation (shown above in Table 1) is not always the best information available on what actual savings were in a DSM year. Better information on unit savings or free rider rates may have become available since the DSM Plan was approved, but this new information is not incorporated into the shareholder incentive calculations.

Therefore, when better information is available savings estimates are adjusted for calculating lost revenues. The payment may flow either to the ratepayers or to the utility, depending on whether the actual savings were less than or greater than the amount of savings built into rates during the rate-setting process.

Table 2 shows the gas savings from each program used in the SSM case, and in the LRAM case. The TRC value of both cases is shown for information purposes.

Enbridge Gas Distribution F2005 — Table 2

Savings volumes for LRAM
TRC value of savings

Program	Built into rates	SSM Case	LRAM Case
	m^3	m^3	m^3
Residential Retrofit & Replacement			
TAPS PARTNERS Showerheads		12,556,808	10,103,955
TAPS PARTNERS aerator		1,882,689	2,584,084
TAPS PARTNERS Pipe wrap		1,226,580	1,737,656
Gas to gas furnace replacement		3,109,929	1,763,362
Enhanced Furnace Replacement		3,106,658	1,088,487
Enhanced Furnace Replacement (fan)			(300,394)
Programmable thermostats		2,523,595	1,640,337
Home Comfort Rewards w/ Tstat		456,957	228,478
Home Comfort Rewards		2,563,110	1,281,555
LOW income - setback thermostats		431,844	277,892
LOW Income showerheads		153,780	92,303
LOW Income pipe wrap		14,160	19,859
Program Total		28,026,110	20,549,867
Residential New Construction			
Program Total		85,850	91,875
TOTAL RESIDENTIAL	**30,900,385**	**28,111,960**	**20,641,742**
Commercial			
Program Total		12,755,548	15,302,674
Multi-Residential			
Non profit		542,861	542,861
Water Conservation		1,092,366	1,395,801
Private		12,652,681	12,652,681
Program Total		14,287,907	14,591,342
Large New Construction			
Program Total		2,558,164	2,558,164
TOTAL COMMERCIAL	**24,553,003**	**29,601,620**	**32,452,181**
Industrial			
Agriculture		4,464,719	4,464,719
Heat recovery		2,353,995	2,353,995
HVAC		280,358	280,358
Infrared		4,129,034	4,129,034
Steam saver		9,546,692	9,546,692
Program Total	**21,420,000**	**20,774,798**	**20,774,798**
PROGRAMS DSM PLAN	**76,873,388**	**78,488,379**	**73,868,721**
Total NPV DSM PLAN	$	168.5	$ 132.4

* The volumes shown on this Table are 'fully effective' volumes. That is, they represent the first 12 months of savings after measures are installed. However, not all of these savings occur during the test year, which is what matters for lost revenue adjustment. The fraction of the volumes shown here which were initially built into rates, and which actually occurred, varies. The difference in these fractions affects the final amounts in the LRAM account for clearance.

Table 3 provides a list of the specific adjustments made for the LRAM case and the source of the updated information. Assumptions which affect the TRC value of savings are included as well as those that affect volumes and LRAM in support of the TRC calculation of the LRAM case.

