



Metro Nashville
DISTRICT ENERGY SYSTEM

DES Advisory Board Meeting
Second Quarter FY16
February 18, 2016

Agenda

1. Call to Order
2. Review & Approval of Previous Meeting Minutes
3. Customer Sales
4. Review of DES Contractor Performance
5. Natural Gas Purchasing Status
6. FY16 Costs to Date
7. Capital Projects Review & Status
8. Other Board Member Items
9. Adjourn

1. *Call to Order*
2. *Review and Approval of
Previous Meeting Minutes*

3. Customer Sales

- ❖ Table 3: Customer Cost Comparison
- ❖ Figure 3A: Historic DES Expenses, Revenues and MFA
- ❖ Figure 3B: Historic DES Energy Costs

Summary Table 3: Customer Cost Comparison for the Previous 12 Months

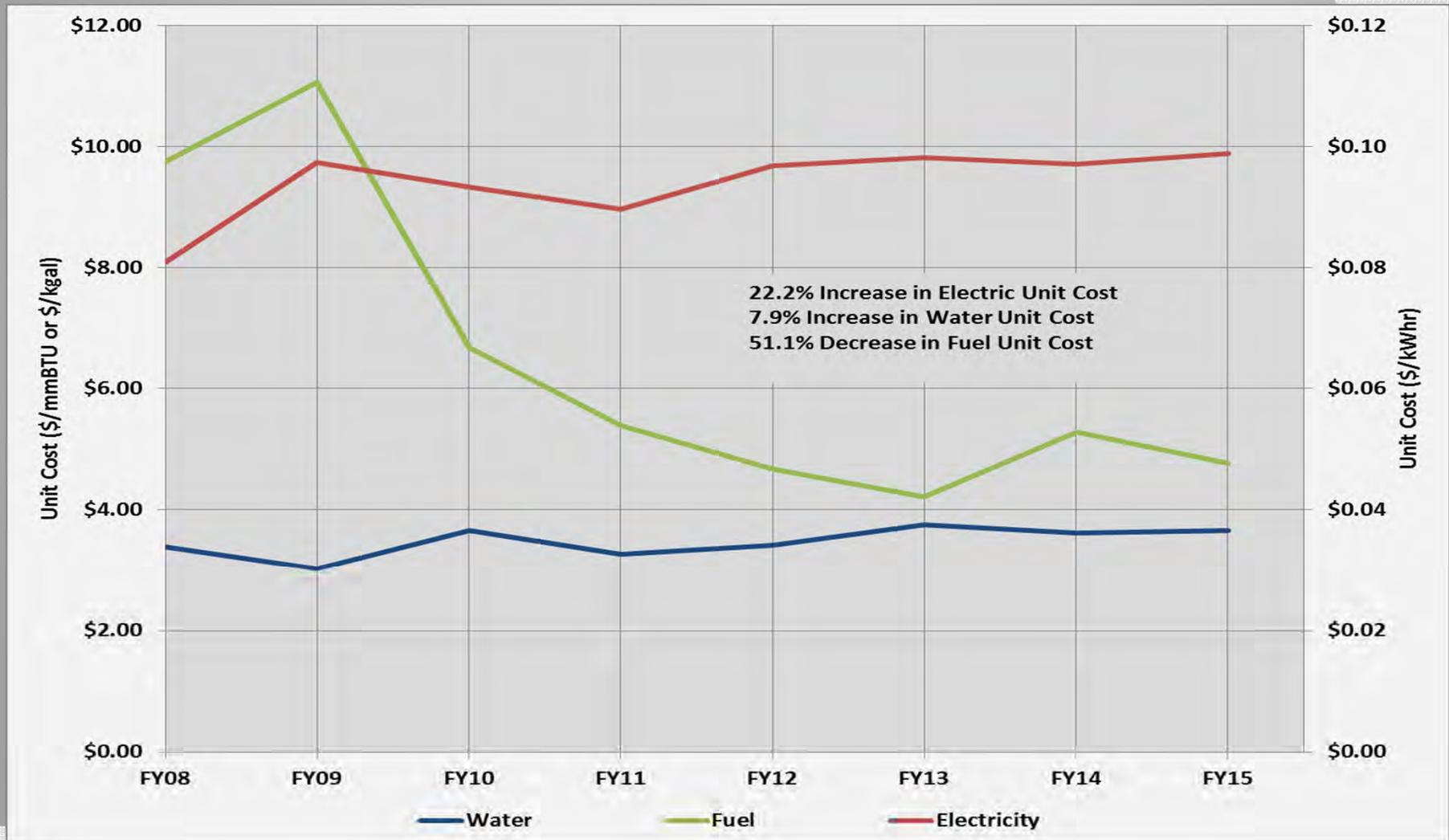
		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Jan 2014 - Dec 2014	Jan 2015 - Dec 2015	% Diff.	Jan 2014 - Dec 2014	Jan 2015 - Dec 2015	% Diff.
Private	Cost	\$ 1,560,909	\$ 1,424,014	-8.77%	\$ 3,418,326	\$ 3,596,042	5.20%
	Usage (lbs or tonhrs)	94,403,874	87,061,564	-7.78%	16,874,237	18,147,511	7.55%
	Unit Cost	\$ 16.53	\$ 16.36	-1.1%	\$ 0.203	\$ 0.198	-2.2%
State	Cost	\$ 2,211,669	\$ 1,908,412	-13.71%	\$ 3,315,912	\$ 3,367,688	1.56%
	Usage (lbs or tonhrs)	122,481,519	102,080,034	-16.66%	14,285,716	14,313,369	0.19%
	Unit Cost	\$ 18.06	\$ 18.70	3.5%	\$ 0.232	\$ 0.235	1.4%
Metro	Cost	\$ 2,822,225	\$ 2,240,299	-20.62%	\$ 5,559,240	\$ 5,479,252	-1.44%
	Usage (lbs or tonhrs)	185,965,300	138,581,290	-25.48%	28,799,790	27,290,066	-5.24%
	Unit Cost	\$ 15.18	\$ 16.17	6.5%	\$ 0.193	\$ 0.201	4.0%
Aggregate	Cost	\$ 6,727,020	\$ 5,697,689	-15.30%	\$ 12,293,478	\$ 12,552,072	2.10%
	Usage (lbs or tonhrs)	408,785,823	333,269,642	-18.47%	59,959,743	60,312,296	0.59%
	Unit Cost	\$ 16.46	\$ 17.10	3.9%	\$ 0.205	\$ 0.208	1.51%

