



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

*DES Advisory Board Meeting*  
*Fourth Quarter FY15*  
*August 20, 2015*

# *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. FY16 Budget
8. Capital Projects Review & Status
9. Potential Customer: Lifeway
10. Other Board Member Items
11. Adjourn



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

## 3. *Customer Sales*

- ❖ Table 3A: Customer Cost Comparison




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

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		July 2013 - June 2014	July 2014 - June 2015	% Diff.	July 2013 - June 2014	July 2014 - June 2015	% Diff.
<b>Private</b>	Cost	\$ 1,494,950	\$ 1,501,662	0.45%	\$ 3,313,129	\$ 3,470,158	4.74%
	Usage (lbs or tonhrs)	92,588,814	95,284,693	2.91%	17,002,070	17,281,059	1.64%
	Unit Cost	\$ 16.15	\$ 15.76	-2.4%	\$ 0.195	\$ 0.201	3.0%
<b>State</b>	Cost	\$ 2,145,493	\$ 2,085,856	-2.78%	\$ 3,304,434	\$ 3,308,638	0.13%
	Usage (lbs or tonhrs)	122,182,740	119,251,395	-2.40%	15,262,594	13,869,881	-9.13%
	Unit Cost	\$ 17.56	\$ 17.49	-0.4%	\$ 0.217	\$ 0.239	10.2%
<b>Metro</b>	Cost	\$ 2,765,773	\$ 2,479,075	-10.37%	\$ 5,359,536	\$ 5,498,511	2.59%
	Usage (lbs or tonhrs)	190,482,533	161,476,275	-15.23%	28,993,711	27,908,434	-3.74%
	Unit Cost	\$ 14.52	\$ 15.35	5.7%	\$ 0.185	\$ 0.197	6.6%
<b>Aggregate</b>	Cost	\$ 6,511,863	\$ 6,193,909	-4.88%	\$ 11,977,099	\$ 12,385,880	3.41%
	Usage (lbs or tonhrs)	410,073,610	381,755,418	-6.91%	61,258,375	59,626,410	-2.66%
	Unit Cost	\$ 15.88	\$ 16.22	2.2%	\$ 0.196	\$ 0.208	6.24%

