UNDERTAKING JT1.34

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Technical Conference TR, page 133

Enbridge to respond to questions Environmental Defence will provide in writing shortly.

RESPONSE

1. Re exhibit I.T3.EGDI.ED.12:

Please provide:

a. The cumulative net TRC benefits of Enbridge's DSM programs since 1997 divided by the average number of Enbridge customers over those years; and

b. The cumulative net TRC benefits of Enbridge's *residential* DSM programs since 1997 divided by the average number of Enbridge's *residential* customers over those years.

Enbridge provides the following response:

a) The chart on the following page contains the cumulative net TRC benefits of all DSM programs from 1997 onwards, and the net TRC benefit *per* Enbridge customer from 1997 onwards. Please note that the below corrects a discrepancy in data provided in response to Environmental Defence Interrogatory #12, filed as Exhibit I.T3.EGDI.ED.12, which will be corrected in a subsequent submission.

b) The chart on the following page also contains the cumulative net TRC benefits of the residential DSM programs from 1997 onwards, and the net TRC benefit *per* residential DSM customer from 1997 onwards.

Witnesses: K. Mark
S. Moffat
B. Ott

Year	Total TRC Net Benefits	Residential TRC Net Benefits [1]	Average Total Customers	Average Residential Customers	TRC Net Benefit per Customer	TRC Net Benefit per Residential Customer
1997	$23,768,711	$13,438,939	1,325,701	1,192,788	$17.93	$11.27
1998	$54,781,095	$30,973,484	1,376,564	1,241,626	$39.80	$24.95
1999	$57,137,198	$32,305,635	1,426,784	1,289,546	$40.05	$25.05
2000	$74,621,798	$44,468,964	1,479,414	1,339,786	$50.44	$33.19
2001	$166,324,425	$87,409,486	1,529,651	1,387,787	$108.73	$62.98
2002	$147,498,185	$68,105,418	1,580,820	1,436,944	$93.30	$47.40
2003	$125,933,313	$62,941,236	1,635,855	1,490,085	$76.98	$42.24
2004	$135,958,467	$73,627,091	1,688,843	1,541,300	$80.50	$47.77
2005	$195,672,737	$117,059,031	1,735,906	1,585,943	$112.72	$73.81
2006	$180,667,779	$72,115,536	1,782,807	1,630,235	$101.34	$44.24
2007	$199,798,420	$82,044,037	1,824,776	1,670,186	$109.49	$49.12
2008	$182,706,679	$44,796,421	1,865,005	1,708,520	$97.97	$26.22
2009	$215,833,455	$63,549,643	1,887,588	1,732,187	$114.34	$36.69
2010	$184,593,043	$49,793,198	1,926,282	1,772,503	$95.83	$28.09
2011	$173,183,348	$50,009,653	1,960,367	1,802,578	$88.34	$27.74
2012	$167,684,328	$21,304,121	1,994,901	1,836,267	$84.06	$11.60
2013	$79,366,462	$863,306	2,029,999	1,869,325	$39.10	$0.46
2014	$89,622,342	$7,257,053	2,063,835	1,901,207	$43.43	$3.82
Total	**$2,455,151,786**	**$922,062,251**	**31,115,098**	**28,428,813**	**$78.91**	**$32.43**

1. Residential TRC Net Benefits for 1997 and 1998 are prorated based on the Residential TRC from 1999

Witnesses: K. Mark
S. Moffat
B. Ott

2. Re exhibit I.T3.EGDI.ED.13:

a. For both 2016 and 2017, please provide the *gross* TRC benefits arising from Enbridge's residential DSM programs (i.e. the avoided costs) divided by the total number of Enbridge's residential customers in each year.

Enbridge provides the following response:

Please find in the chart below the *net* and *gross* TRC benefits per residential DSM customer for the years 2016 and 2017.

