



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

*DES Advisory Board Meeting*  
*Third Quarter FY22*  
*May 19, 2022*



# *Agenda*

1. Call to Order
2. Review & Approval of Previous Meeting Minutes
3. Customer Sales
4. nCOVID-19 Response
5. Review of DES Contractor Performance
6. Natural Gas Purchasing Update
7. FY22 Costs to Date and Budget
8. Marketing
9. Capital Projects Review & Status
10. Other Board Member Items
11. Adjourn

1. Call to Order

2. Review & Approval of Previous Meeting Minutes

Constellation NewEnergy separated from Exelon and are now Constellation Energy Solutions, LLC (CES)

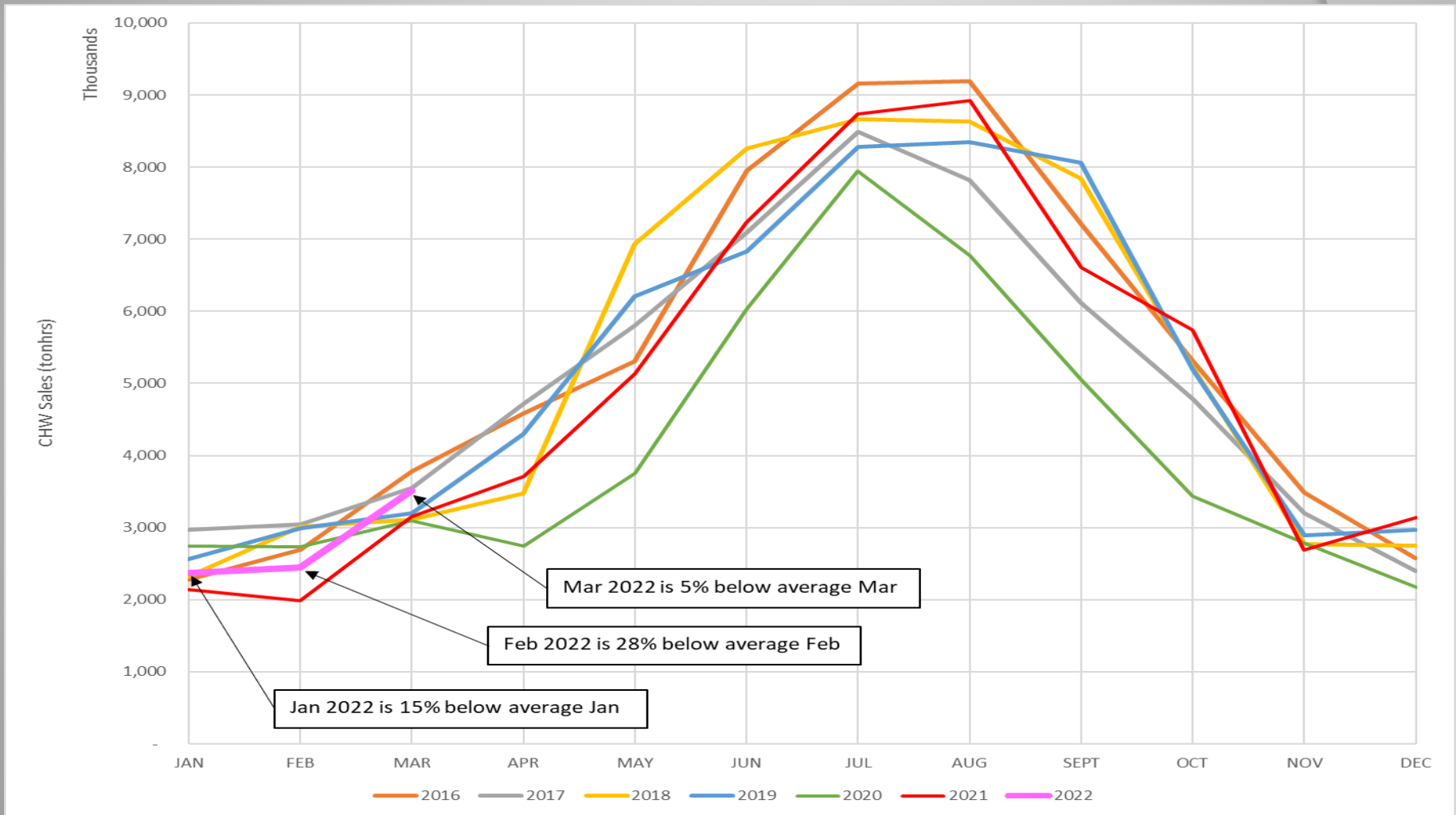
# 3. Customer Sales

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

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Apr 2020- Mar 2020	Apr 2021- Mar 2022	% Diff.	Apr 2020- Mar 2020	Apr 2021- Mar 2022	% Diff.