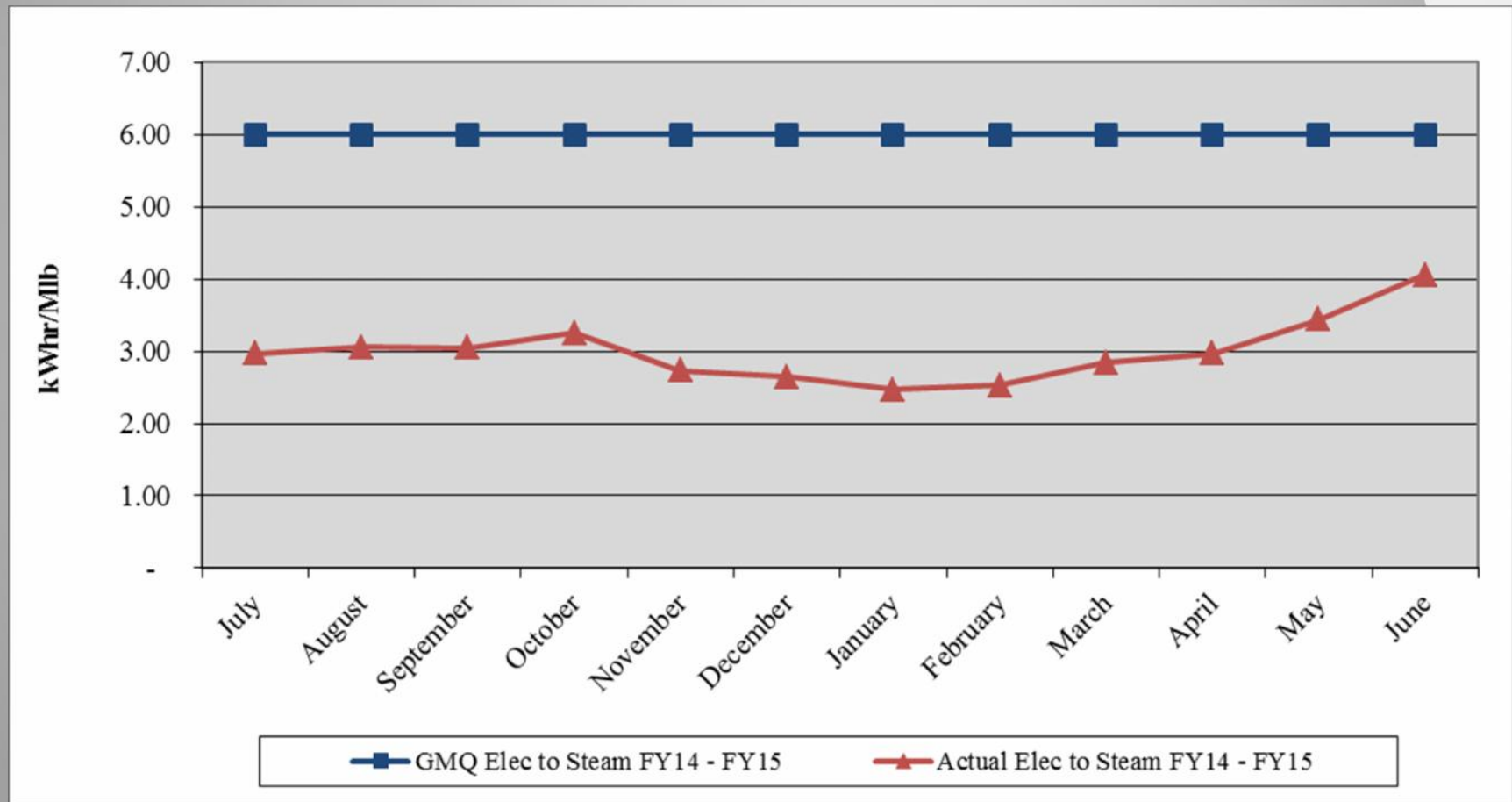
MFA not included in values shown

## 4. *Review of DES Contractor Performance*