LRAM Adjustments **Table 3**

Program	Measure	Change in Assumption	Source
Residential Existing Homes			
	TAPS Partners Showerheads	Unit savings from 111.6 to 89.8 m3	Reflects both a new unit savings value from the Generic hearing assumptions AND an adjustment for the actual number of showerheads installed per house.
		Water savings from 51.4 to 24.2 m3/y	Reflects both a new unit savings value from the Generic hearing assumptions AND an adjustment for the actual number of showerheads installed per house.
		Measure life from 12 to 10 years	Generic Gas DSM hearing assumption
		Incremental cost reduced from $21 to $15	Generic Gas DSM hearing assumption
	TAPS PARTNERS aerator	Unit gas savings from 20.4 to 28 m3	Generic Gas DSM hearing assumption
		Water savings from 3.8 To 13 m3/y	Generic Gas DSM hearing assumption
		Measure life from 12 to 10 years	Generic Gas DSM hearing assumption
		Incremental cost increased from $3 to $6 per household/participant.	Generic Gas DSM hearing assumption
	TAPS PARTNERS Pipe wrap	Unit savings from 12 to 17 m3	Generic Gas DSM hearing assumption
		Measure life from 6.25 to 15 years	Generic Gas DSM hearing assumption
	Gas to gas furnace replacement	Incremental cost from $500 to $650	Generic Gas DSM hearing assumption
	Enhanced Furnace Replacement	Gas savings raised from 320 to match 385 m3/year for gas to gas savings	Generic Gas DSM hearing assumption
	Enhanced Furnace Replacement (fan portion)	Minus 65 m3 gas, and 730 kwh/y savings	Generic Gas DSM hearing assumption
		Free ridership raised from 10 to 15%	Generic Gas DSM hearing assumption
		Incremental cost of fan portion set to $550.	Generic Gas DSM hearing assumption
	Home Comfort Rewards	Incremental costs increased from $1,200 to $2708	Generic Gas DSM hearing assumption
		Gas and electricity savings and incremental costs reduced by 50%	OEB Decision in 2006 attributed 50% of results to other program sponsors.
	Programmable thermostats	Unit gas savings reduced from 212 to 137.8 m3 and 100 to 65 kw/y	Generic Gas DSM hearing assumption
	LI TAPS PLUS Showerheads	Unit gas savings reduced from 111.6 to 83.4 m3	Reflects both a new unit savings value from the Generic hearing assumptions AND an adjustment for the actual number of showerheads installed per house.
		Free ridership raised from 0% to 5%	Generic Gas DSM hearing assumption
		Water savings from 51.4 to 22.3 m3/y	Reflects both a new unit savings value from the Generic hearing assumptions AND an adjustment for the actual number of showerheads installed per house.
		Measure life from 12 to 10 years	Generic Gas DSM hearing assumption
		Incremental cost reduced from $21 to $15	Generic Gas DSM hearing assumption

LRAM Adjustments **Table 3 (continued)**

Program	Measure	Change in Assumption	Source
Residential Existing (continued)			
	LI TAPS PLUS Aerators	Unit gas savings from 20.4 to 28 m3	Generic Gas DSM hearing assumption
		Free ridership raised from 0% to 1%	Generic Gas DSM hearing assumption
		Water savings from 3.8 to 13 m3/y	Generic Gas DSM hearing assumption
		Measure life from 12 to 10 years	Generic Gas DSM hearing assumption
		Incremental cost increased from $3 to $6 per household/participant.	Generic Gas DSM hearing assumption
	LI TAPS PLUS Pipe wrap	Unit savings from 12 to 17 m3	Generic Gas DSM hearing assumption
		Measure life from 6.25 to 15 years	Generic Gas DSM hearing assumption
		Free ridership raised from 0% to 1%	Generic Gas DSM hearing assumption
	LI PLUS Setback thermostat	Unit gas savings reduced from 212 to 137.8 m3 and 100 to 65 kw/y	Generic Gas DSM hearing assumption
		Free ridership raised from 0% to 1%	Generic Gas DSM hearing assumption
		Incremental cost increased from $65 to $90	Generic Gas DSM hearing assumption
Residential New Construction			
	EnerGuide for New Houses	Unit gas savings increased from 450 to 519	Generic Gas DSM hearing assumption
		Free ridership raised from 0% to 5%	Generic Gas DSM hearing assumption
	Energy Star Houses	Unit gas savings increased from 800 to 818	Generic Gas DSM hearing assumption
		Free ridership raised from 0% to 5%	Generic Gas DSM hearing assumption
		Incremental costs reduced from $4,000 to $3,020	Generic Gas DSM hearing assumption
		Electric unit savings of 1,000 kwh added	Generic Gas DSM hearing assumption
Small Commercial			
	Gas to gas furnace replacement	Free ridership increased from 10% to 17.5%	Generic Gas DSM hearing assumption
		Incremental cost from $500 to $650	Generic Gas DSM hearing assumption
	Programmable Thermostats	Unit gas savings increased from 212 to 519 m3/y	Generic Gas DSM hearing assumption
		Free ridership increased from 11% to 20%	Generic Gas DSM hearing assumption
		Unit electric savings increased from 100 to 921 kw/y	Generic Gas DSM hearing assumption
	Rinse n Save	Unit gas savings increased from 1,270 to 2,434 m3/y	Generic Gas DSM hearing assumption
		Unit water savings increased from 299.2 to 432.8 m3/y	Generic Gas DSM hearing assumption
		Incremental costs reduced from $300 to $100	Generic Gas DSM hearing assumption
Multi-Residential			
	Showerheads	Unit gas savings raised from 90 to 115 m3/y	Generic Gas DSM hearing assumption
		Unit water savings reduced from 37.8 to 30.996 m3/y	Generic Gas DSM hearing assumption
		Measure life from 12 to 10 years	Generic Gas DSM hearing assumption
		Incremental cost increased from $13 to $15	Generic Gas DSM hearing assumption

2005 Stub period

As a result of the change to the Company's fiscal year, the 2005 DSM year included an additional three month period, with a target and budget equal to 25% of the full year amounts. Enbridge did not claim a shareholder incentive for this period due to insufficient results. However, the TRC calculations were verified, and adjustments applied where agreements were reached within the Audit Committee for the 2005 period.

