Con Edison Direct Load Control Program

2008 Annual Report

Appendices

Appendix A—Year-to-Date and Program-to-Date Reports

The following table provides the 2008 Business Program results. New thermostat installations during 2008 represent 6% of total active thermostats while the Program experienced deinstalls of less than 4% of active installations. The vast majority of leads were generated as a result of visits by representatives of a marketing firm under contract to Con Edison, direct mail campaigns and Con Edison customer newsletters. The marketing firm's efforts were discontinued in July 2008 due to diminished productivity.

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Business Direct Load Control Program
2008 Program Marketing & Installations

	Cumulative	Westchester	Staten Island	Queens	Brooklyn	Bronx	Manhattan
APPLICATION SOURCE							
Business-to-Business Referral	35	8	3	6	5	4	9
Con Edison Customer Newsletters	58	18	4	7	9	11	9
Web Site Applications	20	6	2	5	4	1	2
HDMC Marketing Rep	771	24	29	50	82	254	332
Organizations	2	1	0	0	0	1	0
Spring 2008 Direct Mail	60	0	1	6	0	51	2
Total	953	57	45	74	100	323	354
APPLICATION ACTIVITY							
Applied	2159	118	93	174	206	752	816
Web Site	1226	66	49	100	108	434	469
InfoLine	933	52	44	74	98	318	347
Total	2159	118	93	174	206	752	816
INSTALLED							
Customers	501	44	21	46	44	240	106
Thermostats	654	63	29	73	54	308	127
Customers Deinstalled	34	8	4	9	4	6	3
Thermostats Deinstalled	52	14	4	18	6	7	3
Customer Dropouts	152	18	16	53	48	10	7
Thermostat Dropouts	195	25	23	63	64	13	7
Total Customers	315	18	1	-16	-8	224	96
Total Installs	**407**	**24**	**2**	**-8**	**-16**	**288**	**117**
Technical Turndowns	107	6	4	11	10	47	29
Customer Turndowns	54	2	4	8	7	13	20

The Business Program-to-Date Report follows:

Business Direct Load Control Program
2005-2008 Program Marketing & Installations

	Cumulative	Westchester	Staten Island	Queens	Brooklyn	Bronx	Manhattan
APPLICATION SOURCE							
Queens Borough Online	2	0	0	2	0	0	0
Telemarketing	507	0	0	378	129	0	0
Business-to-Business Referral	123	25	15	31	23	10	19
Con Edison Customer Newsletters	249	53	13	61	56	33	33
Web Site Applications	48	10	6	14	6	5	7
2007 Newspaper Article	6	0	2	1	1	2	0
HDMC Marketing Rep	10023	1755	541	3000	2300	1229	1198
Organizations	11	3	1	0	4	1	2
Direct Mail	1717	410	109	581	373	200	44
Con Edison E-mail	8	2	1	1	2	0	2
Total	12694	2258	688	4069	2894	1480	1305
APPLICATION ACTIVITY							
Applied	12694	2258	688	4069	2894	1480	1305
Web Site	2159	150	26	940	699	173	171
Infoline	10028	2108	662	2751	2066	1307	1134
Telemarketing	507	0	0	378	129	0	0
Cancelled	16	0	0	10	6	0	0
Total	12678	2258	688	4059	2888	1480	1305
PENDING INSTALLATIONS							
Pending Scheduling	3	0	0	1	2	0	0
Scheduled	2	1	0	1	0	0	0
Cancelled/Deactivated	5182	1066	222	1561	1010	608	715
Total	5187	1067	222	1563	1012	608	715
INSTALLED							
Customers	6021	995	374	2048	1493	683	428
Thermostats	8122	1404	514	2714	2027	915	548
Customers Deinstalled	204	46	19	77	35	19	8
Thermostats Deinstalled	276	69	25	103	47	22	10
Customer Dropouts	442	56	27	177	128	33	19
Thermostat Dropouts	552	74	40	216	160	39	23
Total Customers	5375	893	328	1794	1330	631	401
Total Installs	**7294**	**1261**	**449**	**2395**	**1820**	**854**	**515**
Technical Turndowns	1172	162	83	346	306	151	124
Customer Turndowns	298	34	9	102	77	38	38

The table below provides the 2008 Residential Program results. New thermostat installations during 2008 represent 9% of total active thermostats while deinstalls decreased 3% from year end 2007. Residential customers were marketed through various means, including Con Edison bill messages, Con Edison customer newsletters, direct mail campaigns and Con Edison Web Site promotions.

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Residential Direct Load Control Program
2008 Program Marketing & Installations

	Cumulative	Westchester	Staten Island	Queens	Brooklyn	Bronx	Manhattan
APPLICATION SOURCE							
Friend/Neighbor	252	48	132	26	30	10	6
Con Edison Web Site	154	39	57	31	15	9	3
Con Edison Customer News	268	99	88	42	22	11	6
Other	177	11	20	129	4	8	5
Direct Mail	1475	429	801	115	16	112	2
Newspaper	77	0	77	0	0	0	0
Bill Message	160	57	38	29	22	8	6
Total	2563	683	1213	372	109	158	28
APPLICATION ACTIVITY							
Applied	2563	683	1213	372	109	158	28
Web Site	945	285	395	136	57	50	22
Infoline	1618	398	818	236	52	108	6
Total	2563	683	1213	372	109	158	28
INSTALLED							
Customers	1566	405	811	172	62	106	10
Thermostats	1863	536	912	213	72	118	12
Customers Deinstalled	126	22	82	12	4	6	0
Thermostats Deinstalled	141	24	93	16	4	4	0
Customer Dropouts	446	145	201	50	37	12	1
Thermostat Dropouts	478	157	212	52	42	14	1
Total Customers	1357	344	711	152	46	95	9
Total Installs	1584	461	764	187	54	107	11
Technical Turndowns	212	57	86	44	8	14	3
Customer Turndowns	71	19	38	6	1	7	0

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Residential Direct Load Control Program
2002-2008 Program Marketing & Installations

	Cumulative	Westchester	Staten Island	Queens	Brooklyn	Bronx	Manhattan
APPLICATION SOURCE							
Newspaper Inserts	530	163	348	13	4	0	2
Newspaper Ads	1611	177	1291	68	47	24	4
N.Y. Times Article	23	16	4	2	1	0	0
Employee Letter	43	15	18	5	2	3	0
Door Hanger	339	63	105	123	40	7	1
Direct Mail	8932	3299	3614	1153	550	232	84
Friend/Neighbor	2725	738	1430	226	244	66	21
Con Edison Web Site	650	210	202	105	67	30	36
Con Edison Customer News	2187	848	616	341	241	76	65
Con Edison E-Mail	166	67	39	19	23	8	10
Other	1304	412	439	267	110	46	30
Pennysaver	1224	1195	12	13	1	3	0
Circular Bag	84	0	0	74	7	1	2
Bill Message	2025	620	610	342	285	94	74
News Release	146	15	103	11	6	9	2
Business Program Mailing	40	18	12	1	5	2	2
Telemarketing	7881	3382	3356	909	234	0	0
Total	29910	11238	12199	3672	1867	601	333
APPLICATION ACTIVITY							
Applied	29910	11238	12199	3672	1867	601	333
Web Site	6446	2484	2287	796	481	190	208
Infoline	15583	5372	6556	1967	1152	411	125
Telemarketing	7881	3382	3356	909	234	0	0
Cancelled	256	71	75	28	30	8	44
Total	29654	11167	12124	3644	1837	593	289
PENDING INSTALLATIONS							
Pending Scheduling	160	14	36	97	6	6	1
Scheduled	63	15	7	37	1	1	2
Cancelled/Deactivated	10024	4082	3765	1241	610	185	141
Total	10247	4111	3808	1375	617	192	144
INSTALLED							
Customers	16416	6127	7156	1719	979	343	92
Thermostats	19932	8087	7869	2003	1408	399	166
Customers Deinstalled	811	253	416	84	39	19	0
Thermostats Deinstalled	922	302	456	94	51	19	0
Customer Dropouts	937	332	419	104	62	18	2
Thermostat Dropouts	967	380	432	110	71	20	3
Total Customers	14668	5542	6321	1531	878	306	90
Total Installs	**18043**	**7405**	**6981**	**1799**	**1286**	**360**	**163**
Technical Turndowns	2491	763	964	452	215	45	52
Customer Turndowns	500	166	196	98	26	13	1

Appendix B—Impact Analysis for 2008 Curtailment Events

The thermostats being installed through both programs use the Carrier Comfort Choice ^{SM} technology. One of the major benefits of this technology is the thermostat's ability to store seven days of compressor run-time data and temperatures. When combined with connected load information catalogued at the time of installation (adjusted to reflect maximum kW draw), this data can be used to produce an accurate estimate of hourly load reductions during curtailment events. During the 2008 summer period, the first event was called in Manhattan on Monday, June 9, from 5 p.m. to 12 a.m. The second event was called in Brooklyn on Sunday July 20, from 8:20 a.m. to 7 p.m. Both events were initiated by Con Edison to provide support for local distribution conditions. In both cases, high temperatures were a contributing factor to the system conditions that triggered the need for a curtailment. On June 9, temperatures reached 99 degrees at LaGuardia Airport and on July 20, 94 degrees. The third and fourth events were called at the request of NYISO to test system-wide load relief. These curtailments were conducted on Monday, August 18, an 88 degree day, and Thursday, September 4, (a 90 degree day), for two hours (3 p.m. to 5 p.m.) on each date.

During all events, Program participants had their central air-conditioner compressors cycled off for 30 minutes each hour. Although the Company has the ability to refresh (reset) compressor cycling and overcome customer overrides of the Company's direct load control, customer overrides in the past were seen to increase with the length of events. With no refresh strategies employed and long event durations, the override numbers became higher than desired. Therefore, refresh strategies were not employed during any events in 2008. For future events, refresh strategies will be employed approximately every 2 hours, and the length of events will be reduced to no more than approximately 5 hours to ensure consistent reduction impacts.

Impacts for these events were determined based on run-time data collected from participant thermostats. The run-time data (minutes per hour) is converted to duty cycle percentages and used to measure the percent of time that compressors were on, compared to a similar non-controlled (baseline) day. Connected load data is also collected from? all participants, and combined with an adjustment factor (15%) determined from metered amperage readings for a sample of units during hot days to produce an adjusted connected load kW or maximum kW draw, the basis for converting the run-time to kW impacts.

The Manhattan curtailment on June 9 lasted seven hours (5 p.m. to 12 a.m.) and the Brooklyn curtailment on July 20 lasted over 10 hours (8:20 a.m. to 7 p.m.). Afternoon impacts, which included the effect of overrides, were comparable to prior experience at the applicable temperatures. The control system operated well, with an overall average 98% confirmation level on those two days. For the system-wide

events (August 18 and September 4), curtailments were limited to 3 p.m. to 5 p.m., with confirmation levels of 94% and 86%, respectively.

Baseline Conditions

A baseline condition is defined as the energy use of a central air-conditioning system during peak operating hours that are similar in time and weather conditions to a test or event curtailment day. Calculating Program impacts for each of the four 2008 events required selecting a comparable baseline day using cooling degree-days and reported weather conditions. The selection of each specific baseline day considered the following key factors:

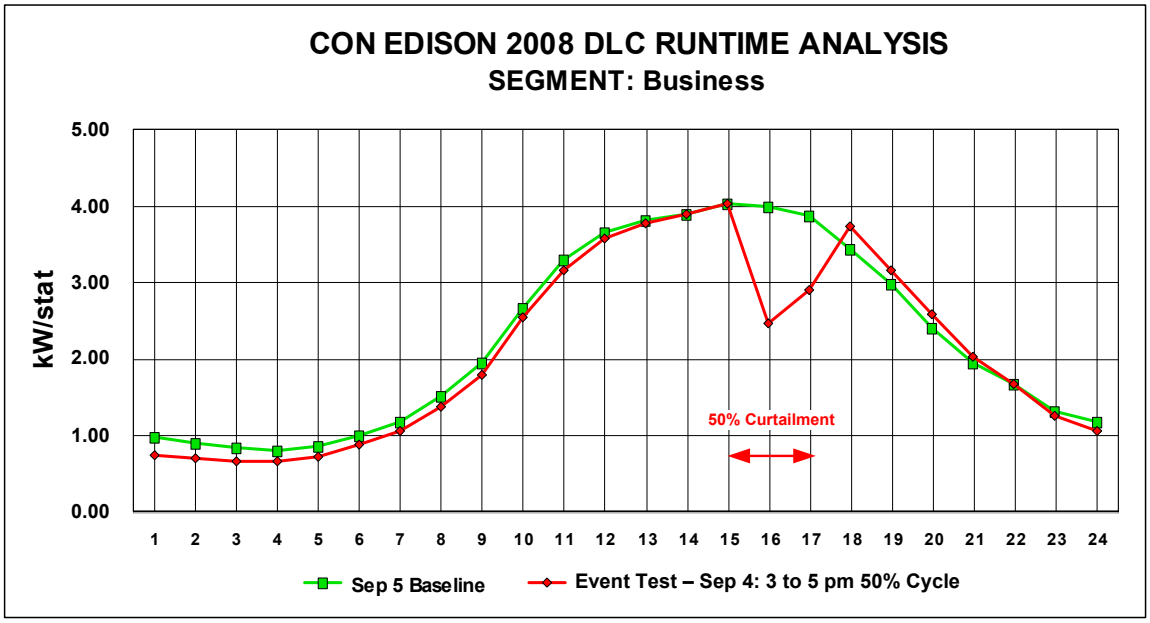
- Comparable cooling degree days, temperature and humidity levels between the baseline and event/test days.
- Comparable heat build-up of consecutive 90+ degree days.
- Comparable day of week (midweek versus beginning or end of week).

In cases where the candidate for best baseline day did not sufficiently match the curtailment event day (typically not severe enough weather), the baseline day was adjusted, typically using the hours just prior to the curtailment event on both the baseline and curtailment event day to judge the best match and required minor scaling adjustment.