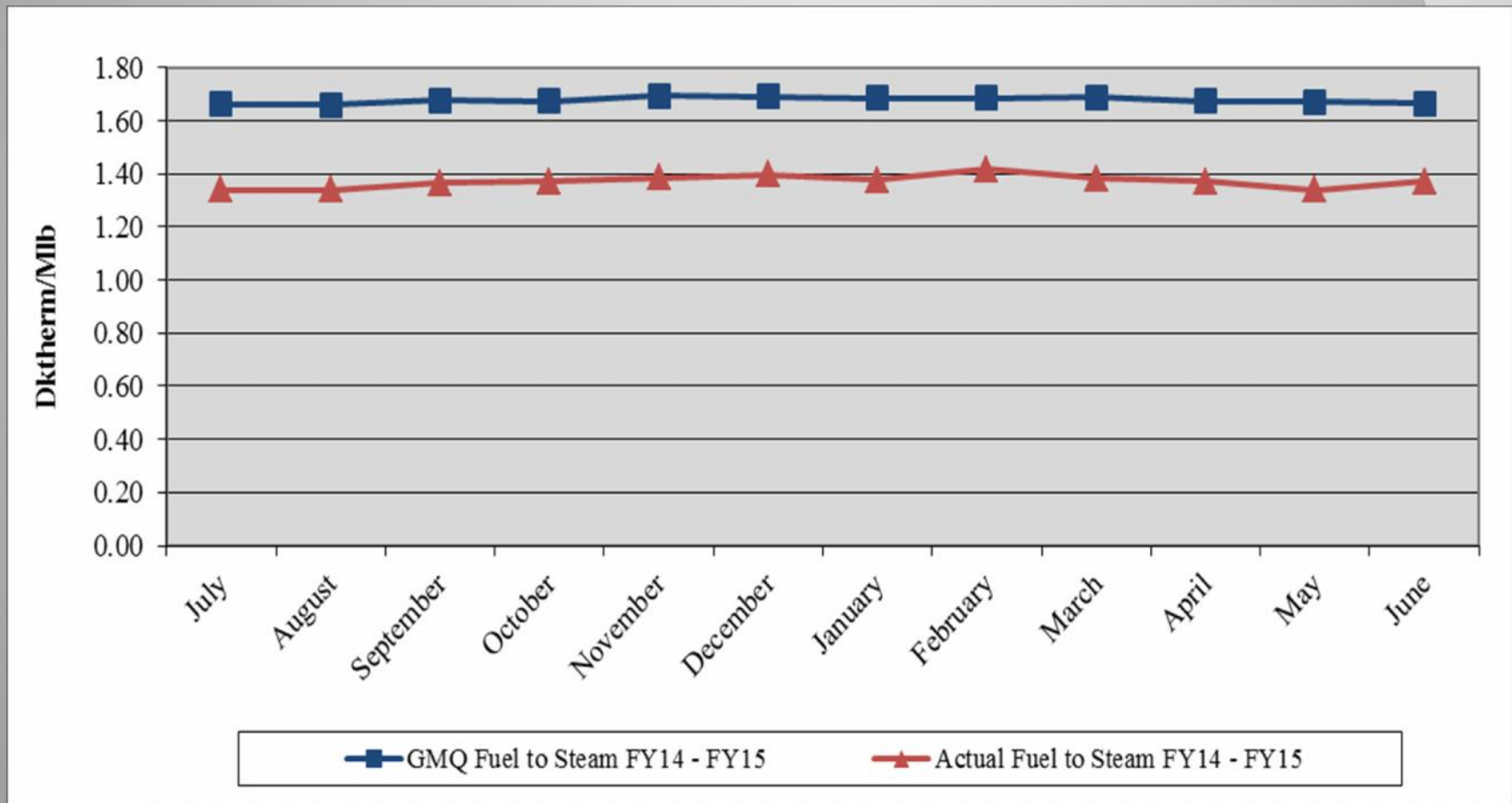
Contractor (CNE) is in compliance with their contractual obligations for FY15.

