



***Metro Nashville***  
**DISTRICT ENERGY SYSTEM**

*DES Advisory Board Meeting*  
*First Quarter FY15*  
*November 20, 2014*

# *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. FY15 Costs to Date
7. FY15 Budget
8. Capital Projects Review & Status Report Update
9. Other Board Member Items
10. Adjourn

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

## 3. *Customer Sales*

- ❖ Table 3: Customer Cost Comparison
- ❖ Figure 3A: 1<sup>st</sup> Qtr CHW Cost Breakdown
- ❖ Figure 3B: 1<sup>st</sup> Qtr Steam Cost Breakdown
- ❖ Figure 3C: 1<sup>st</sup> Qtr Total Cost Breakdown
- ❖ Figure 3D: 1<sup>st</sup> Qtr Expense/Revenue Comparison

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

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Oct 2012 - Sept 2013	Oct 2013 - Sept 2014	% Diff.	Oct 2012 - Sept 2013	Oct 2013 - Sept 2014	% Diff.
<b>Private</b>	Cost	\$ 1,343,932	\$ 1,506,861	12.12%	\$ 3,308,859	\$ 3,395,283	2.61%
	Usage (lbs or tonhrs)	88,241,945	93,485,331	5.94%	17,114,941	17,157,050	0.25%
	Unit Cost	\$ 15.23	\$ 16.12	5.8%	\$ 0.193	\$ 0.198	2.4%
<b>State</b>	Cost	\$ 1,902,479	\$ 2,171,937	14.16%	\$ 3,403,469	\$ 3,305,422	-2.88%
	Usage (lbs or tonhrs)	114,540,906	124,365,580	8.58%	16,657,102	14,705,922	-11.71%
	Unit Cost	\$ 16.61	\$ 17.46	5.1%	\$ 0.204	\$ 0.225	10.0%
<b>Metro</b>	Cost	\$ 2,367,019	\$ 2,812,909	18.84%	\$ 4,867,041	\$ 5,584,411	14.74%
	Usage (lbs or tonhrs)	182,651,578	194,464,622	6.47%	29,698,639	29,935,800	0.80%
	Unit Cost	\$ 12.96	\$ 14.46	11.6%	\$ 0.164	\$ 0.187	13.8%
<b>Aggregate</b>	Cost	\$ 5,620,847	\$ 6,619,672	17.77%	\$ 11,579,369	\$ 12,391,514	7.01%
	Usage (lbs or tonhrs)	385,541,976	418,013,825	8.42%	63,470,682	62,370,534	-1.73%
	Unit Cost	\$ 14.58	\$ 15.84	8.6%	\$ 0.182	\$ 0.199	8.90%

