



Metro Nashville
DISTRICT ENERGY SYSTEM

Semi-Annual DES Customer Meeting
Spring 2009 (FY09)

Presented to
Metro DES Customers

March 19, 2009



Metro Nashville
DISTRICT ENERGY SYSTEM

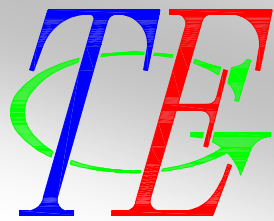
Agenda

1. Welcome!
2. Review & Comparison of Customer Annual Costs
3. Budget FY09 Review
4. Proposed FY10 Budget
5. Natural Gas Purchasing Update
6. CEPS Scorecard
7. Capital Projects Review
8. Customer Operating Cost Reduction
9. Questions & Answers
10. Adjourn



Metro Nashville
DISTRICT ENERGY SYSTEM

1. Welcome!



*THERMAL
ENGINEERING
GROUP, INC.*



Metro Nashville
DISTRICT ENERGY SYSTEM



Constellation Energy[®]
Projects & Services Group



2. Review & Comparison of Customer Annual Costs

	Steam (\$ millions)			Chilled Water (\$ millions)		
	1/07 – 12/07	1/08- 12/08	% Diff.	1/07- 12/07	1/08- 12/08	% Diff.
Private	\$2.377	\$2.439	2.6%	\$3.921	\$3.827	-2.4%
State	\$2.994	\$3.100	3.5%	\$3.169	\$3.257	2.8%
Metro	\$3.269	\$3.317	1.5%	\$4.609	\$4.590	-0.4%
New Customers	\$1.477	\$1.590	7.7%	\$3.118	\$3.111	-0.2%
Aggregate	\$8.639	\$8.856	2.5%	\$11.700	\$11.674	-0.2%

Includes MFA allocated to Metro Buildings (pre-True-up)



Metro Nashville

DISTRICT ENERGY SYSTEM

3. Budget FY09 Review (as of 12/31/08)

Item	FY09 Budget	Total Expenses to Date	Percent of FY09 Budget
FOC: Basic	\$ 3,852,170	\$ 1,926,085	50.00%
FOC: 9th Chiller	\$ 36,100	\$ 18,048	49.99%
FOC: Change Order 6A	\$ 71,260	\$ 35,631	50.00%
FOC: Change Order 6B	\$ 62,390	\$ 31,194	50.00%
Chemicals	\$ 156,510	\$ 84,758	54.15%
Engineering	\$ 40,000	\$ 8,763	21.91%
Insurance	\$ 42,440	\$ 29,722	70.03%
Marketing: CEPS Sales Activity	\$ 27,000	\$ 2,006	7.43%
Metro Marketing	\$ 52,890	\$ -	0.00%
Incentive Payments	\$ 30,150	\$ 7,409	24.57%
Project Administration	\$ 22,090	\$ -	0.00%
Metro Incremental Cost	\$ 585,420	\$ 171,177	29.24%
FEA: Steam	\$ -	\$ 110,303	n.a.
FEA: Chilled Water	\$ -	\$ 202,207	n.a.
ARFA	\$ -	\$ 27,973	n.a.
Metro Credit	\$ -	\$ (233,308)	n.a.
Water/Sewer	\$ 681,600	\$ 206,784	30.34%
Natural Gas/Propane	\$ 6,570,400	\$ 2,615,816	39.81%
Electricity	\$ 4,437,300	\$ 2,337,836	52.69%
EDS Repair & Improvement	\$ 171,430	\$ 23,940	13.96%
EDS Surcharge	\$ 68,460	\$ -	0.00%
Sub-total Operations	\$ 16,907,610	\$ 7,606,343	44.99%
2002 Bonds	\$ 4,361,770	\$ 2,180,964	50.00%
2005 Bonds	\$ 631,590	\$ 347,868	55.08%
FY07 Projects	\$ 227,800	\$ -	0.00%
FY08 Projects	\$ 220,500	\$ -	0.00%
Debt Service Interest Revenue	\$ (72,300)	\$ (82,451)	114.04%
Oper. Reserve Funding Deposit	\$ 97,400	\$ 48,870	50.17%
Sub-total Debt Service	\$ 5,466,760	\$ 2,495,250	45.64%
Total Expenses	\$ 22,374,370	\$ 10,101,594	45.15%
Customer Revenues	\$ 19,768,660	\$ 9,051,278	45.79%
Total Metro Funding Amount	\$ 2,605,710	\$ 1,050,316	40.31%