MFA not included in values shown

Figure 3A: Historic DES Expenses, Revenues and MFA



Figure 3B: Historic DES Energy Costs

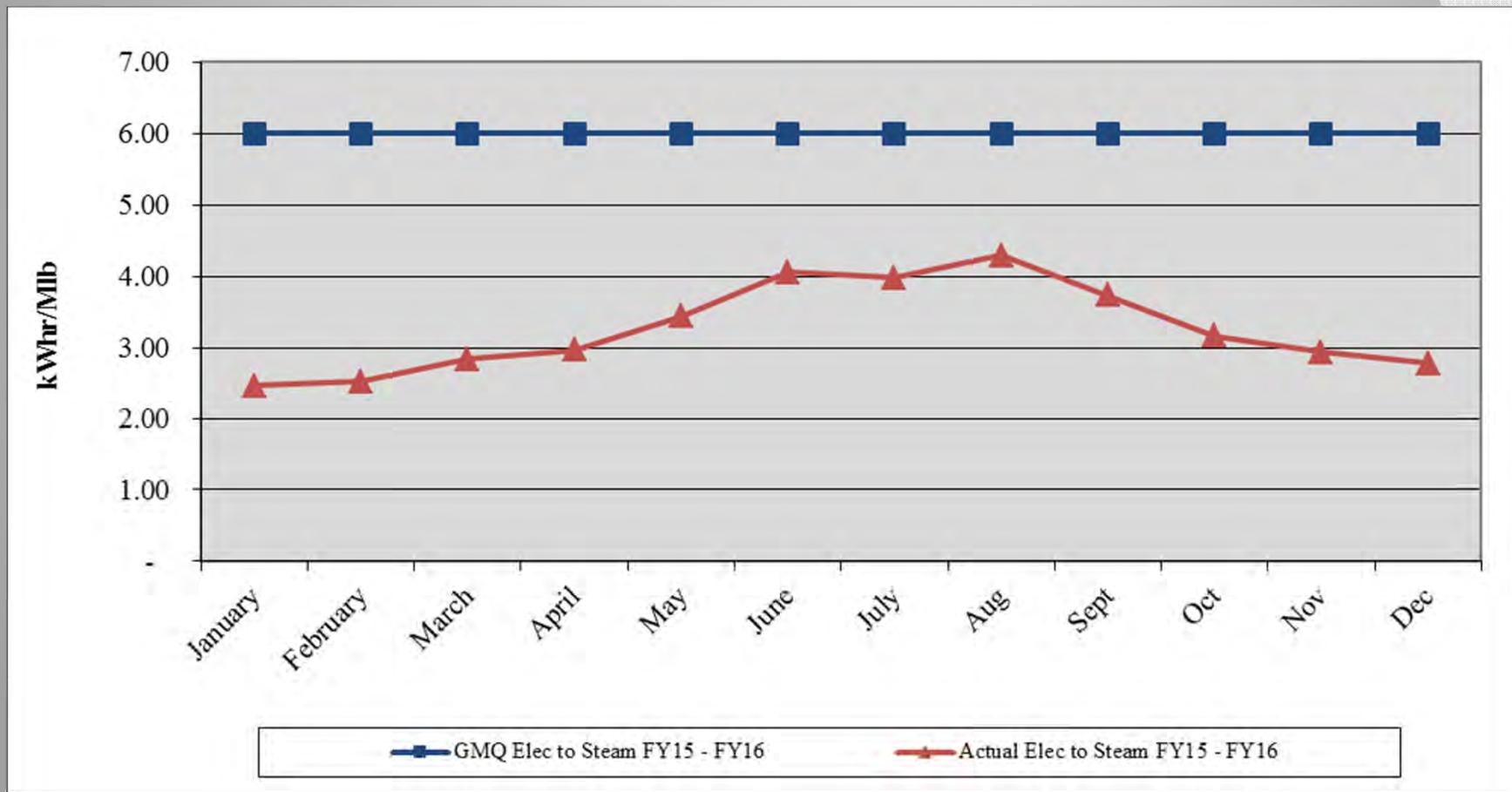