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

# Performance Measurement FY15: Steam Electric Conversion ●

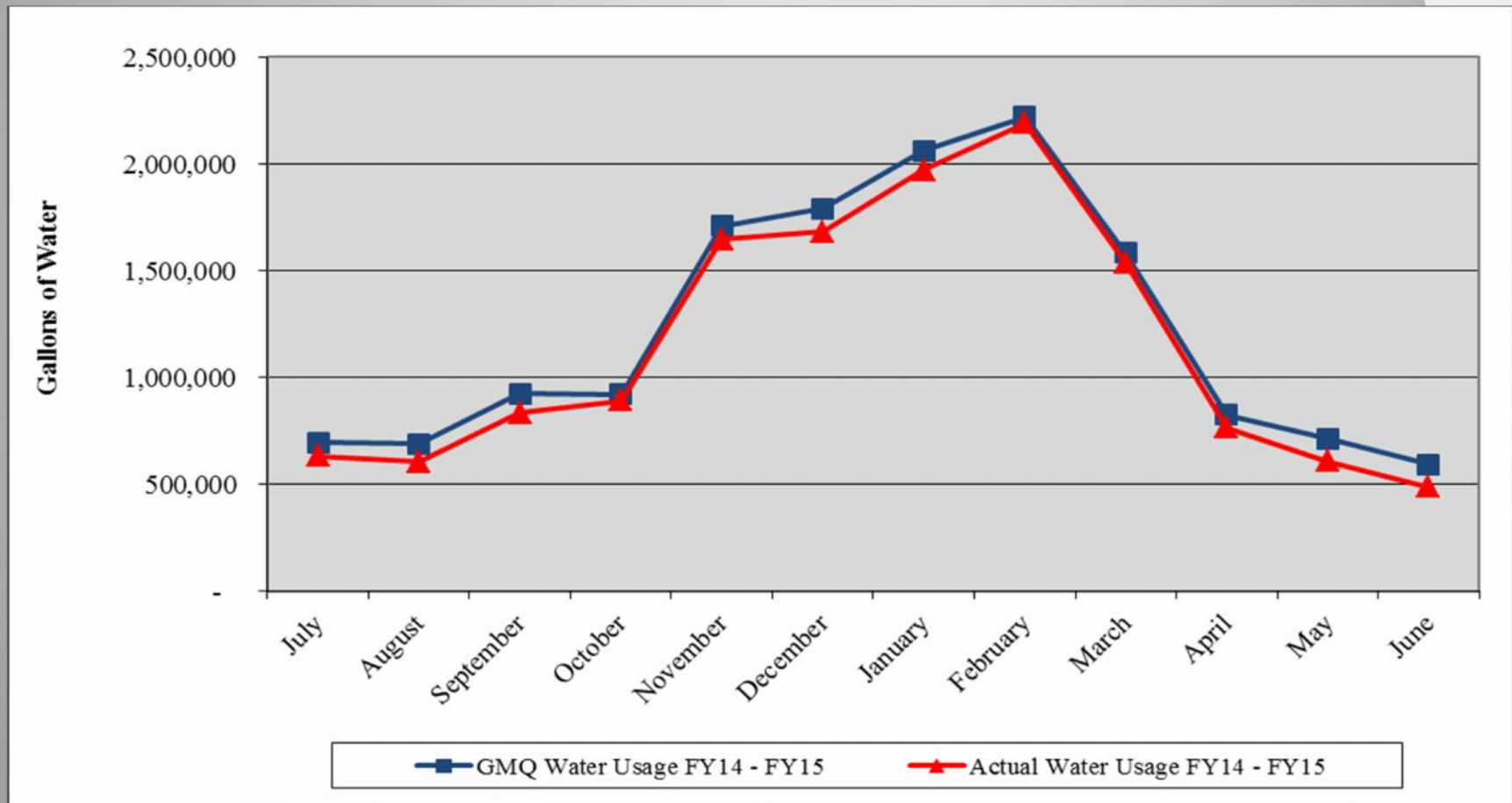


# Performance Measurement FY15: Steam Plant Efficiency

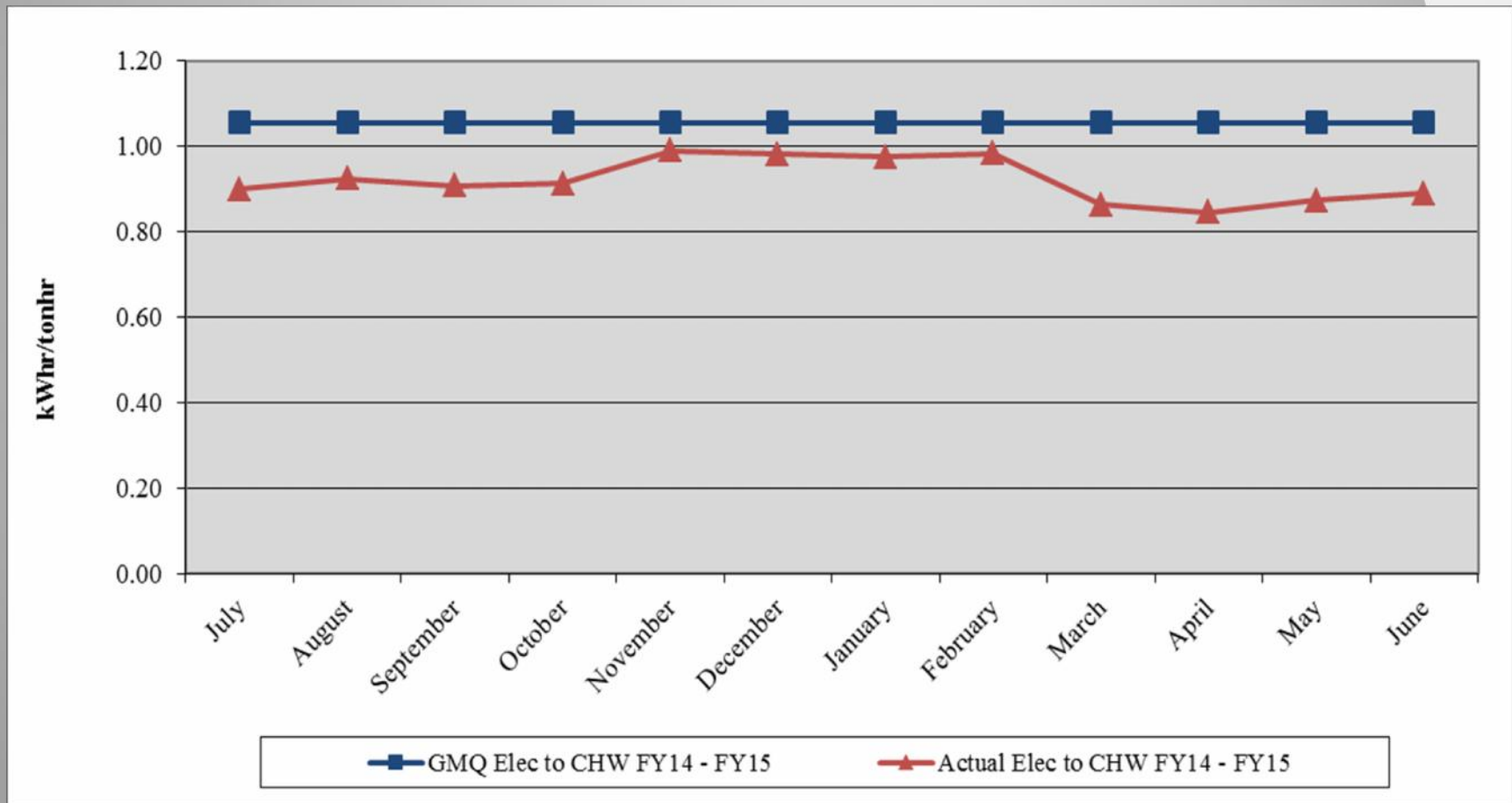