Metro Nashville

DISTRICT ENERGY SYSTEM

4. Proposed FY10 Budget

Item	FY08 Actual Cost	FY09 Budget	FY10 Budget	Percent Change from FY08	Percent Change from FY09
FOC: Basic + C/O 6C	\$ 3,739,971	\$ 3,852,200	\$ 3,976,200	6.32%	3.22%
FOC: 9th Chiller	\$ 35,044	\$ 36,100	\$ 37,200	6.15%	3.05%
FOC: Change Order 6A	\$ 69,187	\$ 71,300	\$ 73,400	6.09%	2.95%
FOC: Change Order 6B	\$ 60,571	\$ 62,400	\$ 64,300	6.16%	3.04%
Chemicals	\$ 187,192	\$ 156,500	\$ 161,200	-13.89%	3.00%
Engineering	\$ 21,160	\$ 40,000	\$ 26,200	23.82%	-34.50%
Insurance	\$ 29,850	\$ 42,400	\$ 43,700	46.40%	3.07%
Marketing: CEPS Sales Activity	\$ -	\$ 27,000	\$ 9,800	n.a.	-63.70%
Metro Marketing	\$ 33,027	\$ 52,900	\$ 35,000	5.98%	-33.84%
Incentive Payments	\$ 27,801	\$ 30,100	\$ -	-100.00%	-100.00%
Project Administration	\$ -	\$ 24,200	\$ 24,000	n.a.	-0.83%
Metro Incremental Cost	\$ 505,605	\$ 568,000	\$ 542,700	7.34%	-4.45%
Water/Sewer	\$ 469,390	\$ 681,600	\$ 689,600	46.91%	1.17%
Natural Gas/Propane	\$ 4,854,021	\$ 6,574,800	\$ 4,692,900	-3.32%	-28.62%
Electricity	\$ 4,014,589	\$ 4,437,300	\$ 5,034,100	25.40%	13.45%
EDS Repair & Improvement	\$ 161,709	\$ 171,400	\$ 176,500	9.15%	2.98%
EDS Surcharge	\$ -	\$ 68,500	\$ 70,600	n.a.	3.07%
Sub-total Operations	\$ 14,209,117	\$ 16,896,700	\$ 15,657,400	10.19%	-7.33%
2002 Bonds	\$ 4,362,377	\$ 4,361,800	\$ 4,362,900	0.01%	0.03%
2005 Bonds	\$ 629,837	\$ 631,600	\$ 627,600	-0.36%	-0.63%
FY07 Projects	\$ 227,800	\$ 227,800	\$ 227,800	0.00%	0.00%
FY08 Projects	\$ -	\$ 220,500	\$ 220,500	n.a.	0.00%
Debt Service Interest Revenue	\$ -	\$ (72,300)	\$ (123,700)	n.a.	71.09%
Oper. Reserve Funding Deposit	\$ 190,961	\$ 97,300	\$ -	-100.00%	-100.00%
Sub-total Debt Service	\$ 5,410,975	\$ 5,466,700	\$ 5,315,100	-1.77%	-2.77%
Total Expenses	\$ 19,620,092	\$ 22,363,400	\$ 20,972,500	6.89%	-6.22%
Customer Revenues	\$ 17,953,792	\$ 20,091,900	\$ 18,488,100	2.98%	-7.98%
Project Admin. Revenue	\$ -	\$ 26,400	\$ 24,000	n.a.	-9.09%
	\$ -	\$ -	\$ -	n.a.	n.a.
Total Metro Funding Amount	\$ 2,193,075	\$ 2,245,100	\$ 2,460,400	12.19%	9.59%