MFA not included in values shown

Figure 3A: 1<sup>st</sup> Qtr CHW Cost Breakdown

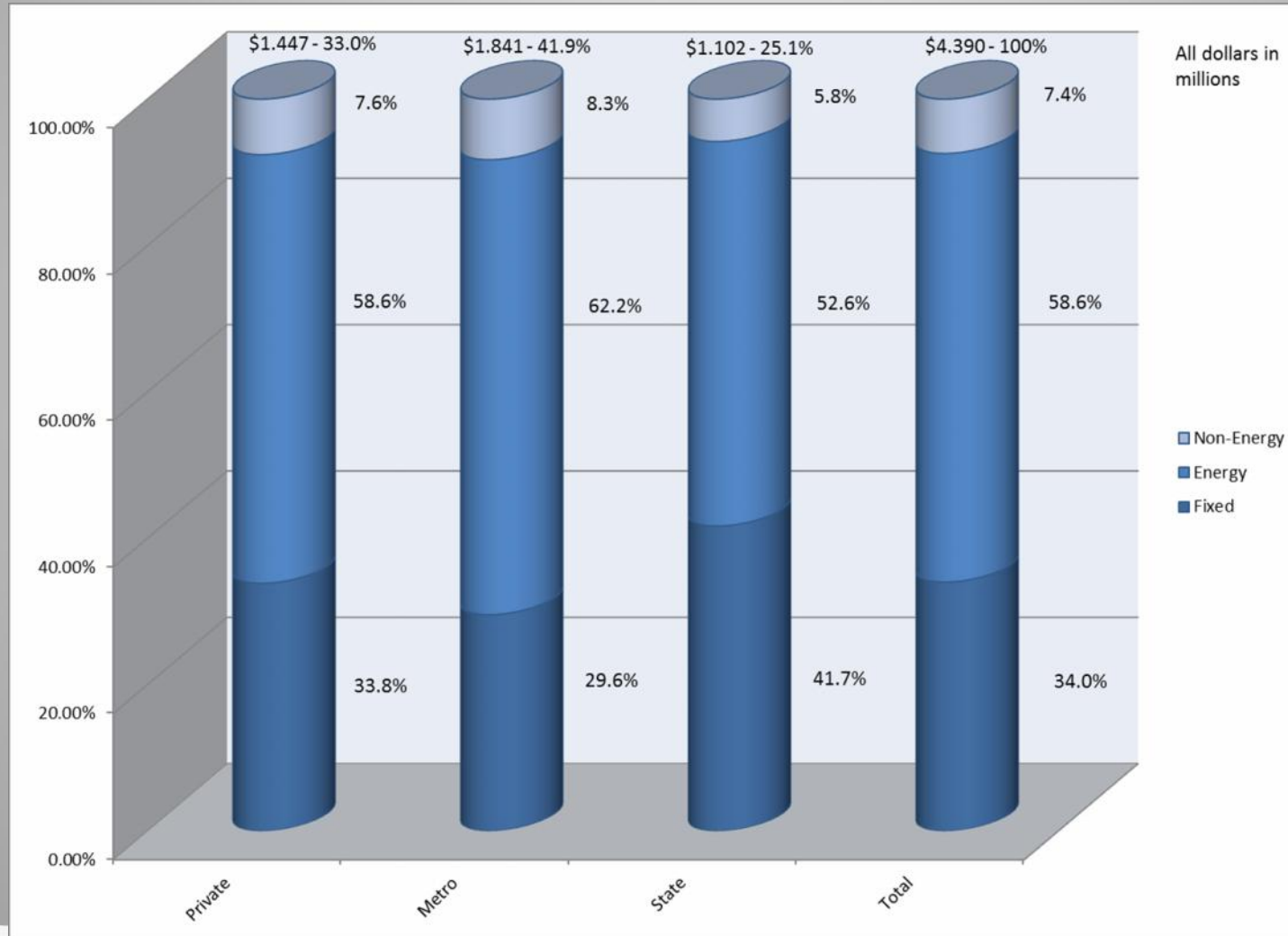


Figure 3B: 1<sup>st</sup> Qtr Steam Cost Breakdown