In addition, the LRAM adjustments from Table 3 above were applied and an LRAM case produced which appears below in Table 4. The LRAM case provides both gas savings volumes for use in generating the LRAM balances, as well as an estimate of the TRC value of the savings from the stub period, using the best available information.

Enbridge Gas Distribution F2005 Stub **Table 4**

Savings volumes for LRAM
TRC value of savings

Program	Built into rates m^3	LRAM Case m^3
Residential Retrofit & Replacement		
Program Total		4,653,482
Residential New Construction		
Program Total		33,398
TOTAL RESIDENTIAL	**11,001,410**	**4,686,880**
Commercial		
Program Total		1,211,171
Multi-Residential		
Program Total	2,199,999	2,266,755
Large New Construction		
Program Total		14,777
TOTAL COMMERCIAL	**4,390,000**	**3,492,703**
Industrial		
Program Total		2,872,602
TOTAL INDUSTRIAL	**3,800,000**	**2,872,602**
PROGRAMS DSM PLAN	19,191,410	11,052,185
TRC NPV (millions)		$ 17.9

ENBRIDGE GAS DISTRIBUTION
F2006 DSM AUDIT
TRC, SSM & LRAM VERIFICATION

FINAL REPORT

PREPARED FOR ENBRIDGE GAS DISTRIBUTION

SEPTEMBER 10, 2007

INTRODUCTION

This project consisted of two discrete tasks, each a part of the audit of the F2006 DSM year at Enbridge Gas Distribution.

1) Review and verify the accuracy of all calculations leading up to the proposed SSM and LRAM amounts.

2) Verify that the calculations are consistent with the OEB-approved method.

TRC results and shareholder incentive

The Board-approved post-ADR volume target was 77.4 million m^3, valued at $147.1 million in TRC net benefits.[1] This target is shown in Table 1 below.

The Evaluation Report estimates the actual gas savings at 93.0 million m^3, proposed an adjusted target at TRC $150.9 million and estimated Actual at TRC $201.2 million, producing a shareholder incentive of $12.5 million, using the declining block incentive structure approved for 2006.

The screening inputs provided by the Company in the 2006 Evaluation Report were used to replicate the TRC and incentive calculations.

Correcting errors

A number of clerical errors were identified in the entries making up the Budget and Actual cases and once corrected the calculations are reproducible from the inputs provided.

Budget adjustment

The 2006 Evaluation Report estimates the pivot point about $2.8 million higher than in the Board-approved version. In my view the adjustment was not consistent with the

[1] EB-2001-0001 A7/T2/S1, p.6 as Updated March 17 2006.

Board-approved rules. The Committee and Company agreed and the Company withdrew this adjustment, changing the Budget TRC amount to $148.1 million.

RLW Analytics report

When the RLW Analytics Audit Report became available, it recommended no changes to inputs that affect the shareholder incentive.

Further analysis & adjustments to Actual savings

Further discussion and analysis was undertaken by the Company and the Committee members on a number of unresolved issues, and a series of additional changes were agreed upon for the Actual savings, as follows:

- Custom projects defined by the Company as "advancements" are advanced five years before their natural replacement life rather than 10 years, affecting measure lives and incremental costs.

- Custom projects which included maintenance alarms required some incremental costs not previously included, which were added. Savings from maintenance contracts were deleted.

- TRC net benefits from all custom projects that did not have other adjustments (ie. advancements) were discounted by 7.5% to account for issues not addressed by the evaluation and auditing work in 2006.

The effect of all these adjustments on the TRC net benefits for the 2006 year was a reduction of approximately $20 million in the TRC value of savings relative to the Evaluation Report estimate.

The resulting gas savings, TRC values and shareholder incentive results are shown below in Table 1.