Metro Nashville
DISTRICT ENERGY SYSTEM

5. Natural Gas Purchasing Update

Natural Gas Purchasing Review

Table 5: FY09 Gas Spending & Budget Comparison

Actual Gas Costs to Date

Projected Gas Costs for FY09+

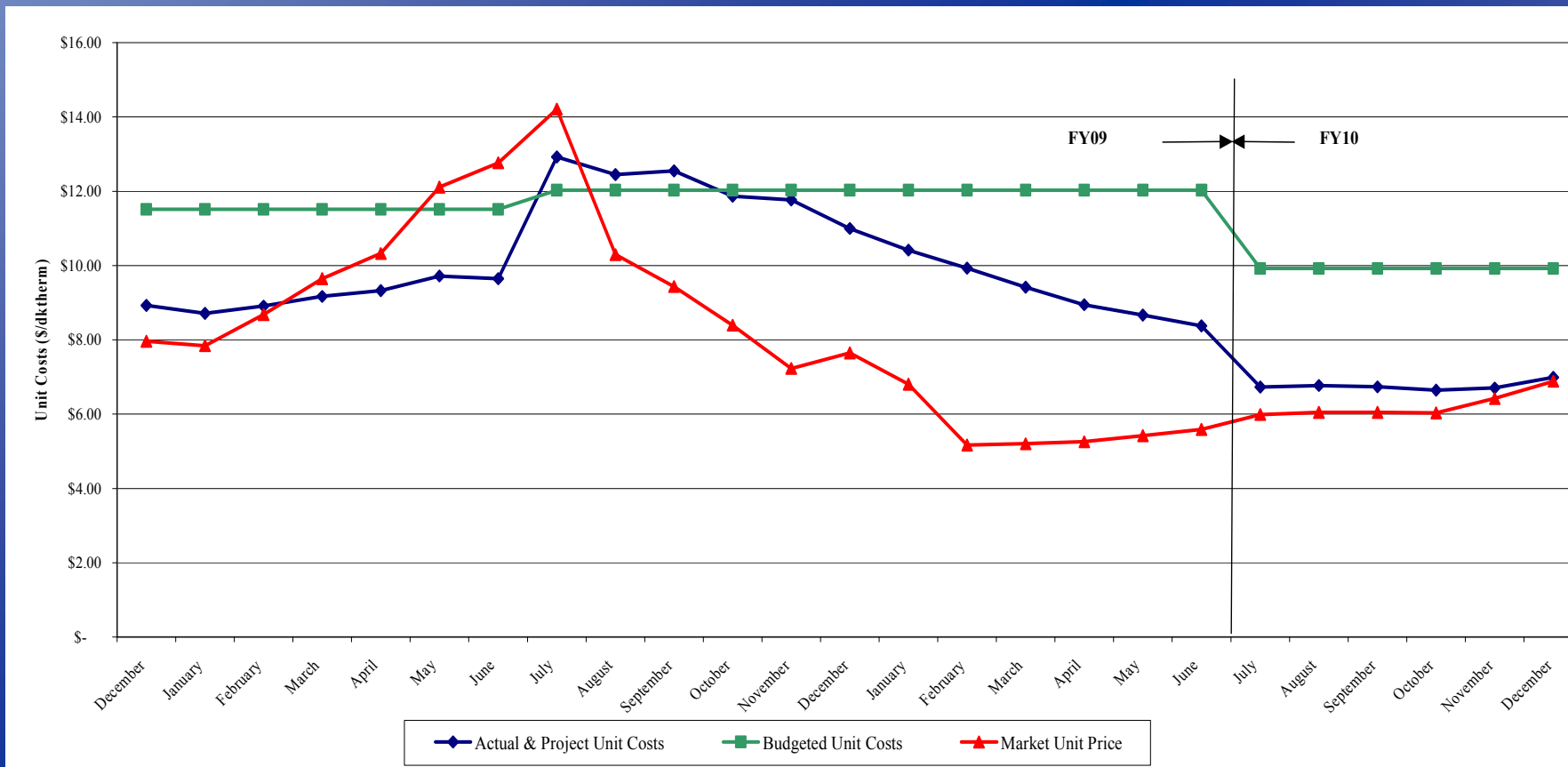


Table 5: FY09 Gas Spending & Budget Comparison

		Actual FY09 To date (Dec 31)	Budget FY09
Steam Sendout (Mlbs)		155,210	154,234
Fuel Use (Dth)	●	219,070	223,794
Plant Eff (Dth/Mlb)	●	1.404	1.451
Total Gas Cost	●	\$2,615,687	\$2,692,242
Unit Cost of Fuel (\$/Dth)	●	\$11.94	\$12.030



Projected Gas Cost Comparison for FY09








Metro Nashville
DISTRICT ENERGY SYSTEM

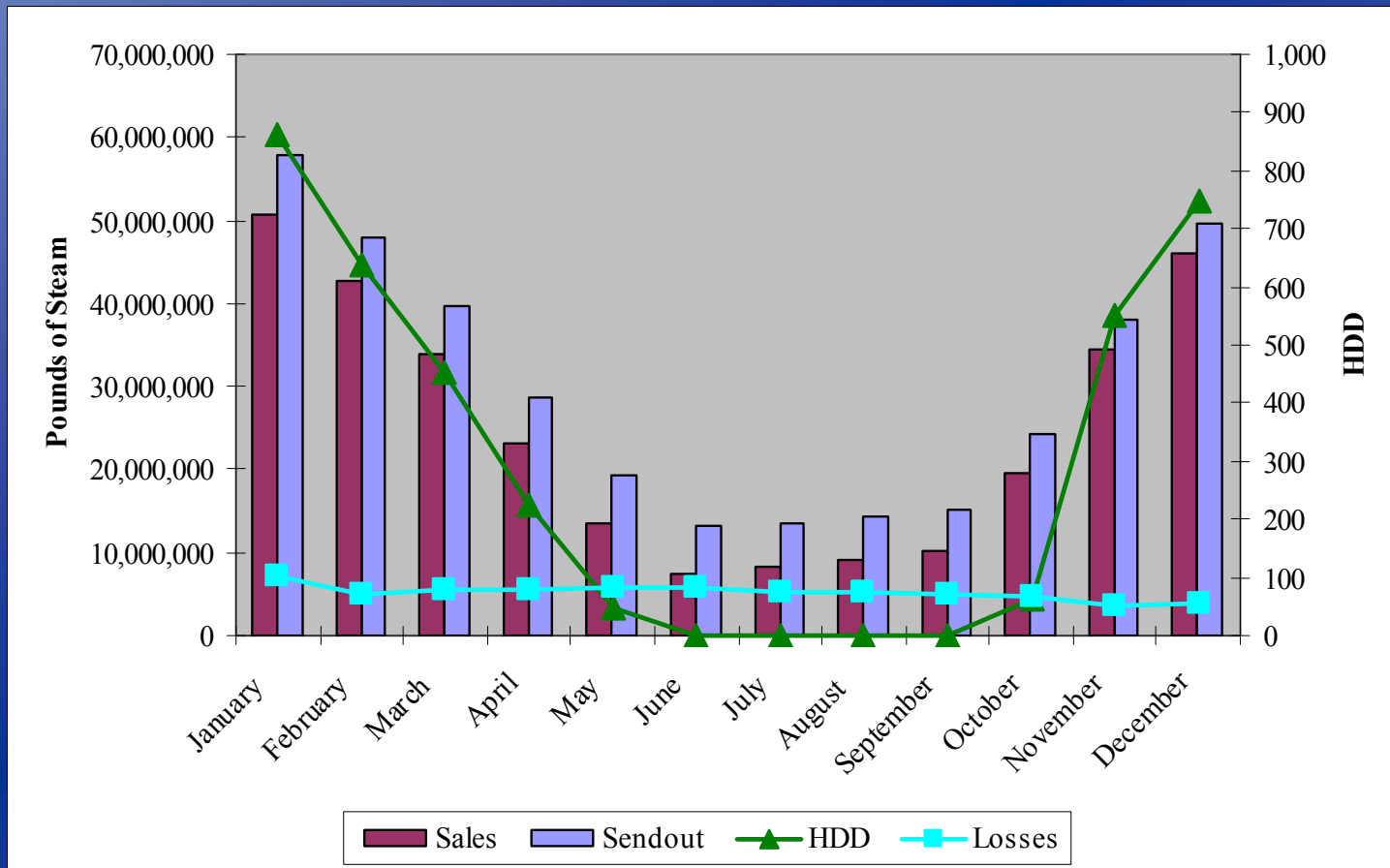
6. CEPS Scorecard

Contractor (CNDE) is in compliance with their contractual obligations for FY09.