The adjusted connected load data for the central air-conditioning system (CAC), coupled with the run-time data collected for each unit, is used to produce a baseline load shape. The baseline load shape will vary for specific customers depending upon the type of equipment, the way in which the equipment is sized, and how the customer operates the equipment. The aggregate baseline load shapes represent the hourly kW load for a typical customer's air-conditioner compressor during a comparable summer day (24 hours). As an example, the 24 hour baseline and curtailment load shapes (for September 5) used in the September 4 impact analyses are shown on the following page.

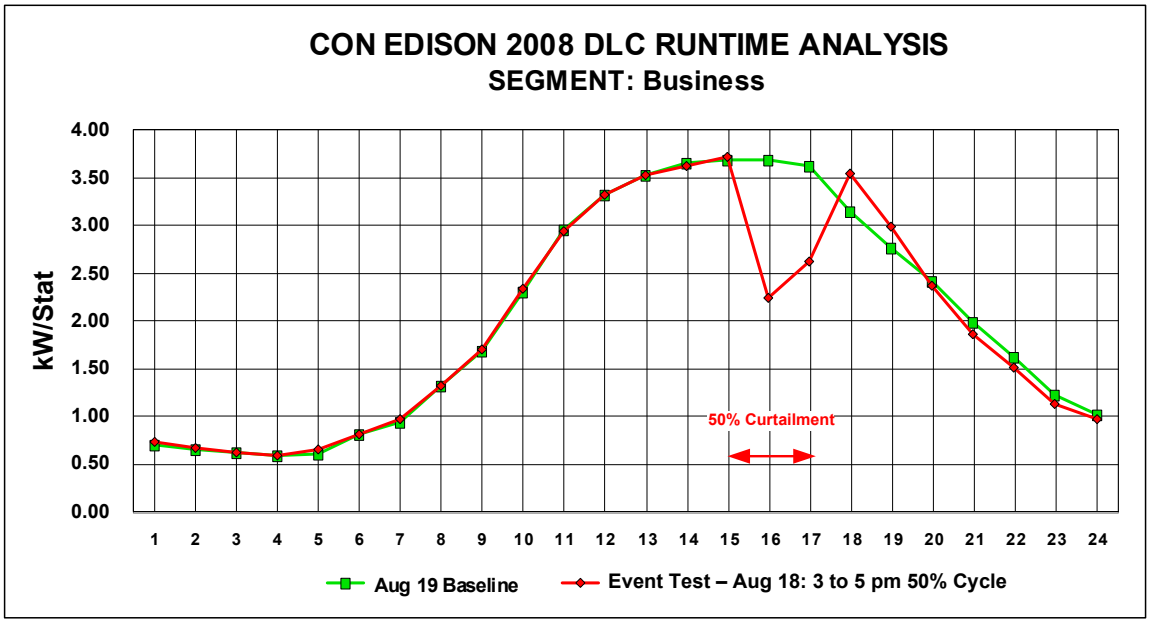
The following two graphics below show baseline conditions alongside curtailment day results on September 4. Business customer baseline hourly kW reached 4.0 kW per customer, peaking at hour ending 4 p.m.

Business Hourly Load Shape for September 4 Impact Analysis



The following graphic shows baseline conditions alongside curtailment day results for September 4 for residential customers. Baseline hourly kW reached just over 2.25 kW per customer, peaking at hour ending 5 p.m.

Residential Hourly Load Shape for September 4 Impact Analysis



Demand Savings Methodology

The approach to calculate net demand savings is as follows:

- Obtain run-time data (duty cycle) for participants on baseline and control days.
- Select baseline days comparable to control days, primarily from cooling degree days, using LaGuardia Airport weather.
- Compute weather adjustment for baseline, if necessary. Multiply baseline day run-times for each hour and participant by weather adjustment factor. This is at 100% run-time for any given hour. If necessary, use comparison of duty cycle between baseline and curtailment day for additional small adjustments using pre-curtailment hour data.
- Controlled Duty Cycle is determined by averaging the run-time data for all participants during each hour of control during the curtailment day. This run-time data includes the effect of overrides.
- Duty Cycle Reduction is determined by subtracting the Baseline Duty Cycle from the curtailment event day Duty Cycle.
- Per Unit kW Reductions are determined by first multiplying the Baseline Duty Cycle and Controlled Day Duty Cycle by the estimated adjusted connected load[1] with losses. This will result in kW per hour for both baseline and control days. The Per Unit kW Reduction is the result of subtracting the Baseline kW from Controlled Day kW. Total kW Reduction is determined by multiplying the Per Unit kW Reduction by the Number of Units under control.

Mathematically, the net impact is calculated as follows:

$$Duty\ Cycle\ Reduction = Baseline\ Duty\ Cycle_i - Controlled\ Duty\ Cycle_i$$

Multiply duty cycles by estimated adjusted connected load

$$Per\ Unit\ kW\ Reduction_i = Baseline\ kW_i - Control\ Day\ kW_i$$

$$Total\ kW\ Reduction_i = Per\ Unit\ kW\ Reduction_i * Number\ of\ Units$$

Where i = the average of the curtailment period.

Note that because one of the curtailment days (July 20) was on a Sunday, a similar weather Sunday would normally have been selected as a comparable baseline day. This was not possible, since there were no other Sundays with similar weather (94 degree high temperature). The baseline was developed

[1] The connected load (kW draw) is based on nameplate data for all participants, adjusted based on results of spot metering from a randomly selected sample of units to develop the ratio of actual maximum kW load draw to connected load. The spot metering includes the use of a power meter/power harmonics analyzer which measures voltage, sign wave, harmonics, power, wattage, and power factor.

instead using the Queens participants for that same day (not controlled), who, from past experience, were very similar to Brooklyn participants, who were controlled that day.

The following assumptions support the business net load impact analysis:

- Connected load 5.87 kW
- Amp meter adjustment 15.0%
- Adjusted connected load 4.99 kW
- Line losses at system peak 14.0%

Connected load with losses 5.80 kW

The following assumptions support the residential net load impact analysis:

- Connected load[2] 4.61 kW
- Amp meter adjustment[3] 15.0%
- Adjusted connected load 3.92 kW
- Line losses at system peak 14.0%

Connected load with losses 4.56 kW

[2] Based on nameplate data collected for CAC systems participating in the DLC Program.

[3] Based on spot metering for sampling of participating CAC systems.

Business kW Impacts:

The tables and graphs on the following pages show the results for the four aforementioned curtailment events for Business participants. For the two system-wide curtailments that were run on milder weather days (August 18 and September 4), a "benchmark" load profile is also provided that corresponds to what the baseline loads would have been on a system peak critical type day, using June 10, 2008, a 100 degree day.

June 9, 2008 Curtailment Event (Manhattan) 5 p.m. to 12 12:00 a.m.: 50% Cycle	Hour Ending						
Business	6:00p.m.	7:00p.m.	8:00p.m.	9:00p.m.	10:00p.m.	11:00p.m.	12 12:00 a.m.
Participating Thermostats[4] **337**							
Net[5] per unit kW load reductions	1.606	1.203	0.928	0.782	0.595	0.397	0.319
Net total kW load reductions with overrides	541	405	313	264	200	134	107
Cumulative overrides	8.9%	30.7%	38.0%	43.2%	44.3%	45.3%	46.9%
Gross[6] per unit kW load reductions	1.762	1.737	1.497	1.377	1.067	0.726	0.600
Gross total kW load reductions without overrides	594	585	504	464	360	245	202

	Average	
	5 p.m. to 8 p.m.	8 p.m. to 12:00 a.m.
Net per unit kW load reductions	1.245	0.523
Net total kW load reductions with overrides	419	176
Cumulative overrides	25.9%	37.3%
Gross per unit kW load reductions	1.665	0.943
Gross total kW load reductions without overrides	561	318

Weather Conditions:	
Max Temperature	99°
Min Temperature	76°
Prior Day Max Temperature	96°

[4] Participating thermostats are defined as thermostats that received the control signal from the two-way paging network. Only thermostats located in Manhattan participated in this event.

[5] Net impacts are the impacts derived directly from run-time data. These impacts include the effects of customers who override the control signal.

[6] Gross impacts are the impacts that would have occurred had customers not been allowed to override the control signal in order to show full potential. These impacts are calculated by removing the effects of overrides from the net impacts.

July 20, 2008 Curtailment Event (Brooklyn)
8:20 a.m. to 7 p.m.: 50% Cycle

	Hour Ending										
Business	9:00a.m.[7]	10:00a.m.	11:00a.m.	12:00p.m.	1:00p.m.	2:00p.m.	3:00p.m.	4:00p.m.	5:00p.m.	6:00p.m.	7:00p.m.
Participating Thermostats[8] **1,180**											
Net per unit kW load reductions	0.338	0.579	0.460	0.392	0.388	0.326	0.245	0.258	0.225	0.199	0.238
Net total kW load reductions with overrides	399	684	543	463	458	385	290	304	266	235	281
Cumulative overrides	1.8%	7.4%	16.3%	25.4%	32.7%	37.2%	39.6%	41.1%	42.1%	42.9%	43.5%
Gross Per unit kW load reductions	0.344	0.626	0.550	0.526	0.577	0.519	0.406	0.438	0.389	0.348	0.422
Gross total kW load reductions without overrides	406	739	649	621	681	612	479	517	459	411	497

	Average	
	8:20 a.m. to 2 p.m.	2 p.m. to 7 p.m.
Net per unit kW load reductions	0.414	0.233
Net total kW load reductions with overrides	489	275
Cumulative overrides	20.1%	41.8%
Gross per unit kW load reductions	0.524	0.400
Gross total kW load reductions without overrides	618	473

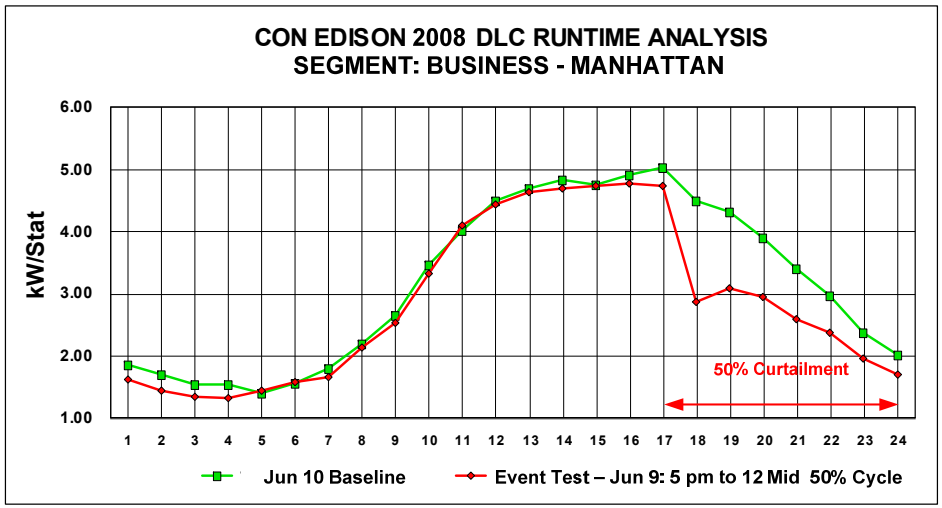
Weather Conditions:

Max Temperature	94°
Min Temperature	79°
Prior Day Max Temperature	97°

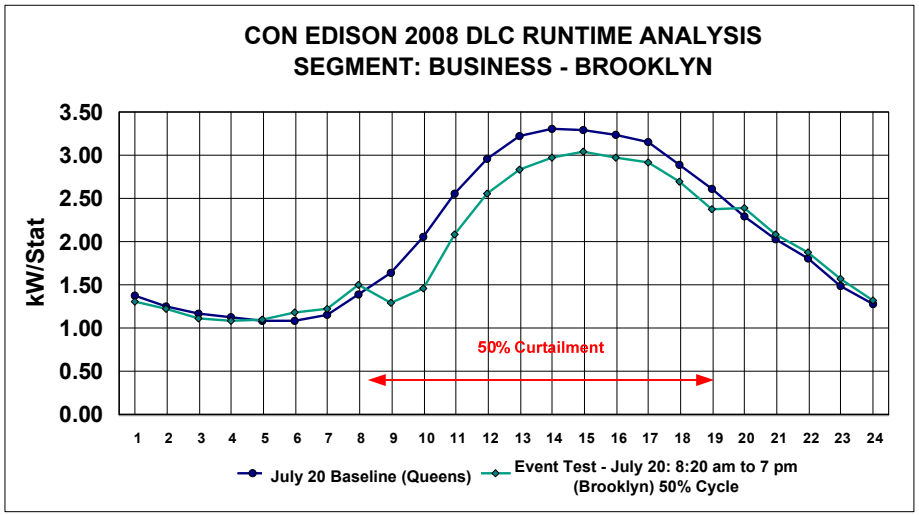
[7] Curtailment began 8:20 a.m.
[8] Only thermostats located in Brooklyn participated in this event.

Graphic Display of Business Impact Analyses:

June 9, 2008 Manhattan (5 p.m.. to 12:00 a.m.)



July 20, 2008 Brooklyn (8:20 a.m. to 7 p.m.)