<b>Private</b>	Cost	\$ 1,226,179	\$ 1,578,881	28.76%	\$ 3,548,471	\$ 4,104,844	15.68%
	Usage (lbs or tonhrs)	76,373,087	91,262,240	19.50%	15,610,835	21,531,885	37.93%
<b>State</b>	Cost	\$ 1,724,482	\$ 2,003,922	16.20%	\$ 3,210,666	\$ 3,316,357	3.29%
	Usage (lbs or tonhrs)	111,330,733	105,983,296	-4.80%	12,509,583	13,582,769	8.58%
<b>Metro</b>	Cost	\$ 1,603,559	\$ 1,980,386	23.50%	\$ 4,169,315	\$ 4,661,051	11.79%
	Usage (lbs or tonhrs)	135,107,666	132,254,216	-2.11%	19,865,495	25,409,360	27.91%
<b>Aggregate</b>	Cost	\$ 4,554,220	\$ 5,563,189	22.15%	\$10,928,452	\$12,082,252	10.56%
	Usage (lbs or tonhrs)	322,811,486	329,499,752	2.07%	47,985,913	60,524,014	26.13%
	Unit Cost	\$ 14.11	\$ 16.88	19.7%	\$ 0.228	\$ 0.200	-12.35%

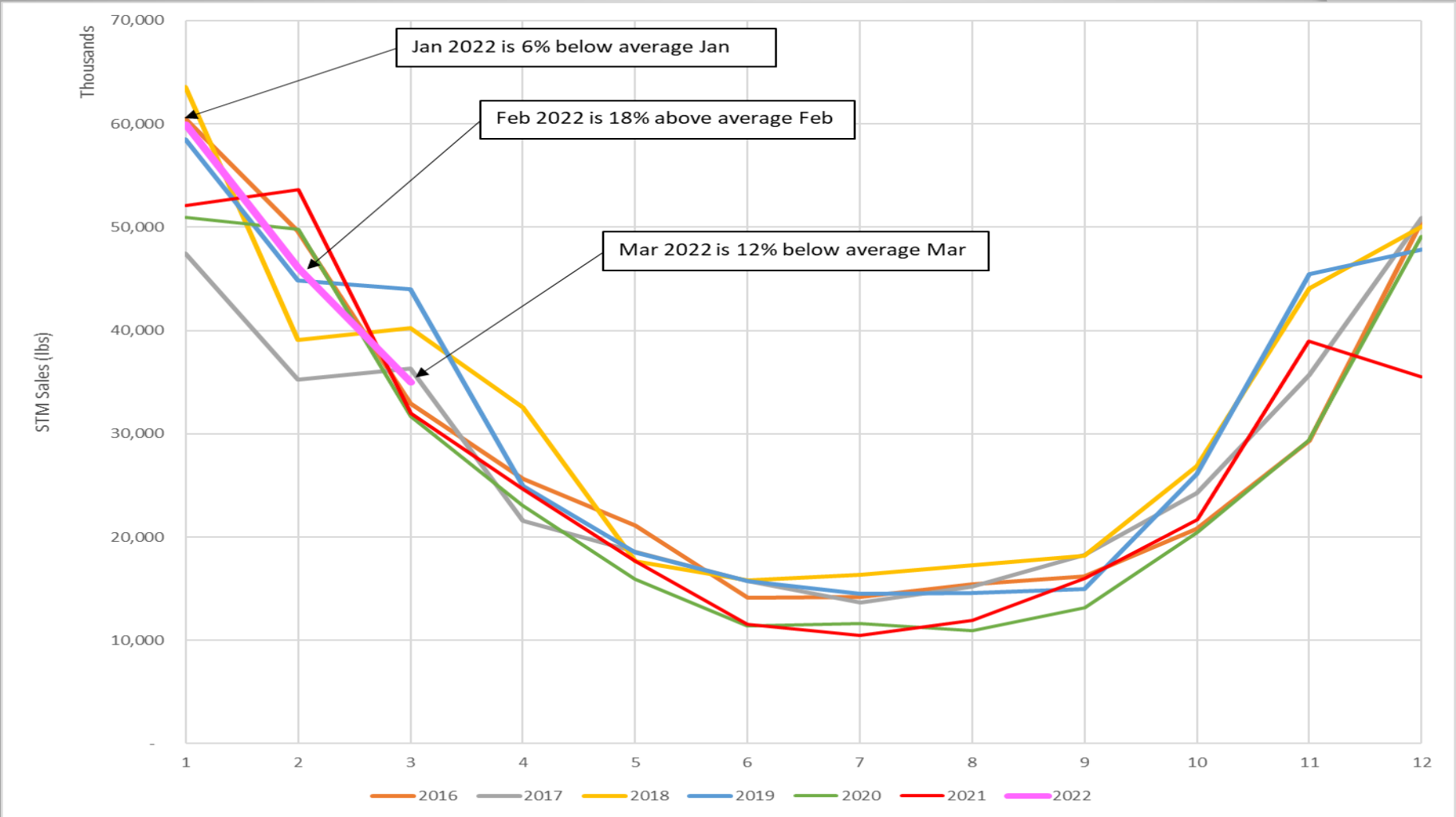
MFA, True-up, late fees and misc. are not included in values shown

# Figure 3A. Historic Chilled Water Sales



Averages include the years 2016, 2017, 2018, 2019, 2020 and 2021.