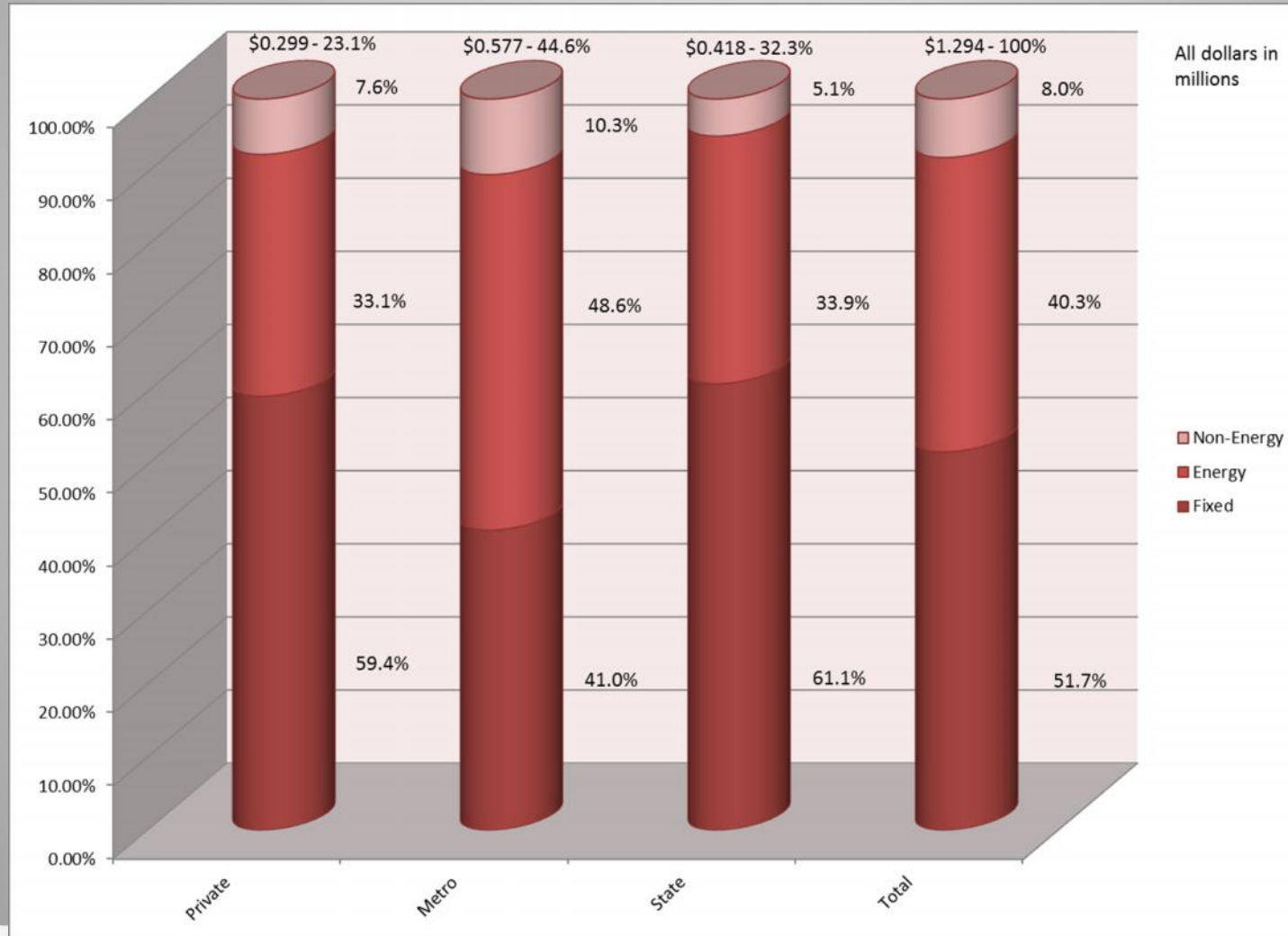


Figure 3C: 1<sup>st</sup> Qtr Total Cost Breakdown

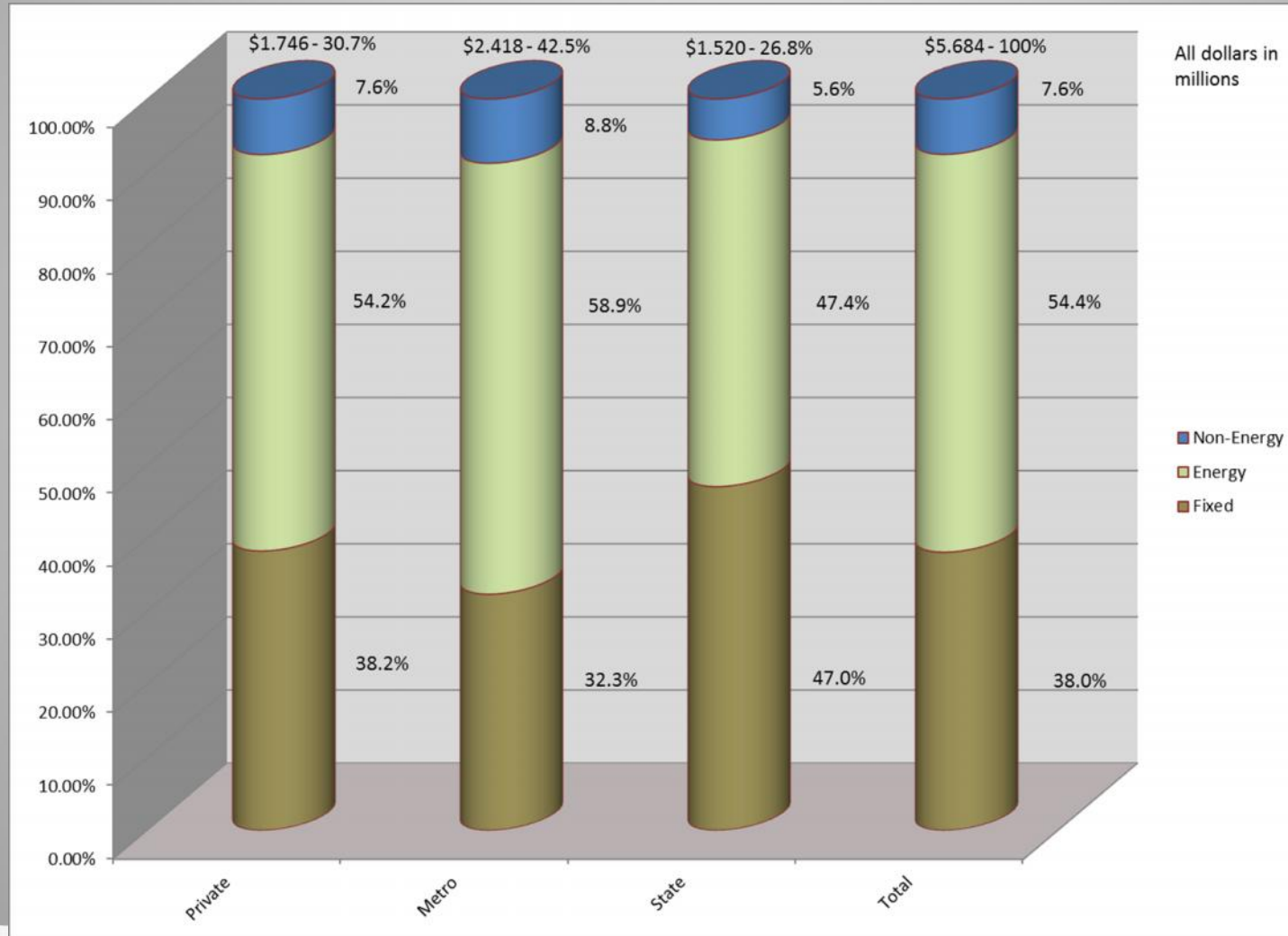
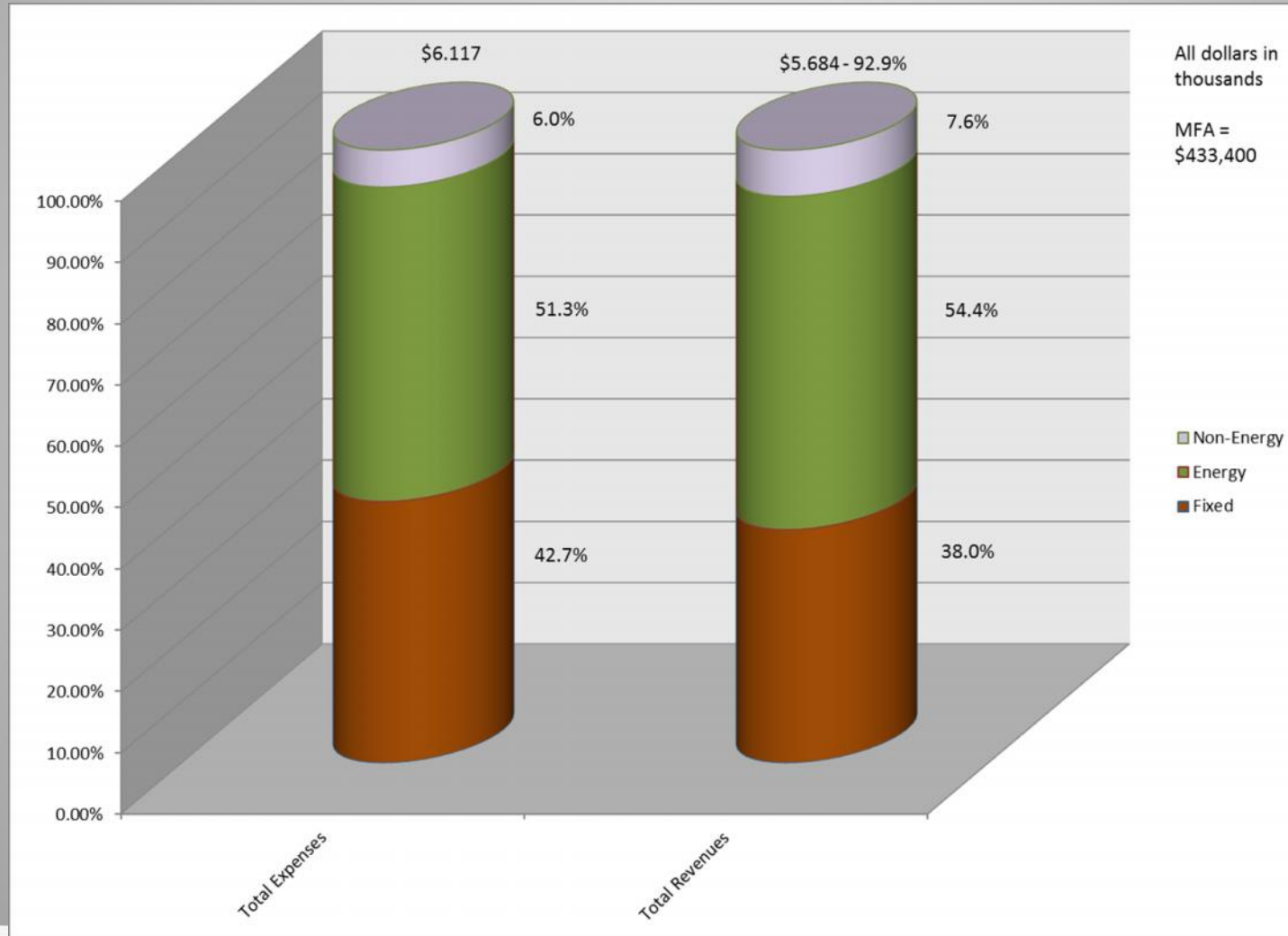