August 18, 2008 Curtailment Event

3 p.m. to 5 p.m.: 50% Cycle

		Hour Ending	
Business		4:00 p.m.	5:00 p.m.
Participating Thermostats **5,264**			
Net per unit kW load reductions		1.423	0.979
Net total kW load reductions with overrides		7,493	5,154
Cumulative overrides		6.4%	16.8%
Gross per unit kW load reductions		1.521	1.177
Gross total kW load reductions without overrides		8,007	6,198

	Average
	3 p.m. to 5 p.m.
Net per unit kW load reductions	1.201
Net total kW load reductions with overrides	6,323
Cumulative overrides	11.6%
Gross per unit kW load reductions	1.349
Gross total kW load reductions without overrides	7,102

Weather Conditions:

Max Temperature	88°
Min Temperature	73°
Prior Day Max Temperature	85°

September 4, 2008 Curtailment Event

3 p.m. to 5 p.m.: 50% Cycle

		Hour Ending	
Business		4:00 p.m.	5:00 p.m.
Participating Thermostats **5,023**			
Net per unit kW load reductions		1.512	0.960
Net total kW load reductions with overrides		7,595	4,821
Cumulative overrides		8.2%	20.6%
Gross per unit kW load reductions		1.647	1.209
Gross total kW load reductions without overrides		8,272	6,070

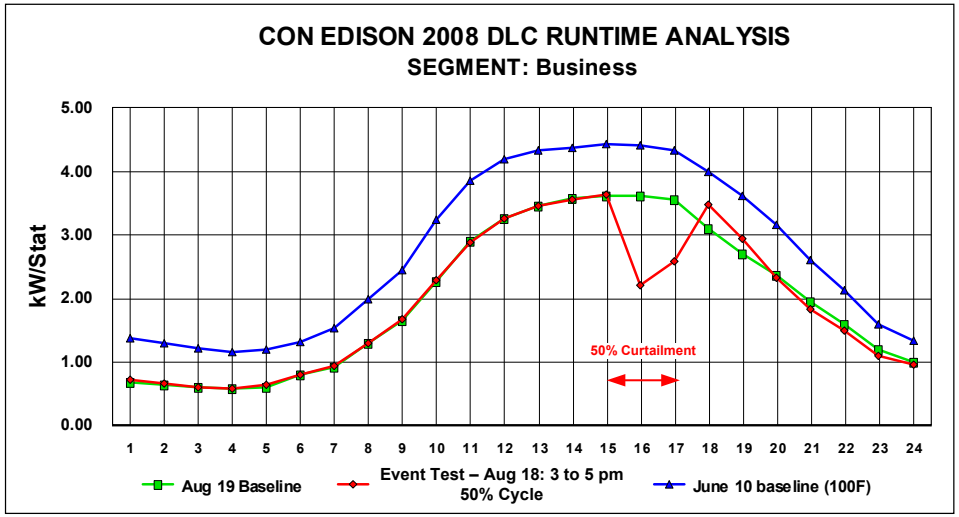
	Average
	3 p.m. to 5 p.m.
Net per unit kW load reductions	1.236
Net total kW load reductions with overrides	6,208
Cumulative overrides	14.4%
Gross per unit kW load reductions	1.428
Gross total kW load reductions without overrides	7,171

Weather Conditions:

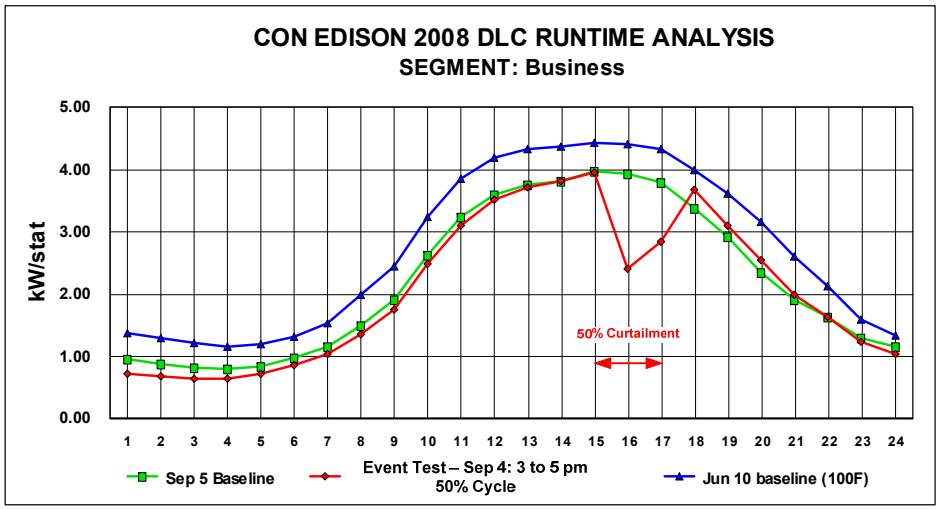
Max Temperature	90°
Min Temperature	72°
Prior Day Max Temperature	81°

Graphic Display of Business Impact Analyses:

August 18, 2008 (3 p.m. to 5 p.m.) with June 10 benchmark day



September 4, 2008 (3 p.m. to 5 p.m.) with June 10 benchmark day



Summary of Business Events

The two system-wide curtailments were conducted on relatively mild days (88 -90 degrees), with prior days even milder (81 – 85 degrees), which is not typical of system-peaking days. The operation on those days was designed to test system-wide implementation, which had not been conducted earlier in 2008 or in 2007. The following tables summarize the average impacts for the afternoon over these two system-wide days. The curtailments conducted for local distribution-critical reasons on June 9 and July 20 were atypical in that they were run either evenings (June 9) or all day on a Sunday (July 20). However, both events were called during extreme temperatures (94 – 99 degrees), typical of system-peaking conditions.

Business: August 18 and September 4, 2008	Average
	3 p.m. to 5 p.m.
Net per unit kW load reductions	1.22
Net total kW load reductions with overrides	6,266
Cumulative overrides	13.0%
Gross per unit kW load reductions	1.389
Gross total kW load reductions without overrides	7,137

Residential kW Impacts:

The tables on the following pages show the results for the four aforementioned curtailment events. For the two system-wide curtailments that were run on milder weather days (August 18 and September 4), a “benchmark” load profile is also provided that corresponds to what the baseline loads would have been on a system peak critical type day, using June 10, 2008, a 100 degree day.

June 9, 2008 Curtailment Event (Manhattan)
5 p.m. to 12 12:00 a.m.: 50% Cycle

	Hour Ending						
Residential	6:00p.m.	7:00p.m.	8:00p.m.	9:00p.m.	10:00p.m.	11:00p.m.	12 12:00 a.m.
Participating Thermostats[9] **137**							
Net[10] Per unit kW load reductions	1.057	1.006	0.971	0.663	0.473	0.154	-0.079
Net total kW load reduction with overrides	145	138	133	91	65	21	-11
Cumulative overrides	0%	7.9%	12.4%	19.1%	22.5%	24.7%	27.0%
Gross[11] Per unit kW load reductions	1.057	1.092	1.108	0.820	0.610	0.205	-0.109
Gross total kW load reductions without overrides	145	150	152	112	84	28	-15

	Average	
	5 p.m. to 8 p.m.	8 p.m. to 12 12:00 a.m.
Net Per unit kW load reductions	1.012	0.303
Net total kW load reduction with overrides	139	41
Cumulative overrides	6.7%	13.1%
Gross Per unit kW load reductions	1.086	0.382
Gross total kW load reduction without overrides	149	52

Weather Conditions:

Max Temperature	99°
Min Temperature	76°
Prior Day Max Temperature	96°

[9] Participating thermostats are defined as thermostats that received the control signal from the two-way paging network. Only thermostats located in Manhattan participated in this event.
[10] Net impacts are the impacts derived directly from run-time data. These impacts include the effects of customers who override the control signal.
[11] Gross impacts are the impacts that would have occurred had customers not been allowed to override the control signal in order to show full potential. These impacts are calculated by removing the effects of overrides from the net impacts.

July 20, 2008 Curtailment Event (Brooklyn)
8:20 a.m. to 7 p.m.: 50% Cycle

	Hour Ending										
Residential	9:00a.m.[12]	10:00a.m.	11:00a.m.	12:00p.m.	1:00p.m.	2:00p.m.	3:00p.m.	4:00p.m.	5:00p.m.	6:00p.m.	7:00p.m.
Participating Thermostats[13] **810**											
Net Per unit kW load reductions	0.474	0.532	0.642	0.627	0.650	0.728	0.740	0.783	0.698	0.685	0.649
Net total kW load reduction with overrides	384	431	520	508	526	589	599	634	565	555	526
Cumulative overrides	1.5%	5.4%	9.9%	13.9%	17.3%	20.3%	22.6%	24.2%	26.4%	29.0%	31.1%
Gross Per unit kW load reductions	0.481	0.563	0.712	0.728	0.786	0.913	0.955	1.033	0.948	0.965	0.942
Gross total kW load reductions without overrides	390	456	577	590	637	739	774	837	768	781	763

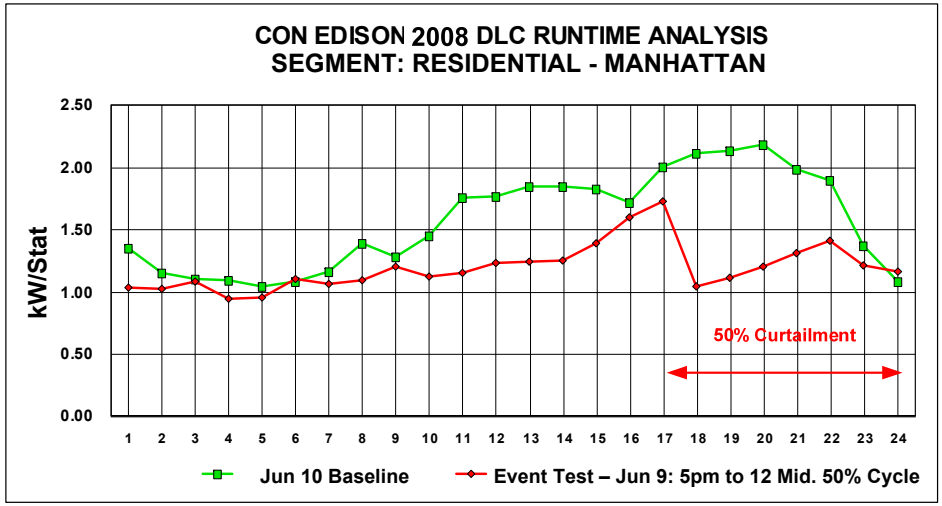
	Average	
	8:20 a.m. to 2 p.m.	2 p.m. to 7 p.m.
Net Per unit kW load reductions	0.609	0.711
Net total kW load reductions with overrides	493	576
Cumulative overrides	11.4%	26.7%
Gross Per unit kW load reductions	0.697	0.969
Gross total kW load reductions without overrides	565	785

Weather Conditions:	
Max Temperature	94°
Min Temperature	79°
Prior Day Max Temperature	97°

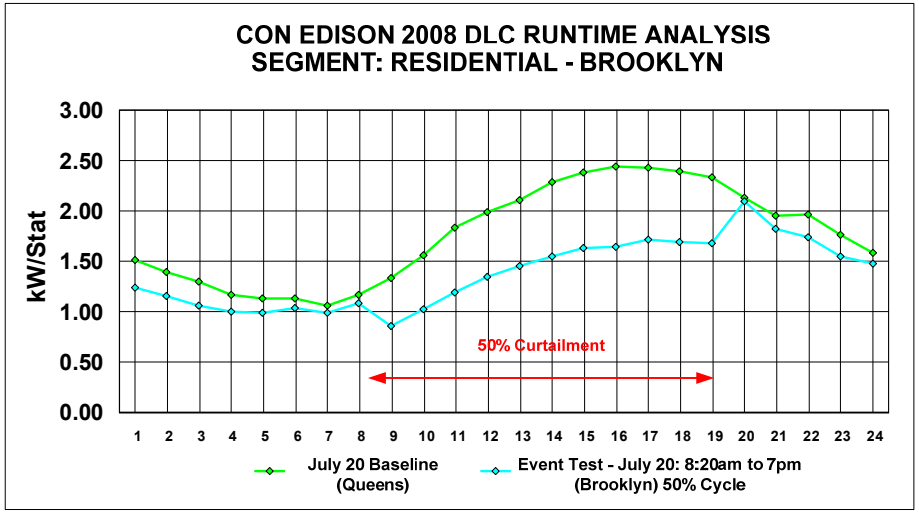
[12] Curtailment began 8:20 a.m.
[13] Only thermostats located in Brooklyn participated in this event.

Graphic Display of Residential Impact Analyses:

June 9, 2008 Manhattan (5 p.m. to 12:00 a.m.)



July 20, 2008 Brooklyn (8:20 a.m. to 7 p.m.)



August 18, 2008 Curtailment Event

3 p.m. to 5 p.m.: 50% Cycle

		Hour Ending	
Business		4:00 p.m.	5:00 p.m.
Participating Thermostats	**13,147**		
Net Per unit kW load reductions		0.656	0.558
Net total kW load reductions with overrides		8,631	7,330
Cumulative overrides		1.9%	5.4%
Gross Per unit kW load reductions		0.669	0.590
Gross total kW load reductions without overrides		8,796	7,751

	Average
	3 p.m. to 5 p.m.
Net Per unit kW load reductions	0.607
Net total kW load reductions with overrides	7,891
Cumulative overrides	3.7%
Gross Per unit kW load reductions	0.629
Gross total kW load reductions without overrides	8,274

Weather Conditions:

Max Temperature	88°
Min Temperature	73°
Prior Day Max Temperature	85°

September 4, 2008 Curtailment Event

3 p.m. to 5 p.m.: 50% Cycle

		Hour Ending	
Residential		4:00 p.m.	5:00 p.m.
Participating Thermostats **13,168**			
Net Per unit kW load reductions		0.854	0.711
Net total kW load reductions with overrides		11,245	9,362
Cumulative overrides		2.4%	7.1%
Gross Per unit kW load reductions		0.875	0.765
Gross total kW load reductions without overrides		11,520	10,077

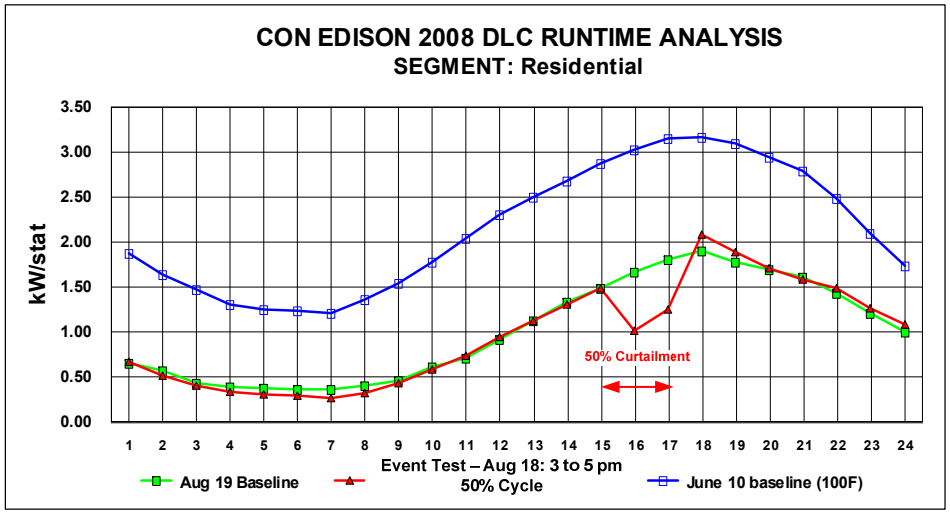
	Average
	3 p.m. to 5 p.m.
Net Per unit kW load reductions	0.782
Net total kW load reductions with overrides	10,303
Cumulative overrides	4.7%
Gross Per unit kW load reductions	0.820
Gross total kW load reductions without overrides	10,798