Year	Residential TRC Net Benefits [1]	Residential TRC Gross Benefits [1 2]	Residential Customers	TRC Net Benefit per Residential Customer	TRC Gross Benefit per Residential Customer
2016	$12,676,899	$14,742,183	1,968,960	$6.44	$7.49
2017	$19,117,314	$22,316,431	2,004,109	$9.54	$11.14
Total	**$31,794,213**	**$37,058,614**	**3,973,069**	**$8.00**	**$9.33**

1. Residential TRC Benefits includes Adaptive Thermostats, Home Energy Conservation (HEC), and Low Income Weatherization

Witnesses: K. Mark
S. Moffat
B. Ott

3. Re exhibit I.T3.EGDI.ED.17:

> This interrogatory reads as follows: “Section 5.1.3 and Appendix E contain a benchmarking analysis. Please reproduce the tables and figures contained therein including only those jurisdictions where the utilities in question are required to implement all cost-effective DSM.”
>
> The response reproduced the tables appearing in Section 5.1.3 of the Navigant report but not those in Appendix E. Please also reproduce the tables and figures in Appendix E including only those jurisdictions where the utilities in question are required to implement all cost-effective DSM.

Enbridge provides the following response:

Please see on the following pages the revised versions of Figures E-1, E-2, E-3, E-4, E-5 and Table E-3. Please note that Enbridge has not investigated in detail the characteristics of the below noted utilities or their DSM portfolios. As such significant differences may exist in terms of the types of programs, technologies, input assumptions, adjustment factors, or other details between Enbridge’s DSM activities and those of the utilities displayed below.

Witnesses: K. Mark
S. Moffat
B. Ott

Figure E-1. 2012 Retail Cost of Natural Gas [1,2,3,4,5,6,7]

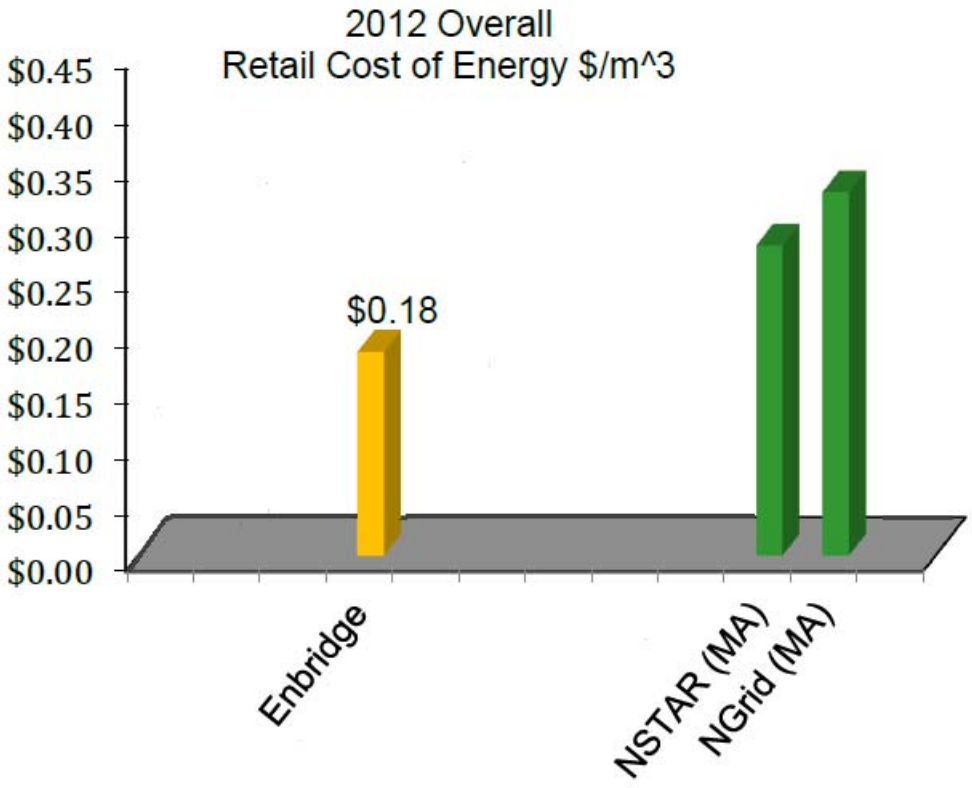


Figure E-2. 2012 DSM Spending as a Percentage of Revenue [1,2,3,4,5,6,7]