4. *Review of DES Contractor Performance*

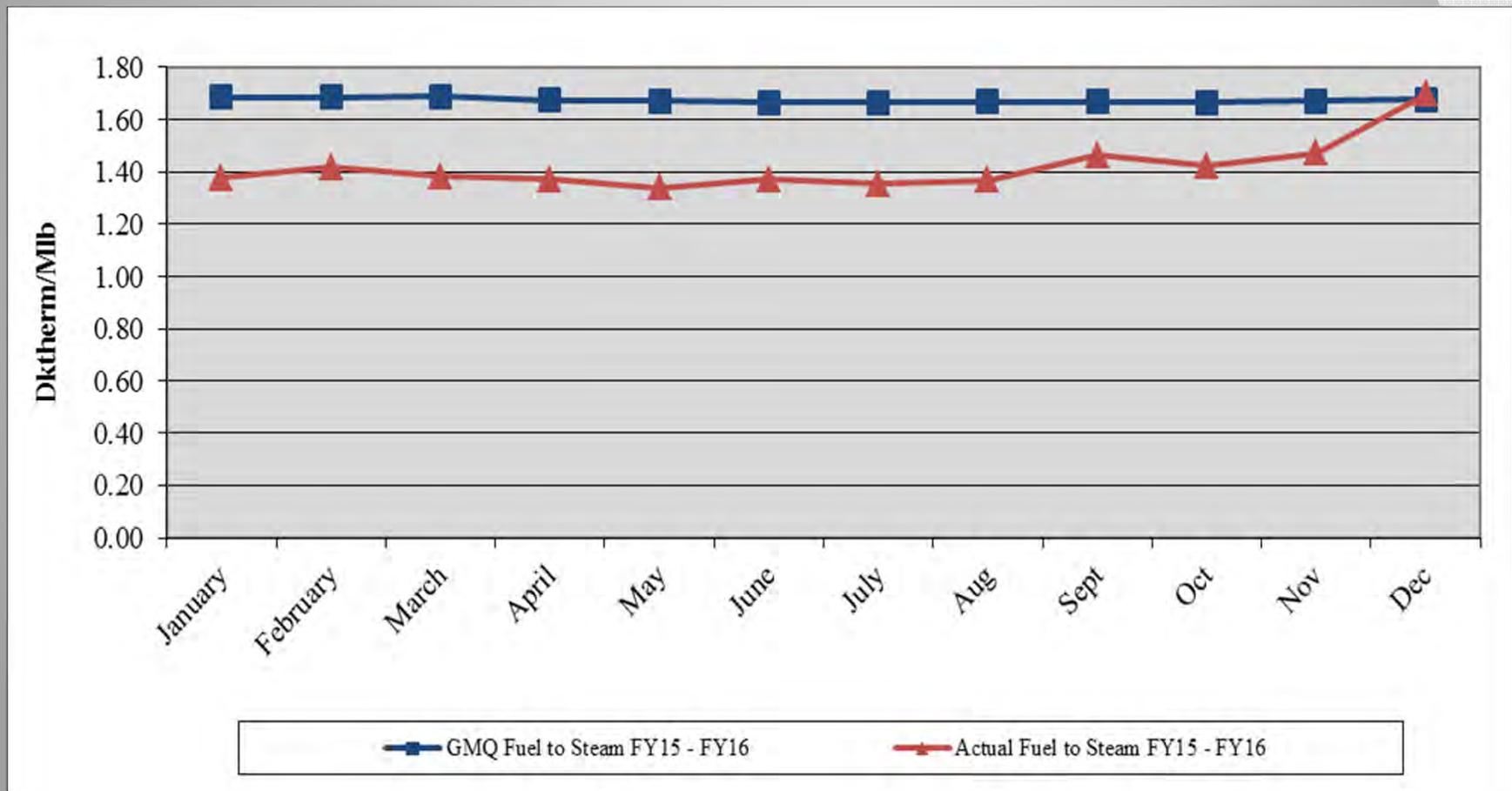
Contractor (CNE) is in compliance with their contractual obligations for FY16.