-  Excellent Performance – No Improvement Necessary
-  Satisfactory Performance – Some Improvement Could Be Made
-  Poor Performance – Much Improvement Necessary

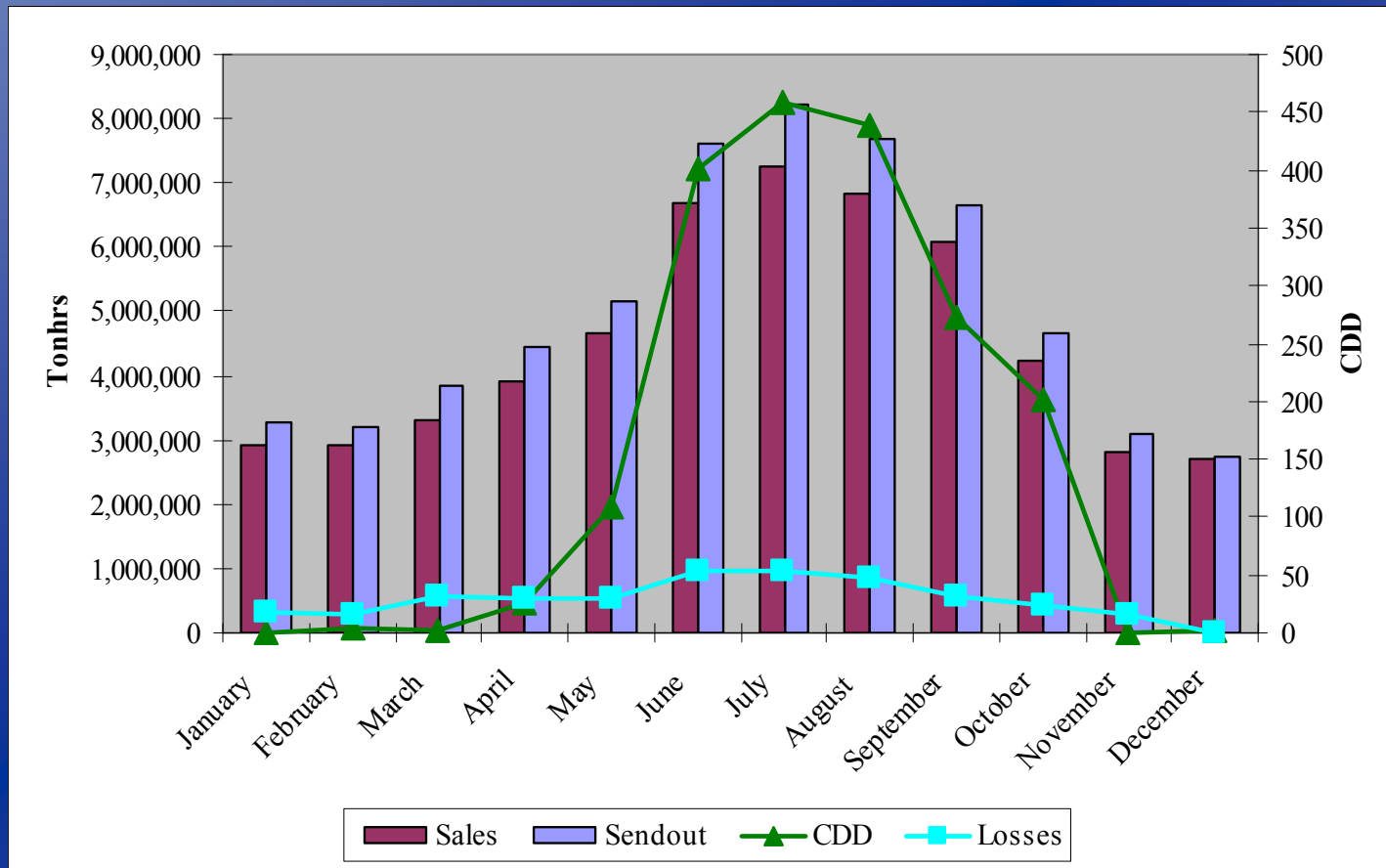


FY09 Operations: Steam



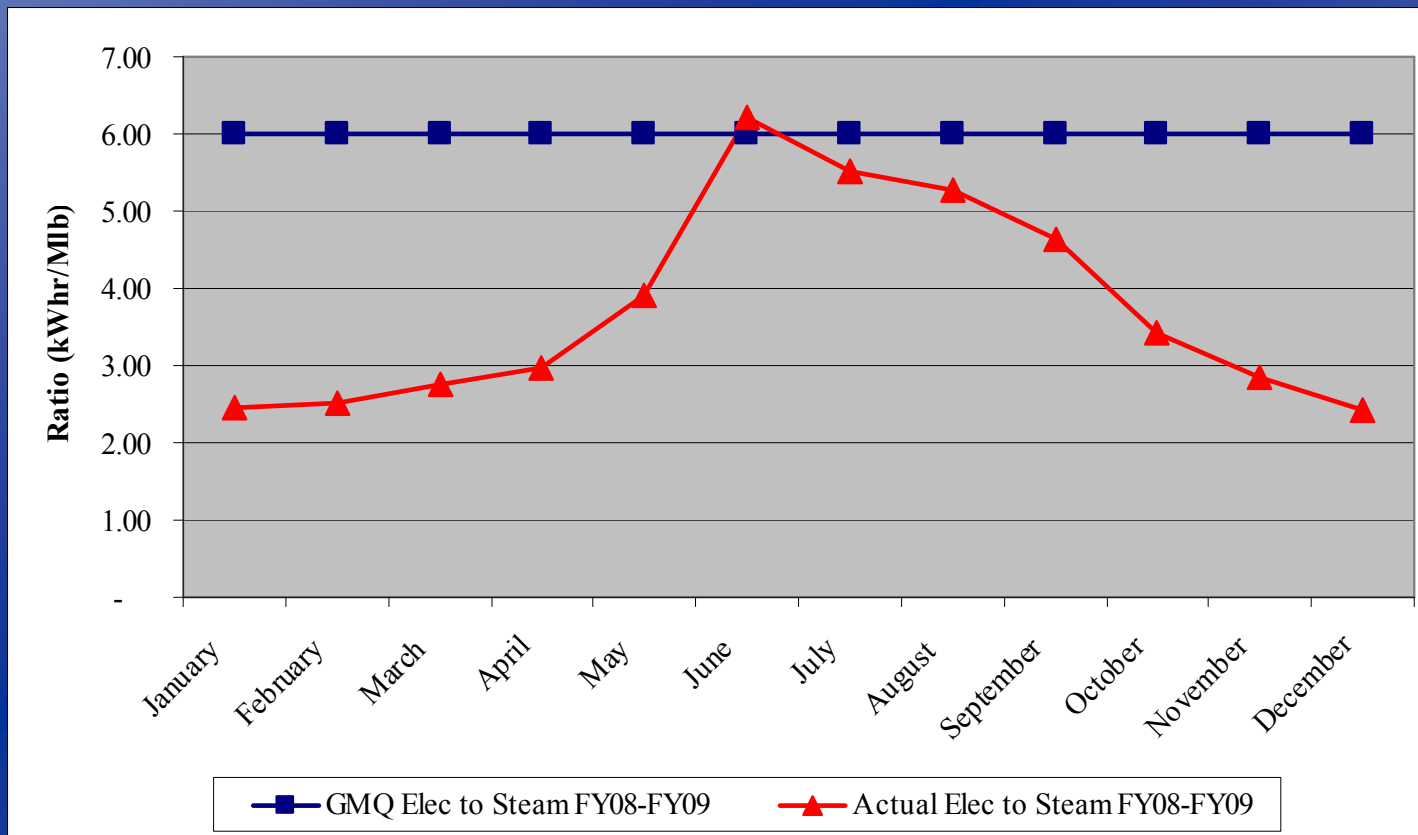


FY09 Operations: Chilled Water



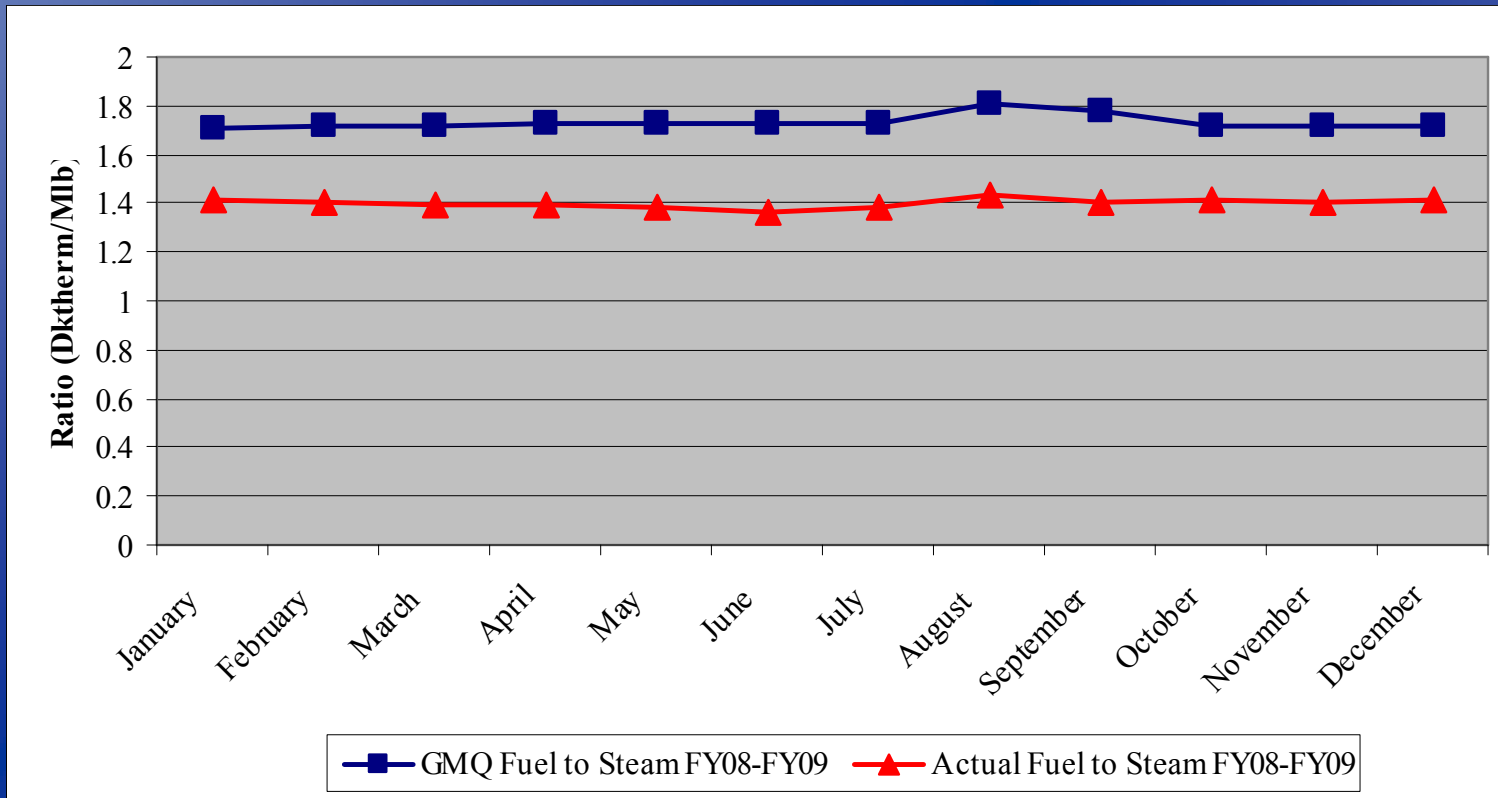


