

**State of Michigan  
Energy Efficiency Potential**

Energy Center of Wisconsin (ECW), July 2006 Study  
Mean Results from 5,000 Iteration Monte-Carlo Analysis

5-Year Average Annual	Residential	Commercial & Industrial	Overall
Program Funding (Millions)	\$37	\$77	\$114
Electric Demand (MW)	29	62	91
Electric Energy (gWh)	297	359	657

5-Year Cumulative*	Residential	Commercial & Industrial	Overall
Program Funding (Millions)	\$184	\$387	\$571
Electric Demand (MW)	147	308	455
Electric Energy (gWh)	1,486	1,797	3,283

\*Represents total savings that occur in year six, after five years of operation

10-Year Average Annual	Residential	Commercial & Industrial	Overall
Program Funding (Millions)	\$51	\$95	\$146
Electric Demand (MW)	46	76	122
Electric Energy (gWh)	402	446	847

10-Year Cumulative*	Residential	Commercial & Industrial	Overall
Program Funding (Millions)	\$509	\$949	\$1,458
Electric Demand (MW)	463	755	1,218
Electric Energy (gWh)	4,019	4,455	8,474

\*Represents total savings that occur in year eleven, after ten years of operation

Levelized Resource Cost (cents/kWh)	2.25 to 2.9
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Avoided Peak Capacity: \$80 per kW

Discount rate: 6.78% ± 2%

Avoided Cost: 6 cents/kWh ± 0.5 cents/kWh

July 26, 2006

TO: Rob Ozar, Michigan Public Service Commission

FROM: Scott Pigg, ECW

RE: Results of applying WI energy efficiency model to MI, and documentation of modifications.

**Results**

Based on the modifications described below, here are the results of applying the Wisconsin energy efficiency potential model to Michigan.

TABLE 1, ESTIMATED 5-YEAR OVERALL MI ENERGY EFFICIENCY POTENTIAL

	<b>Average annual</b>	<b>5-year total<sup>a</sup></b>
<b>Program Funding</b> (\$ millions)	91 to 141	453 to 707
<b>Electric Demand</b> (MW)	70 to 120	348 to 602
<b>Electric Energy</b> (millions of kWh)	520 to 819	2,599 to 4,093

<sup>a</sup>Represents total savings that occur in Year 6, following five years of program operation.

Note: ranges are 90% probability boundaries from probabilistic uncertainty analysis.

TABLE 2, ESTIMATED 10-YEAR OVERALL MI ENERGY EFFICIENCY POTENTIAL

	<b>Average annual</b>	<b>10-year total<sup>a</sup></b>
<b>Program Funding</b> (\$ millions)	115 to 183	1,147 to 1,834
<b>Electric Demand</b> (MW)	87 to 187	873 to 1,868
<b>Electric Energy</b> (millions of kWh)	667 to 1,062	6,672 to 10,622

<sup>a</sup>Represents total savings that occur in Year 11, following five years of program operation.

Note: ranges are 90% probability boundaries from probabilistic uncertainty analysis.

The above are with a target avoided peak capacity of \$80/kW. As requested, I also ran the model for \$0/kW and \$60/kW, and found that as suspected, changing this value does not make any practical difference in light of the uncertainty inherent in other aspects of the model. Nonetheless, I am attaching a spreadsheet with more detailed statistics for all three runs, along with a compilation of the 1,110 inputs (for documentation purposes).

## Modifications

Here are the changes I made to our potential study model:

1. I removed Markets 31 through 36 pertaining to customer-sited renewables
2. I zeroed out program spending related only to gas efficiency improvements, and removed gas impacts (except negative impacts—see Item 3 below). Affected markets are:

Market #	Name	% of program cost removed as being gas-related only
1	Commercial new construction	41%
4	C&I Boiler replacement/upgrade	100%
7	Commercial ventilation systems	20%
13	Industrial manufacturing process	85%
15	Agricultural efficiency improvements	4%
21	Multifamily heating system replacement	100%
23	Gas water heater upgrades	100%
24	New home construction	0%
25	Remodeling shell improvements	0%
27	Residential direct install	45%
28	Residential shell improvements	0%
29	Residential clothes washers	62%

3. I disabled a mechanism that adjusts (downward) target electric avoided costs to account for increases in gas consumption for some programs. I retained estimates of gas consumption increases arising from some program areas for reporting purposes, though these do not affect program spending or electric impact estimates. Affected markets are #3, #5, #23 and #30.