# Performance Measurement FY15: Steam Water Conversion ●

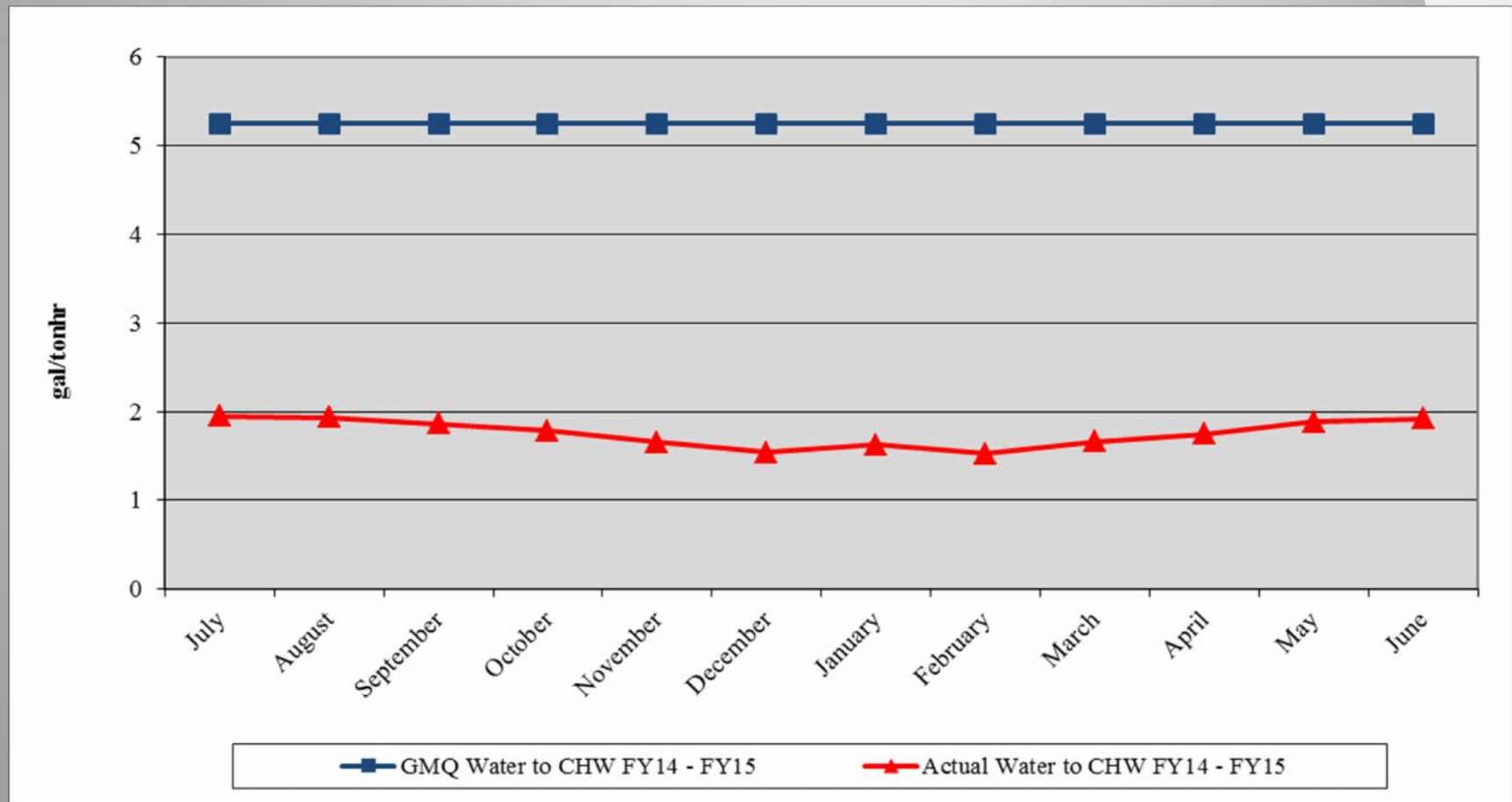


# Performance Measurement FY15: CHW Electric Conversion



# 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 6: FY15 Gas Spending & Budget Comparison
  - ❖ Figure 6: Actual and Projected Gas Cost Comparison