Enbridge Gas Distribution F2006 — Table 1

Program	Initial BUDGET Approved	Final BUDGET SSM	ACTUAL	Initial BUDGET Approved	Final BUDGET SSM	ACTUAL
	Net annual gas savings	Net annual gas savings	Net annual gas savings	NPV DSM Plan	NPV DSM Plan	NPV DSM Plan
Residential Retrofit & Replacement						
Program Total	25,476,130	25,476,130	25,939,102	$ 76,197,760	$ 76,197,760	$ 73,302,527
Residential New Construction						
Program Total	1,491,500	1,491,500	613,800	$ (2,251,223)	$ (2,251,223)	$ (1,187,197)
Small Commercial						
Program Total	1,352,815	1,352,815	2,205,361	$ 1,188,493	$ 2,120,458	$ 3,501,162
Other						
Program Total				$ (264,500)	$ (264,500)	$ (25,098)
Commercial						
Program Total	14,335,300	14,335,300	14,901,894	$ 13,744,282	$ 13,744,351	$ 23,964,395
Multi-Residential						
Program Total	9,382,446	9,382,446	17,477,033	$ 20,504,962	$ 20,504,922	$ 32,097,084
Large New Construction		-				
Program Total	2,177,000	2,177,000	2,732,616	$ 2,381,477	$ 2,381,817	$ 8,217,344
Industrial						
Program Total	23,212,309	23,212,309	25,650,513	$ 40,308,256	$ 40,308,278	$ 44,045,798
PROGRAMS DSM PLAN	77,427,500	77,427,500	89,520,319	$ 151,809,508	$ 152,741,863	$ 183,916,015
Research & development				$ 996,705	$ 996,705	$ 156,311
Overheads				$ 3,663,597	$ 3,663,597	$ 3,092,913
Total NPV DSM PLAN				**$ 147,149,206**	**$ 148,081,561**	**$ 180,666,791**

Shareholder Incentive:			Actual TRC	Incentive rate	SSM
	Target:	$ 148,081,561			
75% of Target			$ 111,061,171		
25% of Target			$ 37,020,390	18%	$ 6,663,670
First 10% above Target:			$ 14,808,156	15%	$ 2,221,223
Second 10% above Target:			$ 14,808,156	12%	$ 1,776,979
Third 10% above Target:			$ 2,968,918	9%	$ 267,203
Fourth 10% above Target:			$ -	6%	$ -
Remainder of Actual TRC:			$ -	3%	$ -
Total TRC & SSM:			$ 180,666,791		$ 10,929,075

Note: The values above may differ slightly from those of the Company due to rounding and other minor effects. For reporting purposes the results provided by the Company may be considered final.

Relative shareholder incentives

Audit Committee members have requested some analysis of the difference from 2005 to 2006 since the shareholder incentive levels are so different. Three of the factors that contribute to this outcome are:

- The Company did achieve 14% greater gas savings in 2006 than in 2005. It exceeded its target in

2006 and did not meet it in 2005.

- The incentive structure changed in 2006 to begin awarding the Company incentive payments at 75% of the target for the year, as can be seen in the incentive calculation above. The first $6.7 million of the incentive for example is earned between 75% and 100% of the target.

- In 2006 the Company was permitted to claim savings for incidental water and electricity savings from custom projects that had not been budgeted. The recording of these savings contributes roughly $14 million of net benefits to the 2006 TRC total.

LRAM Case

Lost-revenue recovery is intended to keep the utility financially indifferent to the effect of lost sales, regardless of the success of its DSM programs. Therefore, actual savings amounts are intended to be the basis for calculating the amount of lost revenues.

The actual savings generated for the shareholder incentive calculation (shown in Table 1) is not always the best information available on what actual savings were in a DSM year. Better information on unit savings or free rider rates may have become available since the DSM Plan was approved, but this new information is not incorporated into the shareholder incentive calculations.

Therefore, when better information is available savings estimates are adjusted as a basis for calculating lost revenues. The payment may flow either to the ratepayers or to the utility, depending on whether the actual savings were less than or greater than the amount of savings built into rates during the rate-setting process.

Table 2 below shows the gas savings from each program used in the SSM case, and in the LRAM case. In this case, roughly 1 million m^3 less was saved in the LRAM case than the estimate used for SSM calculations. The TRC value of both cases is shown for information purposes.