# Figure 3B. Historic Steam Sales



Averages include the years 2016, 2017, 2018, 2019, 2020 and 2021.






## 4. nCOVID-19 Response

- Late fees re-activated May 2021
- Two customers opted for COVID deferral; all paid and deferral period over
- There is 1 customer currently in arrears more than 30 days
- CES continues to limit access to EGF to essential personnel only
- Tele-meetings and job-site meetings still occurring

## 5. *Review of DES Contractor Performance*

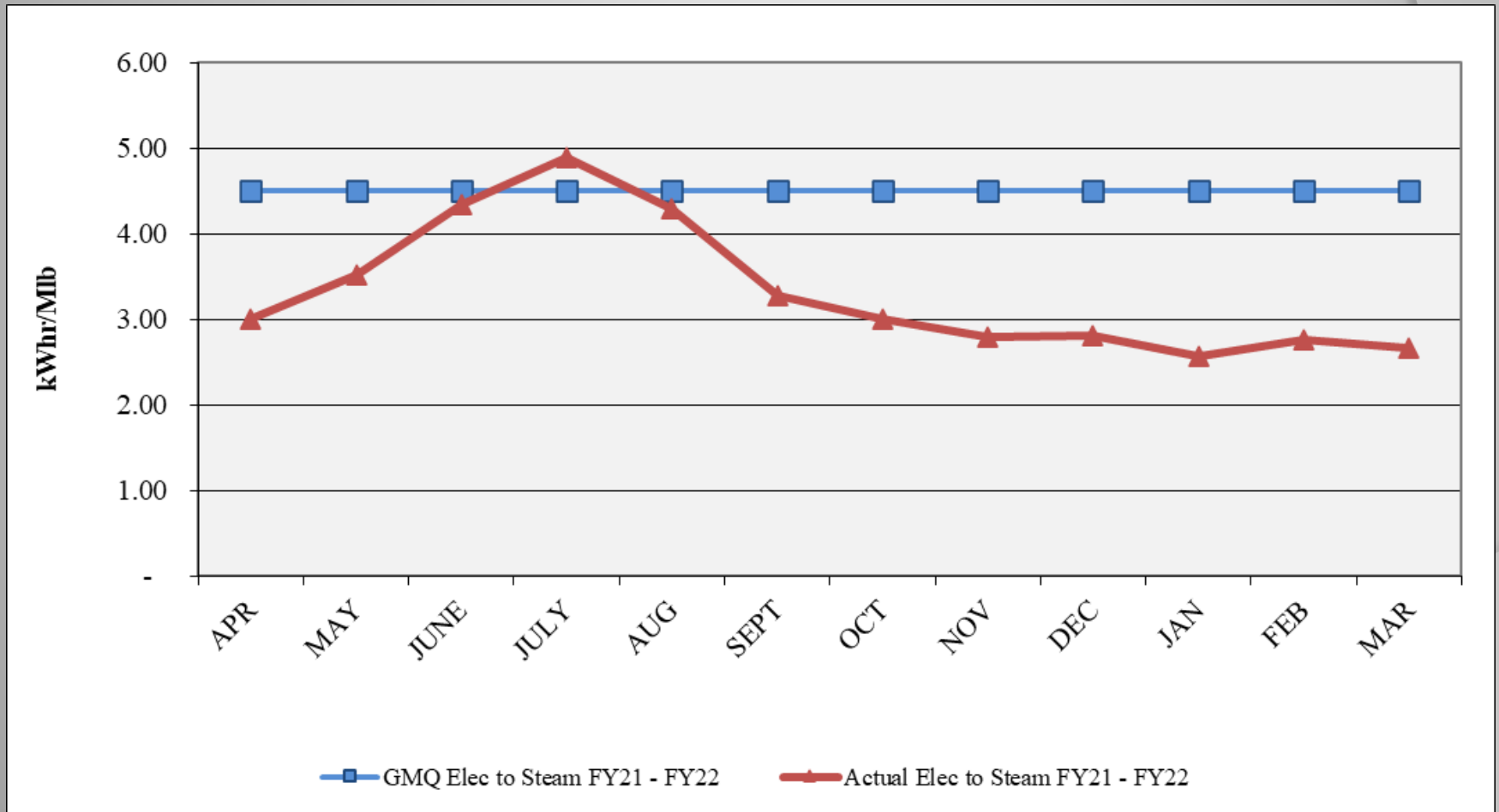
Contractor (CES) has failed to meet all the new performance guarantees during the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Quarters FY22 and during FY21. CES is developing plan to address the failure to meet the new performance guarantees.

