



Greening of IT



**The City of New York Department of Citywide Administrative Services
Division of Fiscal Management and Operations
Office of Energy Conservation**

Martha K. Hirst

Commissioner

Donald P. Brosen

Deputy Commissioner

Division of Fiscal Management and Operations

Susan Cohen

Assistant Commissioner

Office of Energy Conservation

**Technology Forum
November 7, 2008**

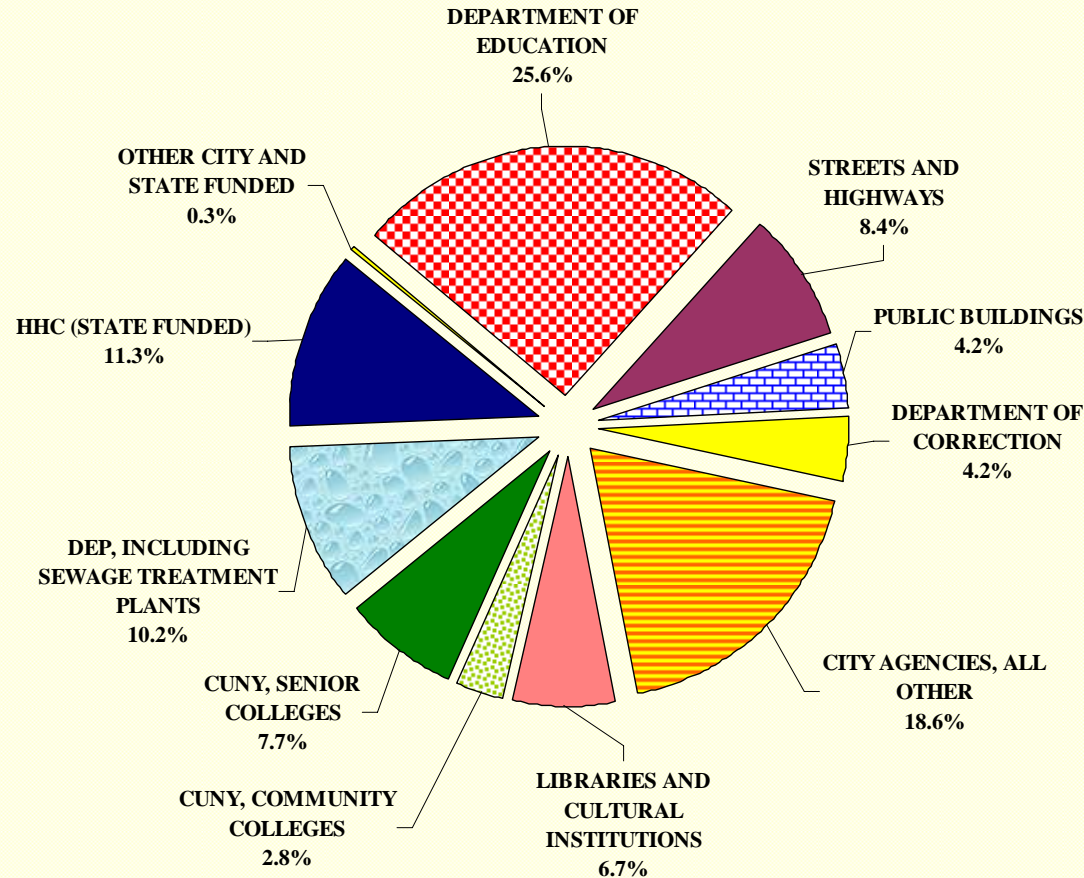


DCAS Office of Energy Conservation

- Manages the purchase of **electricity, natural gas, and steam** and pays utility account for 80 City agencies and entities (4,000 facilities)
- Develops annual energy budget (nearly \$900m) in consultation with the Office of Management and Budget (OMB)
- Implements energy conservation programs through a contractual agreement with the New York Power Authority (NYPA)
- Coordinates with Energy Liaison Officers in each agency to monitor usage and to promote energy conservation
- Develops and implements programs to reduce energy use and greenhouse gas (GHG) emissions in City facilities (as a member of Energy Conservation Steering Committee)