Figure 3D: 1<sup>st</sup> Qtr Expense/Revenue Comparison

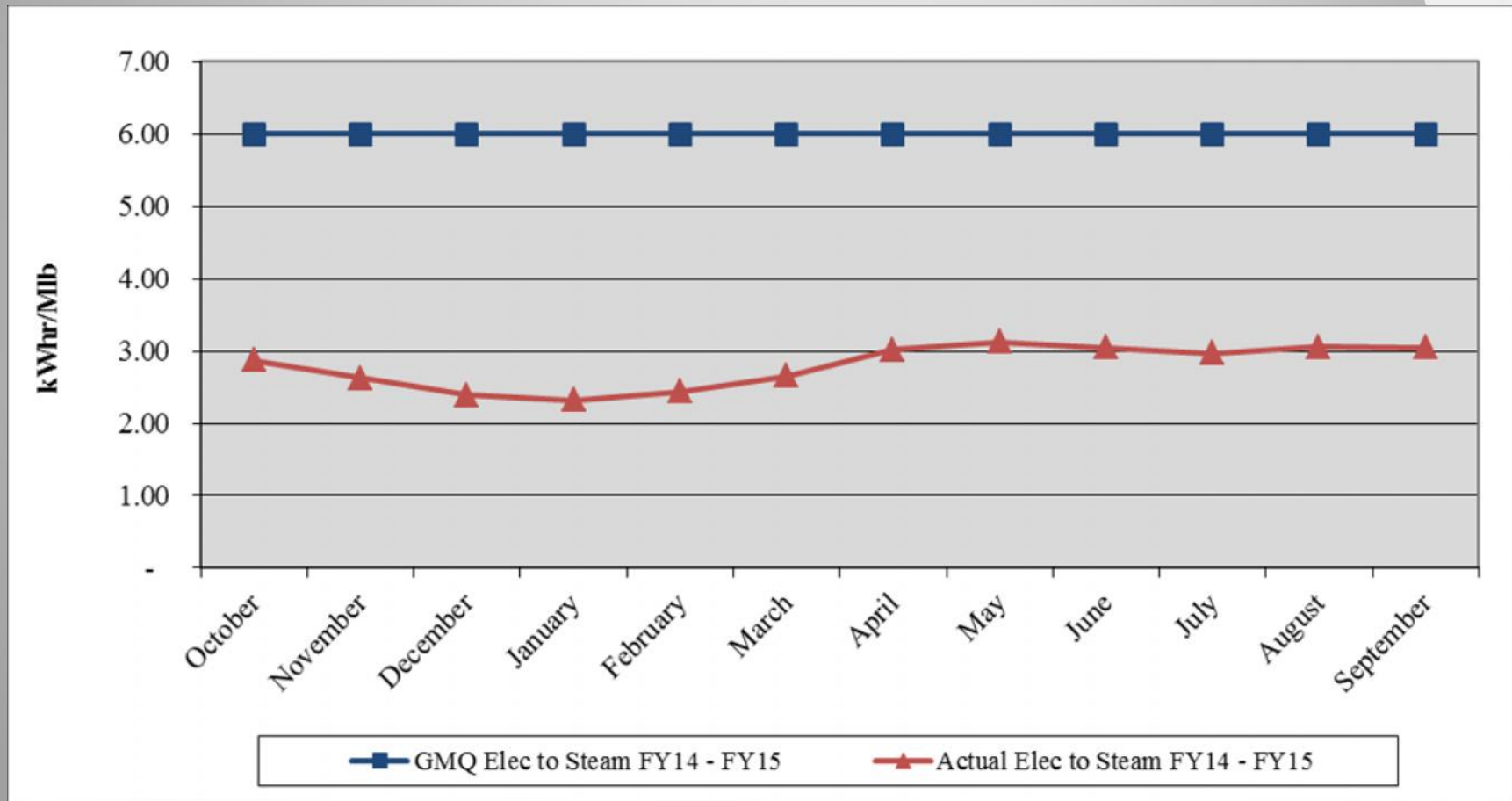


## 4. *Review of DES Contractor Performance*

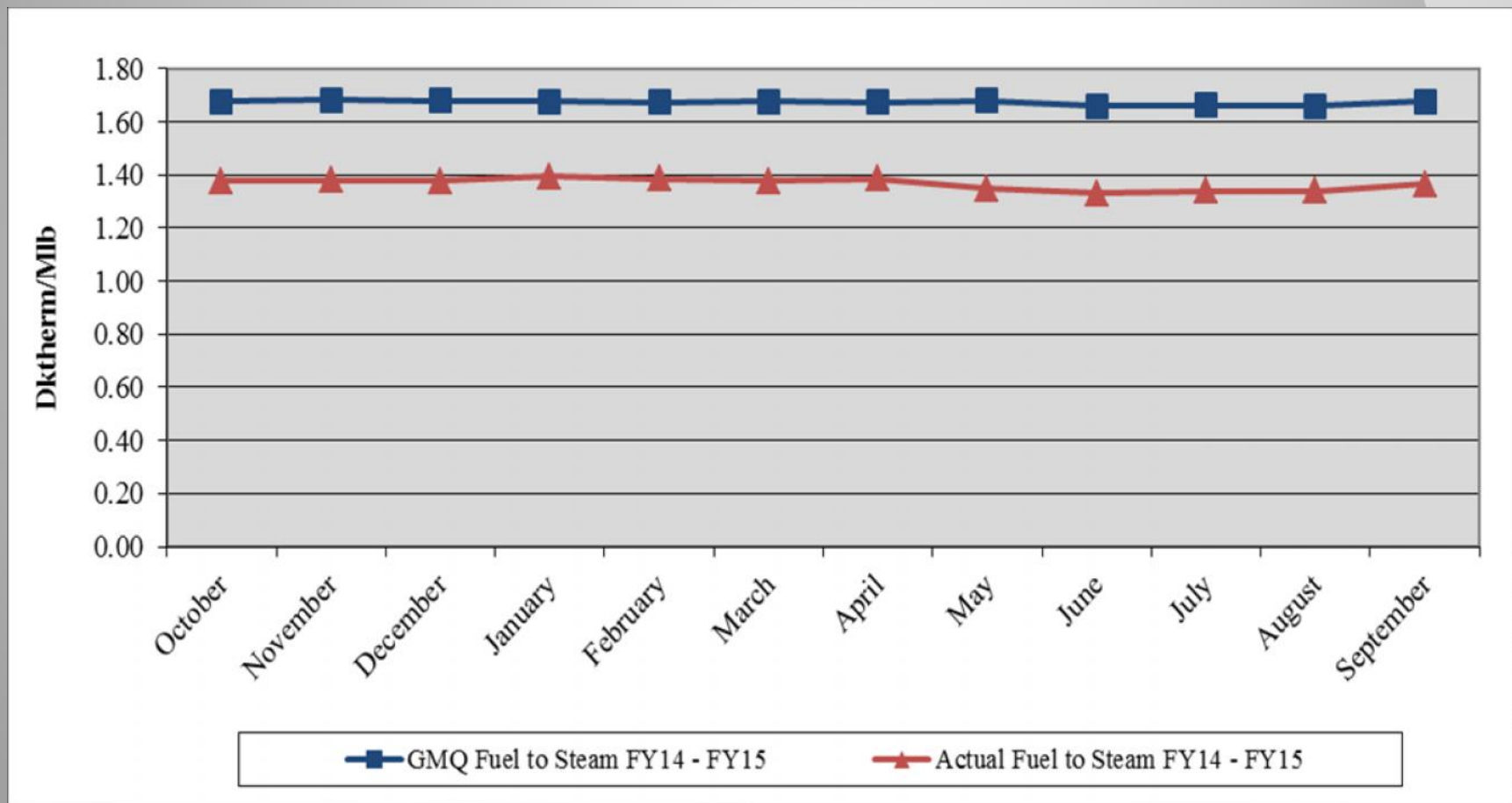