CES has several long-term, outstanding maintenance items in EDS tunnels that need to be addressed.

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

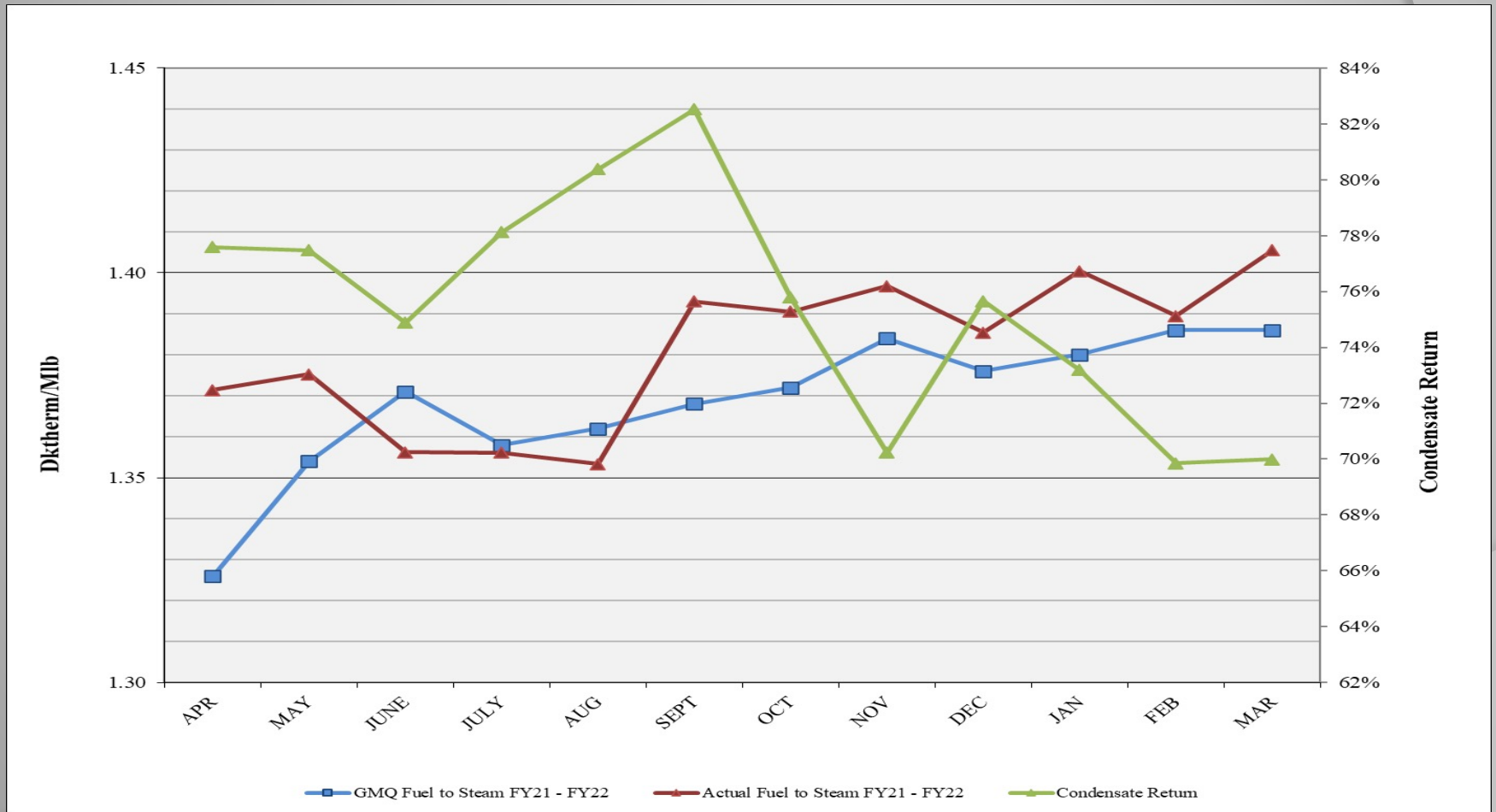


# Performance Measurement FY22: Steam Electric Conversion ●



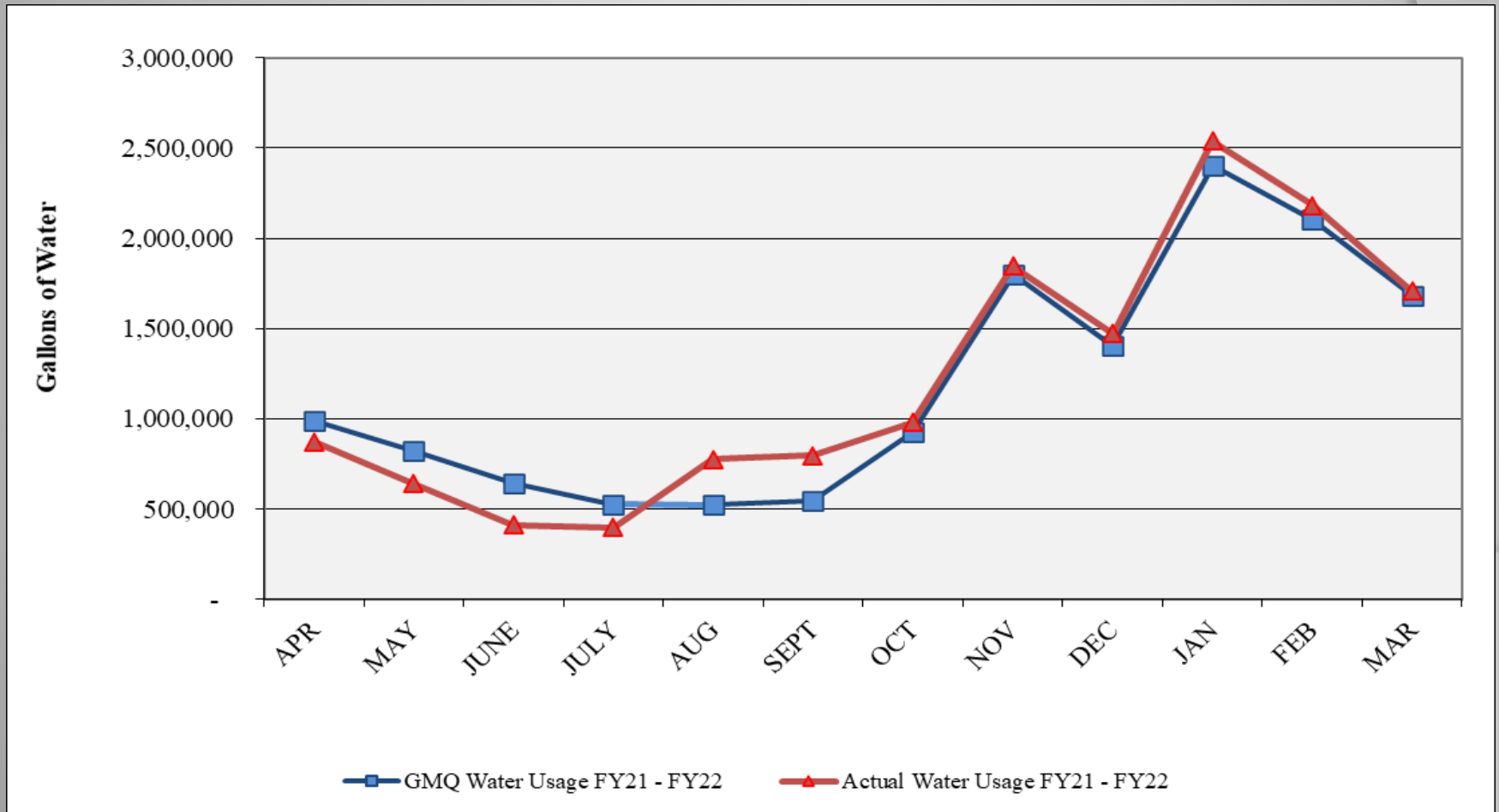
GMQ exceeded in July.