FY09 Energy Budget by Agency Group



- **FY09 budget: almost \$900 million**
- **Electricity = 68% (\$ basis); natural gas = 25%; steam = 7%**



OEC Energy Conservation Activities

1997-2007

- Electricity reduction of 20 MW (82,000 MWH) in 220 buildings
- Total project costs: \$72 million (annual average of **\$6.5 million**)
- Reduction of 58,000 tons of Greenhouse Gas Emissions

Fiscal Year 2008 (completed or to-be completed)

- 101 energy conservation projects
- Electricity reduction of 2.7 MW
- Total project costs: **\$41.9 million**
- Reduction of 1.27 metric tons CO₂e emissions

2009-2017 (PlaNYC projections)

- Annual commitment of 10% of City's energy budget for energy conservation projects
- Target reduction of 1.68 million metric tons of CO₂e emissions by 2017



Before OEC

DEPARTMENT OF WATER SUPPLY, GAS & ELECTRICITY.
BOROUGH OF MANHATTAN & THE BRONX.
Lamps & Lighting. 1903.
CHAPTER 466. LAWS OF 1901.

Manhattan
Register: **A** Manhattan.

THE CITY OF NEW YORK,
DEPARTMENT OF FINANCE No. 44102

Comptroller's Office NOV -2 1903

The Chamberlain of the City of New York

Pay to *Melbach Street Light Co. of America* or order
fifteen hundred and twenty-eight ⁴⁰/₁₀₀ Dollars
for *Naphtalene Jars*

FOUR HUNDRED AND SEVENTY SEVEN

Countersigned: *[Signature]* Chief Clerk for Mayor.

Voucher: *Rec'd Oct 7, 1903*
[Signature] Assistant Deputy and Acting Comptroller.

THIS WARRANT IS TO BE PAID ONLY BY CHECK ON THE CITY TREASURY, SIGNED BY THE CHAMBERLAIN TO THE ORDER OF THE PAYEE ABOVE NAMED.

The National City Bank of New York
Pay out of
THE CITY TREASURY
the amount of the above Warrant to the order of the payee named therein

\$1528
[Signature] Chamberlain.

Morris B. Brown Co. 49 to 57 Park Place, N.Y.



City Agency Energy Teams

- Use OEC reports to monitor agency-wide energy usage and costs
- Develop plans for energy conservation (projects)
- Follow energy conservation guidelines

REPORT	DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES - OFFICE OF ENERGY CONSERVATION										PAGE
	NYP&A 06/08 ACCT EXCEEDING PREVIOUS YEAR - 25 PERCENT OR MORE - 826003 - BUR OF WATER SUPPLY & SEWER										
ACCOUNT	ADDRESS	METER	PRESENT YEAR DAYS	PRESENT YEAR KWH/KW	PREVIOUS YEAR DAYS	PREVIOUS YEAR KWH/KW	% DIFF				
290118155501009	170-31 CEDARCROFT ROAD ST19	6251523	029	1,080 E	032	660 E	63				
290118155510000	106-30 180TH ST ST24	6315733	029	162.00*	032	114.00*	42				
290118155604001	SPRINGFIELD BLVD & 91ST AVE ST39	7517013	029	28,480	022	22,080 E	28				
290118155703001	WS/O 161 ST & 72 AVE ST52	4573335	029	3,240 E	032	240 E	1250				
290118155706004	194-10 99TH AVE ST55	6148693	029	51,360 E	032	7,200 E	613				
290118155804007	145-02 228TH ST TK32	5648745	029	9,240 E	032	120 E	7600				
290118155804007	145-02 228TH ST TK32	5648745	029	56.40	032	4.80E	1075				
290118156006008	84-70 127TH ST ST22	6991858	029	3,920	032	640	512				
290118156006008	84-70 127TH ST ST22	6991858	029	34.00*	032	4.80*	608				
390118197500000	2800 GOULDEN AVE SHAFT #4	5933959	029	1,560	032	960	62				
390118215600014	OPP VAN CORTLANDT JEROME AVE	7406010	029	51,840 *	032	27,840 *	86				
390118216400000	NEC 197TH ST & GOULDEN AVE GATEHOUSE #5	6243486	029	3,456 E	032	540	540				
390118218500005	HARRISON AVE. & WEST 181ST ST CHAMB 5B	5535096	029	4,518	032	1,080	318				
390118308900008	JEROME AVENUE & GOULDEN AVENUE	7404935	029	5,568 *	032	2,340 *	137				
390118315400000	RYAWA AVENUE & COSTER STREET SHAFT 8A	5736503	029	1,788	032	69	2491				
390118315400000	RYAWA AVENUE & COSTER STREET SHAFT 8A	5736503	029	10.28	032	0.38	2605				