Weather Conditions:

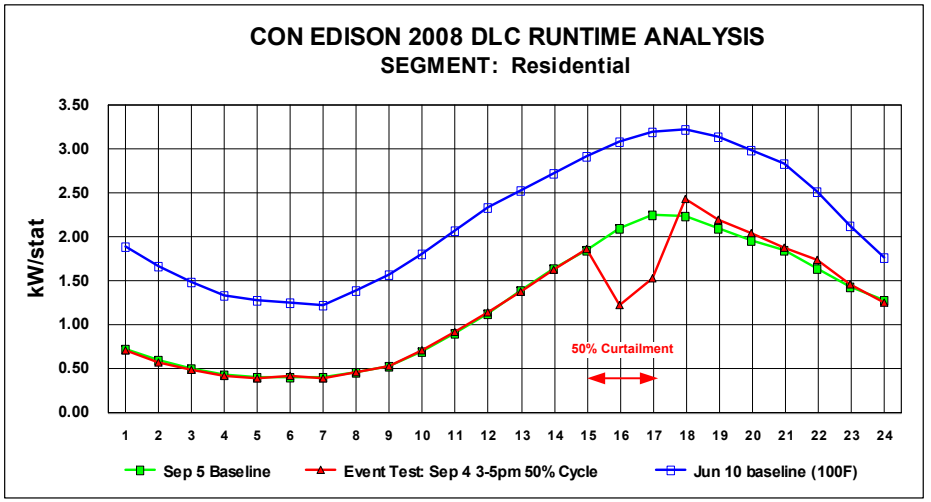
Max Temperature	90°
Min Temperature	72°
Prior Day Max Temperature	81°

Graphic Display of Residential Impact Analyses:

August 18, 2008 (3 p.m. to 5 p.m.) with June 10 benchmark day



September 4, 2008 (3 p.m. to 5 p.m.) with June 10 benchmark day



Summary of Residential Events

The two system-wide curtailments were conducted on relatively mild days (88 -90 degrees), with prior days even milder (81 – 85 degrees), so it is not typical of system-peak conditions. The Program operation on two days was designed to test system-wide implementation, which had not been conducted earlier in 2008 or in 2007. The following tables summarize the average the impacts for these two system-wide events. The curtailments conducted for local distribution-critical reasons on June 9 and July 20 were atypical in that they were run either evenings (June 9) or all day on a Sunday (July 20), although both days were during extreme temperatures (94 – 99 degrees), typical of system-peaking conditions.

Residential: August 18 and September 4, 2008	Average
	3 p.m. to 5 p.m.
Net per unit kW load reductions	1.22
Net total kW load reductions with overrides	6,266
Cumulative overrides	13.0%
Gross per unit kW load reductions	1.389
Gross total kW load reduction without overrides	7,137

Appendix C—Customer Service

Customer representatives provide a wide spectrum of customer service for the Residential and Business markets, including helping customers apply for the Program, answering scheduling questions, handling incentive check inquiries, and addressing the following related topics:

- Thermostat issues – The representative explains how to use the thermostat, and walks the participant through the programming features. Care is taken so that the customer is completely satisfied.
- Internet feature – Callers are taken step-by-step through the process of programming their thermostats through the Internet. Passwords are reset for those who have forgotten them. One very important part of the Internet feature is the 's ability to assist customers who are unable to see the display clearly, unable to physically get to the thermostat, and, while not at home, have their heat or central air-conditioning turned on/off or set point adjusted.
- Equipment – Any calls related to equipment operations are grouped within this category, including the most common call, "No air-conditioning" or "No heat." When these calls occur, the first step is to review the settings of the thermostat to make sure the device is properly set for heating or cooling. If the thermostat has no display (blank screen), the customer is asked to check all circuit breakers and switches. If the thermostat appears to be working correctly, the InfoLine explains that this is not a thermostat issue, advising the customer to call his or her own service company. If the issue appears to be thermostat-related, the customer's information is given to the contractor to schedule a service visit.
- Deinstall requests – Any participant who is not satisfied with the thermostat or the Program and who contacts the InfoLine is asked why they are dissatisfied, and an attempt is made to resolve the issue. The thermostat features and operation are reviewed. If the customer still wants the thermostat removed, a service visit is scheduled for the removal of the equipment.

All representatives are trained to handle the various calls received from existing or prospective participants. For existing participants, each representative has a troubleshooting manual containing questions to ask the participant, and steps through which to walk the participant in order to determine if the issue can be resolved immediately or requires a service call. Service technicians are deployed to handle all on-site service visits. If the representative cannot resolve the issue, on-site service is scheduled immediately. During the summer months, when central air-conditioning use is at its highest level additional service technicians are employed.

Service technicians are available after-hours and on weekends to respond to emergency calls from Program participants. After determining the problem with the customer, the technician on-call addresses

the customer's concern, up to and including dispatching a service technician to the site. If the problem is not an emergency, assistance is provided the next day during normal business hours.

The team receives comprehensive cross-training on all aspects of the Program, helping staff anticipate customer service questions, and teaching them how to handle repair calls from customers.

The Con Edison Central Air-Conditioning Program provides telephone support to Program participants 24 hours a day, seven days a week. During the Program year the handled more than 6,400 calls. The following table summarizes the reasons for InfoLine calls.

Number of Calls Received

Inquiry	Residential	Business
General information/applications	3692	255
Thermostat programming/customer education	893	180
Equipment	338	149
Internet customer education	397	135
Scheduling	229	30
Curtailment-related	47	16
Thank-you gift checks (incentives)	44	11
Total	**5,640**	**776**

- Marketing and Communications

Marketing and communications materials inform customers that if they participate they are helping to ensure reliable power for themselves and their neighbors.
For residential customers, the emphasis is on better comfort through the ability to adjust the temperature of one's home usage automatically both day and night. For business customers, Con Edison emphasizes better management of energy usage automatically.

Secondary messages include free installation and thank-you gifts (incentives) of $25 for residential, or $50 for business customers.

Program staff communicates with participants throughout the year. In 2008, an end-of-season letter was mailed to participants reminding them of the Program's toll-free telephone number and Web Site address, and the purpose of the Program. Three direct mail communication pieces were mailed during the Program year to all participants:

- Pre-season letter – 2008 pre-season letter was mailed to all participants of the Program.
- Post-season letter – 2008 end-of-season letter was mailed to all participants of the Program.
- End-of-season survey – All Business participants received this survey and a random sample of 5,000 Residential and Residential-Religious customers received the survey.

For the both the residential and business markets, a variety of correspondence materials have been developed and employed for Program participants, including:

- Welcome letter – After a customer applies for the Program, he or she automatically receives a letter giving detailed Program information. For Residential customers, if the customer has an e-mail address, this letter is sent via e-mail. If there is no e-mail address, the letter is mailed to the participants service address. All Business customers receive the welcome letter via mail.
- PIN letter – This letter is left with the customer as part of the installation process. It contains a user ID and password for use when programming the thermostat over the Internet.
- Technical turndown letter – If during the installation visit the technician is unable to install the thermostat for any reason, this letter is mailed to the customer expressing thanks for his or her interest in the Program.
- Thank you letter – This letter thanks the customer for enrolling in the Program, and is included with the thank you check.
- Deinstall letter – After a deinstall service visit, a deinstall letter is sent thanking the customer for his or her interest and support.

The following table represents the Program participant communication letters that were mailed to residential and business participants.

Marketing Communications

	Residential	Business
Welcome letters	1261*	762
Thank you letters	1476	508
Technical turndown letters	185	103
Deinstall letters	105	35
Total	**3027**	**1408**

* An additional 1352 letters were e-mailed.
**Note that PIN letters are distributed during installation of thermostats; they are not mailed.

During the Program year, various marketing efforts were implemented to acquire new participants for the Program. The residential flyer, an informational brochure for the program, focused on managing energy use, sustaining reliable power, and explaining other key features of the Program. The toll-free number and Program Web Site information are both contained in the flyer, providing customer program and enrollment information. Several direct mail campaigns during the year were completed for residential customers.

A winter direct mail campaign and door-to-door marketing campaign helped promote the Program to business customers. The business brochure was used by the door-to-door marketers as a leave-behind.

The brochure highlights the Program's key features such as energy management, reliable power and making a positive impact on the environment as well as enrollment information.

See the following pages for all communication letters which include:

- 2008 End-of-Season Letter
- Residential Flyer
- Residential Marketing Direct Mail Letter
- Residential Welcome Letter
- Residential Single PIN Letter
- Residential Multi PIN Letter
- Residential Gift Check Letter
- Residential Technical Turndown Letter
- Residential Deinstall Letter
- Business Program Brochure
- Business Welcome Letter
- Business Single PIN Letter
- Business Multi PIN Letter
- Business Gift Check Letter
- Business Technical Turndown Letter
- Business Deinstall Letter

2008 End-of-Season Letter

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003-0987

December 2008

Dear Con Edison Customer:

Thank you for participating in Con Edison's Central Air-Conditioning Program this year. We experienced another year of continued growth in customer enrollment in the Program. Your continued participation and use of your thermostat can help provide reliable electric service, save energy and help the environment.

As a reminder, if you use the thermostat to set your heating temperatures, consider programming your thermostat settings to adjust your home's temperature according to your lifestyle. Programmable thermostats, when used efficiently, will ensure comfortable room temperatures and help you save energy. For more helpful tips on using energy efficiently, visit www.coned.com/thepowerofgreen.

We are always interested in your feedback. A randomly selected group of program participants will receive a survey about the program. If you receive it, please take the time to complete and return the survey.

If you have questions about your programmable thermostat, you can reach us at 1-866-521-8600, Monday - Friday, from 9 a.m. to 5 p.m. or e-mail us at www.conedprograms.com. If you need immediate assistance at any other time, please call 1-866-691-0374.

Sincerely,

Andre Wellington

Andre Wellington
Program Manager

Residential Flyer

A thermostat so powerful it could make you a better New Yorker.

Manage your energy use everyday.

Your home temperature can be comfortable day and night. With a free Carrier ComfortChoice℠ seven-day programmable thermostat from Con Edison, you can program the temperature of your central air conditioner by time of day, seven days a week. You can even adjust the temperature of the thermostat remotely via the Internet.

Valued at $300 with installation — yours FREE.

We'll install a thermostat in your home at no charge to you. You'll also receive a gift of $25, as our way of saying thank you.

Save energy and help the environment.

Using a programmable thermostat saves energy and that's good for the environment. You may even be able to use the thermostat to control your heating system and save energy year 'round.

Reliable power for you and your neighbors.

When you sign up, you'll help provide more reliable power to you and your neighbors. Con Edison can adjust the thermostat temperature by just a few degrees, when necessary, to help ensure a more reliable power supply.

Sign up today.

To receive a free thermostat or for more information, call us at 1-866-521-8600 or visit www.conEd.com/cool.

This offer is available only to residential and residential religious customers with central air-conditioning in Con Edison's service area.

conEdison

Residential Marketing Direct Mail Letter

conEdison
a conEdison, inc. company

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003
www.conEd.com

Dear Con Edison Customer:

Con Edison is offering free, programmable thermostats to customers with central air-conditioning to help them efficiently manage their energy usage. These smart thermostats can be programmed manually or over the Internet. If you use the same thermostat for your cooling and heating system, the new thermostat will help you stay comfortable and use energy efficiently throughout the year.

We can arrange a convenient time to install the thermostat at no cost to you. We'll demonstrate how easy it is to program for up to seven days a week, four daily periods. The thermostat comes with a one-year warranty, and an experienced technician will service your thermostat, if necessary, free of charge.

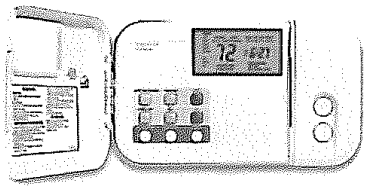
As a voluntary participant in Con Edison's Central Air-Conditioning Program, you'll be helping to provide continuous, reliable power to your home and your neighbors. Con Edison will cycle the central air-conditioner compressor on and off to reduce the demand for electricity, when necessary. The fan will continue to circulate air. You may override the adjustment to reset the temperature for comfort during these times.

We hope you will accept our offer of a free programmable thermostat. After the thermostat is installed, you'll receive a thank-you gift of $25. To learn more about this offer and to request your thermostat, call 1-866-521-8600 or visit www.conEd.com/cool.

Sincerely,

Andre Wellington

Andre Wellington
Manager, Energy Efficiency Programs



This programmable thermostat can be yours free.
Call 1-866-521-8600 or visit www.conEd.com/cool.

Residential Welcome Letter

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003-0987

December 9, 2008

Dear Valued Customer:

Congratulations! You have just signed up to receive a free high-tech thermostat from Con Edison. With its programmable and Internet-communicating features, you're in control of your home's comfort at all times. All this flexibility means you can now better manage your energy usage.

We will contact you within two weeks to schedule a convenient time to install the thermostat in your home at no charge to you. When the thermostat is installed, you will receive your personal USER NAME and PASSWORD. You will need both to activate your thermostat via the Internet, which you will be able to do seven days after it is installed.

You'll also receive your $25 sign-up bonus within six to eight weeks after your thermostat has been installed.

By accepting the thermostat, you are agreeing to allow Con Edison to make a slight adjustment when necessary to your central air-conditioning control setting. This adjustment will reduce energy usage and help to ensure continuous reliable power. You can override our adjustment by changing your thermostat manually.

If you have any questions, please contact us toll-free at 1 (866) 521- 8600 or visit our Web Site at www.coned.com/cool.