# Performance Measurement FY22: Steam Plant Efficiency



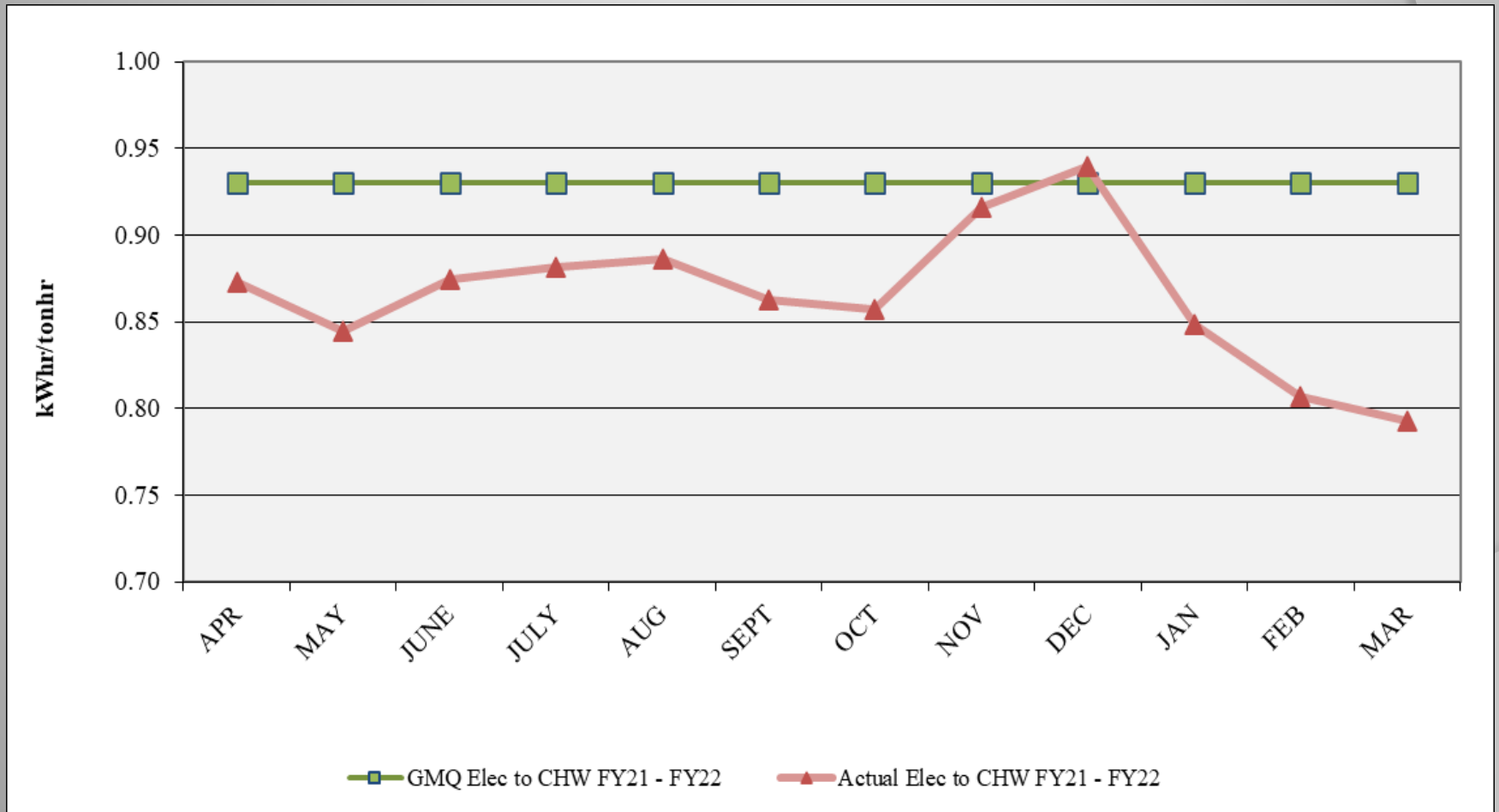
GMQ exceeded in Apr, May, Sept, Oct, Nov, Dec, Jan, Feb, and Mar.

# Performance Measurement FY22: Steam Water Conversion ●



GMQ exceeded in Aug, Sept, Oct, Nov, Dec, Jan, Feb, and Mar.