4. I added scaling factors to account for the larger Michigan population and economic base. The scaling factors are based on the ratio of MI to WI GWh sales:

Sector electricity sales (GWH)	MI (2006 projection)	WI (2004)	Ratio
Residential	33,318	19,124	1.74
Commercial	38,318	22,351	1.71
Industrial	32,630	24,329	1.34

Sources: MI --- 6/28/06 email from Rob Ozar; WI --- 2005 Wisconsin Energy statistics

Program costs and impacts are scaled up by these ratios (see attachment). I assigned  $\pm 20$  percent uncertainty to these scaling factors.

5. I added climate adjustment factors to account for fewer Michigan heating degree days and more cooling degree days:

Population-weighted degree days (65F)	MI	WI	Ratio
Heating	6,951	7,793	0.89
Cooling	568	502	1.13

Source: backed out from NCDC Series F-1 and F-2 reports of actual degree days and percent deviation from normal (<http://www.ncdc.noaa.gov/oa/documentlibrary/hcs/hcs.html>)

I also estimated the proportion of program-level impacts that are heating or cooling related: only that fraction of the total program impacts are adjusted by the above ratios. I assigned  $\pm 10$  percent uncertainty to the climate adjustment factors and 25 percent uncertainty to fraction of impacts to be adjusted where it was less than 1.0. The attachment shows the scaling factor and climate adjustment factors for each market.

6. I changed to discount rate to 6.78% (retaining the modeled  $\pm 2$  percentage point uncertainty).
7. I changed the target avoided cost for electricity to  $6 \pm 0.5$  cents/kWh.

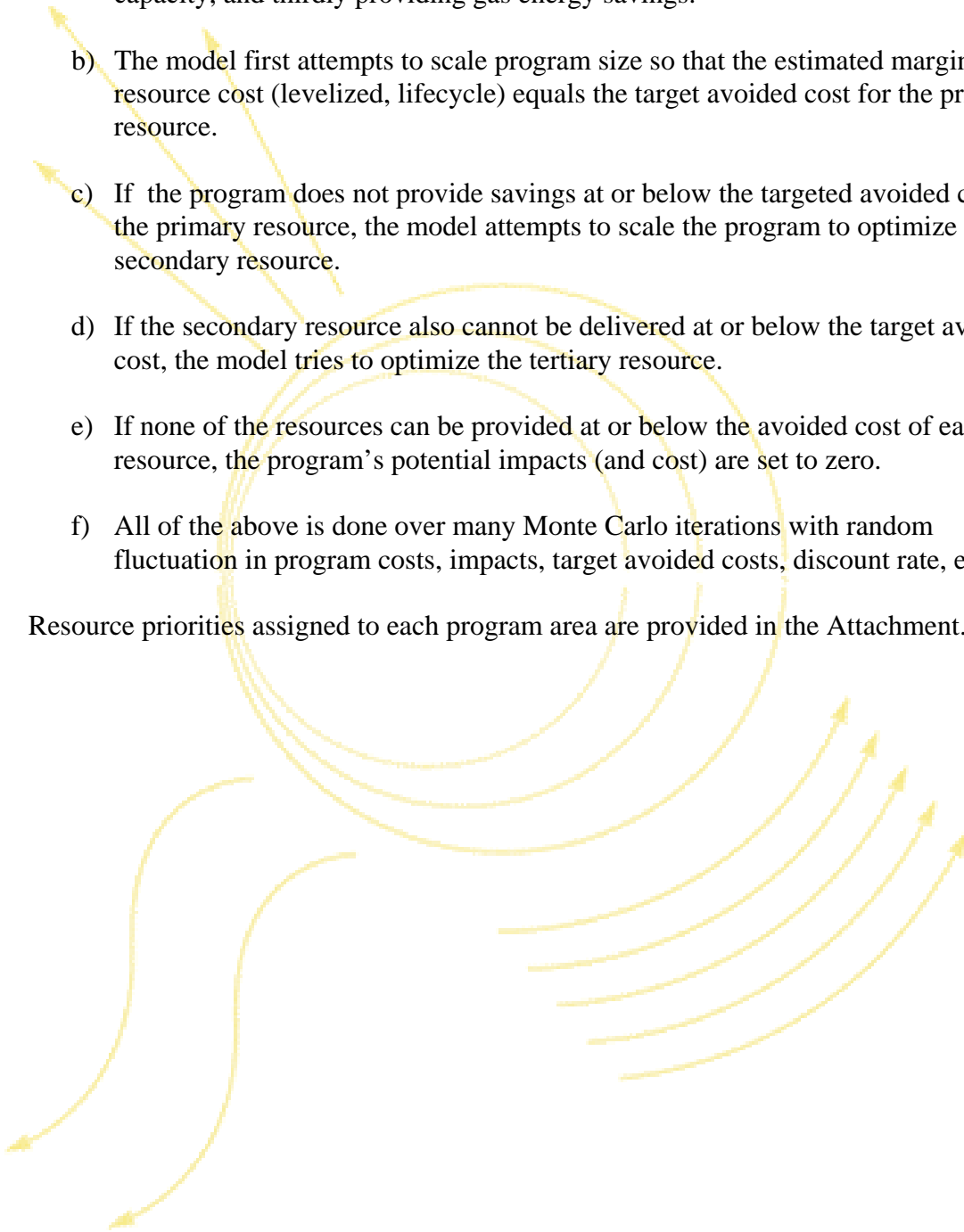
I also want to clarify something that I didn't fully address in our conference call on July 11: namely, the question of how the model optimizes program size and impacts across the three different resources (electric energy, electric peak demand and gas energy). This has to do with how program spending and impacts are scaled up or down based on the estimated change in marginal cost relative to a target avoided cost. The model works thusly:

- a) Each program area is assigned a primary, secondary and tertiary resource. For example, Commercial New Construction (Program Area 1.01) is designated as primarily targeting electric energy savings, secondarily addressing peak electric

capacity, and thirdly providing gas energy savings.

- b) The model first attempts to scale program size so that the estimated marginal resource cost (levelized, lifecycle) equals the target avoided cost for the primary resource.
- c) If the program does not provide savings at or below the targeted avoided cost of the primary resource, the model attempts to scale the program to optimize the secondary resource.
- d) If the secondary resource also cannot be delivered at or below the target avoided cost, the model tries to optimize the tertiary resource.
- e) If none of the resources can be provided at or below the avoided cost of each resource, the program's potential impacts (and cost) are set to zero.
- f) All of the above is done over many Monte Carlo iterations with random fluctuation in program costs, impacts, target avoided costs, discount rate, etc.

Resource priorities assigned to each program area are provided in the Attachment.



# Attachment

Program Area	Program Name	Resource priority			Scaling factor	MI / WI adjustments	
		1	2	3		Climate adjustment factor	Climate sensitive fraction
1.01	High Performance New Buildings	kwh	kW	therms	1.71	1.13	0.25
2.01	Unitary HVAC Replacement and System Improvements	kWh	kW	therms	1.71	1.13	1.00
3.01	Lighting Remodeling & Replacement Upgrades	kWh	kW	therms	1.71	1.13	0.15
4.01	Boiler Replacement & System Improvements	therms	kWh	kW	1.71	0.89	1.00
5.01	Lighting System Retrofit Improvements	kWh	kW	therms	1.71	1.13	0.15
6.01	Chiller Replacement and System Improvements	kWh	kW	therms	1.71	1.13	1.00
7.01	Ventilation System Improvements	kWh	kW	therms	1.71	1.13	0.50
8.01	Refrigeration System Improvements	kWh	kW	therms	1.71	1.00	1.00
9.01	Motors: New, Replacement and Repair Market	kWh	kW	therms	1.34	1.00	1.00
10.01	Compressed Air Systems Improvement	kWh	kW	therms	1.34	1.00	1.00
11.01	Fan and Blower Systems Improvement	kWh	kW	therms	1.34	1.00	1.00
12.01	Pump Systems Improvement	kWh	kW	therms	1.34	1.00	1.00
13.01	Manufacturing Process Upgrades	therms	kWh	kW	1.34	1.00	1.00
14.01	Water and Wastewater System Improvements	kWh	kW	therms	1.71	1.00	1.00
15.01	Agriculture Energy Efficiency Upgrades	kWh	kW	therms	1.71	1.00	1.00
16.01	ENERGY STAR Marketing	kWh	kW	therms	1.74	1.00	1.00
16.02	Retailer Promotion of ENERGY STAR Consumer Electronics	kWh	kW	therms	1.74	1.00	1.00
17.01	Incentives for CFLs	kWh	kW	therms	1.74	1.00	1.00
18.01	Multi-Family Common Area Lighting - Direct Install Market	kWh	kW	therms	1.74	1.00	1.00
19.01	Incentives for variable speed furnaces	kWh	kW	therms	1.74	0.89	1.00
20.01	Central AC Upgrade Incentives	kW	kWh	therms	1.74	1.13	1.00
20.02	HVAC installation practices	kW	kWh	therms	1.74	1.13	1.00
21.01	Multi-Family Heating System Replacement - medium and larger buildings	therms	kWh	kW	1.74	0.89	1.00
21.02	Multi-Family Heating System Replacement - small buildings	therms	kWh	kW	1.74	0.89	1.00
22.01	Room AC early retirement	kW	kWh	therms	1.74	1.13	1.00
22.02	Room AC Retailer Stocking Incentives	kW	kWh	therms	1.74	1.13	1.00
23.01	Incentives for Homeowner Water Heater Purchases - Fuel Conversion	kWh	kW	therms	1.74	1.00	1.00
23.02	Incentives for Homeowner Water Heater Purchases - Power Vent/Close the Hole	therms	kWh	kW	1.74	1.00	1.00
23.03	Incentives for Homeowner Water Heater Purchases - On-Demand/Close the Hole	therms	kWh	kW	1.74	1.00	1.00
24.01	Incentives for Energy Efficient (EE) New Home Construction	kWh	kWh	kW	1.74	1.13	1.00
25.01	Remodeling shell improvements	kWh	kWh	kW	1.74	1.13	1.00
26.01	Dehumidifier early retirement	kW	kWh	therms	1.74	1.13	1.00
26.02	Dehumidifier non-dispatchable load control	kW	kWh	therms	1.74	1.13	1.00
27.01	Direct Install Market through Partners - Owner-Occupied	kwh	therms	kW	1.74	1.00	1.00
27.02	Direct Install Market by Program Staff - Owner-Occupied	kwh	therms	kW	1.74	1.00	1.00
27.03	Direct Install Market by Program Staff - Multi-Family (5+ units)	kwh	therms	kW	1.74	1.00	1.00
28.01	Shell improvements	kWh	kWh	kW	1.74	1.13	1.00
29.01	Incentives for Homeowner Clothes Washer Purchases	kWh	therms	kW	1.74	1.00	1.00
30.01	Multi-Family Fuel Switching	kwh	kW	therms	1.74	0.89	0.60

**Target avoided peak demand charge: \$0/kw**

**Monte Carlo results (5,000 iterations)**

(note: x1 is the p1 percentile of the MC distribution; similarly, x2 is the p2 percentile)