Sincerely,

Andre Wellington

Andre Wellington
Manager

Residential Single PIN Letter

Dear Valued Customer:

Your newly installed Carrier thermostat can be programmed manually while you are at home or via the Internet from anywhere. To access your thermostat over the Internet for the first time, you will need to use the USER ID and PIN provided below in this letter. You can expect your USER ID and PIN to be registered within seven days of the installation of your thermostat.

In order to access your thermostat you will need to log onto www.coned.com/cool. After you have logged onto the home page, click on the Customer Log-In tab. You will be asked to provide you USER ID and PIN.

User ID: _____

PIN: _____

Once you have entered the above information, follow the instructions on the log-in.

We hope you will enjoy using your new Carrier thermostat. If you have any questions, please call us at 1 (866) 521-8600.

Residential Multi-PIN Letter

conEdison
a conEdison, inc. company

Dear Valued Customer:

Your newly installed Carrier thermostat can be programmed manually while you are at home or via the Internet from anywhere. To access your thermostat over the Internet for the first time, you will need to use the USER ID and PIN provided below in this letter. You can expect your USER ID and PIN to be registered within seven days of the installation of your thermostat.

In order to access your thermostat you will need to log onto www.coned.com/cool. After you have logged onto the home page, click on the Customer Log-In tab. You will be asked to provide you USER ID and PIN.

USER ID	PIN

Once you have entered the above information, follow the instructions on the log-in.

We hope you will enjoy using your new Carrier thermostat. If you have any questions, please call us at 1 (866) 521-8600.

Residential Gift Check Letter

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003-0987

September 1, 2008

Dear Valued Customer:

Thank you for participating in Con Edison's Central Air Conditioning Program. In keeping with our pledge to you, enclosed is your gift of $25.

We hope that you are enjoying the convenience of using your programmable thermostat to better manage your energy usage. And we thank you for helping us to provide reliable power with a slight adjustment to your central air conditioner to reduce the demand for energy.

We welcome your questions and comments. Please contact us at 1 (866) 521-8600 or by e-mail ConEdison@conedprograms.com.

Sincerely,

Andre Wellington

Andre Wellington
Manager

Residential Technical Turndown Letter

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003-0987

September 1, 2008

John Q. Sample
123 Main Street
Anytown, NY 12345

Dear John Q. Sample:

Thank you for your interest in Con Edison's Central Air-Conditioning Program. Unfortunately, we were unable to install a programmable thermostat in your home because of technical difficulties.

If you would like to learn about other ways to use energy wisely, please visit www.coned.com/customercentral, or call Con Edison's Energy Line at 1 (800) 609-4488.

Sincerely,

Andre Wellington

Andre Wellington
Manager

Residential Deinstall Letter

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003-0987

September 5, 2008

John Q. Smith
123 Main Street
Anytown, NY 12345

Dear John Smith:

Thank you for your interest in Con Edison's Central Air-Conditioning Program. We appreciate your support of the program and regret that you have decided to return your programmable thermostat.

If you are interested in learning about other ways to use energy wisely, visit www.coned.com/customercentral, or call Con Edison's Energy Line at 1 (800) 609-4488.

Sincerely,

Andre Wellington

Andre Wellington
Manager

Business Program Brochure

FREQUENTLY ASKED QUESTIONS:

How does the thermostat work?
The thermostat's digital technology lets you manage your energy more efficiently. You can pre-program your thermostat up to four different times a day, every day of the week. You can even adjust it remotely over the Internet. Managing energy usage has never been easier.

How do I program my new Carrier thermostat?
Our technician will program it for you according to your preferences at installation. If you want to reduce cooling when your business is closed and have a cooler temperature just before you open, the technician will set that up for you. Our technician will also show you how to program the thermostat yourself and will leave you with a helpful guide for your convenience.

How do I program my thermostat over the Internet?
Just log on to www.conEd.com/cool and click the customer log-in button. Once you log on, you can see the current temperature, change the temperature, create a program, or reprogram the thermostat.

When will Con Edison adjust my air-conditioning system?
In order to continue to provide reliable power for you and your neighborhood, Con Edison can access your thermostat remotely to temporarily reduce the demand for energy. You can always override the adjustment if you need to.

How will I know my air conditioning has been adjusted?
The digital screen on the thermostat will read "curtailment" and will also count backward to show the "time left" until the thermostat returns to its pre-set temperature.

Will Con Edison turn my air conditioner off?
No. We will only cycle the compressor off and on. Your fan will continue to operate as usual.

conEdison

code: abcd

A thermostat so powerful it could make you a better New Yorker.

NEW for your business—
and it's FREE.

conEdison

Manage your energy usage while helping provide safe, reliable power for your business and your neighborhood.

Energy plays a vital role in every New York business. It powers lights, credit card terminals, computers and business equipment of all kinds plus the central air-conditioning system that maintains comfort for your customers and employees. It keeps our neighborhoods vibrant and our streets alive with commerce.

That's why Con Edison created a program to help you manage your energy usage—with the precision of digital technology. And at the same time, you will be helping us provide safe, reliable power to your business and your neighbors.

Valued at $300 with installation—it's yours FREE.

At the heart of this program is the Carrier Comfort Choice℠ thermostat. It features the latest digital technology and is programmable for seven days of the week. And as a business owner with a qualifying central air-conditioning system, it's yours free—installation included.

Adjust temperature with digital precision.

You can program the thermostat to begin cooling 30 minutes before you open. And you can have it reduce cooling when you close.

Best of all, you can adjust your temperature manually with the touch of a button. You can even change temperature settings remotely from another location, via the Internet. And, depending on your existing equipment, you can even use it to control your heating system and manage your energy usage year-round.

Keep the power flowing to your business and your community.

Con Edison will be able to adjust the temperature of your thermostat and many other thermostats just a few degrees to help maintain reliable power to your business and your neighborhood.

Make a positive impact on the environment, too.

Thousands of businesses like yours already manage their energy this smart way, because it's not only good for business, it's good for the environment.

Sign up now and receive $50.

After you've signed up, we'll schedule an installation at your convenience. A trained technician will handle your installation, test the new thermostat and even program it for you. The technician will also show you how to program the thermostat and give you a helpful guide. You'll also receive a thank you gift of $50 from Con Edison after your thermostat is installed.

To sign up, or for more information, call **1-866-521-8600** or visit **www.conEd.com/cool**.

Business Welcome Letter

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003-0987

September 1, 2008

Dear Valued Customer:

Congratulations! You have just signed up to receive a free programmable thermostat and participate in Con Edison's Central Air-Conditioning Program for business customers.

We will contact you within two weeks to schedule a convenient time to install the thermostat in your business at no charge to you. When the thermostat is installed, you will receive your personal USER NAME and PASSWORD. You will need both to activate your thermostat via the Internet, which you will be able to do seven days after it is installed.

You'll also receive your sign-up bonus within six to eight weeks after your thermostat has been installed.

By accepting the thermostat, you are agreeing to allow Con Edison to make a slight adjustment when necessary to your central air-conditioning control setting to help ensure reliable power. You can override our adjustment by changing your thermostat manually.

If you have any questions, please contact us toll-free at 1 (866) 521- 8600 or visit our Web Site at www.ConEd.com/cool.

Sincerely,

Andre Wellington

Andre Wellington
Manager

Business Single PIN Letter

Dear Valued Customer:

Your newly installed Carrier thermostat can be programmed manually or via the Internet. To access your thermostat over the Internet for the first time, you will need to use the USER ID and PIN provided below in this letter. You can expect your USER ID and PIN to be registered within seven days of the installation of your thermostat.

In order to access your thermostat you will need to log onto www.ConEd.com/cool. After you have logged onto the home page, click on the Customer Log-In tab. You will be asked to provide your USER ID and PIN.

User ID: _____

PIN: _____

Once you have entered the above information, follow the instructions on the log-in.

We hope you will enjoy using your new thermostat. If you have any questions, please call us at 1 (866) 521-8600.

Business Multi-PIN Letter

Dear Valued Customer:

Your newly installed Carrier thermostat can be programmed manually or via the Internet. To access your thermostat over the Internet for the first time, you will need to use the USER ID and PIN provided below in this letter. You can expect your USER ID and PIN to be registered within seven days of the installation of your thermostat.

In order to access your thermostat you will need to log onto www.ConEd.com/cool.
After you have logged onto the home page, click on the Customer Log-In tab. You will be asked to provide your USER ID and PIN.

USER ID	PIN

Once you have entered the above information, follow the instructions on the log-in.

We hope you will enjoy using your new thermostat. If you have any questions, please call us at 1 (866) 521-8600.

Business Gift Check Letter

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003-0987

September 1, 2008

Dear Valued Customer:

Thank you for participating in Con Edison's Central Air-Conditioning Program for business customers. In keeping with our pledge to you, enclosed is your gift of $50.

We welcome your questions and comments. Please contact us at 1 (866) 521-8600 or by e-mail ConEdison@conedprograms.com.

Sincerely,

Andre Wellington

Andre Wellington
Manager

Business Technical Turndown Letter

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003-0987

September 1, 2008

John Q. Sample Associates
123 Main Street
Anytown, NY 12345

Dear Valued Customer:

Thank you for your interest in Con Edison's Central Air-Conditioning Program for business customers. Unfortunately, we were unable to install a programmable thermostat at your facility because of technical difficulties.

If you would like to learn about other ways to use energy wisely, please visit www.coned.com/customercentral.

Sincerely,

Andre Wellington

Andre Wellington
Manager

Business Deinstall Letter

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003-0987

September 5, 2008

John Q. Smith
ACME Trading Co.
123 Main Street
Anytown, NY 12345

Dear John Smith:

Thank you for your interest in Con Edison's Central Air-Conditioning Program. We appreciate your support of the program and regret that you have decided to return your programmable thermostat.

If you are interested in learning about other ways to use energy wisely, visit www.coned.com/customercentral, or call Con Edison's Energy Line at 1 (800) 609-4488.

Sincerely,

Andre Wellington

Andre Wellington
Manager

Appendix D—Operational Activities

D1. Technical Turndowns

There are several reasons why applicants drop out of the Program before installation. These customers sign up for the Program and schedule an appointment for installation, but are not able to have the equipment installed.

- Wiring – The wiring is not compatible with the new equipment. Customers with this problem can choose to have an electrician install the required wires and reschedule the installation.
- Damper Systems – The thermostat used in the Program is not compatible with systems that have motorized dampers in the ductwork. While an attempt to screen for this condition occurs when customers apply, customers are often unaware that their systems incorporate this component.
- No Access – The air-handling system that the thermostat is directly wired to could not be safely accessed.
- Customer Refusals – A customer refuses to have the thermostat installed when the installer arrives.
- Unit Condition − If a customer's cooling system is inoperable or in poor condition, a thermostat is not installed. Customers may reschedule after their equipment has been repaired or replaced.
- Heat/Cool Stat – Proper wiring may not be available to install the thermostat with heat/cool mode capability. Customers may choose the option of having the thermostat installed for only their central air-conditioning, leaving their original thermostat in place for heat control.
- Mounting – In some cases, the new thermostat did not fit into the space where it would be mounted. Other homes, facilities or businesses had existing thermostats located on the wall that did not match the size of the new Carrier Comfort Choice thermostat.

The tables below show the reasons why new applicants from technical turndowns drop out of the Program. The number one reason that customers were unable to join the Program was due to incompatible wiring for residential customers and lack of accessibility to the equipment for business customers.

2008 Program Year - Residential Technical Turndowns

	Cumulative	Westchester	Staten Island	Queens	Brooklyn	Bronx	Manhattan
Wiring	56	18	21	11	3	1	2
Unit Condition	52	14	20	10	1	7	0
No Access	43	12	16	9	3	2	1
Heat/Cool Stat	29	5	16	6	1	1	0
Damper System	17	5	8	2	0	2	0
Mounting	12	4	5	2	0	1	0
Other	1	1	0	0	0	0	0
Total	**210**	**59**	**86**	**40**	**8**	**14**	**3**

2008 Program Year - Business Technical Turndowns

	Cumulative	Westchester	Staten Island	Queens	Brooklyn	Bronx	Manhattan
No Access	43	0	1	3	4	21	14
Unit Condition	32	2	0	4	1	15	10
Wiring	25	3	3	5	4	7	3
Damper System	5	2	0	0	0	2	1
Mounting	2	0	0	0	1	1	0
Heat/Cool Stat	1	0	0	0	0	1	0
Total	**108**	**7**	**4**	**12**	**10**	**47**	**28**

D2. Service Calls

Most service calls were related to "No Air-Conditioning" or "No Heat" complaints. The representatives try to diagnose whether or not the problem is related to the thermostat; however, it is not always possible to make this determination and a service call may be necessary. While the installers take precautions during the installations by inspecting equipment to ensure that it is in good condition, this does not guarantee that the equipment will operate properly once the heating or cooling season begins. The representative takes the customer through a checklist to attempt to identify the cause of the problem to avoid unnecessary service calls by service technicians. In most cases, the problem is not thermostat-related and the customer is instructed to contact their own HVAC technician to repair their equipment. In cases where it may be a thermostat-related problem, a service visit is scheduled to correct the problem. The following table shows all service visits for the Program year by reason.

Service Visits: 2008 Program Year

	Residential	Business	Total
Control replaced	134	58	192
Customer relations	91	50	141
Appliance	70	46	116
Wiring control	37	15	52
Thermostat replaced	35	21	56
Breaker/fuse	8	9	17
Wiring thermostat	8	5	13
Other *(refused service)*	2	0	2
Total	**385**	**204**	**589**

- Non-Responding Thermostats (NRTs)

One of the primary benefits of using two-way communicating thermostats in a program is that it allows the utility to know how many active participants it has in its program. The Carrier Comfort Choice system monitors the operation of each of the installed systems. These "heartbeats" are analyzed once a week. If a unit stops "heartbeating" it may be an indication that something has gone wrong. This could be caused by anything from an equipment failure to a customer having removed the system.

At the first occurrence of warmer weather, when customers begin to use their central air-conditioners, a list of non-responding thermostats (NRTs) is developed. The NRT resolution process is ongoing, with the list updated at the beginning of every cooling season. This list consists of only those customers who have lost communications (have no heartbeat) for more than 100 days. NRTs are defined as thermostats that miss a "heartbeat" for three weeks in a row. The NRT list contains full customer information and the number of days without communication.