Agency energy teams: monitor usage

Electricity Usage Benchmark Report

May 2008 compared to May 2007, Citywide and by Agency

Degree Days		
	Heating	Cooling
May 2007	89	104
May 2008	171	25
%Δ	92%	-76%

Agency Code	Agency	KWH - FY 07	KWH - FY 08	% Δ	Δ in # of accounts billed
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CITY GOVERNMENT TOTAL	297,577,357	298,913,913	0.4%	-3
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002003	Office of Management & Budget	166,080	183,040	10.2%	..
003000	Board of Elections	161,360	168,440	4.4%	..
008000	Office of the Actuary	24,640	24,560	-0.3%	..
017000	Office of Emergency Management	300,406	297,624	-0.9%	1
025000	Law Department	291,402	279,572	-4.1%	..
030000	Department of City Planning	6,480	10,080	55.6%	..
032000	Department of Investigation	48,800	52,800	8.2%	..
037000	New York Public Library	3,470,013	3,600,200	3.8%	-1
038000	Brooklyn Public Library	1,261,688	1,288,204	2.1%	..
039000	Queens Borough Public Library	1,310,074	1,276,550	-2.6%	..

126022	Jamaica Arts Center	26,320	32,040	21.7%	..
493000	Staten Island Community Board #3	1,116	1,350	21.0%	..
858000	Department of Info. Tech. & Telecommunications	1,663,600	1,958,560	17.7%	..
801000	NYC Economic Development Corp	1,605,981	1,865,982	16.2%	4
126006	Metropolitan Museum of Art	5,476,158	6,262,720	14.4%	..
126013	Staten Island Zoological Society	93,800	106,200	13.2%	..



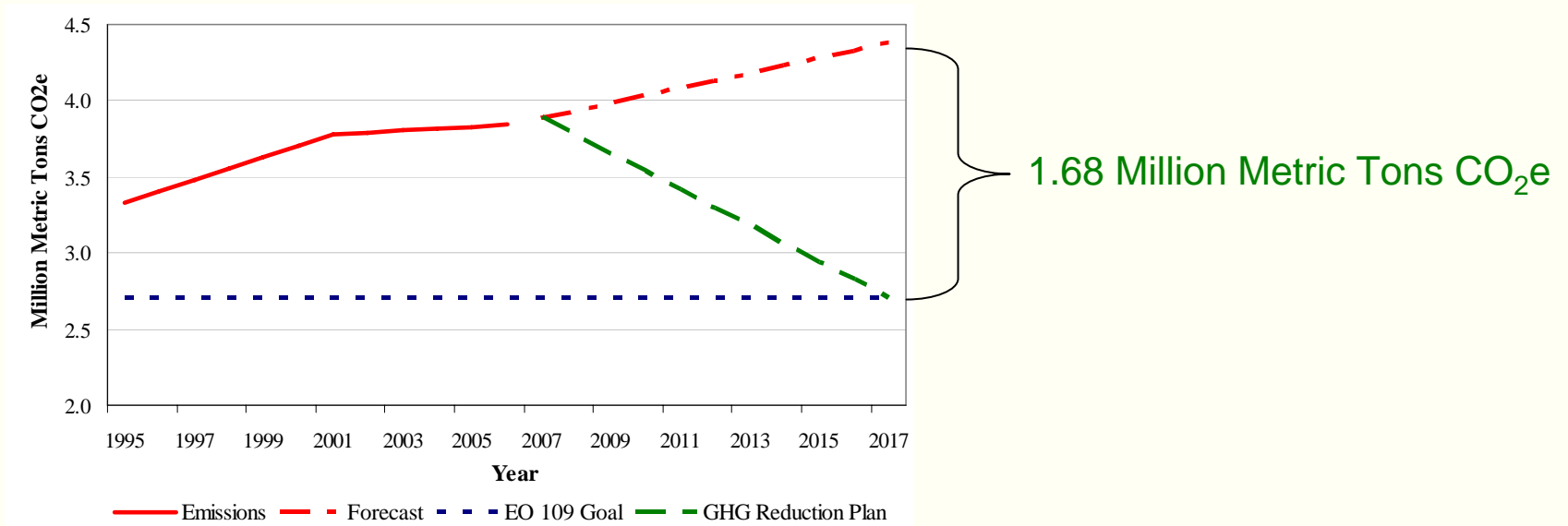
PlaNYC and City Government Energy Conservation