Performance Measurement FY09: Steam Electric Conversion ●





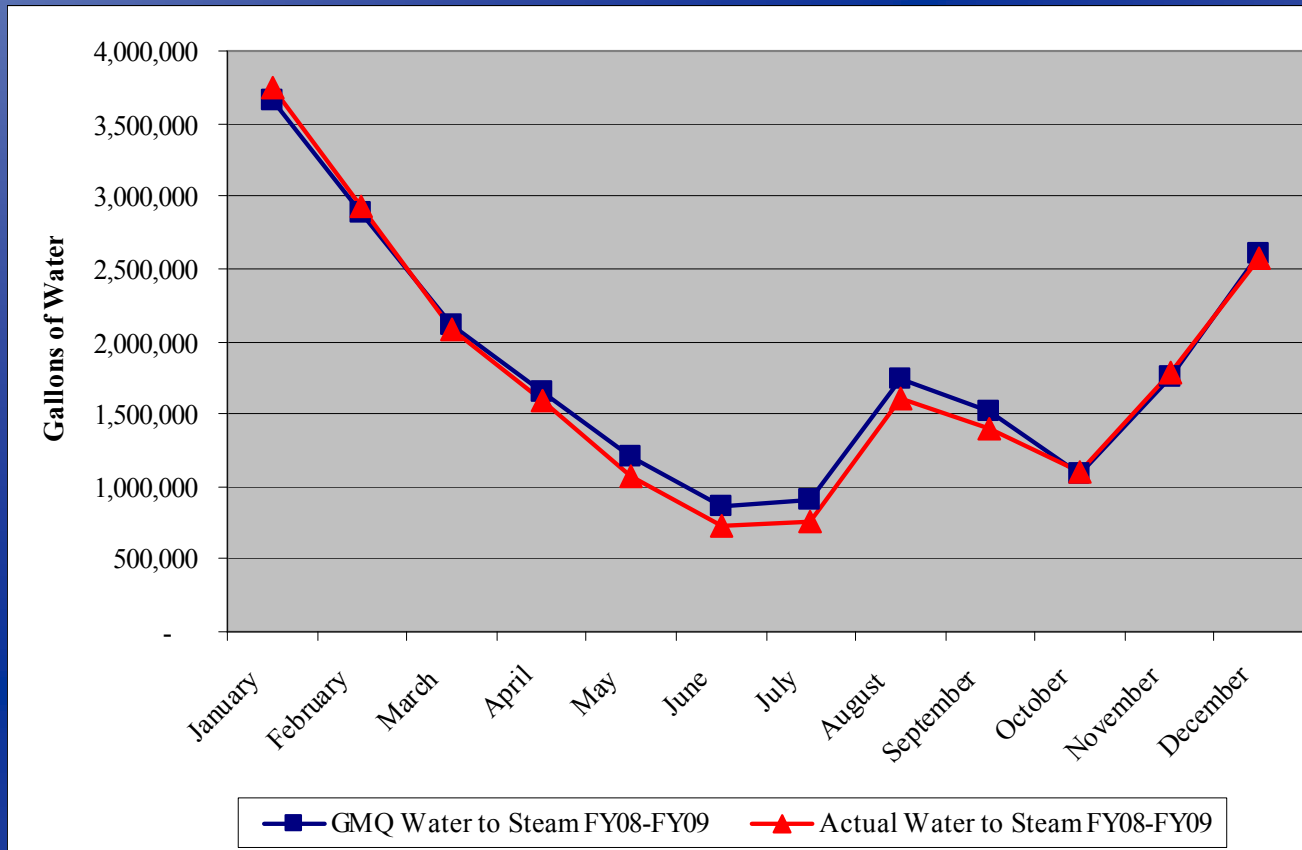
Performance Measurement FY09: Steam Plant Efficiency ●