The first step in resolving an NRT is for representatives to attempt to contact each customer on the list. Customers are asked if their thermostats are still installed and operating. If a thermostat was removed, the customer is categorized as a "deinstall." If the thermostat is still installed, a service visit is scheduled. During the service visit, the equipment problem is corrected and the customer is placed back on active status. Customers who cannot be reached are mailed a letter requesting that the customer contact the within 30 days or their Internet access will be terminated. In the final stage of an NRT, the thermostat is placed in "hibernate" mode. Hibernate mode is used only when all attempts to contact the customer fail, resulting with the inability to verify that the thermostat is still installed and inability to access their thermostat for curtailments. Should the customer call and verify that the thermostat is still installed, they can be reinstated into the Program.

D3. Quality Control

- Customer Surveys

Post-Installation Survey

Each month, 10% of the new installation customers are contacted to determine their satisfaction with the installer, the installation process, the installer's ability to explain the programming features of the thermostat, the installation scheduling, and the equipment installed. Both residential and business customers surveyed were extremely satisfied with the installation process and installer.

The following pages include a copy of the "Follow-up Customer Satisfaction Survey" instrument and a graphic depiction summarizing the results of the customers' responses for each question in the survey.

Con Edison Central Air-Conditioning Program
Follow-up Customer Satisfaction Survey

Rate your satisfaction with the following components using a scale of 1 to 5 where "1" is "extremely satisfied" and "5" is "extremely dissatisfied."

1. Was the installer polite?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

2. Did the installer behave in a professional manner?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

3. Did the installer program your thermostat and explain to you how to program the thermostat?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

4. Did the installer explain all the features on the thermostat?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

5. Did the installer answer all your questions?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

6. Did the installer clean up the work area?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

7. Did the installer leave the old thermostat with you?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

8. Was the installer on-time?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

8a. If not, how late was the installer?
_____hours.

9. How satisfied were you with the information you received about the program?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

10. How satisfied were you with the ease of scheduling the installation?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

11. How satisfied were you with the quality of the equipment installed?

Extremely Satisfied		Satisfied		Extremely Dissatisfied	Don't Know
1	2	3	4	5	6

12. Do you have any other comments about your installation experience?

_____

_____

_____

_____

Residential Survey Responses:

Rating Scale: 5 = Very Satisfied, 3 = Neutral, 1 = Very Dissatisfied

- "Don't know" responses are not included in the rating.

Question Number	Number of Responses	Number of "Don't Know"
Question 1	187	0
Question 2	187	0
Question 3	184	3
Question 4	184	3
Question 5	187	0
Question 6	187	0
Question 7	175	12
Question 8	185	2
Question 9	187	0
Question 10	185	2
Question 11	187	0

Comments:
Compressor not working = 1 response

Business Survey Responses:

Rating Scale: 5 = Very Satisfied, 3 = Neutral, 1 = Very Dissatisfied

- "Don't know" responses are not included in the rating.

Question Number	Number of Responses	Number of "Don't Know"
Question 1	87	0
Question 2	87	0
Question 3	86	1
Question 4	85	2
Question 5	86	1
Question 6	86	1
Question 7	77	10
Question 8	84	3
Question 9	85	2
Question 10	83	4
Question 11	78	9

Technical Turndown Survey

The installation contractor provides a weekly report of customers who signed up for the Program, had a scheduled appointment for installation, but were not able to have the equipment installed. As part of the quality control process, all technical turndown customers are called to determine why the installation could not be completed. The reasons that the customers state during this survey are then compared to the reasons stated by the installation contractor, and any discrepancies are resolved. In some cases, customers had fixed their broken equipment and were able to reschedule the appointment.

For the Residential Program, there were a total of 276 technical turndowns (including 66 customer refusals). Of that population, 188 customers were contacted, 18 of whom had rescheduled installation appointments. For the Business Program, there were a total of 155 technical turndowns (including 47 customer refusals). Of that population, 114 customers were contacted. A copy of the survey instrument is located on the following page.

Con Edison Central Air-Conditioning Program
Technical Turndown Survey

A telephone survey is conducted for customers who are "Technical Turndowns." These are customers who have the installer come to their home, facility or business, and for one of several reasons, the installation cannot be completed.

Reasons for Technical Turndowns

Condition	Customer's equipment is not working
Location	Air handler is not accessible
Wiring	Problem with wiring in home, facility or business
Mounting	Thermostat could not fit on wall
Damper System	Customer has damper system
Wanted Heat/Cool Thermostat	Customer wanted a "heat/cool" thermostat
Customer Cancel	During the installation, customer decided to cancel

Telephone representatives attempt to contact 100% of these customers, except for "damper system" and "wanted heat/cool thermostat" turndowns. If the representative successfully contacts the customer, he or she will ask what reason prevented the thermostat from being installed and will write down the reason the customer states. The customer's reason is then compared to the reason given by the technician. All discrepancies are resolved. Most technical turndowns are not discovered until the installer is at the home, facility or business. During the application intake and the scheduling process, customers are questioned as to whether they have a damper system so as to avoid a technical turndown.

- Field Inspections

The contractor conducts a field review of a minimum of 10% of all successful installations. Supervisors conduct on-site quality control inspections for all installers which includes a checklist for each field review. This inspection is a formalized field audit process which covers all aspects of installation and customer education. Its goal is to assure that each staff member performs up to expectations and in full accordance with the Program's guidelines. In cases where an installer is found to need improvement, refresher training is provided. The installer's work is 100% inspected throughout the re-training period. Any installer who is provided refresher training and does not improve is removed from the Program. The installation contractor provides "Quality Assurance Quarterly Inspection Reports" reflecting the inspection data. Achieving high standards is the goal for all aspects of Program operations, including data integrity and administrative functions.

Contractor Quality Assurance Report Program Year

Total CAC Controls Installed	Total Installation Inspections	% of Total Installations Inspected	Total Installations That Passed Inspection	% of Installations That Passed Inspection
2,446	266	10.9%	263	98.9%

D5. Customer Claims

Customer claims occur when a customer submits a claim for reimbursement for equipment damage that they believe was caused by the installation of a thermostat, or a malfunction of an installed thermostat. The claim is reviewed and, if necessary, an on-site inspection is conducted. A letter is then mailed to the customer with the results of the investigation.

Residential Customer Claims

Number of Customers	Total Claims $	Claims Paid	Claims Denied
11	$6,933	$3,500	$3,433

Business Customer Claims

Number of Customers	Total Claims $	Claims Paid	Claims Denied
2	$9,669	$0	$9,669

Appendix E—Customer Communications and Marketing

The Web Site (www.conEd.com/cool) is an integral part of the Program, which services participants and acts as a recruitment medium for both residential and business markets. The Web Site supports marketing through a comprehensive menu of information sources. It also allows customers to enroll in the Program by submitting an application online. The Program's Web Site is used to support various Program activities. These activities include:

- Providing for interested participants general Program information
- Enabling online enrollment for the Program
- Providing information on the operation and programming of the thermostat
- Providing a web link to the Web Site established for online thermostat control

The following table shows the number of visits ("hits") for the 2008 Program year:

Month	Total Visitor Sessions	Unique Visitors	Visitors Who Visited More Than Once
January	3,060	1,207	1,853
February	2,532	959	1,573
March	2,810	1,271	1,539
April	2,226	1,033	1,193
May	2,095	1,043	1,052
June	6,278	3,369	2,909
July	6,185	3,114	3,071
August	3,609	1,666	1,943
September	2,899	1,381	1,518
October	2,709	1,129	1,580
November	2,852	1,022	1,830
December	3,120	870	2,250

Web Site visits for the total year:

Visitor Sessions	Unique Visitors	Visitors Who Visited More Than Once
40,375	18,064	22,311

Appendix F—2008 End-of-Season Survey

An end-of-season survey was administered among all business participants and to a random sample of 5,000 residential participants.

Information pertaining to the survey as well as results of the survey can be found on the following pages:

- Cover Letter
- Business Program End-of-Season Survey
- Residential Program End-of-Season Survey
- Business Program Key Findings
- Business Program End-of-Season Survey Tabulations
- Residential Program Key Findings
- Residential Program End-of-Season Survey Tabulations

Cover Letter

Consolidated Edison Company
of New York, Inc.
4 Irving Place
New York NY 10003-0987

January 2009

Dear Con Edison Customer:

You were randomly selected as a program participant to receive the enclosed 2008 Con Edison Central-Air Conditioning Program survey. By completing this survey, you are providing us feedback on the overall quality of the program.

We hope that you will take the time to complete the survey since your participation is key to understanding how we can better serve you. Please return the survey in the enclosed pre-addressed, postage-paid envelope before February 13, 2009.

Thank you,

Andre Wellington

Andre Wellington
Program Manager

Con Edison Central Air-Conditioning Program
2008 Residential Participant Survey

Please check the appropriate box: □ Residential Homeowner □ Religious Institution

1. Including 2008, how many years have you participated in the Con Edison Central Air-Conditioning Program?

   _____ Less than one year _____ 1 – 3 years _____ more than 3 years

2. Why did you participate in the program? *(Circle all that apply)*
   1. Free thermostat
   2. $25 incentive bonus
   3. Internet accessibility
   4. Manage energy use
   5. Help reduce strain on the Con Edison electric system, when needed
   6. Other: _____

Please circle one response to each question:

3. Do you use the programming features on your thermostat?

Yes	*No*	
1	2	If no, please explain why _____ *(Skip to Question 4)*

If you answered YES to Question 3, please answer Question 3a.

3a. How would you rate the ease of programming your thermostat?

Extremely Easy	*Easy*	*Difficult*		*Extremely Difficult*
1	2	3	4	

4. Overall, do you feel that your thermostat is user friendly?

Very User Friendly	*User Friendly*	*User Unfriendly*	*Very User Unfriendly*
1	2	3	4

5. Did you program your thermostat settings over the Internet this past summer?

Yes	*No (Skip to Question 5d)*
1	2

If you answered YES to Question 5, please answer Questions 5a, 5b and 5c.

5a. How many times have you programmed your thermostat settings over the Internet?

One time	*Two to four times*	*Five or more times*
1	2	3

5b. How would you rate the ease of programming your thermostat settings over the Internet?

Extremely Easy	*Easy*	*Difficult*	*Extremely Difficult*
1	2	3	4

5c. How would you rate the usefulness of this feature?

Very Useful	*Useful*	*Not Useful*	*Not at all Useful*
1	2	3	4

If you answered NO to Question 5, please answer Question 5d.

5d. Please select the reason why you have not programmed your thermostat settings over the Internet:
   1. I do not have access to a computer
   2. I am not interested
   3. I do not have a communication signal
   4. I am unaware of Internet features
   5. Other: _____

6. Would you be interested in receiving information about the program or other energy efficiency programs through e-mail?

Yes	*No*
1	2

If yes, please provide your e-mail address: *(Remains Confidential)*

_____ **[Continued on back]**

7. Have you called the Con Edison Central Air-Conditioning Program InfoLine?

Yes	*No (Skip to Question 8)*
1	2

If you answered YES to Question 7, please answer Question 7a.

7a. How helpful do you feel the InfoLine was in responding to your questions?

Extremely Helpful	*Helpful*	*Unhelpful*	*Extremely Unhelpful*
1	2	3	4

8. Have you called the after hours phone service?

Yes	*No (Skip to Question 9)*
1	2

If you answered YES to Question 8, please answer Question 8a.

8a. How helpful do you feel the after hours phone service was in responding to your questions?

Extremely Responsive	*Responsive*	*Unresponsive*	*Extremely Unresponsive*
1	2	3	4

9. This summer, did you override the thermostat on your central air-conditioning system?

Yes (Continue)	*No (Skip to Question 10)*
1	2

If you answered YES to Question 9, please answer Questions 9a, 9b and 9c.

9a. How many times did you override your thermostat this summer? _____ *times*

9b. Please explain the reason(s) why you overrode. *(Circle all that apply)*

1. *Too hot in residence*
2. *Health reasons*
3. *Other:* _____

9c. How would you rate your comfort level before you overrode the thermostat?

Very Comfortable	*Somewhat Comfortable*	*Somewhat Uncomfortable*	*Very Uncomfortable*
1	2	3	4

10. Overall, how satisfied are you with the Con Edison Central Air-Conditioning Program?

Very Satisfied	*Somewhat Satisfied*	*Somewhat Dissatisfied*	*Very Dissatisfied*
1	2	3	4

10a. How likely are you to recommend a friend or family member to participate in the Con Edison Central Air-Conditioning Program?

Very Likely	*Somewhat Likely*	*Somewhat Unlikely*	*Unlikely*	*Very*
1	2	3		4

Recommendations / Suggestions / Comments: _____

_____

Optional: Name: _____

Address: _____

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY. PLEASE RETURN THIS SURVEY IN THE ENCLOSED PRE-ADDRESSED, POSTAGE-PAID ENVELOPE BEFORE FEBRUARY 13, 2009.

Con Edison Central Air-Conditioning Program
2008 Business Participant Survey

1. Including 2008, how many years have you participated in the Con Edison Central Air-Conditioning Program?

   _____ Less than one year _____ 1 – 3 years _____ 3 years or more

2. Why did you participate in the program? *(Circle all that apply)*
   - *1. Free thermostat*
   - *2. $50 incentive bonus*
   - *3. Internet accessibility*
   - *4. Manage energy use*
   - *5. Help reduce strain on the Con Edison electric system, when needed*
   - *6. Other: _____*

Please circle one response to each question:

3. Do you use the programming features on your thermostat?

Yes	*No*	
1	2	If no, please explain why _____ *(Skip to Question 4)*

If you answered YES to Question 3, please answer Question 3a.

3a. How would you rate the ease of programming your thermostat?

Extremely Easy	*Easy*	*Difficult*	*Extremely Difficult*
1	2	3	4

4. Overall, do you feel that your thermostat is user friendly?

Very User Friendly	*User Friendly*	*User Unfriendly*	*Very User Unfriendly*
1	2	3	4

5. Did you program your thermostat settings over the Internet this past summer?

Yes	*No (Skip to Question 5d)*
1	2

If you answered YES to Question 5, please answer Questions 5a, 5b and 5c.