	<i>Name</i>	<i>Minimum</i>	<i>Mean</i>	<i>Maximum</i>	<i>x1</i>	<i>p1</i>	<i>x2</i>	<i>p2</i>	<i>x2-x1</i>	<i>p2-p1</i>
5-year horizon	Overall Potential 5-year / Cost	71.96953	112.3281	186.7403	88.76383	5%	139.4619	95%	50.69804	90%
	Overall Potential 5-year / MW	52.79566	84.18239	155.5052	66.72051	5%	104.1056	95%	37.38504	90%
	Overall Potential 5-year / kWh (10^6))	422.5601	655.2924	1031.653	512.105	5%	819.7314	95%	307.6265	90%
	Overall Potential 5-year / therms (10^6))	-5.768744	-2.623417	-0.984118	-3.796397	5%	-1.621345	95%	2.175052	90%
	C&I potential 5-year / Cost	43.78754	77.74165	135.9982	59.43093	5%	98.43422	95%	39.00329	90%
	C&I potential 5-year / MW	38.16854	62.00793	98.04802	48.32421	5%	77.91998	95%	29.59577	90%
	C&I potential 5-year / kWh (10^6))	227.9301	361.1928	574.348	283.0411	5%	449.7203	95%	166.6792	90%
	C&I potential 5-year / therms (10^6))	-3.873502	-1.811165	-0.791246	-2.558235	5%	-1.214938	95%	1.343297	90%
	Res potential 5-year / Cost	15.8145	34.58648	68.89109	23.15393	5%	49.35664	95%	26.20272	90%
	Res potential 5-year / MW	9.020805	22.17446	82.9293	13.28291	5%	34.05243	95%	20.76952	90%
10-year horizon	Overall Potential 10-year / Cost	90.66836	141.0474	232.196	111.6422	5%	174.34	95%	62.69786	90%
	Overall Potential 10-year / MW	65.90051	105.5988	227.5463	83.27046	5%	130.9657	95%	47.69522	90%
	Overall Potential 10-year / kWh (10^6))	522.2549	841.9772	1339.796	659.0829	5%	1052.609	95%	393.5259	90%
	Overall Potential 10-year / therms (10^6))	-7.705786	-3.345701	-1.177212	-4.877479	5%	-2.075823	95%	2.801656	90%
	C&I potential 10-year / Cost	51.98944	95.33387	161.5883	73.12608	5%	120.4697	95%	47.34362	90%
	C&I potential 10-year / MW	45.61554	75.9359	118.4931	59.09518	5%	94.98146	95%	35.88628	90%
	C&I potential 10-year / kWh (10^6))	288.7442	447.6371	730.3587	351.2828	5%	557.442	95%	206.1591	90%
	C&I potential 10-year / therms (10^6))	-4.897213	-2.267048	-0.961724	-3.207487	5%	-1.530619	95%	1.676868	90%
	Res potential 10-year / Cost	20.1828	45.7135	93.86737	30.51948	5%	65.04745	95%	34.52797	90%
	Res potential 10-year / MW	12.01687	29.66289	154.6748	17.41115	5%	45.90928	95%	28.49812	90%
Res potential 10-year / kWh (10^6))	160.9458	394.3401	812.0105	252.4945	5%	576.7631	95%	324.2685	90%	
Res potential 10-year / therms (10^6))	-4.871405	-1.078653	0.492051	-2.256776	5%	-0.120951	95%	2.135825	90%	

**Target avoided peak demand charge: \$60/kw**

	<i>Name</i>	<i>Minimum</i>	<i>Mean</i>	<i>Maximum</i>	<i>x1</i>	<i>p1</i>	<i>x2</i>	<i>p2</i>	<i>x2-x1</i>	<i>p2-p1</i>
5-year horizon	Overall Potential 5-year / Cost	70.82583	113.4099	188.3879	89.41817	5%	140.165	95%	50.74679	90%
	Overall Potential 5-year / MW	56.42965	88.0915	276.183	68.33435	5%	113.7923	95%	45.45797	90%
	Overall Potential 5-year / kWh (10^6))	388.0005	657.0472	1119.047	516.0083	5%	822.6422	95%	306.6339	90%
	Overall Potential 5-year / therms (10^6))	-5.581926	-2.630346	-0.813003	-3.817281	5%	-1.621603	95%	2.195677	90%
	C&I potential 5-year / Cost	46.62452	77.71903	127.6548	59.7639	5%	98.68572	95%	38.92183	90%
	C&I potential 5-year / MW	36.72756	61.97175	97.91508	48.27689	5%	77.8335	95%	29.55661	90%