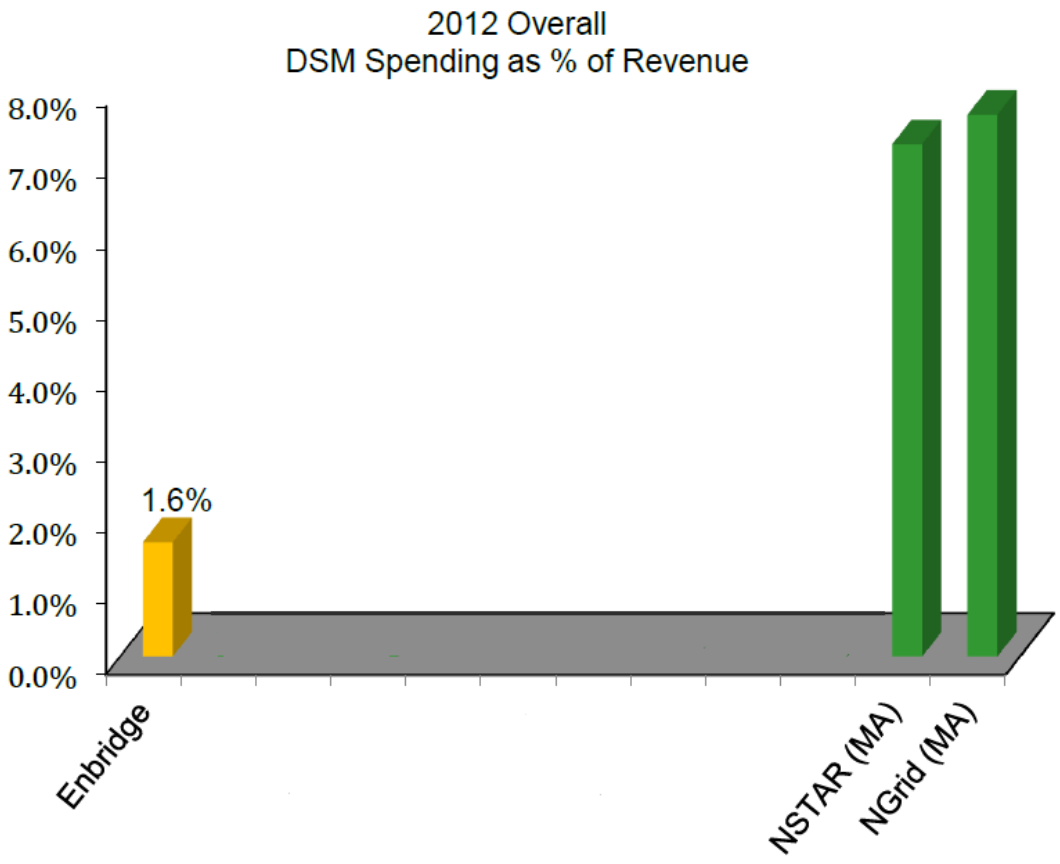


Figure E-3. 2012 Gross Energy Savings as a Percentage of Gas Sales [1,2,3,4,5,6,7]