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

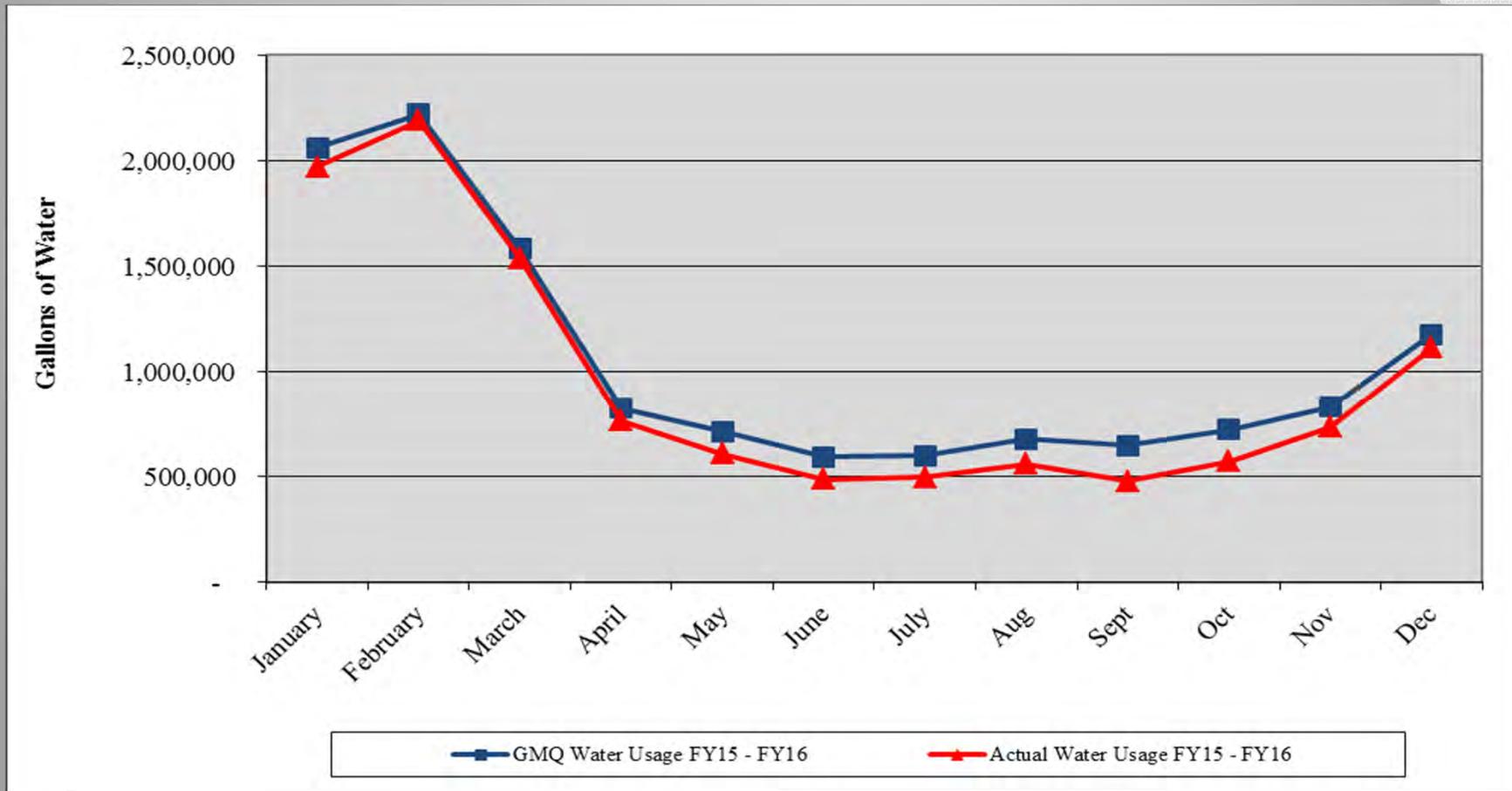
Performance Measurement FY16: Steam Electric Conversion ●