	<i>Name</i>	<i>Minimum</i>	<i>Mean</i>	<i>Maximum</i>	<i>x1</i>	<i>p1</i>	<i>x2</i>	<i>p2</i>	<i>x2-x1</i>	<i>p2-p1</i>
	C&I potential 5-year / kWh (10^6))	227.4077	361.096	586.7844	283.3775	5%	453.0052	95%	169.6277	90%
	C&I potential 5-year / therms (10^6))	-4.007523	-1.811289	-0.828625	-2.577774	5%	-1.21005	95%	1.367724	90%
	Res potential 5-year / Cost	13.87027	35.69087	84.73138	23.52374	5%	51.14764	95%	27.6239	90%
	Res potential 5-year / MW	8.985579	26.11974	223.2817	14.38695	5%	46.53338	95%	32.14643	90%
	Res potential 5-year / kWh (10^6))	113.1461	295.9512	614.5307	188.7964	5%	431.7347	95%	242.9382	90%
	Res potential 5-year / therms (10^6))	-3.48767	-0.819057	0.358068	-1.761924	5%	-7.09E-02	95%	1.691031	90%
10-year horizon	Overall Potential 10-year / Cost	89.24153	143.6307	247.5785	112.7672	5%	178.7553	95%	65.98804	90%
	Overall Potential 10-year / MW	68.843	115.0631	494.8067	85.66495	5%	167.5973	95%	81.93234	90%
	Overall Potential 10-year / kWh (10^6))	496.3957	846.5462	1478.335	663.3899	5%	1061.489	95%	398.0986	90%
	Overall Potential 10-year / therms (10^6))	-6.953809	-3.359816	-0.978095	-4.917222	5%	-2.061966	95%	2.855255	90%
	C&I potential 10-year / Cost	56.91859	95.3271	151.2708	73.35007	5%	120.415	95%	47.06493	90%
	C&I potential 10-year / MW	44.25224	75.90145	119.0672	59.10934	5%	95.17708	95%	36.06774	90%
	C&I potential 10-year / kWh (10^6))	282.9319	447.5853	701.7638	351.2851	5%	557.3735	95%	206.0884	90%
	C&I potential 10-year / therms (10^6))	-4.690584	-2.267587	-1.040031	-3.209777	5%	-1.521295	95%	1.688482	90%
	Res potential 10-year / Cost	16.94777	48.30362	131.3483	31.15606	5%	70.36218	95%	39.20613	90%
	Res potential 10-year / MW	10.94908	39.16161	428.9062	18.90554	5%	89.45967	95%	70.55414	90%
	Res potential 10-year / kWh (10^6))	142.8683	398.9609	839.6893	254.6156	5%	578.7059	95%	324.0903	90%
	Res potential 10-year / therms (10^6))	-4.681906	-1.092229	0.472321	-2.318154	5%	-0.116959	95%	2.201195	90%

**Target avoided peak demand charge: \$80/kw**

	<i>Name</i>	<i>Minimum</i>	<i>Mean</i>	<i>Maximum</i>	<i>x1</i>	<i>p1</i>	<i>x2</i>	<i>p2</i>	<i>x2-x1</i>	<i>p2-p1</i>
5-year horizon	Overall Potential 5-year / Cost	69.22127	114.4758	180.8625	90.51893	5%	141.397	95%	50.87803	90%
	Overall Potential 5-year / MW	57.52253	90.94102	237.4263	69.6275	5%	120.4141	95%	50.78659	90%
	Overall Potential 5-year / kWh (10^6))	412.627	658.0149	1100.205	519.8469	5%	818.5457	95%	298.6989	90%
	Overall Potential 5-year / therms (10^6))	-5.407682	-2.628019	-0.803499	-3.794268	5%	-1.615845	95%	2.178422	90%
	C&I potential 5-year / Cost	44.81817	77.67812	130.0833	60.05348	5%	99.01833	95%	38.96486	90%
	C&I potential 5-year / MW	37.12584	61.93582	100.874	48.68243	5%	77.645	95%	28.96257	90%
	C&I potential 5-year / kWh (10^6))	217.9335	360.952	572.281	282.5533	5%	449.1409	95%	166.5876	90%
	C&I potential 5-year / therms (10^6))	-3.727966	-1.809429	-0.823256	-2.560822	5%	-1.218085	95%	1.342736	90%
	Res potential 5-year / Cost	14.29187	36.79772	89.2839	24.49873	5%	53.05158	95%	28.55285	90%
	Res potential 5-year / MW	9.582232	29.00521	171.5076	15.29695	5%	54.19918	95%	38.90223	90%
	Res potential 5-year / kWh (10^6))	109.2303	297.0628	686.8429	192.1243	5%	435.0173	95%	242.8931	90%
	Res potential 5-year / therms (10^6))	-3.059212	-0.81859	0.499213	-1.738536	5%	-8.10E-02	95%	1.6575	90%
10-year horizon	Overall Potential 10-year / Cost	89.50766	146.0057	244.8812	114.675	5%	183.4211	95%	68.74606	90%
	Overall Potential 10-year / MW	70.83505	121.3394	387.9471	87.29707	5%	186.774	95%	99.47688	90%
	Overall Potential 10-year / kWh (10^6))	526.9164	849.0333	1436.3	667.1741	5%	1062.234	95%	395.0599	90%