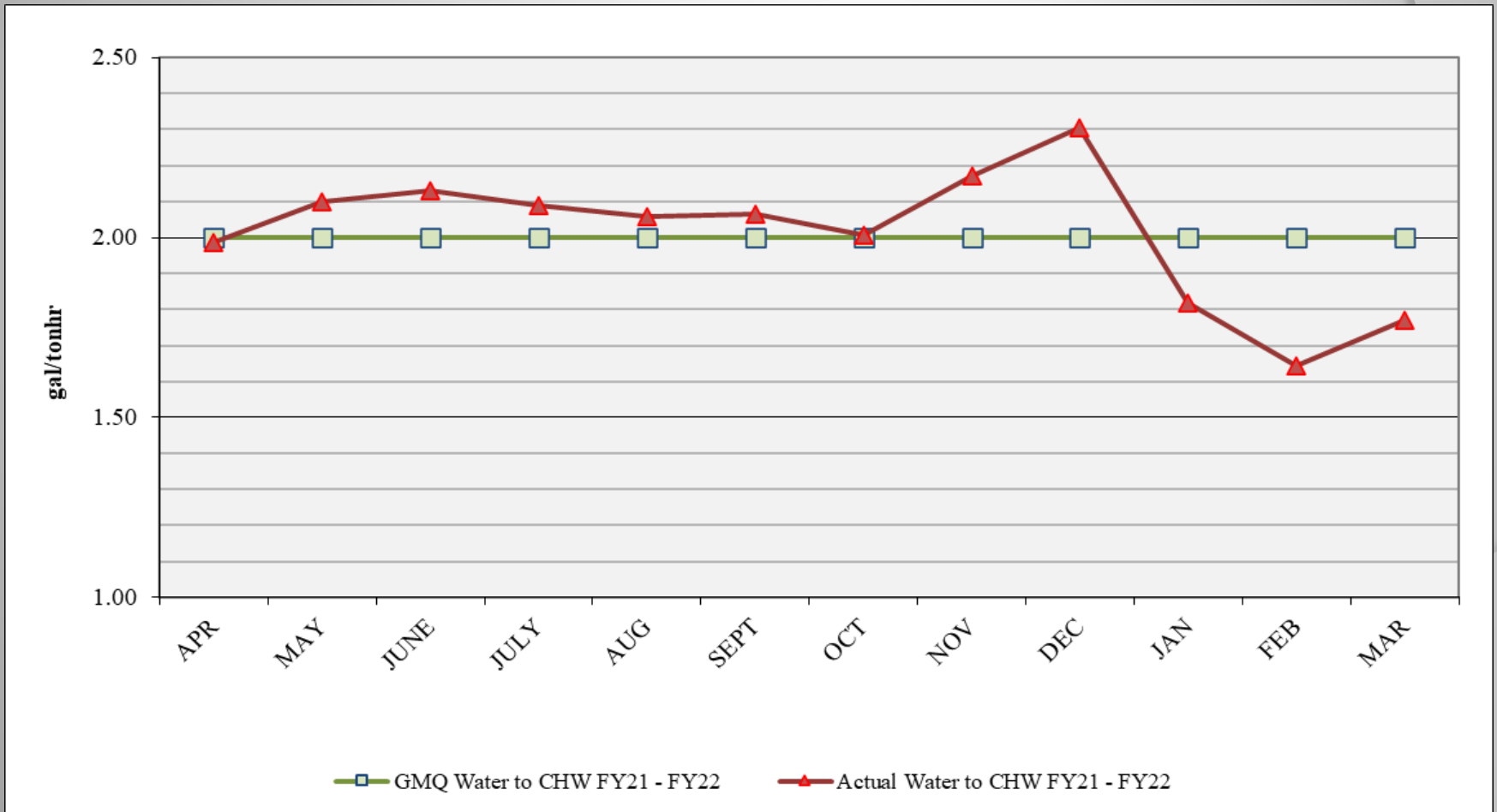
# Performance Measurement FY22: CHW Electric Conversion ●



GMQ exceeded in Dec.

# Performance Measurement FY22: CHW

## Water Conversion ●



GMQ exceeded May, June, July, Aug, Sept, Oct, Nov and Dec.



# Water Treatment

Q3FY22    Q2FY22    Q1FY22    Q4FY21

## ❖ Steam and Condensate

- ❖ Corrosion
- ❖ Iron
- ❖ Hardness
- ❖ Chlorine/Sulfite



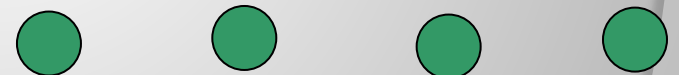
## ❖ Condensing Water

- ❖ Conductivity
- ❖ Biologicals



## ❖ Chilled Water

- ❖ Hardness
- ❖ Corrosion
- ❖ EGF and Customer Biologicals Good
- ❖ Deposits



❖ CES developing chilled water side-stream filter proposal



# EGF Walkthrough

Q3FY22    Q2FY22    Q1FY22    Q4FY21

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



# EDS Walkthrough

Q3FY22    Q2FY22    Q1FY22    Q4FY21

✓ Overall Status; Tunnels	● -	n/a	n/a	n/a
✓ Overall Status; Vaults	● -	n/a	n/a	n/a
✓ Housekeeping	● -	● -	● -	● -
✓ Maintenance Items				
✓ Piping	● -	● -	● -	● -
✓ Insulation R/R	● +	● +	● +	●
✓ Water Infiltration	●	●	●	●
✓ Corrosion of Structural Metal Components	● -	● +	● +	●
✓ Safety Items	●	●	●	●