Contractor (CNE) is in compliance with their contractual obligations for FY15.

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

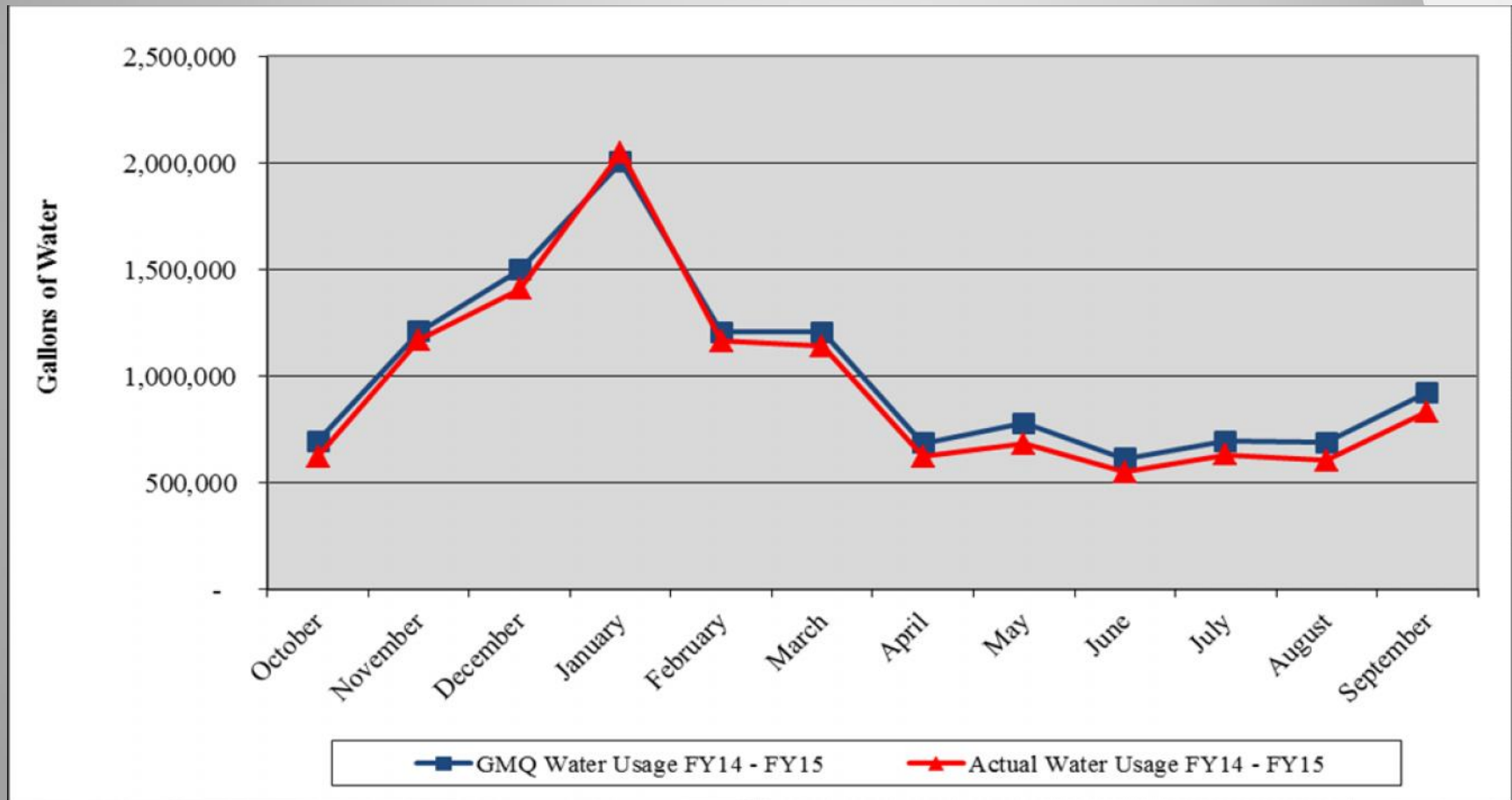
# Performance Measurement FY15: Steam Electric Conversion