<i>Name</i>	<i>Minimum</i>	<i>Mean</i>	<i>Maximum</i>	<i>x1</i>	<i>p1</i>	<i>x2</i>	<i>p2</i>	<i>x2-x1</i>	<i>p2-p1</i>
Overall Potential 10-year / therms (10 <sup>6</sup> )	-7.208594	-3.355267	-1.099162	-4.866901	5%	-2.071494	95%	2.795407	90%
C&I potential 10-year / Cost	56.87285	95.25777	166.7787	73.80645	5%	120.9484	95%	47.14196	90%
C&I potential 10-year / MW	46.5296	75.84515	122.5739	59.68552	5%	94.97975	95%	35.29423	90%
C&I potential 10-year / kWh (10 <sup>6</sup> )	265.5029	447.3152	691.3662	352.1189	5%	557.1725	95%	205.0536	90%
C&I potential 10-year / therms (10 <sup>6</sup> )	-4.668653	-2.264596	-1.017992	-3.190368	5%	-1.530415	95%	1.659953	90%
Res potential 10-year / Cost	19.59895	50.74794	123.2533	32.50148	5%	76.26759	95%	43.76611	90%
Res potential 10-year / MW	13.00436	45.49429	308.2562	20.04604	5%	107.743	95%	87.69691	90%
Res potential 10-year / kWh (10 <sup>6</sup> )	147.3815	401.7181	887.6248	260.2674	5%	587.3923	95%	327.1249	90%
Res potential 10-year / therms (10 <sup>6</sup> )	-4.16101	-1.090671	0.626745	-2.264319	5%	-0.129656	95%	2.134663	90%

July 26, 2006

TO: Rob Ozar, Michigan Public Service Commission

FROM: Scott Pigg, ECW

RE: Corrected results

Here are the revised tables after correcting the MI projection of commercial sector GWh sales from 38,318 to 38,118. I'm also attaching a spreadsheet with the revised more detailed statistics.

TABLE 1, ESTIMATED 5-YEAR OVERALL MI ENERGY EFFICIENCY POTENTIAL

	<b>Average annual</b>	<b>5-year total<sup>a</sup></b>
<b>Program Funding</b> (\$ millions)	90 to 142	452 to 711
<b>Electric Demand</b> (MW)	70 to 120	348 to 602
<b>Electric Energy</b> (millions of kWh)	517 to 817	2,587 to 4,086

<sup>a</sup>Represents total savings that occur in Year 6, following five years of program operation.

Note: ranges are 90% probability boundaries from probabilistic uncertainty analysis.

TABLE 2, ESTIMATED 10-YEAR OVERALL MI ENERGY EFFICIENCY POTENTIAL

	<b>Average annual</b>	<b>10-year total<sup>a</sup></b>
<b>Program Funding</b> (\$ millions)	115 to 185	1,145 to 1,846
<b>Electric Demand</b> (MW)	87 to 186	873 to 1,860
<b>Electric Energy</b> (millions of kWh)	665 to 1,058	6,654 to 10,579

<sup>a</sup>Represents total savings that occur in Year 11, following five years of program operation.

Note: ranges are 90% probability boundaries from probabilistic uncertainty analysis.