Performance Measurement FY09: Steam

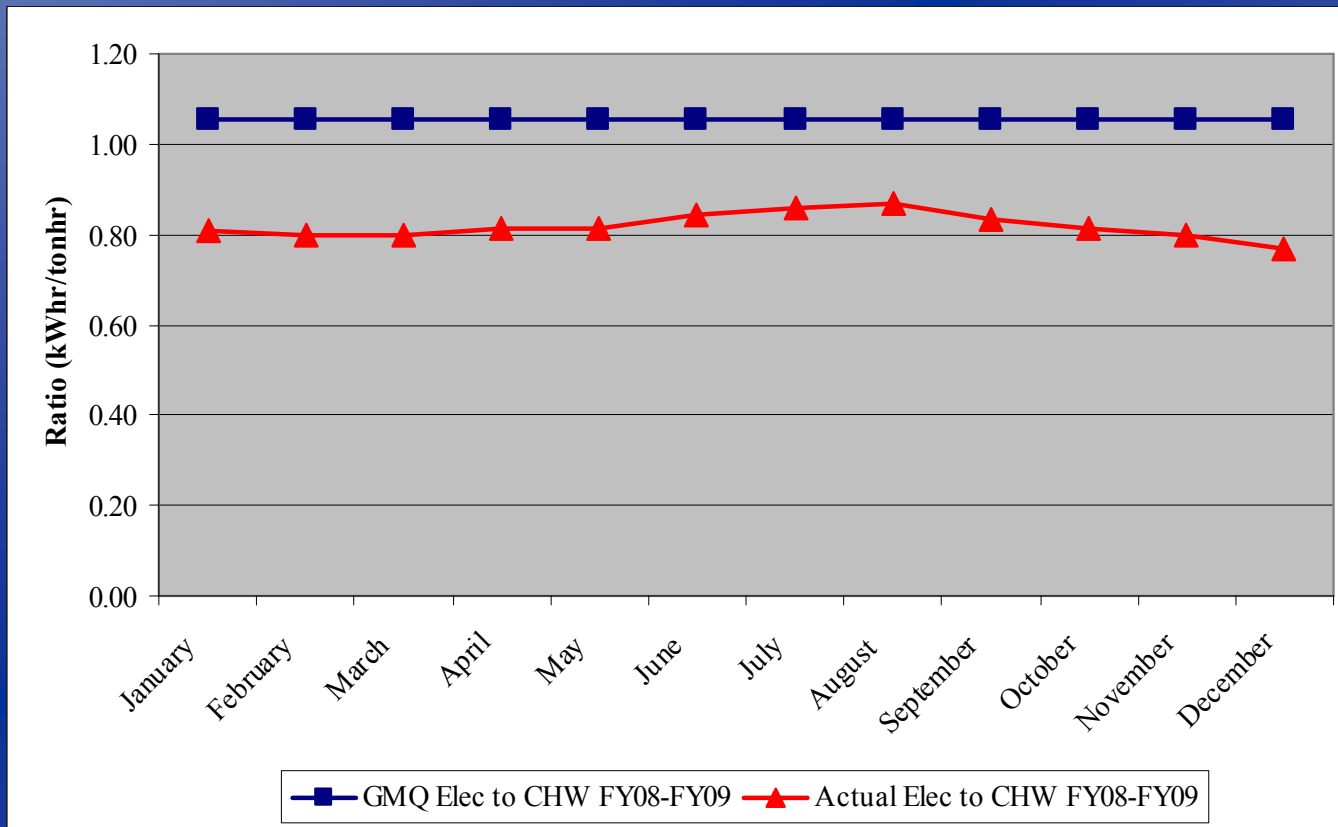
Water Conversion





Performance Measurement FY09: Chilled Water

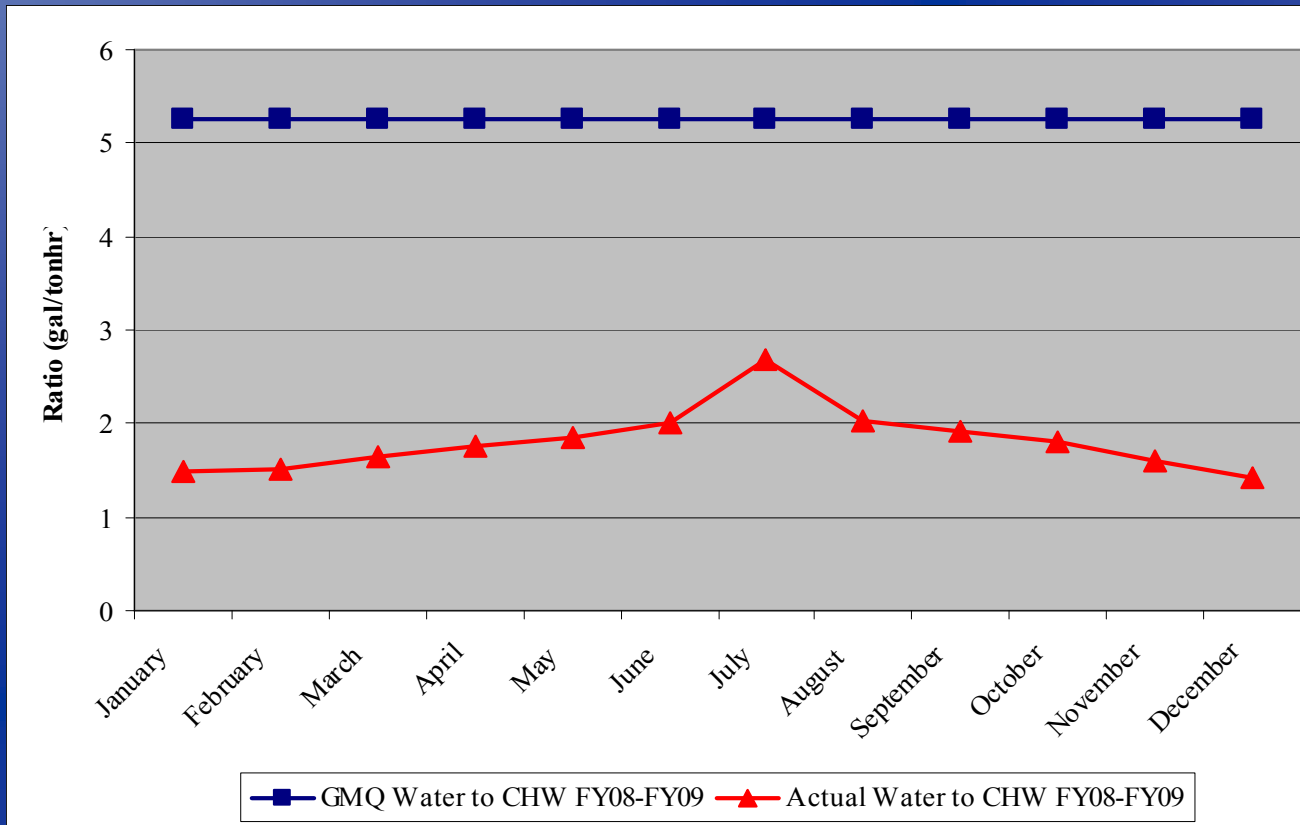
Electric Conversion ●





Performance Measurement FY09: Chilled Water

Water Conversion ●





Water Treatment

- Steam/Condensate
 - Corrosion ●
 - Iron ●
 - Hardness ●
 - Chlorine/Sulfite ●
- Condensing Water
 - Conductivity ●
 - Biologicals ●
- Chilled Water
 - Hardness ●
 - Corrosion ●
 - Biologicals ●



EGF Walkthrough Quarterly Inspection Process

- Equipment Maintenance ●
- Operations ●
- Electrical ●
- Housekeeping ●
- Building Structure ●
- Building Exterior and Grounds ●



EDS Walkthrough

Quarterly Inspection Process

- Manhole/Tunnel Housekeeping ●
- Maintenance Items
 - Insulation Repair/Replacement ●
 - Water Infiltration ●
 - Corrosion of Structural Metal Components ●
- Safety Items ●



7. Capital Projects Review (Active Projects)

- DES 036: 4th Ave Tunnel Fan (R&I) - in closeout
- DES 041/054: Symphony CND – in closeout
- DES 044: STM Repair & CND Replacement MH 5 to MH 9 – in construction
- DES 045: MH 6 to MH 23 CND Replacement – in closeout
- DES 046: Ryman CND – in design
- DES 050: MH Insulation – in construction/ongoing
- DES 052: Wildhorse CND Tempering – in closeout
- DES 055: Rebuild of MH “C” – in closeout
- DES 056: STM Repair & CND Replacement to Citizen’s Plaza – in construction