5a. How many times have you programmed your thermostat settings over the Internet?

One time	*Two to four times*	*Five or more times*
1	2	3

5b. How would you rate the ease of programming your thermostat settings over the Internet?

Extremely Easy	*Easy*	*Difficult*	*Extremely Difficult*
1	2	3	4

5c. How would you rate the usefulness of this feature?

Very Useful	*Useful*	*Not Useful*		*Not at all Useful*
1	2	3	4	

If you answered NO to Question 5, please answer Questions 5d.

5d. Please select the reason why you have not programmed your thermostat settings over the Internet:

- *1. I do not have access to a computer*
- *2. I am not interested*
- *3. I do not have a communication signal*
- *4. I am unaware of Internet features*
- *5. Other: _____*

6. Would you be interested in receiving information about the program or other energy efficiency programs through e-mail?

Yes	*No*
1	2

If yes, please provide your e-mail address: *(Remains Confidential)*

_____ **[Continued on back]**

7. Have you called the Con Edison Central Air-Conditioning Program ?

Yes	*No (Skip to Question 8)*
1	2

If you answered YES to Question 7, please answer Question 7a.

7a. How helpful do you feel the InfoLine was in responding to your questions?

Extremely Helpful	*Helpful*	*Unhelpful*	*Extremely Unhelpful*
1	2	3	4

8. Have you called the after hours phone service?

Yes	*No (Skip to Question 9)*
1	2

If you answered YES to Question 8, please answer Question 8a.

8a. How helpful do you feel the after hours phone service was in responding to your questions?

Extremely Responsive	*Responsive*	*Unresponsive*	*Extremely Unresponsive*
1	2	3	4

9. This summer, did you override the thermostat on your central air-conditioning system?

Yes (Continue)	*No (Skip to Question 10)*
1	2

If you answered YES to Question 9, please answer Questions 9a, 9b and 9c.

9a. How many times did you override your thermostat this summer? _____ *times*

9b. Please explain the reason(s) why you overrode. *(Circle all that apply)*

1. *Too hot in building*
2. *Customer complaints*
3. *Employee complaints*
4. *Other:* _____

9c. How would you rate your comfort level before you overrode the thermostat?

Very Comfortable	*Somewhat Comfortable*	*Somewhat Uncomfortable*	*Very Uncomfortable*
1	2	3	4

10. Overall, how satisfied are you with the Con Edison Central Air-Conditioning Program?

Very Satisfied	*Somewhat Satisfied*	*Somewhat Dissatisfied*	*Very Dissatisfied*
1	2	3	4

10a. How likely are you to recommend that another business associate participate in the Con Edison Central Air-Conditioning Program?

Very Likely	*Somewhat Likely*	*Somewhat Unlikely*	*Very Unlikely*
1	2	3	4

Recommendations / Suggestions / Comments: _____

_____

Optional: Name: _____

Address: _____

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY. PLEASE RETURN THIS SURVEY IN THE ENCLOSED PRE-ADDRESSED, POSTAGE-PAID ENVELOPE BEFORE FEBRUARY 13, 2009.

Business Program Key Findings

Business Participants

- Overall, the majority of respondents reported satisfaction with the Program. Based on survey results, 90% of respondents indicated that they were either satisfied or extremely satisfied.
- A resounding majority of business respondents (89%) would recommend the program to a business associate.
- Most business respondents reported that they use the thermostat programming features. A majority of respondents (85%) use the programming feature of their thermostat. 85% find the thermostat user-friendly and 87% assert the thermostat is either easy or extremely easy to program.
- The most commonly reported reason for not using the Internet programming feature was being unaware of this feature (37%), followed by lack of interest (24%).
- Among those who use the Internet feature to program their thermostats (19%), 82% used the Internet feature more than once. Of those using the Internet feature, 92% feel it is a useful feature of the Program and 88% reported the feature easy to use.
- While the strong majority of participants did not need to contact the InfoLine (81%), 93% of those that did found it either helpful or extremely helpful. Only 4% of respondents used the after hours phone service, and of those 69% reported the service either responsive or extremely responsive.
- Most respondents indicated an elevated level of energy awareness. More than half of respondents (55%) indicated energy management was important, and slightly less than half of the respondents (41%) reported a desire to reduce the strain on the Con Edison electric system when needed. Additionally, 44% reported interest in receiving further information about other energy efficiency programs.
- Most participants in the Program did not override their thermostats (59%). Those that did override their thermostats did so five or more times (50%), most commonly reporting their comfort level as either somewhat uncomfortable (40%) or somewhat comfortable (28%) prior to overriding. Excessive heat in the building was the most common reason (63%), followed by customer complaints (44%).

The following tables provide detailed results for the 2008 business survey.

2008 Business Participant Survey Tabulations

Surveys mailed: 5,000
Surveys returned: 415
Note: NR =Number of No-Responses (which are not included in totals)

1. Including 2008, how many years have you participated in the Con Edison Central Air-Conditioning Program?

	# of Responses*	%**
Less than one year	59	14.7%
1 – 3 years	260	64.8%
3 years or more	82	20.4%
Total	401	100%

*NR = 14
****** Totals may not equal 100% due to rounding

2. Why did you participate in the program? *(Circle all that apply)*

	# of Responses*	%
Free thermostat	248	59.8%
$50 incentive bonus	160	38.6%
Internet accessibility	98	23.6%
Manage energy use	227	54.7%
Help reduce strain on the Con Edison electric system, when needed	168	40.5%
Other	5	1.2%

*Multiple responses accepted

Other comments:
Already installed = 2
Corporate Office Mandated = 1

Please circle one response to each question:

3. Do you use the programming features on your thermostat?

	# of Responses*	%
Yes	350	85.2%
No	61	14.8%
Total	411	100%

*NR = 4

If no, please explain:
Unsure how to use/complicated = 24
No need to use = 14
Business hours fluctuate = 5

If you answered YES to Question 3, please answer Question 3a.

3a. How would you rate the ease of programming your thermostat?

Average rating: 1.92

	# of Responses*	%**
1=Extremely Easy	79	23.0%
2=Easy	220	64.1%
3=Difficult	36	10.5%
4=Extremely Difficult	8	2.3%
Total	343	100%

*NR = 7

**Totals may not equal 100% due to rounding

4. Overall, do you feel that your thermostat is user friendly?

Average rating: 2.0

	# of Responses*	%**
1= Very User Friendly	78	19.3%
2=User Friendly	264	65.2%
3=User Unfriendly	49	12.1%
4=Very User Unfriendly	14	3.5%
Total	405	100%

*NR = 10

** Totals may not equal 100% due to rounding

5. Did you program your thermostat settings over the Internet this past summer?

	# of Responses*	%
Yes	78	19.0%
No	332	81.0%
Total	410	100%

NR = 5

If you answered YES to Question 5, please answer Questions 5a, 5b and 5c.

5a. How many times have you programmed your thermostat settings over the Internet?

	# of Responses*	%
One time	14	18.4%
Two to four times	32	42.1%
Five or more times	30	39.5%
Total	76	100%

*NR = 2

5b. How would you rate the ease of programming your thermostat settings over the Internet?

Average rating: 1.83

	# of Responses*	%
1=Extremely Easy	25	32.9%
2=Easy	42	55.3%
3=Difficult	6	7.9%
4=Extremely Difficult	3	3.9%
Total	76	100%

*NR = 2

5c. How would you rate the usefulness of this feature?

Average rating = 1.65

	# of Responses*	%**
1=Very Useful	35	45.5%
2=Useful	36	46.8%
3=Not Useful	4	5.2%
4=Not at all Useful	2	2.6%
Total	77	100%

*NR = 1

** Totals may not equal 100% due to rounding

If you answered NO to Question 5, please answer Questions 5d.

5d. Please select the reason why you have not programmed your thermostat settings over the Internet:

	# of Responses*	%
1. I do not have access to a computer	58	18.4%
2. I am not interested	75	23.8%
3. I do not have a communication signal	12	3.8%
4. I am unaware of Internet features	109	34.6%
5. Other	61	19.4%
Total	315	100%

*NR = 17

Other comments:
No need = 42
Too difficult = 12
Does not work = 6

6. Would you be interested in receiving information about the program or other energy efficiency programs through e-mail?

	# of Responses*	%
Yes	178	44.1%
No	226	55.9%
Total	404	100%

*NR = 11

7. Have you called the Con Edison Central Air-Conditioning Program ?

	# of Responses*	%
Yes	76	18.9%
No	327	81.1%
Total	403	100%

*NR = 12

If you answered YES to Question 7, please answer Question 7a.

7a. How helpful do you feel the InfoLine was in responding to your questions?

Average rating: 1.78

	# of Responses*	%**
1=Extremely Helpful	22	30.6%
2=Helpful	45	62.5%
3=Unhelpful	4	5.6%
4=Extremely Unhelpful	1	1.4%
Total	72	100%

*NR = 4

** Totals may not equal 100% due to rounding

8. Have you called the after hours phone service?

	# of Responses*	%
Yes	16	4.2%
No	361	95.8%
Total	377	100%

*NR = 38

If you answered YES to Question 8, please answer Question 8a.

8a. How helpful do you feel the after hours phone service was in responding to your questions?

Average rating = 2.13

	# of Responses	% **
1=Extremely Responsive	3	18.8%
2=Responsive	8	50.0%
3=Unresponsive	5	31.3%
4=Extremely Unresponsive	0	0.0%
Total	16	100%

** Totals may not equal 100% due to rounding

9. This summer, did you override the thermostat on your central air-conditioning system?

	# of Responses*	%
Yes	157	40.8%
No	228	59.2%
Total	385	100%

*NR = 30

If you answered YES to Question 9, please answer Questions 9a, 9b and 9c.

9a. How many times did you override your thermostat this summer?

	# of Responses*	%**
1	15	10.2%
2	34	23.1%
3	16	10.9%
4	8	5.4%
5+	74	50.3%
Total	147	100%

*NR = 10
** Totals may not equal 100% due to rounding

9b. Please explain the reason(s) why you overrode. *(Circle all that apply)*

	# of Responses*	**%****
1. Too hot in building	99	63.1%
2. Customer complaints	68	43.3%
3. Employee complaints	64	40.8%
4. Other	17	10.8%

*Multiple responses accepted

Other comments:
Comfort = 11
Business Sensitive to Heat = 6

9c. How would you rate your comfort level before you overrode the thermostat?

Average rating = 2.68

	# of Responses*	%
1=Very Comfortable	19	12.3%
2=Somewhat Comfortable	43	27.7%
3=Somewhat Uncomfortable	62	40.0%
4=Very Uncomfortable	31	20.0%
Total	155	100%

*NR = 2

10. Overall, how satisfied are you with the Con Edison Central Air-Conditioning Program?

Average rating = 1.69

	# of Responses*	%**
1=Very Satisfied	179	44.9%
2=Somewhat Satisfied	179	44.9%
3=Somewhat Dissatisfied	26	6.5%
4=Very Dissatisfied	15	3.8%
Total	399	100%

*NR = 16
** Totals may not equal 100% due to rounding

10a. How likely are you to recommend that another business associate participate in the Con Edison Central Air-Conditioning Program?

Average rating = 1.66

	# of Responses*	%
1=Very Likely	191	49.1%
2=Somewhat Likely	154	39.6%
3=Somewhat Unlikely	28	7.2%
4=Unlikely	16	4.1%
Total	389	100%

*NR = 26

Recommendations / Suggestions / Comments:

15 responses = Pleased with program
15 responses = Thermostat problems
11 responses = Need help programming the thermostat
8 responses = Bills higher
4 responses = Need Internet Programming Assistant
4 responses = Internet Access does not work

One response each:

Check up visit on programming thermostat in summer/winter
Email alerts if temp is too high/low
Check type of business to tailor CAC
Offer solar panels
User password for to restrict Internet access
Publish more info on the program
Install problem discovered by a/c repairman
Make available for zoned system
Have Coned Rep sit face to face to discuss program
No longer wishes to be in program

Residential Program Key Findings

- Based on end-of-season survey results, over 92% of respondents indicated that they were satisfied or extremely satisfied with the Program overall. A high level of overall satisfaction with the Residential Program is evident by the 90% of respondents that would recommend the Program to a friend or relative.
- Program participants are predominantly residential homeowners (98%), with only 2% indicating Religious Institutions. The average duration of participation among respondents was three years or more (47%), followed closely by one to three years (40%).
- Participation in the Program is motivated primarily by the free thermostat (71%), followed by the desire to manage energy (56%) and to reduce the strain on the Con Edison electric system when necessary (52%). Increasing interest in energy usage was further evident by 50% of respondents reporting interest in receiving e-mail communication regarding other energy efficiency programs.
- A significant majority of respondents (80%) use the programming feature of their thermostat and 83% find the thermostat to be user-friendly. In addition, 86% of respondents rate the thermostat easy or extremely easy to program, an increase of 17% from last year.
- The Internet programming feature was used by 15% of respondents, with 78% reporting using it more than once. Of those who use the Internet programming feature, 89% indicated the feature was easy to use and 95% feel it is a useful feature of the Program.
- Most participants that did not use the Internet programming feature indicated they were unaware of the Internet features (37%) or that they were not interested (26%).
- The majority of participants did not contact the (79%). Of those who had, 87% found the either helpful or extremely helpful in responding to their questions. Only 6% of respondents found it necessary to use the after hours phone service, and 77% of those found that service to be either responsive or extremely responsive in serving their needs.
- Slightly more than one-third of respondents found it necessary to override their thermostats (34%) during the summer of 2008. The average participant reported using the override feature only twice (37%), followed by five times or more (23%).
- Of those who used the override feature, 49% reported being somewhat uncomfortable prior to overriding compared to 24% reporting somewhat comfortable prior to using the override feature. The most commonly reported reason for using the override feature was the residence becoming too hot (77%).

The following tables provide detailed results for the 2008 survey.