## Table 5: FY15 Gas Spending & Budget Comparison

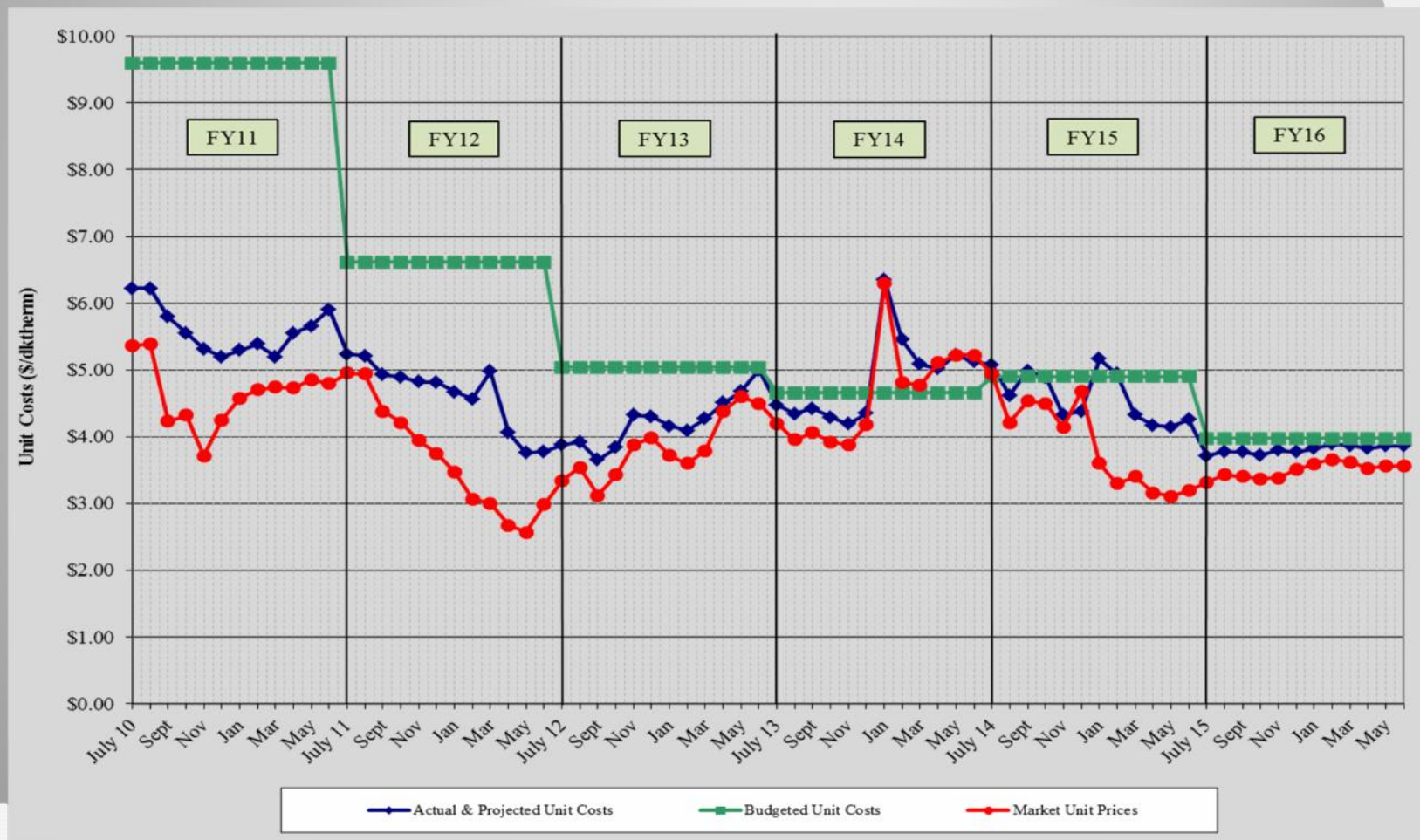
	Actual FY15 To date (June 30)	Budget FY15	Percent Difference
Steam Sendout (Mlbs)	440,426	436,677	0.9%
Fuel Use (Dth) (includes propane)	● 607,463	606,544	0.2%
Plant Eff (Dth/Mlb)	● 1.379	1.389	-0.7%
Total Gas Cost (includes propane)	● \$2,713,647	\$2,972,672	-8.7%
Unit Cost of Fuel (\$/Dth)	● \$4.467	\$4.901	-8.9%