Enbridge Gas Distribution F2006 LRAM Summary

Table 2

Savings volumes for LRAM
TRC value of savings

Program	Built into rates	SSM Case	LRAM Case
	m^3	m^3	m^3
Residential Retrofit & Replacement			
TAPS PARTNERS Showerheads		10,760,191	7,499,527
TAPS PARTNERS aerator			2,282,465
TAPS PARTNERS Pipe wrap		778,994	1,103,575
Gas to gas furnace replacement		2,357,355	2,357,355
Enhanced Furnace Replacement		3,181,248	2,211,409
Enhanced Furnace Replacement (fan)			(610,292)
Programmable thermostats		3,407,183	2,214,669
EGH		4,120,542	4,120,542
LI TAPS PLUS Showerheads		690,228	501,723
LI TAPS PLUS Aerators			144,948
LI TAPS PLUS Pipe wrap		64,176	90,007
LI PLUS Setback thermostat		579,184	372,705
Program Total		25,939,102	22,288,633
Residential New Construction			
R2000		8,800	8,800
EnerGuide for New Houses		81,000	88,407
Energy Star Houses		524,000	509,001
Program Total		613,800	606,208
TOTAL RESIDENTIAL	**34,783,115**	**26,552,902**	**22,894,841**
Multi-Residential			
Non profit		675,320	675,320
Private		14,103,247	14,103,247
Water conservation		2,698,466	3,397,339
Program Total	**9,310,075**	**17,477,033**	**18,175,906**
Small Commercial			
Program Total		2,205,361	4,214,991
Large Commercial			
Program Total		14,901,894	14,901,894
Large New Construction			
Program Total		2,732,616	2,732,616
TOTAL COMMERCIAL	**17,084,650**	**19,839,871**	**21,849,501**
Large New Construction			
Program Total		2,732,616	2,732,616
Industrial			
Steam Saver		2,932,065	2,932,065
HVAC		6,879,711	6,879,711
Monitoring/targetting		1,790,678	1,790,678
Heat recovery		3,876,734	3,876,734
Process efficiency		7,750,145	7,750,145
Agriculture		2,421,181	2,421,181
Program Total	**23,100,000**	**25,650,513**	**25,650,513**
PROGRAMS DSM PLAN	84,277,840	89,520,319	88,570,760
TRC NPV (millions)		$ 180.7	$ 162.5

* The volumes shown on this Table are 'fully effective' volumes. That is, they represent the first 12 months of savings after measures are installed. However, not all of these savings occur during the test year, which is what matters for lost revenue adjustment. The fraction of the volumes shown here which were initially built into rates, and which were actually achieved, varies. The difference in these fractions affects the final amounts in the LRAM account for clearance.

Table 3 below provides a list of the specific adjustments made for the LRAM case and the source of the updated information. Assumptions which affect the TRC value of savings are included as well as those that affect volumes (and therefore LRAM) in support of the TRC calculation of the LRAM case.