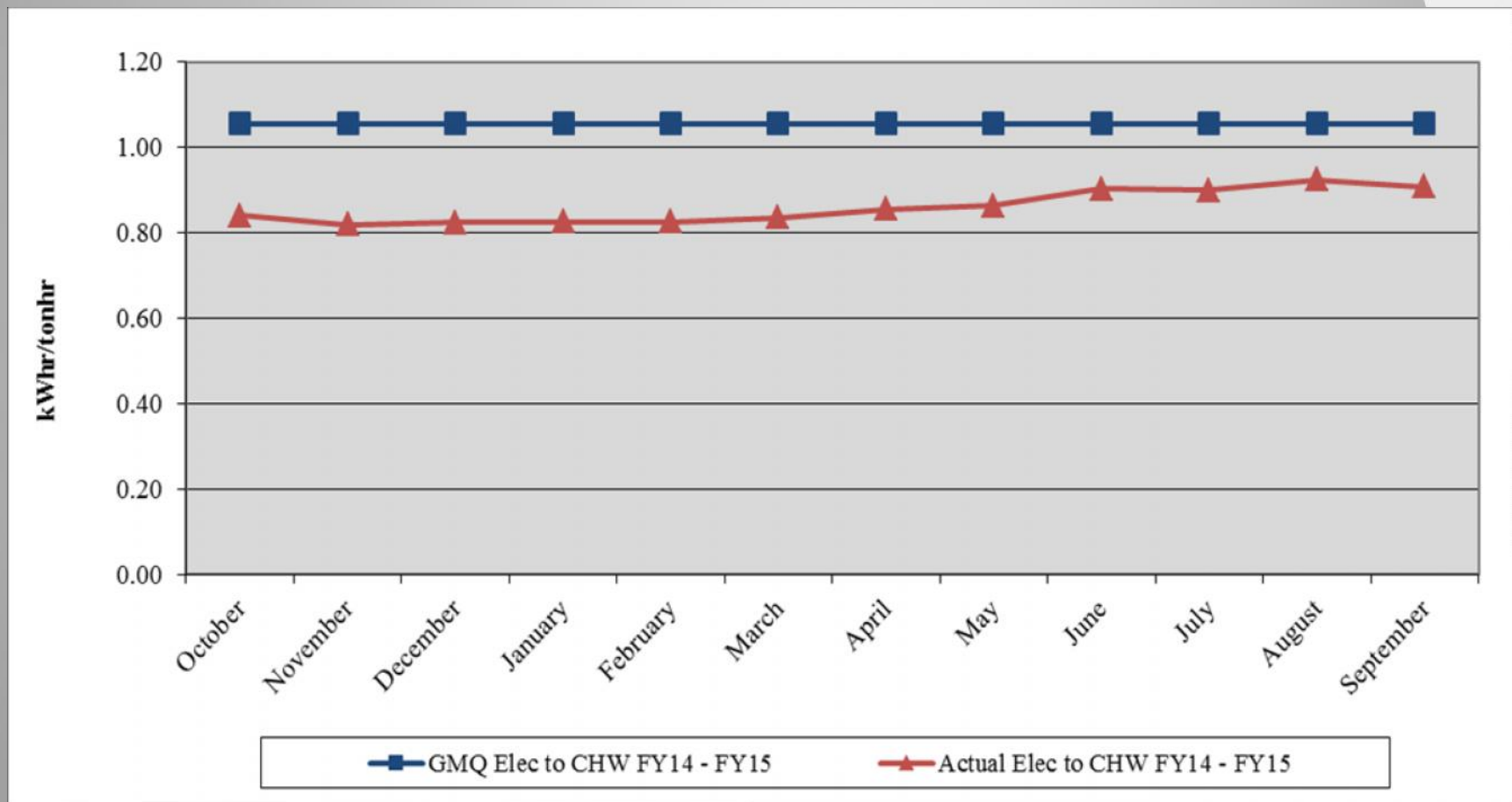
# Performance Measurement FY15: Steam Plant Efficiency