2008 Residential Participant Survey Tabulations

Surveys mailed: 5,000
Surveys returned: 1,012
Note: NR = No-Response (these are not included in totals)

Respondent Category:

	# of Responses*	%
Residential Homeowner	660	98.2%
Religious Institution	12	1.8%
Total	672	100%

*NR = 349

1. Including 2008, how many years have you participated in the Con Edison Central Air-Conditioning Program?

	# of Responses*	%
Less than one year	128	13.1%
1 – 3 years	395	40.3%
3 years or more	457	46.6%
Total	980	100%

*NR = 41

2. Why did you participate in the Program? *(Circle all that apply)*

	# of Responses*	%
Free thermostat	721	70.6%
$25 incentive bonus	402	39.4%
Internet accessibility	239	23.4%
Manage energy use	574	56.2%
Help reduce strain on the Con Edison electric system, when needed	530	51.9%
Other	22	2.2%

*Multiple responses accepted

Other comments:
Help Environment = 7
Already installed = 4

Please circle one response to each question:

3. Do you use the programming features on your thermostat?

	# of Responses*	%
Yes	809	80.3%
No	199	19.7%
Total	1008	100%

*NR = 13

If no, please explain:
Unsure how to use/complicated = 87
No need to use = 56
Irregular Schedule = 10

If you answered YES to Question 3, please answer Question 3a.

3a. How would you rate the ease of programming your thermostat?

Average rating: 1.95

	# of Responses*	%
1=Extremely Easy	165	20.8%
2=Easy	514	64.8%
3=Difficult	104	13.1%
4=Extremely Difficult	10	1.3%
Total	793	100%

*NR = 16

4. Overall, do you feel that your thermostat is user friendly?

Average rating: 2.02

	# of Responses	%**
1= Very User Friendly	187	18.8%
2=User Friendly	637	64.1%
3=User Unfriendly	131	13.2%
4=Very User Unfriendly	38	3.8%
Total	993	100%

*NR = 28

** Totals may not equal 100% due to rounding

5. Did you program your thermostat settings over the Internet this past summer?

	# of Responses*	%
Yes	148	14.8%
No	851	85.2%
Total	999	100%

*NR = 22

If you answered YES to Question 5, please answer Questions 5a, 5b and 5c.

5a. How many times have you programmed your thermostat settings over the Internet?

	# of Responses*	%**
One time	32	21.9%
Two to four times	57	39.0%
Five or more times	57	39.0%
Total	146	100%

*NR = 2

** Totals may not equal 100% due to rounding

5b. How would you rate the ease of programming your thermostat settings over the Internet?

Average rating: 1.83

	# of Responses*	%
1=Extremely Easy	45	31.0%
2=Easy	84	57.9%
3=Difficult	12	8.3%
4=Extremely Difficult	4	2.8%
Total	145	100%

*NR = 3

5c. How would you rate the usefulness of this feature?

Average rating = 1.43

	# of Responses*	%**
1=Very Useful	92	63.0%
2=Useful	46	31.5%
3=Not Useful	7	4.8%
4=Not at all Useful	1	0.7%
Total	146	100%

*NR = 2
** Totals may not equal 100% due to rounding

If you answered NO to Question 5, please answer Questions 5d.

5d. Please select the reason why you have not programmed your thermostat settings over the Internet:

	# of Responses*	%
1. I do not have access to a computer	150	19.3%
2. I am not interested	202	25.9%
3. I do not have a communication signal	36	4.6%
4. I am unaware of Internet features	287	36.8%
5. Other	104	13.4%
Total	779	100%

*NR = 72

Other comments:
No need = 72
Too difficult = 18
Computer Issues = 7

6. Would you be interested in receiving information about the Program or other energy efficiency programs through e-mail?

	# of Responses*	%
Yes	482	49.8%
No	486	50.2%
Total	968	100%

*NR = 53

7. Have you called the Con Edison Central Air-Conditioning Program ?

	# of Responses*	%
Yes	208	20.8%
No	790	79.2%
Total	998	100%

*NR = 23

If you answered YES to Question 7, please answer Question 7a.

7a. How helpful do you feel the InfoLine was in responding to your questions?

Average rating: 1.73

	# of Responses*	%**
1=Extremely Helpful	88	43.3%
2=Helpful	89	43.8%
3=Unhelpful	18	8.9%
4=Extremely Unhelpful	8	3.9%
Total	203	100%

*NR = 5

** Totals may not equal 100% due to rounding

8. Have you called the after hours phone service?

	# of Responses*	%
Yes	55	5.9%
No	874	94.1%
Total	929	100%

*NR = 92

If you answered YES to Question 8, please answer Question 8a.

8a. How helpful do you feel the after hours phone service was in responding to your questions?

Average rating = 2.02

	# of Responses*	%
1=Extremely Responsive	14	26.4%
2=Responsive	27	50.9%
3=Unresponsive	9	17.0%
4=Extremely Unresponsive	3	5.7%
Total	53	100%

*NR = 2

9. This summer, did you override the thermostat on your central air-conditioning system?

	# of Responses*	%
Yes	325	34.4%
No	619	65.6%
Total	944	100%

*NR = 77

If you answered YES to Question 9, please answer Questions 9a, 9b and 9c.

9a. How many times did you override your thermostat this summer?

	# of Responses*	%**
1	39	16.7%
2	86	36.8%
3	36	15.4%
4	20	8.4%
5+	53	22.6%
Total	234	100%

*NR = 91

****** Totals may not equal 100% due to rounding

9b. Please explain the reason(s) why you overrode. *(Circle all that apply)*

	# of Responses*	%
1. Too hot in residence	247	76.5%
2. Health Reasons	43	13.3%
3. Other	33	10.2%

*Multiple responses accepted

Other comments:
Comfort = 25

9c. How would you rate your comfort level before you overrode the thermostat?

Average rating = 2.80

	# of Responses*	%
1=Very Comfortable	25	8.0%
2=Somewhat Comfortable	75	23.9%
3=Somewhat Uncomfortable	153	48.7%
4=Very Uncomfortable	61	19.4%
Total	314	100%

*NR = 11

10. Overall, how satisfied are you with the Con Edison Central Air-Conditioning Program?

Average rating = 1.55

	# of Responses*	%**
1=Very Satisfied	539	55.6%
2=Somewhat Satisfied	356	36.7%
3=Somewhat Dissatisfied	45	4.6%
4=Very Dissatisfied	30	3.1%
Total	970	100%

***NR = 51

****** Totals may not equal 100% due to rounding

10a. How likely are you to recommend that a friend or family member participate in the Con Edison Central Air-Conditioning Program?

Average rating = 1.55

	# of Responses*	%
1=Very Likely	564	58.6%
2=Somewhat Likely	302	31.4%
3=Somewhat Unlikely	57	5.9%
4=Unlikely	39	4.1%
Total	962	100%

*NR = 59

Recommendations / Suggestions / Comments:

*Respondents that provide contact information are contacted immediately.

93 responses = Need help programming the thermostat
35 responses = Pleased with Program
11 responses = Offer other energy conservation programs
10 responses = Refresher visit on programming thermostat
9 responses = Allow changes by phone access
9 responses = Override was overridden (refreshed by Con Edison) too quickly
9 responses = Would like a heating program similar to CAC program
8 responses = Lower Rates
7 responses = Need help with Internet Access
7 responses = Recommended to friends
6 responses = Make annual incentives
4 responses = User a "User ID" instead of the acct # for Internet access
4 responses = No signal received
3 responses = Thermostat Inaccurate
2 responses = Have outdoor temp on thermostat

One response each:

Warning signal prior to override
Allow heat settings lower
Program should be mandatory
Never received answer to written letter

Appendix G—Program Description

F1. System Features

This Program is a system of programmable thermostats that Con Edison can curtail remotely when needed to reduce the electric load from central air-conditioning systems. The request to reduce load can be initiated by either the New York State Independent Systems Operator (NYISO) when system conditions warrant, or by Con Edison when a critical situation occurs on its electric distribution system. Each time the Program is activated, the programmable thermostats are contacted via a two-way paging network and instructed to cycle central air-conditioning compressors at particular time intervals. A typical cycling strategy is "50% Cycling," in which the CAC unit run-times are limited to 50% on-time (duty cycles) during the curtailment event.

The technology associated with these thermostats provides immediate confirmation that a thermostat has received a curtailment signal. It also produces run-time data for subsequent Program evaluation purposes, which includes minutes per hour of on-time and indoor temperature.

Equipment

Thermostat and Control Board

A typical installation replaces the existing thermostat with a seven-day programmable, two-way-communicating thermostat and a control board with a small (7") antenna. The control board is typically installed indoors near the air handler component of the cooling system. The thermostat works with any central air-conditioning or heat pump system, except damper-based central air-conditioning systems. The thermostat permits Program participants to override control events by simply pressing the down temperature control button. The control board, which is directly wired to the thermostat, has a low voltage connection to the cooling system. The control board contains the radio that communicates with the Program's wireless network. The programmable thermostat can help customers save energy in homes, facilities and businesses by allowing occupants to program their cooling and heating set points to match their comfort preferences and occupancy schedules.

Server

The thermostat system uses Internet-based communications software. As with all Internet-based systems, a server is required to host the application. Con Edison has a dedicated server for this Program which is hosted in a secure facility with 24/7 monitoring, uninterruptible power supply (UPS), and backup power capability.

Communications

User Interface Web Site

The control technology provides participants with the ability to control their thermostats over the Internet via the Program's wireless paging network. Program participants access their thermostats by first going to the Program Web Site, where there is a hyperlink to the user interface Web Site. Program participants are given a unique login ID and password to obtain secure entry into the user interface Web Site. This software, with appropriate access, allows participants to program their thermostat set points and time periods to best reflect the appropriate level of comfort needed by their homes, religious facilities or businesses, including when unoccupied.

Utility Load Curtailment Software

Con Edison uses an Internet-based program developed by the manufacturer, Carrier, called Carrier Comfort Choice[SM] Manager (CCM) to initiate thermostat control in a customer's home, facility or business, and to specify the control strategy and the duration of the control event. The Program project manager logs into the CCM system via a secure password-encoded Web Site to access the event initiation Web page. The control system then triggers the wireless paging network to contact thermostats installed in homes, or businesses. After being connected, each thermostat responds, acknowledging the curtailment command, and begins the curtailment at the specified time. At the initiation of a curtailment, the thermostats respond by adjusting their control settings according to the specified control strategy and displaying a curtailment icon, along with the time remaining for the curtailment, on their LCD display. If the customer chooses to opt-out during a curtailment, he or she can manually override the curtailment on-site only. When the customer overrides the curtailment, the override is logged into a database for use in calculating load impacts. The Program project manager can monitor the thermostat responses and customer overrides, and produce reports on curtailment events.

Control Strategy

Con Edison has established the following procedures for the operation of a curtailment event:

- Control is accomplished by cycling the compressor off for 30 continuous minutes per hour.
- Con Edison has the ability to refresh the control event in two-hour increments.
- Control is to be initiated during NYISO-declared events or by Con Edison based on system needs.
- There is no limit to the number of times that Con Edison can institute load curtailments.

F2. Installation Process

Con Edison utilizes an experienced installation company to perform the installation and service of customer thermostats and associated equipment. Installers are trained to arrive within their scheduled appointment time at a customer's premises, properly equipped with the professional tools and materials required for the job. Installers also provide service work and are hired based on both technical competence and interpersonal skills.

Prior to beginning the installation, the installer:

- Conducts a brief interview with the customer to ensure that he/she fully understands the function of the device and the relatively minor effect it will have on his/her lifestyle. The installer also describes the scope of the installation work and answers all of the customer's questions prior to beginning the installation.
- Visually inspects the control wiring and the equipment, and field-qualifies the central air-conditioning system and installation conditions. If the site and equipment meet the qualifications, the installer will install the thermostat and control board. Central air-conditioning systems that are not adequately operational or maintained are not qualified for Program participation.

The installation procedures were created specifically for Carrier Comfort Choice hardware and communications protocols established by Carrier. Installation practices are taught during Program training, and each installer is tested for proficiency before commencing work in the field. Installers are well trained in all installation configurations and testing requirements. Installers provide a comprehensive review of the Program during the installation visit. Installers will also program the thermostat with a weekly cooling (and heating, if appropriate) schedule as per the customer's direction.

The installer provides a customer review of the Program materials that are left with the customer, including information on device operation, customer service process, and answers any questions the customer may have. After completing the necessary work order, the installer closes out the visit.

This installation process lasts approximately an hour and a half, and is designed to leave customers satisfied with the service visit to their home, or business, and add a well-informed and educated customer to the list of Con Edison Program participants. Follow-up calls (discussed in more detail in the Quality Control section on page 42) demonstrate a very high level of customer satisfaction with the installation process.

F3. Project Team

Applied Energy Group, Inc.

For more than two decades**,** Applied Energy Group, Inc. (AEG) has provided a wide range of innovative consulting services to their clients in the energy business. AEG's successful track record reflects their commitment to getting the job done right, on time and on budget. For this reason, utilities, government agencies, technology companies and others facing strategic and tactical decisions of consequence frequently engage AEG's seasoned consultants to identify and implement solutions that meet their organizational goals.

AEG serves as the overall project manager for the day-to-day operations of the Program as well as managing the subcontractors for the Program (Carrier Corporation and Honeywell Solutions).

AEG provides the management for all customers enrolled in the Program. AEG also maintains the operation, staffing and training of representatives for customer inquiries and service calls.
The is available 24 hours a day, seven days a week and is responsible for taking applications, customer education, Internet questions, troubleshooting, curtailment event questions and general customer inquiries.

In addition, AEG monitors and controls the installation of thermostat control systems, provides curtailment event management 24 hours a day, seven days a week during the May 1 through September 30 summer season, and prepares the analysis of curtailment event impacts and associated reporting.

AEG is responsible for database maintenance of enrolled customer information, thermostat installations and equipment statistics, quality control surveys and inspections, the handling of customer claims and complaints, and direct mail campaigns for customer recruitment.

Carrier Corporation

Carrier is one of the world's leading manufacturers of heating, ventilation, and cooling systems. Carrier designs, manufactures, and markets a broad range of electronic equipment, including thermostats and PC-based building management systems. Carrier provides the Comfort Choice system which includes the thermostats, control boards, software and hosting. Carrier also provides technical consulting for the Program.

Honeywell Solutions

Honeywell Solutions provides all installation and service functions. They have installed over 55,000 Comfort Choice systems throughout the country. Over the past 20 years, Honeywell Solutions has installed and serviced more program installations than any other contractor in the United States.