Excludes consultant fees and FEA and budget contingency;

Includes transportation and propane costs



# 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	\$ 4,471,300	\$ 4,606,800	\$ 4,532,100	98.38%
Pass Throughs				
Non-Energy	\$ 1,070,900	\$ 1,041,300	\$ 1,226,400	117.78%
Water/Sewer	\$ 485,300	\$ 724,600	\$ 509,000	70.25%
Natural Gas Base	\$ 3,354,300	\$ 3,121,940	\$ 2,912,000	93.28%
Natural Gas Contingency	\$ -	\$ 635,260	\$ -	0.00%
Electricity	\$ 5,226,000	\$ 6,574,600	\$ 5,459,700	83.04%
Interest Revenue and ORF	\$ (28,800)	\$ (175,200)	\$ (36,700)	
Debt Service	\$ 5,734,500	\$ 5,645,900	\$ 5,646,000	100.00%
<b>Total Expenses</b>	<b>\$ 20,313,500</b>	<b>\$ 22,175,200</b>	<b>\$ 20,248,500</b>	<b>91.31%</b>
<b>Total Revenues</b>	<b>\$ 18,397,000</b>	<b>\$ 20,325,700</b>	<b>\$ 18,466,300</b>	<b>90.85%</b>
<b>Metro Funding Amount</b>	<b>\$ 1,916,500</b>	<b>\$ 1,849,500</b>	<b>\$ 1,849,500</b>	<b>100.00%</b>

## 7. 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	\$ 1,064,600	2.24%
Water/Sewer	\$ 724,600	\$ 745,400	2.87%
Natural Gas Base	\$ 3,121,940	\$ 2,954,515	-5.36%
Natural Gas Contingency	\$ 635,260	\$ 678,717	6.84%
Electricity	\$ 6,574,600	\$ 6,545,700	-0.44%
Interest Revenue and ORF	\$ (175,200)	\$ (156,900)	
Debt Service	\$ 5,645,900	\$ 5,571,800	-1.31%
<b>Total Expenses</b>	<b>\$ 22,175,200</b>	<b>\$ 22,072,032</b>	<b>-0.47%</b>
<b>Total Revenues</b>	<b>\$ 20,325,700</b>	<b>\$ 20,272,932</b>	<b>-0.26%</b>
<b>Metro Funding Amount</b>	<b>\$ 1,849,500</b>	<b>\$ 1,799,100</b>	<b>-2.73%</b>

## 8. *Capital Expenditure Update*

	<b>Spent to End of FY14</b>	<b>FY15 Spending</b>	<b>Balance to Date (06/30/15)</b>
R&I Projects	\$2,293,259	\$286,125	\$46,885
49109-2010 Bond	\$1,911,257	\$398,163	\$316,497
49107-Customer Connection Fund	\$6,568,602	\$143,020	\$1,788,379
<b>Total</b>	<b>\$10,773,118</b>	<b>\$827,308</b>	<b>\$2,151,761</b>

# *Capital Projects Review*

## Active Capital Projects

- DES 061: MH & Tunnel Steel Corrosion Repair & Prevention – ongoing
- DES 104: TOU – developing TOU invoicing changes
- DES 107: West Riverfront Park Manhole Repairs
- DES 110: EGF Alternate Fuels Evaluation – Awaiting Final Report from CNE
- DES 111: EGF Combined Heat and Power – Development Phase
- DES 112: Condensate Repair at Cordell Hull Building (State)

# *Capital Projects Review*

## Capital Projects in Close-out

- DES 089: AA Birch Tunnel Repairs
- DES 105: Vertical Tunnel Shaft Repairs at Suntrust Building
- DES 106: MCH Chilled Water Bypass
- DES 108: 7<sup>th</sup> Avenue Tunnel Insulation Repairs
- DES 109: Indigo Hotel Sparge Tube