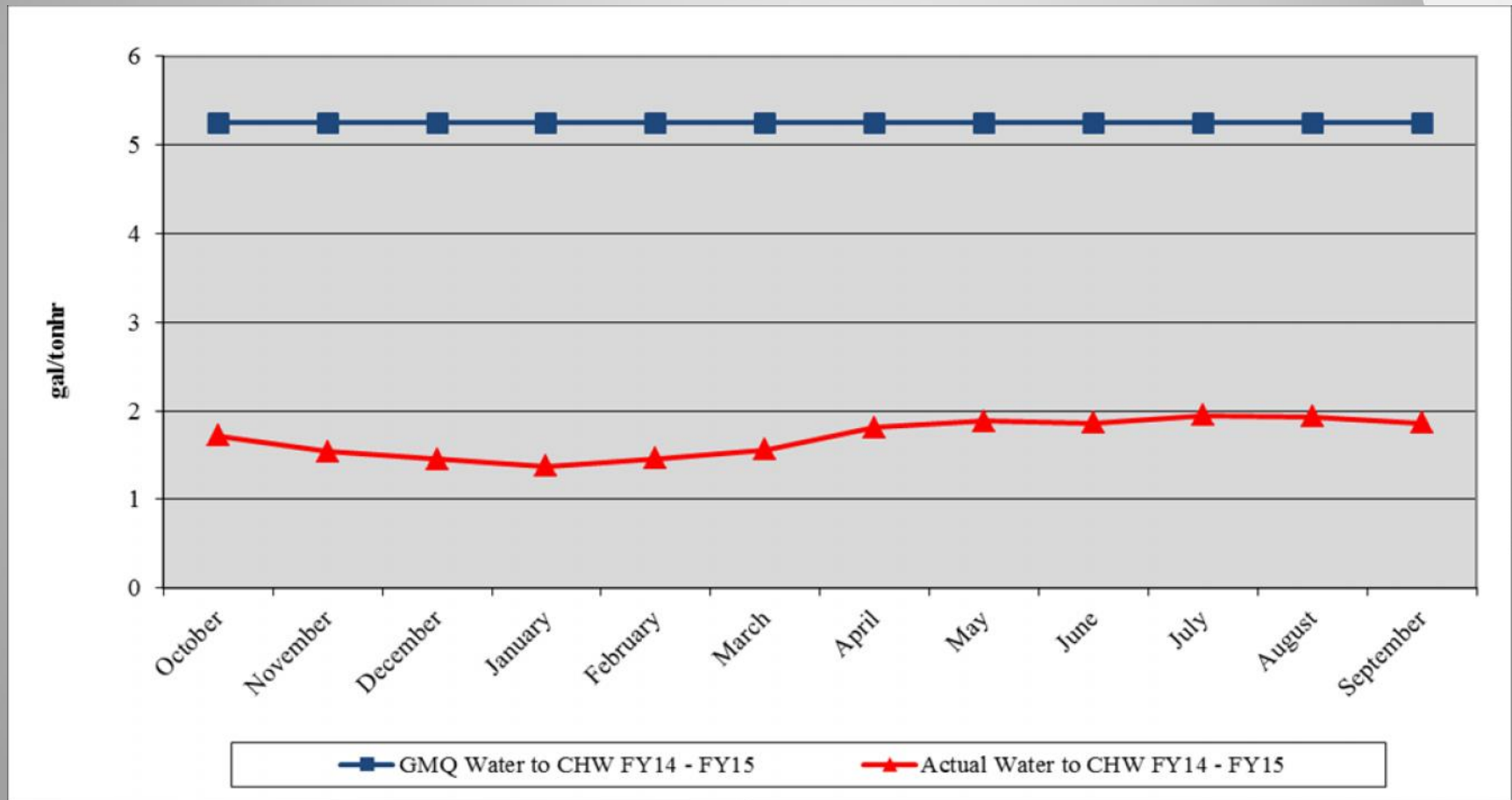
# Performance Measurement FY15: Steam Water Conversion ●



# Performance Measurement FY15: CHW Electric Conversion ●



# Performance Measurement FY15: 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*

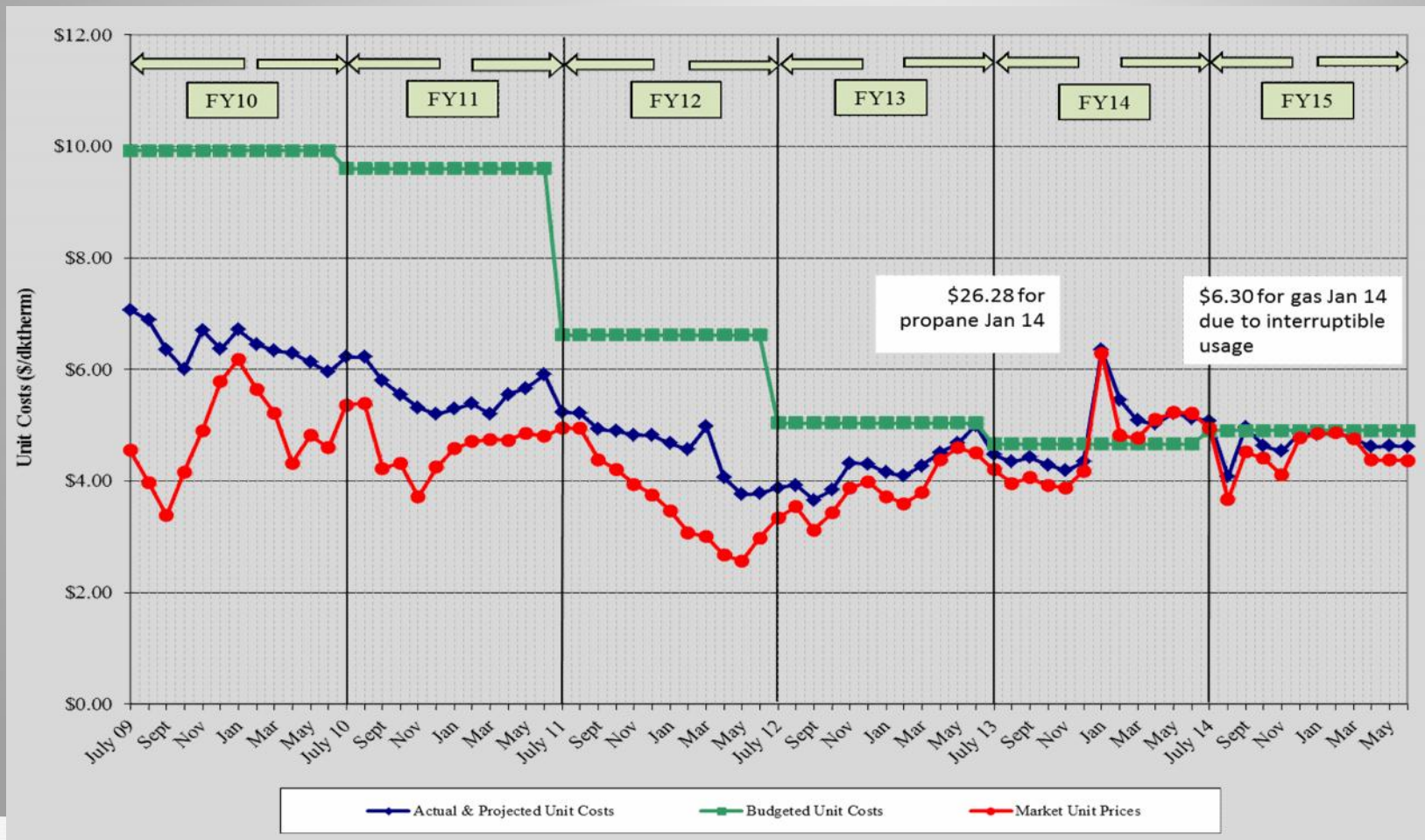
- ❖ Natural Gas Purchasing Review
  - ❖ Table 5: FY15 Gas Spending & Budget Comparison
  - ❖ Figure 5: Actual and Projected Gas Cost Comparison