<p>On Earth Day 2007, Mayor Bloomberg released PlaNYC, with over 100 initiatives covering land, water, transportation, energy and air.</p>	<p><u>Energy Initiative #2</u>: Reduce energy consumption by City government</p>
<p>To meet Energy Initiative #2:</p> <ul style="list-style-type: none">a) the Mayor issued an Executive Order committing 10% of FY08 energy budget to energy reduction and directing the City to reduce its GHG emissions by 30 percent by 2017 through energy efficiency and other building related upgrades to City-owned facilities;b) the City developed 10-year plan to meet the reduction goalc) and City Council passed Local Law 55 of 2007.	<p><u>Executive Order 109</u> (Oct. 2008) Energy Conservation Steering Committee: Operations; OMB; DCAS; EDC; DDC</p>



Carbon Reduction Goal for City Government by 2017

To meet PlaNYC, GHG Emissions from NYC buildings and operations must be reduced by **1.68 million metric tons** CO₂e from FY2006 level.





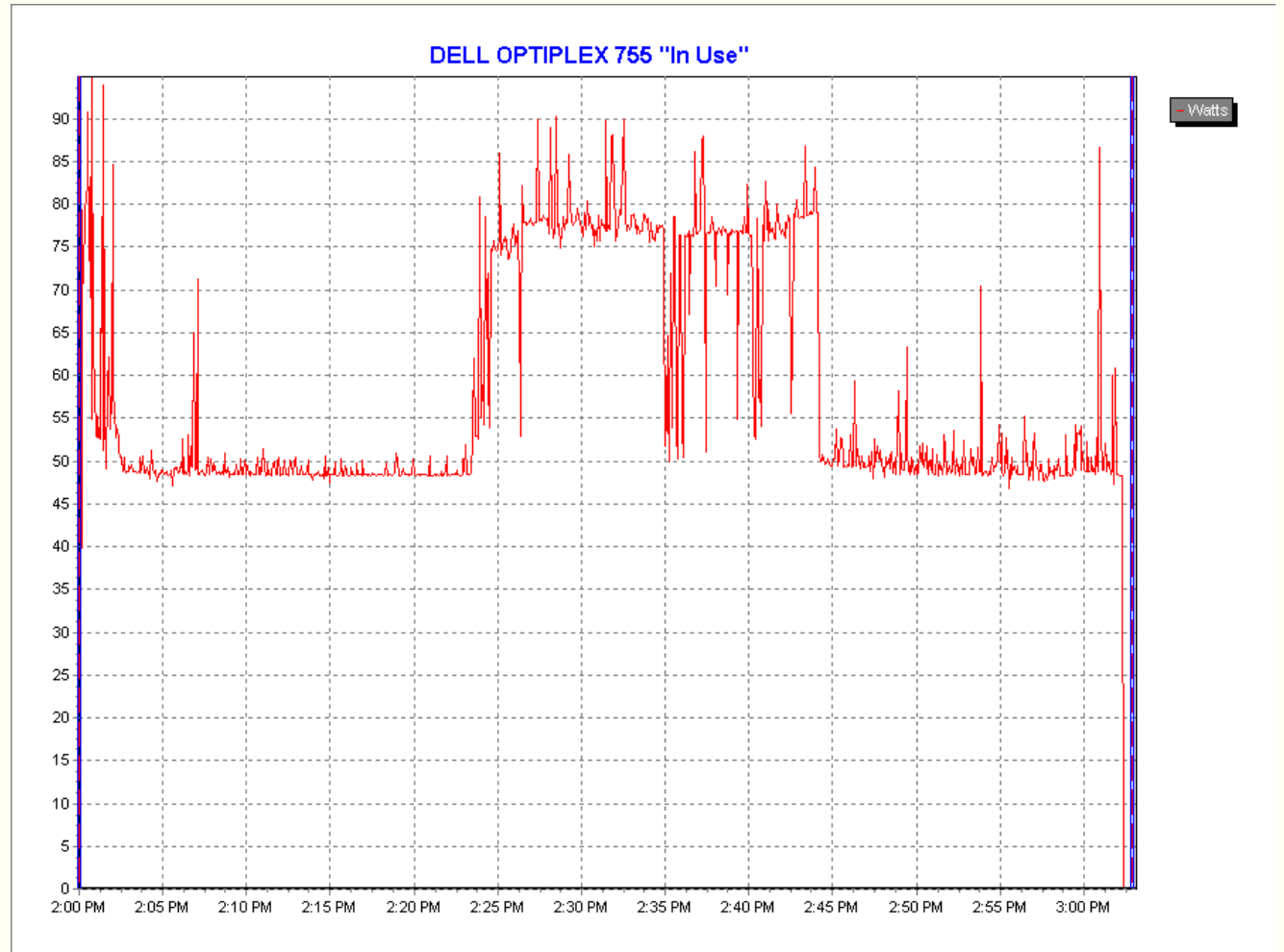
Energy Conservation Programs under 10-year Plan

- Pilot baseline energy audits and BMS and/or metering/monitoring installations
- Operations & Maintenance assessment across agencies and development of new O&M programs
- Implementation of energy conservation capital projects
 - o Lighting retrofits
 - o HVAC improvements
 - o Clean distributed generation (Clean DG)



Potential for CPU Savings? Dell Optiplex 755 ['Small Tower']