LRAM Adjustments **Table 3**

Program	Measure	Change in Assumption	Source
Residential Existing			
	TAPS Partners Showerheads	Unit savings from 111.6 to 92 m3	Reflects both a new unit savings value from the Generic hearing assumptions AND an adjustment for the actual number of showerheads installed per house.
		Water savings from 51.4 to 24.8 m3/y	Reflects both a new unit savings value from the Generic hearing assumptions AND an adjustment for the actual number of showerheads installed per house.
		Measure life from 12 to 10 years	Generic Gas DSM hearing assumption
		Incremental cost reduced from $21 to $15	Generic Gas DSM hearing assumption
	TAPS PARTNERS aerator	Unit gas savings from 20.4 to 28 m3	Generic Gas DSM hearing assumption
		Water savings from 3.8 to 13 m3/y	Generic Gas DSM hearing assumption
		Measure life from 12 to 10 years	Generic Gas DSM hearing assumption
		Incremental cost changed from $3 to $6 per household/participant	Generic Gas DSM hearing assumption
	TAPS PARTNERS Pipe wrap	Unit savings from 12 to 17 m3	Generic Gas DSM hearing assumption
		Measure life from 6.25 to 15 years	Generic Gas DSM hearing assumption
	Gas to gas furnace	Incremental cost from $500 to $650	Generic Gas DSM hearing assumption
	Enhanced Furnace Replacement	Gas savings raised from 320 to match 385 m3/year for gas to gas savings	Generic Gas DSM hearing assumption
	Enhanced Furnace Replacement (fan portion)	Minus 65 m3 gas, and 730 kwh/y savings	Generic Gas DSM hearing assumption
		Free ridership raised from 10 to 15%	Generic Gas DSM hearing assumption
		Incremental cost of fan portion set to $550.	Generic Gas DSM hearing assumption
	Programmable thermostats	Unit gas savings reduced from 212 to 137.8 m3 and electric from 100 to 65 kwh/y	Generic Gas DSM hearing assumption
	LI TAPS PLUS Showerheads	Unit gas savings reduced from 111.6 to 101 m3	Reflects both a new unit savings value from the Generic hearing assumptions AND an adjustment for the actual number of showerheads installed per house.
		Free ridership raised from 0% to 5%	Generic Gas DSM hearing assumption
		Water savings from 51.4 to 27 m3/y	Reflects both a new unit savings value from the Generic hearing assumptions AND an adjustment for the actual number of showerheads installed per house.
		Measure life from 12 to 10 years	Generic Gas DSM hearing assumption
		Incremental cost reduced from $21 to $15	Generic Gas DSM hearing assumption
	LI TAPS PLUS Aerators	Unit gas savings from 20.4 to 28 m3	Generic Gas DSM hearing assumption
		Free ridership raised from 0% to 1%	Generic Gas DSM hearing assumption
		Water savings from 3.8 to 13 m3/y	Generic Gas DSM hearing assumption
		Measure life from 12 to 10 years	Generic Gas DSM hearing assumption
		Incremental cost changed from $3 to $6 per household/participant	Generic Gas DSM hearing assumption
	LI TAPS PLUS Pipe wrap	Unit savings from 12 to 17 m3	Generic Gas DSM hearing assumption
		Measure life from 6.25 to 15 years	Generic Gas DSM hearing assumption
		Free ridership raised from 0% to 1%	Generic Gas DSM hearing assumption
	LI PLUS Setback thermostat	Unit gas savings reduced from 212 to 137.8 m3 and electric from 100 to 65 kwh/y	Generic Gas DSM hearing assumption
		Free ridership raised from 0% to 1%	Generic Gas DSM hearing assumption
		Incremental cost increased from $65 to $90	Generic Gas DSM hearing assumption

LRAM Adjustments **Table 3 (continued)**

Program	Measure	Change in Assumption	Source
Residential New Construction			
	EnerGuide for New Houses	Unit gas savings increased from 450 to 519	Generic Gas DSM hearing assumption
		Free ridership raised from 0% to 5%	Generic Gas DSM hearing assumption
	Energy Star Houses	Unit gas savings increased from 800 to 818	Generic Gas DSM hearing assumption
		Free ridership raised from 0% to 5%	Generic Gas DSM hearing assumption
		Incremental costs reduced from $4,000 to $3,020	Generic Gas DSM hearing assumption
		Electric unit savings of 1,000 kwh added	Generic Gas DSM hearing assumption
Small Commercial			
	Gas to gas furnace replacement	Free ridership increased from 10% to 17.5%	Generic Gas DSM hearing assumption
		Incremental cost from $500 to $650	Generic Gas DSM hearing assumption
	Programmable Thermostats	Unit gas savings increased from 212 to 519 m3/y	Generic Gas DSM hearing assumption
		Free ridership increased from 11% to 20%	Generic Gas DSM hearing assumption
		Unit electric savings increased from 100 to 921 kw/y	Generic Gas DSM hearing assumption
	Rinse n Save	Unit gas savings increased from 1,270 to 2,434 m3/y	Generic Gas DSM hearing assumption
		Unit water savings increased from 299.2 to 432.8 m3/y	Generic Gas DSM hearing assumption
Multi-Residential			
	Showerheads	Unit gas savings raised from 90 to 115 m3/y	Generic Gas DSM hearing assumption
		Unit water savings reduced from 37.8 to 30.97 m3/y	Generic Gas DSM hearing assumption
		Measure life from 12 to 10 years	Generic Gas DSM hearing assumption
		Incremental cost increased from $13 to $15	Generic Gas DSM hearing assumption

LRAM Verification

The audit initially called for a verification of the LRAM calculations. For this to be possible certain information must be filed so it is on the record:

- the volumes that are built into rates
- the calculation method for LRAM balances used by the Company

This information is not available in the hearing record or in the 2006 Evaluation Report. Therefore verification of the LRAM calculation has not been done. New annual effective volumes have been provided in Table 2 that the Company will use to perform the LRAM calculation. If verification of the LRAM calculation is desired in future audits, the record will need to be established in advance.