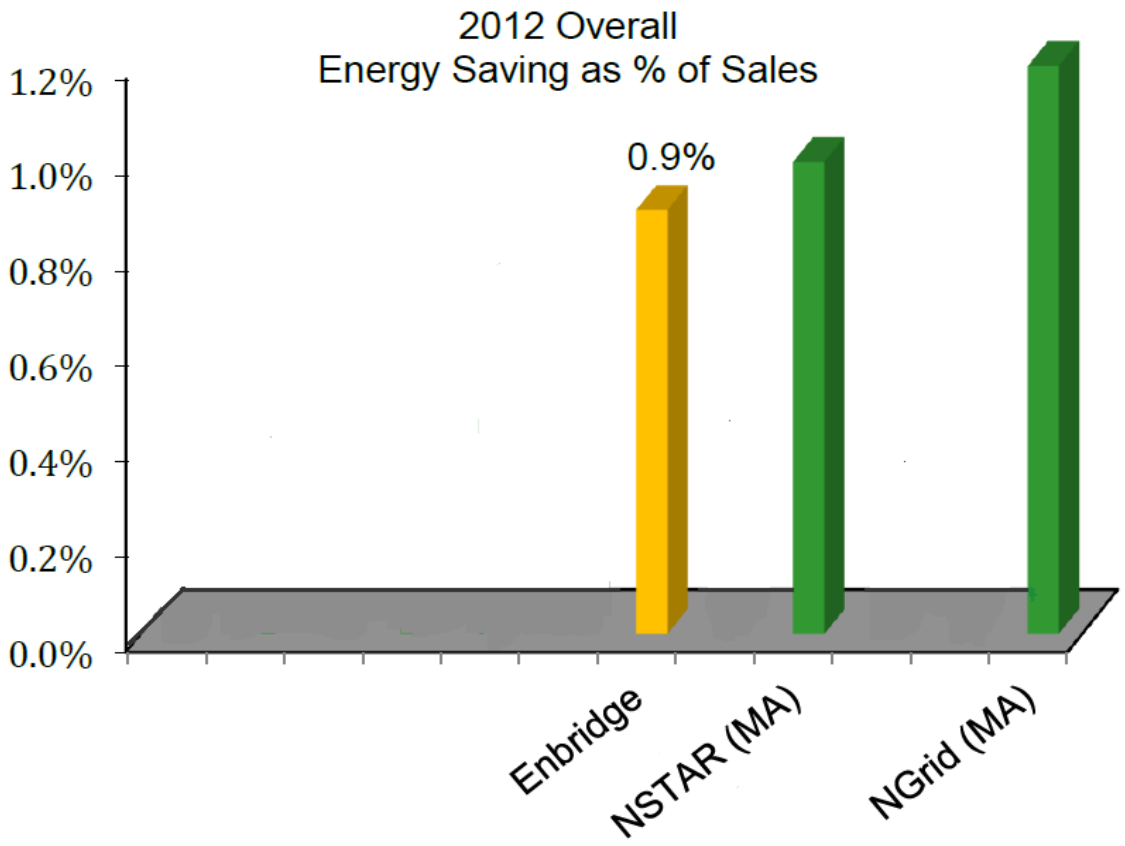


Figure E-4. 2012 Cost of Natural Gas Savings [1,2,3,4,5,6,7]