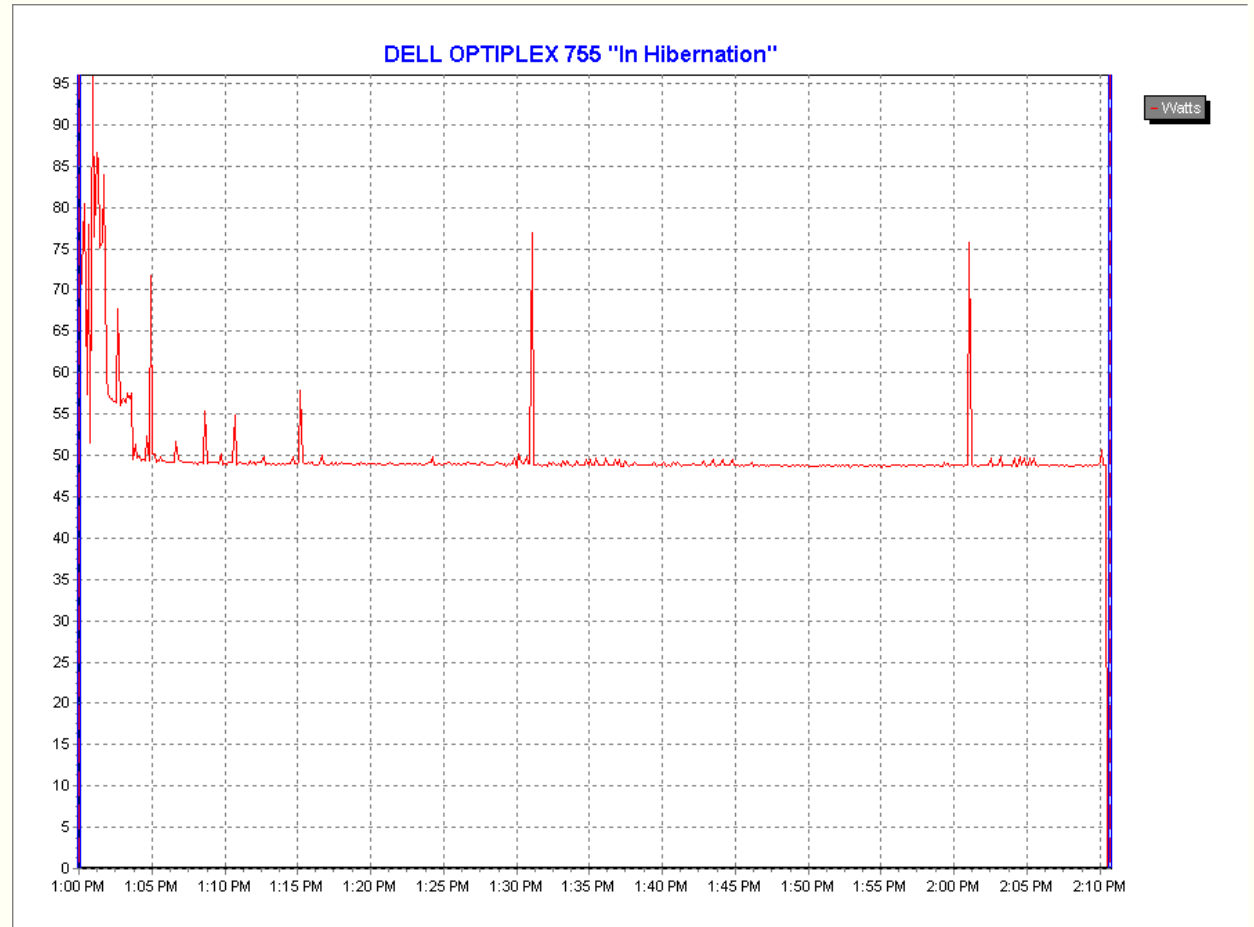
In use:





Potential for CPU Savings? Dell Optiplex 755 ['Small Tower']

In hibernation:

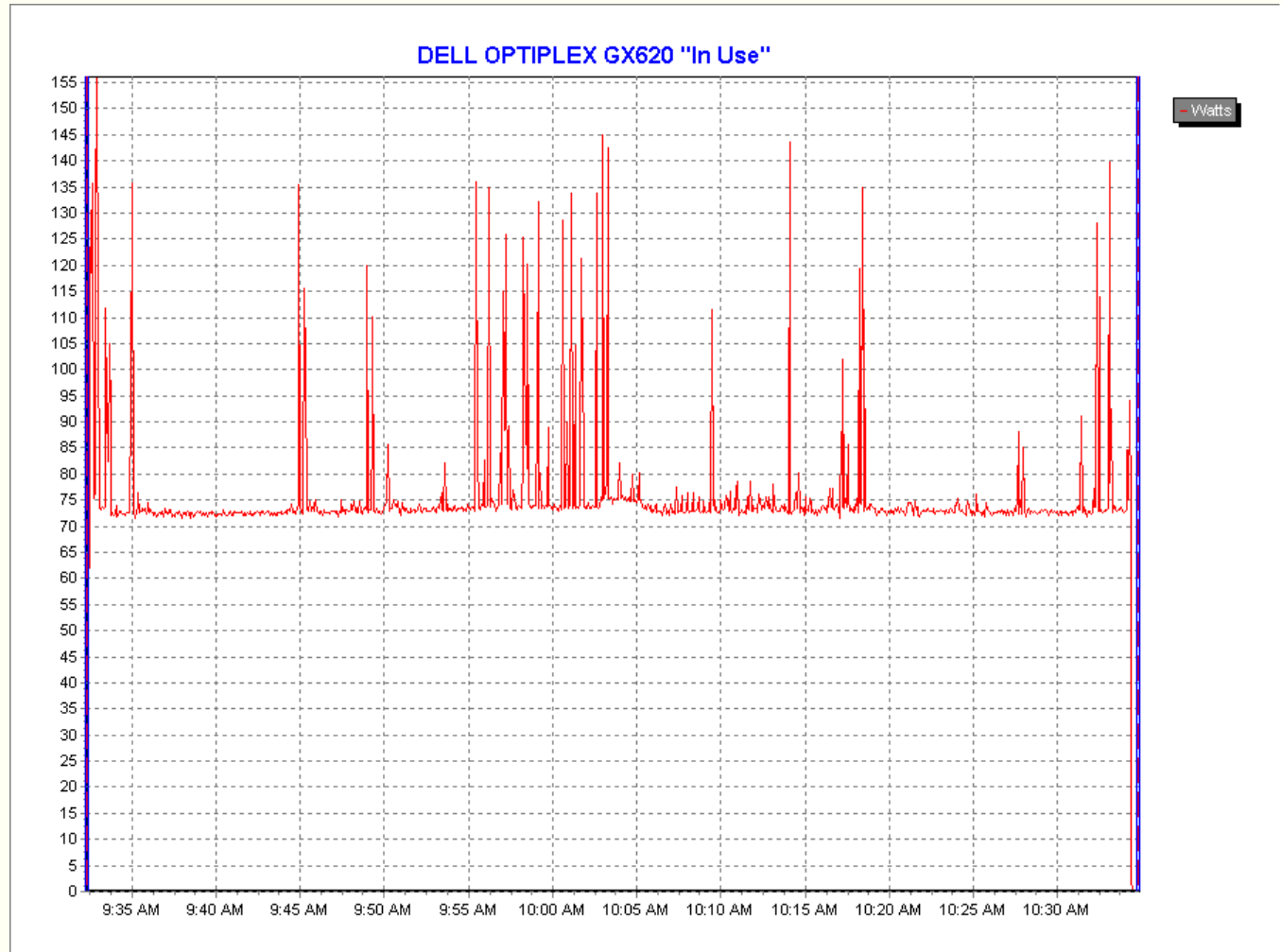




Potential for CPU Savings?

DELL OPTIPLEX GX620 ['Large tower']

In use:

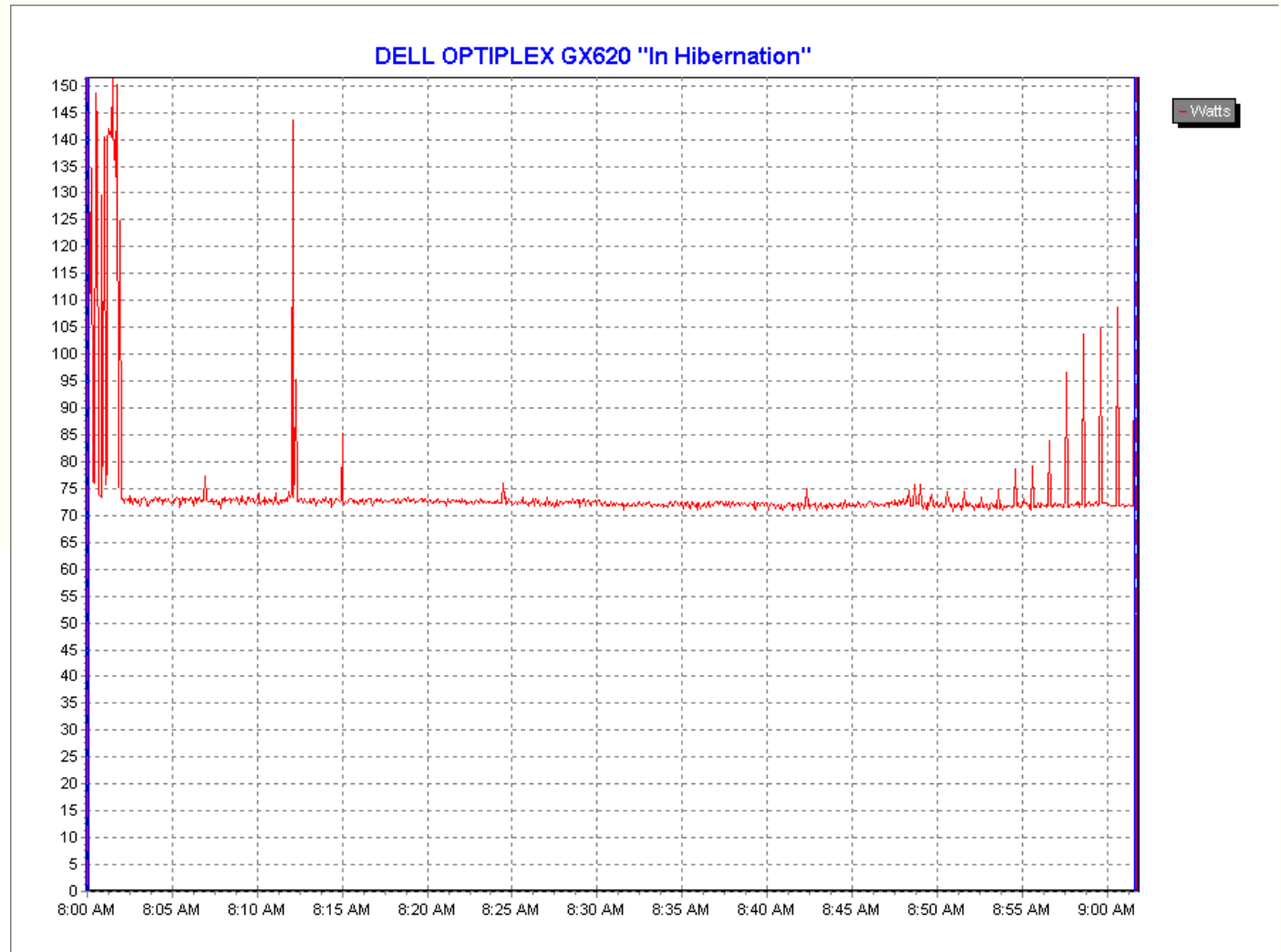




Potential for CPU Savings?

DELL OPTIPLEX GX620 ['Large tower']

In hibernation:





Potential Savings Examples

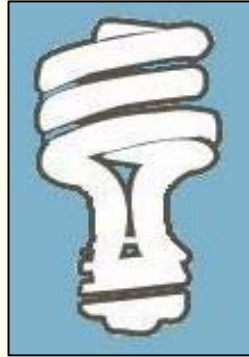
	Watts Used In Hibernation
OPTIPLEX 755 (small tower)	49
OPTIPLEX GX620 (large tower)	72

Savings from switching to small tower from large tower, assuming on all the time

Savings from small tower in watts/hour	23
hours/year	8760
watt hours/year	201,480
kwh/year	201
Metric tons of CO2e per kwh (GHG emissions factor for electricity)	0.000472
Metric tons of CO2e per year reduced per CPU switch	0.10
Approximate cost savings (at 10 cents/kwh)	\$ 20.00

Savings potential from switching off large tower at night

Hours per year	8760
"Work" hours per year assuming 14 hours/day, 5 days/week, 52 weeks/yr	3640
Ratio of work to total hours	0.42
Large tower savings in watt hours/year	262,080



QUESTIONS?

Visit OEC on the web at :

www.nyc.gov/energy-conservation