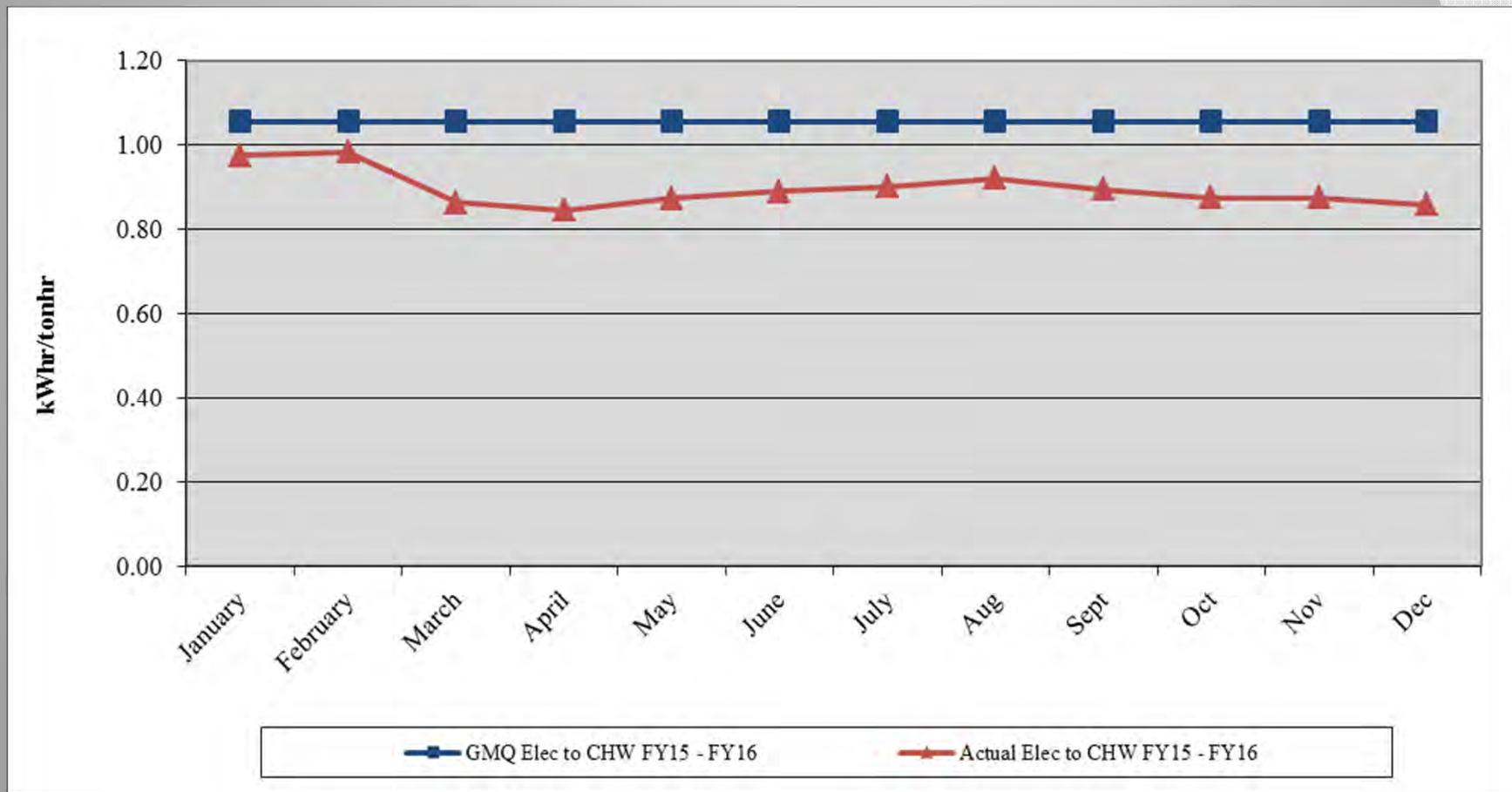
Performance Measurement FY16: Steam Plant Efficiency