## Table 5: FY15 Gas Spending & Budget Comparison

		Actual FY15 To date (Sept 30)	Budget FY15	Percent Difference
Steam Sendout (Mlbs)		70,092	55,307	26.7%
Fuel Use (Dth) (includes propane)	●	94,468	76,822	23.0%
Plant Eff (Dth/Mlb)	●	1.348	1.389	-2.9%
Total Gas Cost (includes propane)	●	\$440,415	\$376,503	17.0%
Unit Cost of Fuel (\$/Dth)	●	\$4.662	\$4.901	-4.9%

Excludes consultant fees and FEA and budget contingency

# Figure 5. Actual and Projected Gas Cost Comparison History



## 6. FY15 Costs to Date

Item	FY14 Actual	FY15 Budget	FY15 Actual to date	Percent of FY15 Budget
FOC's	\$ 4,459,927	\$ 4,533,300	\$ 1,133,023	24.99%
Pass Throughs				
Non-Energy	\$ 1,082,270	\$ 1,187,267	\$ 430,194	36.23%
Water/Sewer	\$ 485,337	\$ 721,800	\$ 201,426	27.91%
Natural Gas Base	\$ 3,354,335	\$ 2,972,673	\$ 376,503	12.67%
Natural Gas Contingency	\$ -	\$ 635,260	\$ 63,911	10.06%
Electricity	\$ 5,225,956	\$ 6,576,100	\$ 2,506,762	38.12%
Debt Service	\$ 5,705,732	\$ 5,491,800	\$ 1,206,377	21.97%
<b>Total Expenses</b>	<b>\$ 20,313,558</b>	<b>\$ 22,118,200</b>	<b>\$ 5,918,197</b>	<b>26.76%</b>
<b>Total Revenues</b>	<b>\$ 18,396,977</b>	<b>\$ 20,268,500</b>	<b>\$ 5,652,648</b>	<b>27.89%</b>
<b>Metro Funding Amount</b>	<b>\$ 1,916,581</b>	<b>\$ 1,849,700</b>	<b>\$ 462,425</b>	<b>25.00%</b>

## 7. FY15 Budget

Item	FY14 Budget	FY15 Budget	Percent Change
FOC's	\$ 4,583,500	\$ 4,533,300	-1.10%
Pass Throughs			
Non-Energy	\$ 1,233,707	\$ 1,187,267	-3.76%
Water/Sewer	\$ 714,300	\$ 721,800	1.05%
Natural Gas Base	\$ 2,511,120	\$ 2,972,673	18.38%
Natural Gas Contingency	\$ 502,273	\$ 635,260	26.48%
Electricity	\$ 6,585,000	\$ 6,576,100	-0.14%
Debt Service	\$ 5,518,700	\$ 5,491,800	-0.49%
<b>Total Expenses</b>	<b>\$ 21,648,600</b>	<b>\$ 22,118,200</b>	<b>2.17%</b>
<b>Total Revenues</b>	<b>\$ 19,690,300</b>	<b>\$ 20,268,500</b>	<b>2.94%</b>
<b>Metro Funding Amount</b>	<b>\$ 1,958,300</b>	<b>\$ 1,849,700</b>	<b>-5.55%</b>

## 8. *Capital Expenditure Update*

	<b>Spent to End of FY14</b>	<b>FY15 Spending</b>	<b>Balance to Date (10/31/14)</b>
R&I Projects	\$2,293,259	\$1,909	\$276,966
49109-2010 Bond	\$1,891,257	\$0	\$518,743
49107-Customer Connection Fund	\$6,575,530	\$6,928	\$1,924,470
<b>Total</b>	<b>\$10,760,046</b>	<b>\$8,837</b>	<b>\$2,720,179</b>



# *Capital Projects Review*

## Active Capital Projects

- DES 061: MH & Tunnel Steel Corrosion Repair & Prevention – ongoing
- DES 104: TOU – developing TOU invoicing changes
- DES 106: MCH Chilled Water Mods – Phase I complete; Phase II in 2<sup>nd</sup> Qtr
- DES 107: West Riverfront Park Manhole Repairs

# *Capital Projects Review*

## Capital Projects in Close-out

- none



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DISTRICT ENERGY SYSTEM

## *9. Other Board Member Items*

## *10. Adjourn*

- *Advisory Board Meeting Schedule*
- FY15 – 2<sup>nd</sup> Quarter Meeting – February 19, 2015
- FY15 – 3<sup>rd</sup> Quarter Meeting – May 21, 2015
- FY15 – 4<sup>th</sup> Quarter Meeting – August 20, 2015
- FY16 – 1<sup>st</sup> Quarter Meeting – November 19, 2015