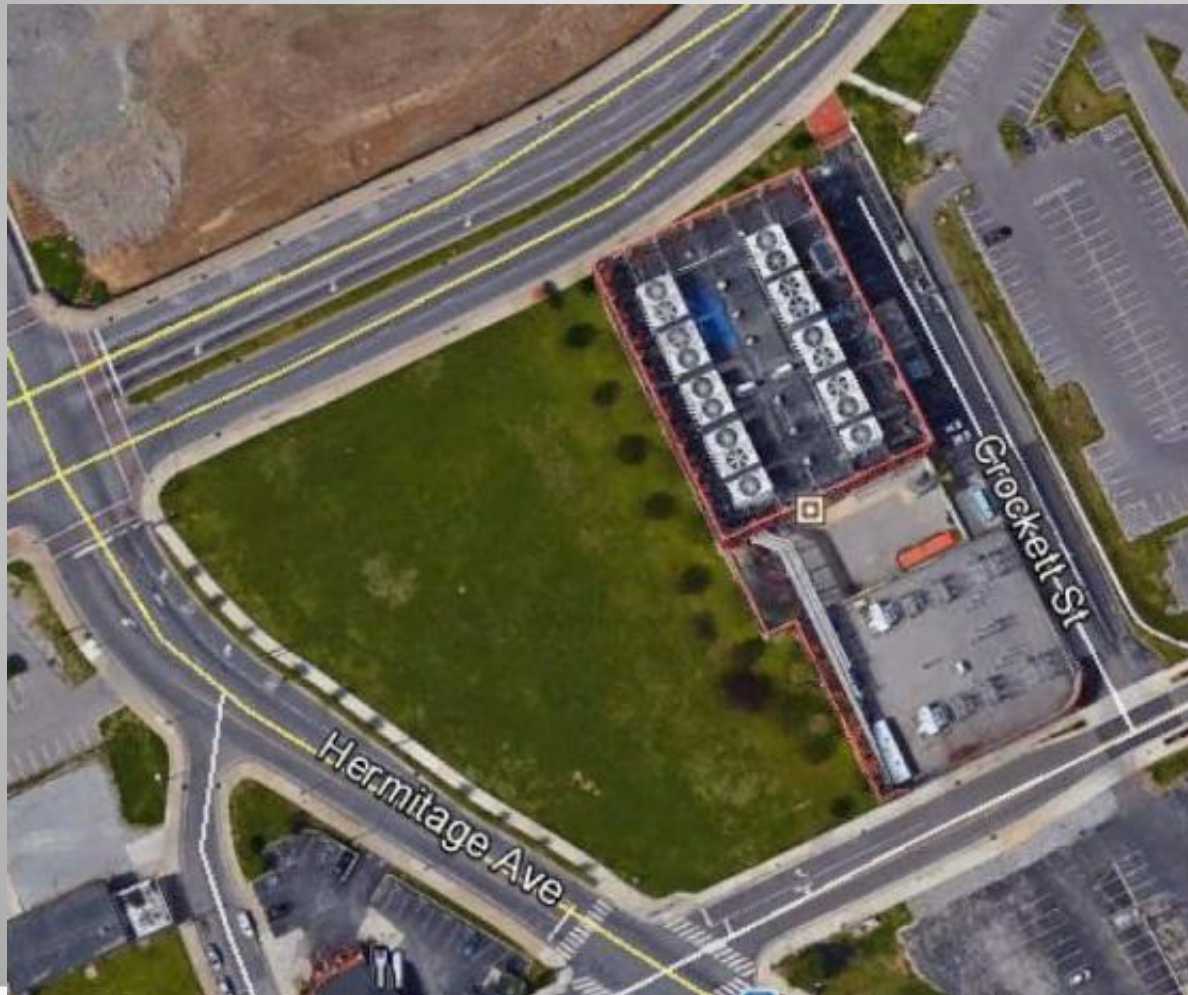
## 9. *Potential Customer: Lifeway*

- Approx 257,000 sq ft Office Building Next Door
- Anticipated CHW Demand of 492 tons
- Anticipated Steam Demand of 2,500 pph
- Ground Breaking Fall 2015 – Completion in Fall 2017



**Metro Nashville**  
DISTRICT ENERGY SYSTEM

# *Lifeway Building Location*





## *10. Other Board Member Items*

## *11. Adjourn*

- *Advisory Board Meeting Schedule*
- FY16 – 1<sup>st</sup> Quarter Meeting – November 19, 2015
- FY16 – 2<sup>nd</sup> Quarter Meeting – February 18, 2016
- FY16 – 3<sup>rd</sup> Quarter Meeting – May 19, 2016
- FY16 – 4<sup>th</sup> Quarter Meeting – August 18, 2016