Performance Measurement FY16: Steam Water Conversion ●

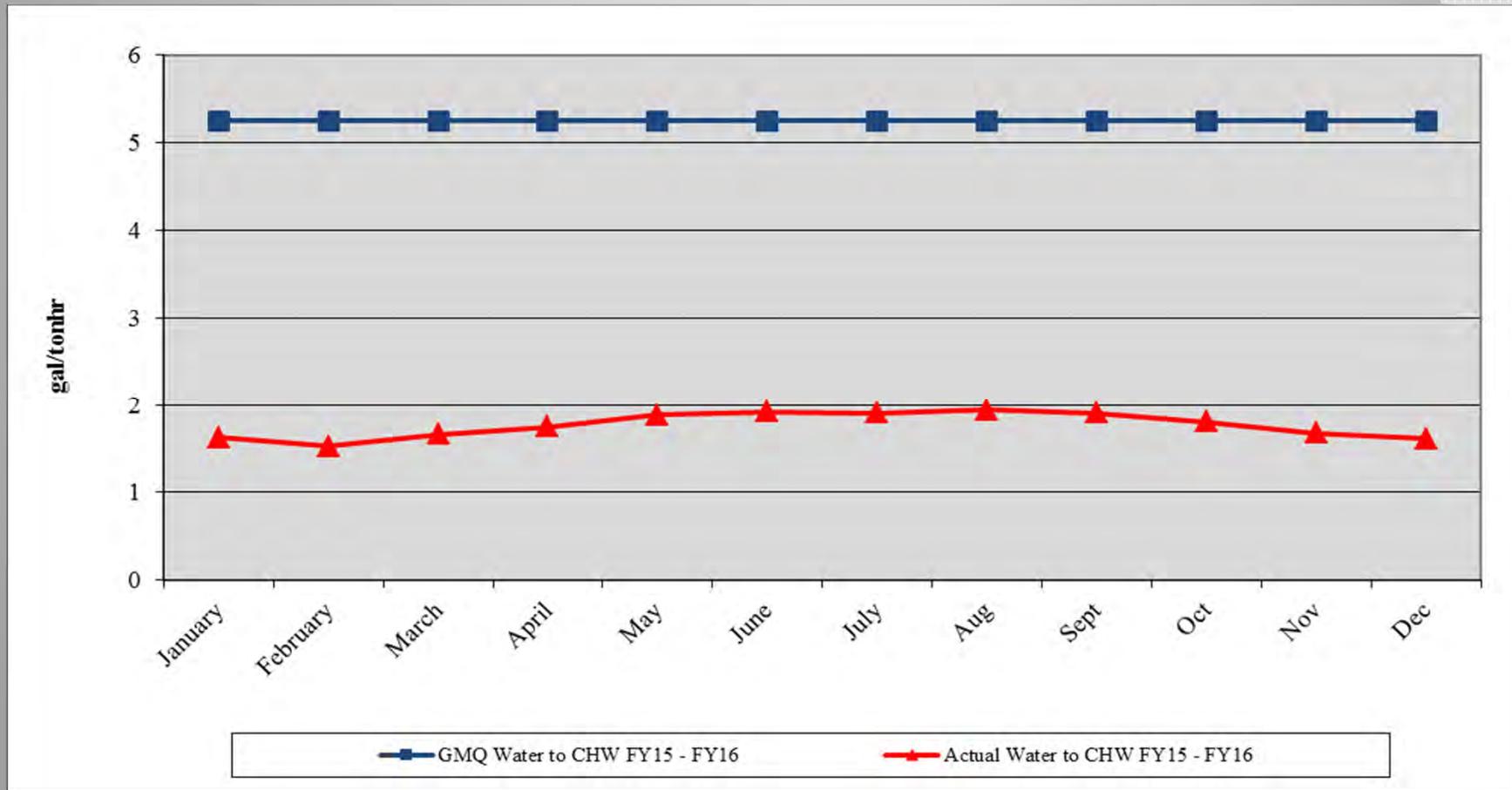


Performance Measurement FY16: CHW Electric Conversion



Performance Measurement FY16: CHW

Water Conversion ●



Water Treatment

- ❖ Steam and Condensate ●
 - ❖ Corrosion
 - ❖ Iron
 - ❖ Hardness
 - ❖ Chlorine/Sulfite
- ❖ Condensing Water ●
 - ❖ Conductivity
 - ❖ Biologicals
- ❖ Chilled Water ●
 - ❖ Hardness
 - ❖ Corrosion
 - ❖ Biologicals
 - ❖ Delta T Issue