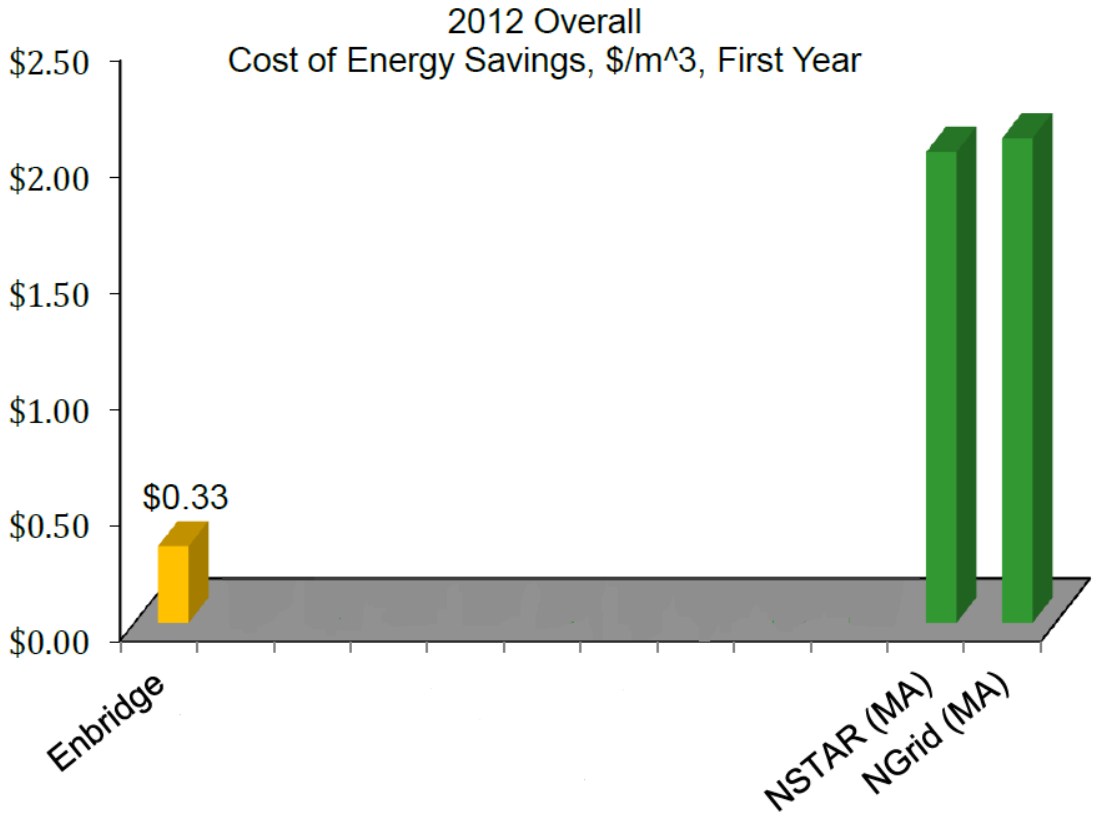
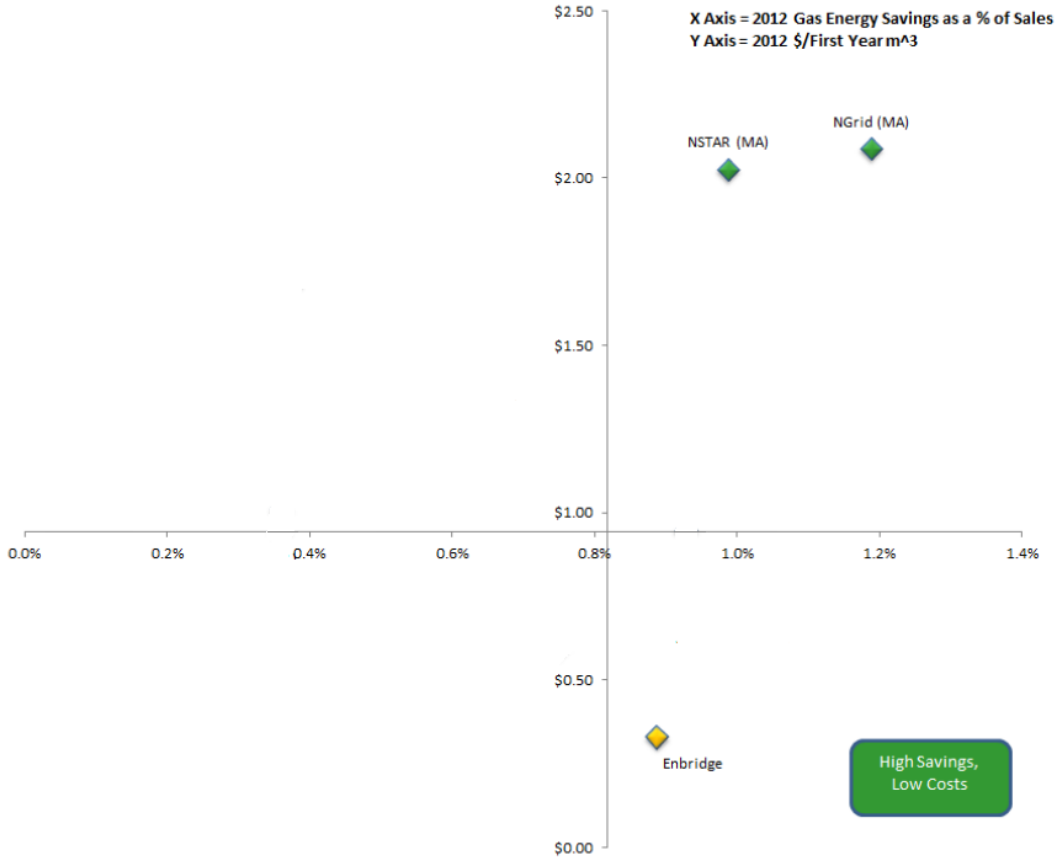