2005 Post Audit LRAM Calculation

based on 96,091,798 FE m3 built into rates

Rate	Budget Net Partially Effective	Actual Net Partially Effective	2005 LRAM Volume Volume Variance	2005 Q2 Distribution Margin	2005 LRAM $	
Rate 1	25,974,169	14,923,805	11,050,364	8.2576	$ 912,490	102%
Rate 6	8,717,597	8,474,306	243,291	5.2158	$ 12,689	2%
Rate 100	6,961,919	9,513,784	(2,551,865)	3.5953	$ (91,746)	-24%
Rate 110	3,124,791	2,840,220	284,571	1.5303	$ 4,355	3%
Rate 115	1,988,503	865,668	1,122,835	0.8400	$ 9,431	10%
Rate 145	2,417,464	3,746,536	(1,329,072)	1.8053	$ (23,994)	-12%
Rate 170	6,358,975	4,331,391	2,027,584	0.4461	$ 9,045	19%
Totals	55,543,417	44,695,709	10,847,708		$ 832,271	

Rate	LRAM allocation
Rate 1	102%
Rate 6	2%
Rate 100	-24%
Rate 110	3%
Rate 115	10%
Rate 145	-12%
Rate 170	19%
Totals	100%

2006 Post Audit LRAM Calculation

based on 84,277,839 FE m3 built into rates

Rate	Budget Net Partially Effective	Actual Net Partially Effective	2006 LRAM Volume Volume Variance	2006 Q1 Distribution Margin	2006 LRAM $	
Rate 1	18,545,462	11,120,326	7,425,136	8.2764	$ 614,533	132%
Rate 6	7,567,858	8,870,884	(1,303,026)	5.3861	$ (70,183)	-23%
Rate 100	5,213,260	12,112,258	(6,898,998)	3.6553	$ (252,178)	-123%
Rate 110	2,825,981	1,641,329	1,184,653	1.4916	$ 17,671	21%
Rate 115	1,798,352	741,958	1,056,393	0.8109	$ 8,567	19%
Rate 145	2,144,188	2,004,782	139,407	1.8854	$ 2,628	2%
Rate 170	5,777,441	1,751,749	4,025,692	0.4592	$ 18,485	72%
Totals	43,872,542	38,243,285	5,629,257		**$ 339,524**	

Rate	LRAM allocation
Rate 1	132%
Rate 6	-23%
Rate 100	-123%
Rate 110	21%
Rate 115	19%
Rate 145	2%
Rate 170	72%
Totals	100%

Friday, September 07, 2007

Judith Ramsay
Manager, DSM Research and Evaluation
Enbridge Gas Distribution Inc.

Dear Judith,

This letter documents the auditor's findings of a review of the "Energy-Efficient & Energy Star Window Sales Trends in the Ontario Residential Low-Rise Market" report completed by Marbek Resource Consultants on May 17, 2007. The window manufacturer surveys reported changes in the sales penetration of energy-efficient and ENERGY STAR windows in the Enbridge territory during 2004-2006.

As part of a 2005 settlement agreement the parties agreed to a pilot targeted market transformation incentive of $300,000 for efficient windows if a third party evaluation confirmed that after a 12 month period the market share for Energy Star windows in the franchise area had increased 10% above the 2004 base year. A 2006 settlement agreement included another $300,000 incentive for further raising the market share by 5% from the 2005 results.

The table below summarizes the window manufacturer survey results from the Marbek report.

ENERGY STAR Windows Sales Penetration (As reported by Window Mnfrs)			
Housing Type	**2004**	**2005**	**2006**
Existing Low-Rise Res Housing in Ontario	38%	66%	70%
New Low-Rise Res Housing in Ontario	3%	5%	12%
All Low-Rise Res Housing in Ontario	9%	17%	25%

Results for 2005 show an ENERGY STAR window market increase of 28% for existing homes, a 2% increase in new homes and an 8% increase for all homes.

Results for 2006 reflect a 4% market increase for existing homes, a 7% increase for new homes and an 8% increase for all homes.

If one is to follow a strict interpretation of the 2005 and 2006 settlement agreements then the $300,000 incentive would not be given for 2005 (needed a 10% increase and achieved 8%) but the $300,000 incentive would be warranted for the 2006 results (needed a 5% increase and achieved 8%).