EGF Walkthrough

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

EDS Walkthrough

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



5. Natural Gas Purchasing

- ❖ Natural Gas Purchasing Review
 - ❖ Table 5: FY16 Gas Spending & Budget Comparison
 - ❖ Figure 5: Actual and Projected Gas Cost Comparison

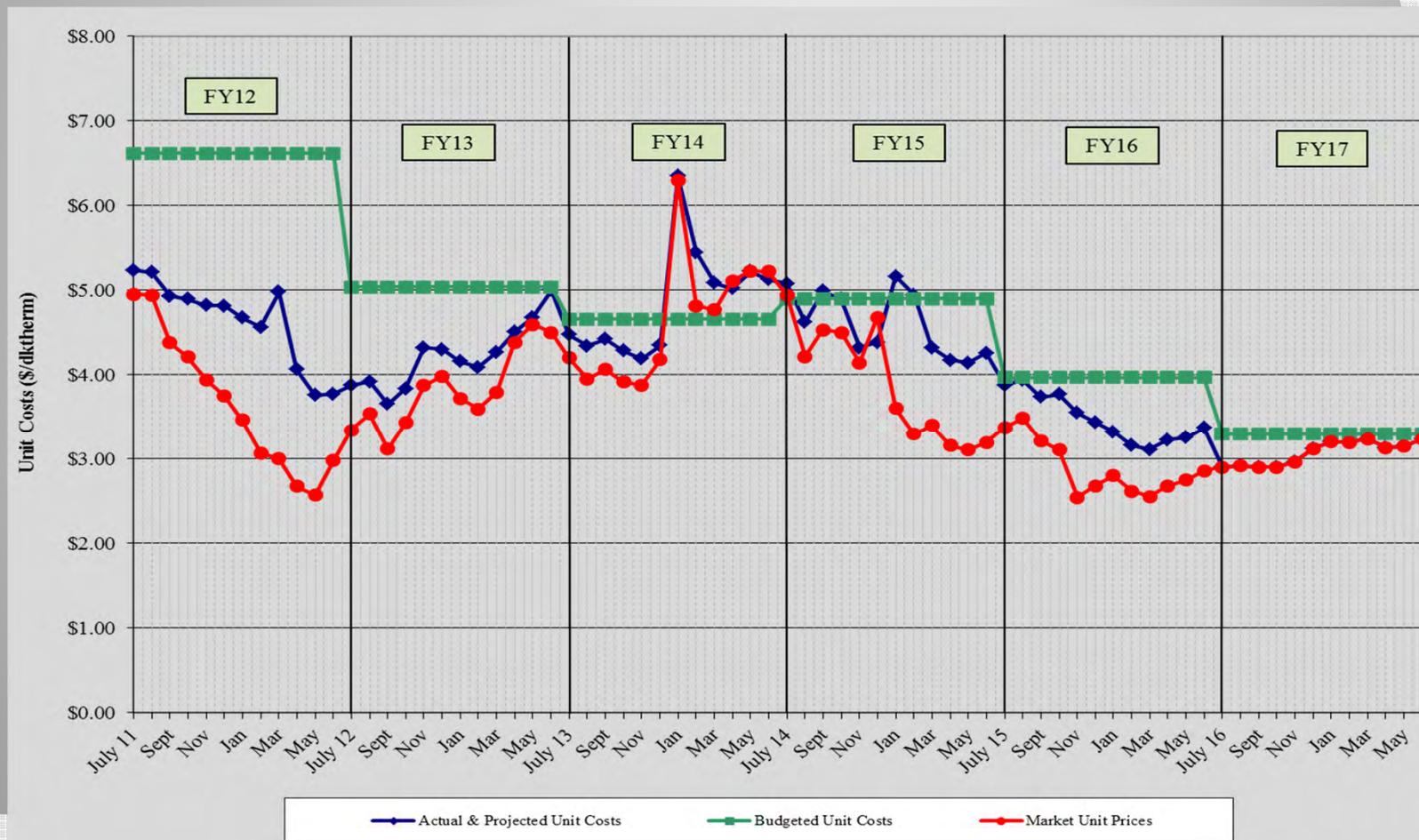
Table 5: FY16 Gas Spending & Budget Comparison