Figure E-5. 2012 Natural Gas Savings and First Year Costs ($/m^3) Over All Sectors [1,2,3,4,5,6,7]



Witnesses: K. Mark
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Table E-3 Detailed Benchmark Data [1,2,3,4,5,6,7]
2012- DSM Results by State

		2012 Incremental DSM Results		2012 Retail				Normalized DSM Results		
Customer Sector	Utility	m3	Costs $M	Customers	Annual m3	Revenue $M	Cost of Energy $/m3	Spending as a % of Revenue	Energy Savings as a % of Sales	Cost of Savings $/m3
Residential										
Canada	Enbridge	14,086,586	$16.6	1,929,313	3,868,127,000	$1,239	$0.32	1.3%	0.4%	$1.18
Massachusetts	NGrid	27,009,771	$71.1	808,556	1,942,084,180	$779	$0.40	9.1%	1.4%	$2.63
Massachusetts	NSTAR	4,867,191	$19.5	245,507	505,168,314	$212	$0.42	9.2%	1.0%	$4.01
C&I										
Canada	Enbridge	78,445,878.0	$14.0	160,167.0	6,567,894,000	$666	$0.10	2.1%	1.2%	$0.18
Massachusetts	NGrid	14,108,121.2	$14.6	82,795.0	1,517,942,300	$346	$0.23	4.2%	0.9%	$1.04
Massachusetts	NSTAR	6,966,670.1	$4.4	27,295.0	692,874,911	$120	$0.17	3.7%	1.0%	$0.64
Overall										
Canada	Enbridge	92,532,464.0	$30.6	2,089,480.0	10,436,021,000	$1,905	$0.18	1.6%	0.9%	$0.33
Massachusetts	NGrid	41,117,892.4	$85.8	891,361.0	3,460,026,479	1,124.6	$0.33	7.6%	1.0%	$2.03
Massachusetts	NSTAR	11,833,861.2	$24.0	272,802.0	1,198,043,225	332.2	$0.28	7.2%	1.0%	$0.66

[1] (0.2% annual savings in 2011, ramping up to 1.5% in 2019) (ACEEE (2014) *State and Local Policy Database: Illinois*, http://database.aceee.org/state/illinois#sthash.bGWyz5jh.dpuf)
[2] http://database.aceee.org/state/iowa#sthash.8lQbPs2e.dpuf
[3] http://database.aceee.org/state/michigan#sthash.TZP0sYSN.dpuf
[4] Vermont law requires program administrators to set *electricity* energy utility budgets at a level that would realize "all reasonably available, cost-effective energy efficiency. A separate proceeding for setting gas energy efficiency budgets is expected in the future, but is not currently in place.
[5] http://database.aceee.org/state/massachusetts#sthash.ulRAAgsM.dpuf
[6] The Green Communities Act requires that electric and gas utilities procure all cost-effective energy efficiency before more expense supply resources http://database.aceee.org/state/massachusetts#sthash.ulRAAgsM.dpuf).
[7] http://database.aceee.org/state/minnesota#sthash.Lr12YnGK.dpuf

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