**Target avoided peak demand charge: \$80/kw**  
**Corrected GWh for MI commercial sector**

**Monte Carlo results (5,000 iterations)**

(note:  $x_1$  is the  $p_1$  percentile of the MC distribution; similarly,  $x_2$  is the  $p_2$  percentile)

	Name	Minimum	Mean	Maximum	$x_1$	$p_1$	$x_2$	$p_2$	$x_2-x_1$	$p_2-p_1$	
5-year horizon	Overall Potential 5-year / Cost	68.26987	114.2483	184.2255	90.49401	5%	141.4048	95%	50.91076	90%	
	Overall Potential 5-year / MW	55.05541	90.99963	255.3598	69.77275	5%	120.7945	95%	51.02179	90%	
	Overall Potential 5-year / kWh (10 <sup>6</sup> )	396.7966	656.6551	1043.726	519.8497	5%	820.1269	95%	300.2772	90%	
	Overall Potential 5-year / therms (10 <sup>6</sup> )	-5.52724	-2.613396	-0.836801	-3.754031	5%	-1.629156	95%	2.124876	90%	
	C&I potential 5-year / Cost	45.33888	77.38084	125.8861	59.14878	5%	97.99517	95%	38.84639	90%	
	C&I potential 5-year / MW	36.84112	61.65693	97.04154	48.10072	5%	76.54872	95%	28.448	90%	
	C&I potential 5-year / kWh (10 <sup>6</sup> )	219.8351	359.4914	552.4426	280.9412	5%	447.5548	95%	166.6136	90%	
	C&I potential 5-year / therms (10 <sup>6</sup> )	-3.692419	-1.798976	-0.798708	-2.519393	5%	-1.20443	95%	1.314963	90%	
	Res potential 5-year / Cost	15.99159	36.86524	82.57699	24.17542	5%	53.22401	95%	29.04859	90%	
	Res potential 5-year / MW	9.912941	29.34111	180.7478	15.32458	5%	55.08455	95%	39.75997	90%	
	Res potential 5-year / kWh (10 <sup>6</sup> )	123.3185	297.1565	616.5616	190.9113	5%	433.429	95%	242.5177	90%	
	Res potential 5-year / therms (10 <sup>6</sup> )	-3.184892	-0.814368	0.433065	-1.732792	5%	-7.37E-02	95%	1.659067	90%	
	10-year horizon	Overall Potential 10-year / Cost	83.45249	145.8212	253.6117	114.4835	5%	182.3562	95%	67.87272	90%
		Overall Potential 10-year / MW	66.03854	121.8317	416.316	87.61618	5%	188.8573	95%	101.2412	90%
Overall Potential 10-year / kWh (10 <sup>6</sup> )		495.2002	847.4308	1349.39	666.4371	5%	1060.263	95%	393.8262	90%	
Overall Potential 10-year / therms (10 <sup>6</sup> )		-7.041079	-3.337862	-1.187923	-4.801625	5%	-2.08669	95%	2.714936	90%	
C&I potential 10-year / Cost		54.90833	94.9015	155.9746	72.76757	5%	119.6273	95%	46.85978	90%	
C&I potential 10-year / MW		46.47615	75.51595	116.1404	59.34413	5%	93.7465	95%	34.40237	90%	
C&I potential 10-year / kWh (10 <sup>6</sup> )		274.7908	445.5131	693.1557	349.4538	5%	552.7188	95%	203.265	90%	
C&I potential 10-year / therms (10 <sup>6</sup> )		-4.409081	-2.251928	-0.938296	-3.155906	5%	-1.514309	95%	1.641597	90%	
Res potential 10-year / Cost		21.29683	50.91736	127.3213	32.39252	5%	76.4349	95%	44.04238	90%	
Res potential 10-year / MW		12.44892	46.31433	325.2324	20.12686	5%	111.0517	95%	90.92481	90%	
Res potential 10-year / kWh (10 <sup>6</sup> )		170.4798	401.9108	828.2443	258.9234	5%	582.5576	95%	323.6341	90%	
Res potential 10-year / therms (10 <sup>6</sup> )		-4.132498	-1.085888	0.661105	-2.282317	5%	-0.124136	95%	2.158181	90%	