David F. Duda
Project Manager
RLW Analytics, Inc.

SETTLEMENT PROPOSAL

CLEARANCE OF 2005 AND 2006 DEMAND SIDE MANAGEMENT VARIANCE ACCOUNTS

December 7, 2007

TABLE OF CONTENTS

PREAMBLE

This Settlement Proposal is filed with the Ontario Energy Board ("OEB" or "Board") in connection with the application of Enbridge Gas Distribution Inc. ("Enbridge Gas Distribution" or the "Company"), for an order or orders approving the final balances of the 2005 and 2006 LRAM, DSM and SSM variance accounts and clearance into rates, as at April 1, 2008.

The framework for stakeholder consultations and the monitoring, evaluation and audit of DSM program results has been the subject of Board Decisions in prior rate cases brought forward by the Company. The methodologies to calculate the LRAM, DSMVA and SSM in each of 2005, the 2005 "stub" period, and 2006, have also been the subject of Board decisions and approvals. Consistent with the framework approved by the Board in past proceedings, the Company's 2005 and 2006 DSM programs were the subject of monitoring and evaluation reports. These results were then the subject of an independent audit undertaken by RLW Analytics. Both the Monitoring and Evaluation Reports and the Independent Audit were then considered by the Audit Committee chosen by the DSM Consultative.

Following a detailed review of these reports, the Audit Committee made recommendations to the DSM Consultative and the Company. Both the DSM Consultative and the Company have accepted the following settlement recommendations made by the Audit Committee. In respect of the 2005 SSM, the Audit Committee has recommended a reduction in the SSM from $977,032 to zero. The Audit Committee has also recommended a reduction in the 2006 SSM from $12,522,731 to $11,229,075 (which includes $300,000 for the Market Transformation programs). The Audit Committee confirmed the amounts calculated for the 2005 and 2006 DSMVAs and LRAMs are appropriate. The Company accepts these recommendations.

Accordingly, there is a complete settlement in respect of the amounts to be recorded in each of the subject DSM variance accounts for 2005 and 2006. There is also a complete settlement as to the clearance of these amounts effective April 1, 2008.

All aspects of this Settlement Proposal are subject to approval by the Board. The parties to this settlement all agree that this Settlement Proposal is a package: The individual aspects of this agreement are inextricably linked to one another, and none of the parts of this settlement are severable. As such, there is no agreement amongst the parties to settle any aspect of the issues addressed in this Settlement Proposal, in isolation, from the balance of the issues addressed herein. The parties agree, therefore, that in the event that the Board does not accept this Settlement Proposal in its entirety, then (in accordance with the Board's *Settlement Conference Guidelines*) the Board will reject the Settlement Proposal in its entirety.

Best efforts have been made to identify all of the evidence that supports this Settlement Proposal. Parties who participated in settlement negotiations are identified below. Any party that is identified as not having participated in settlement negotiations takes no position on any aspect of this Settlement Proposal.

TERMS OF SETTLEMENT

With this preamble, the following represents the settlement reached amongst the parties.

Parties agree that the following amounts will be recorded in the following DSM Variance Accounts:

2005 Lost Revenue Adjustment Mechanism Variance Account (2005 LRAM)	($832,271)
2005 Demand Side Management Variance Account (2005 DSMVA)	$697,550
2005 Shared Saving Mechanism Variance Account (2005 SSM)	$Nil
2006 Lost Revenue Adjustment Mechanism Variance Account (2006 LRAM)	($339,524)
2006 Demand Side Management Variance Account (2006 DSMVA - Operating)	$374,734
2006 Shared Saving Mechanism Variance Account (2006 SSM) (*Comprised of $10,929,075 for Resource Acquisition programs, plus $300,000 for Market Transformation)	$11,229,075 *

Parties further agree that each of the amounts recorded in the above-noted DSM Variance Accounts should be cleared as at April 1, 2008. Therefore, the sum of $11,129,564 will be cleared as a one-time billing adjustment, together with all other deferral and variance accounts for which the Company has requested the Board's approval for clearance, at April 1, 2008. The manner in which the accounts are cleared will reflect Board approved methodology.

Participating Parties: CCC, Energy Probe, GEC, IGUA, Pollution Probe, SEC, and VECC.

Approval: All participating parties accept and agree with this Settlement Proposal.

Evidence: The evidence in relation to this issue includes the following:

A-1-2 Application
B-1-1 Overview and Summary of Application