		Actual FY16 To date (Dec 31)	Budget FY16	Percent Difference
Steam Sendout (Mlbs)		156,099	206,050	-24.2%
Fuel Use (Dth) (includes propane)	●	233,175	282,700	-17.5%
Plant Eff (Dth/Mlb)	●	1.494	1.372	8.9%
Total Gas Cost (includes propane)	●	\$942,182	\$1,180,004	-20.2%
Unit Cost of Fuel (\$/Dth)	●	\$4.041	\$4.174	-3.2%

Excludes consultant fees and FEA and budget contingency;

Includes transportation and propane costs (\$70,000 pre-purchased propane)

Figure 5. Actual and Projected Gas Cost Comparison History



6. FY16 Costs to Date

Item	FY15 Actual	FY16 Budget	FY16 Actual to date	Percent of FY16 Budget
FOC's	\$ 4,532,100	\$ 4,668,200	\$ 2,266,000	48.54%
Pass Throughs				
Non-Energy	\$ 1,249,000	\$ 1,069,500	\$ 480,700	44.95%
Water/Sewer	\$ 509,000	\$ 745,400	\$ 319,700	42.89%
Natural Gas Base	\$ 2,897,000	\$ 2,832,858	\$ 946,600	33.42%
Natural Gas Contingency	\$ -	\$ 555,142	\$ -	0.00%
Electricity	\$ 5,459,700	\$ 6,545,700	\$ 3,386,100	51.73%
ORF Deposit	\$ 600	\$ -	\$ -	
Debt Service	\$ 5,646,000	\$ 5,565,900	\$ 2,702,200	48.55%
Total Expenses	\$ 20,293,400	\$ 21,982,700	\$ 10,101,300	45.95%
Total Revenues	\$ 18,425,800	\$ 20,188,200	\$ 9,507,300	47.09%
Metro Funding Amount	\$ 1,867,600	\$ 1,794,500	\$ 897,250	50.00%

FY16 Budget

Item	FY15 Budget	FY16 Budget	Percent Change
FOC's	\$ 4,606,800	\$ 4,668,200	1.33%
Pass Throughs			
Non-Energy	\$ 1,041,300	\$ 1,069,500	2.71%
Water/Sewer	\$ 724,600	\$ 745,400	2.87%
Natural Gas Base	\$ 3,121,940	\$ 2,832,858	-9.26%
Natural Gas Contingency	\$ 635,260	\$ 555,142	-12.61%
Electricity	\$ 6,574,600	\$ 6,545,700	-0.44%
ORF Deposit	\$ 600	\$ -	-100.00%
Debt Service	\$ 5,645,900	\$ 5,565,900	-1.42%
Total Expenses	\$ 22,351,000	\$ 21,982,700	-1.65%
Total Revenues	\$ 20,501,500	\$ 20,188,200	-1.53%
Metro Funding Amount	\$ 1,849,500	\$ 1,794,500	-2.97%

7. Capital Expenditure Update

	Spent to End of FY15	FY16 Spending	Balance to Date (12/31/15)
R&I Projects	\$2,579,384	\$164,558	\$31,161
49109-2010 Bond	\$2,309,419	\$90,480	\$242,656
49107-Customer Connection Fund	\$6,711,621	\$17,745	\$1,770,634
49116-DES CHP and EDS Projects	\$0	\$81,802	\$30,693,198
Total	\$11,600,424	\$349,707	\$32,737,649

Capital Projects Review

Active Capital Projects

- DES 061: MH & Tunnel Steel Corrosion Repair & Prevention – Ongoing
- DES 104: TOU – CNE Implementing Program (anticipate completion for FY17)
- DES 110: EGF Alternate Fuels Evaluation – Propane Acquisition Plan and 2nd Propane Tank
- DES 111: EGF Combined Heat and Power – Engineer Selected
- DES 119: Chilled Water System Delta T – Equipment Installed

Capital Projects Review

Capital Projects in Close-out

- DES 112: Condensate Return Piping Replacement Cordell Hull Building
- DES 117: Manhole S5 Repairs

8. Other Board Member Items

9. Adjourn

- *Advisory Board Meeting Schedule*
- FY16 – 3rd Quarter Meeting – May 19, 2016
- FY16 – 4th Quarter Meeting – August 18, 2016
- FY17 – 1st Quarter Meeting – November 17, 2016
- FY17 – 2nd Quarter Meeting – February 16, 2017