- DES 057: STM & CND Valve Replacement: Phase I – in construction



8. Customer Operating Cost Reduction

- Fuel Efficiency Adjustment (FEA)
- Capital Project ROI
 - Boiler O₂ Trim
 - Power Factor Correction Capacitor
 - Condensate Return
 - New Customers
 - MWS Effluent for CT Make-up
- TIFS & Contract Demand



Thermal Inefficiency Surcharges (TIFS)

- Caused by Low CHW Return Temps
- High CHW Flow Rates Relative to Load
- Poor Heat Transfer at Building Coils
 - Dirty coils inside and out
 - Reduced air flow (dirty filters, fan belts, etc.)
- Poor Controls
- Most Customers Incurring TIFS
- High ΔT Helps Everyone with Increased EGF Efficiency and Decreased Pumping Energy!



Contract Demand

- Applicable to Steam & Chilled Water
- Demands Reviewed Each Month
- Excursion Above 103% Contract Demand
 - Lasting for ~30 Minutes or Longer
 - Frequent or Multiple Excursions in Month
 - Mechanical Problems?
- Notification/Warning Letter
- Potential Demand Adjustment for 12 Months



Causes for High Demand

- “Sudden” Increase in Building Load
 - Quickly Opening Valves
 - Turning Pumps on After Being Off
 - Trying to Heat up or Cool Down Building Quickly
 - **Always Stage Equipment!**
- Events or High Occupancy
- Keeping Doors/Windows Open
- Simultaneous Use of Steam & Chilled Water
- Experiencing Actual Peak Demand
- Reheat



Metro Nashville
DISTRICT ENERGY SYSTEM

9. Questions & Answers

10. Adjourn

Thanks for Coming!