## 6. *Natural Gas Purchasing*

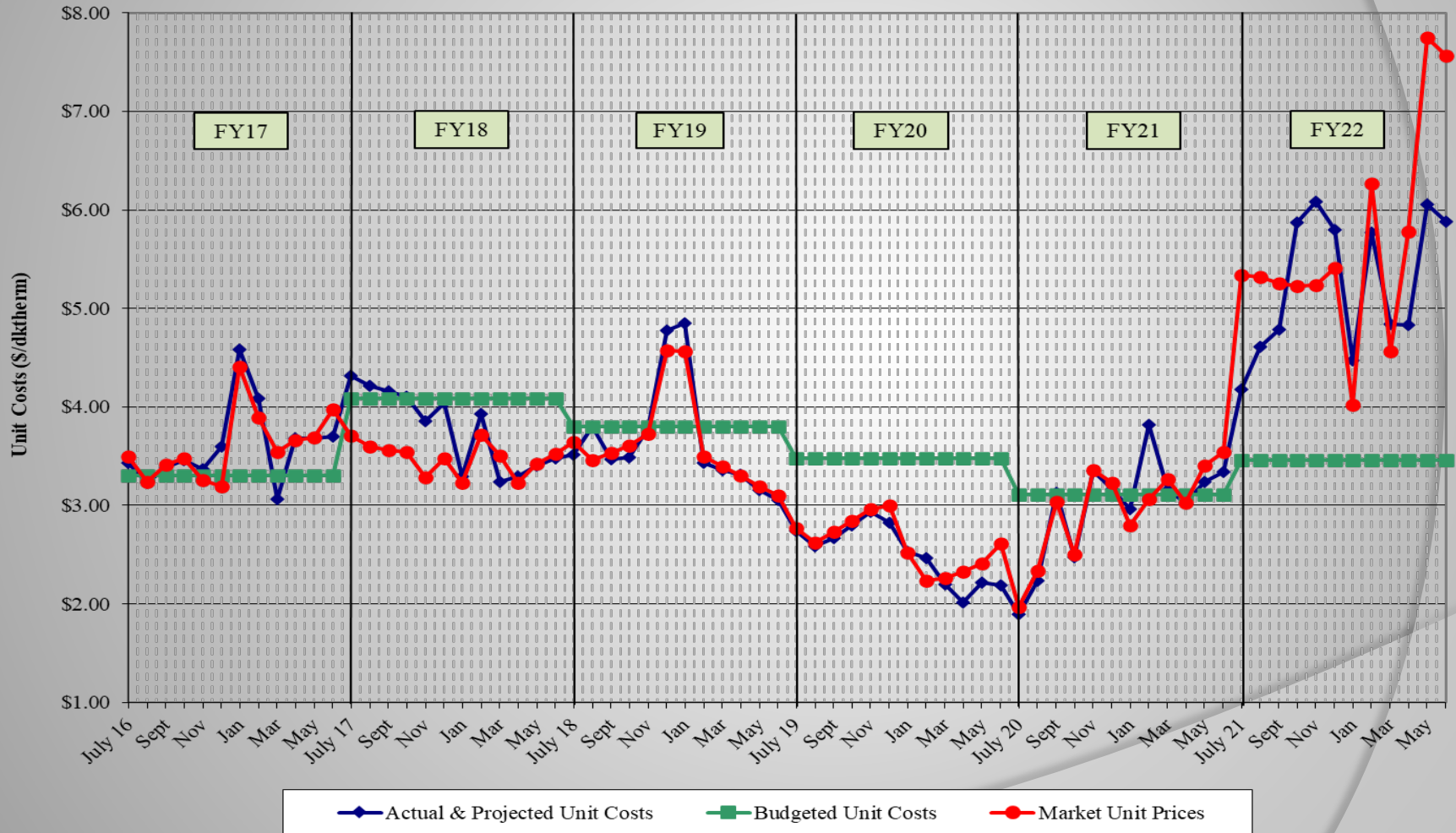
- ❖ Natural Gas Purchasing Review
  - ❖ Table 6: FY22 Gas Spending & Budget Comparison
  - ❖ Figure 6: Actual and Projected Fuel Cost Comparison

## Table 6: FY22 Gas Spending & Budget Comparison

		Actual FY22 To Mar 31	Budget FY22	Percent Difference
Steam Sendout (Mlbs)		321,586	333,780	-3.7%
Fuel Use (Dth) (includes propane)	●	447,171	484,648	-7.7%
Plant Eff (Dth/Mlb)	●	1.391	1.452	-4.2%
Total Gas Cost (includes propane)	●	\$2,339,975	\$2,056,816	13.8%
Unit Cost of Fuel (\$/Dth)	●	\$5.233	\$3.330	57.1%

Excludes consultant fees and FEA and budget contingency; Includes transportation and actual propane costs and usages except unused pre-purchased propane

# Figure 6. Actual and Projected Fuel Cost Comparison



Currently hedging 45% to 50% of natural gas through FY23; FY22 futures include hedged price, NYMEX and transportation.

# 7. FY22 Costs to Date

Item	FY22 Budget	FY22 Actual to date	Percent of FY22 Budget
FOC's	\$ 3,890,100	\$ 2,917,586	75.00%
Pass Throughs			
Administrative Costs	\$ 459,600	\$ 301,827	65.67%
Chemicals	\$ 232,200	\$ 177,221	76.32%
R&I Fund Transfers	\$ 294,800	\$ 245,667	83.33%
Water/Sewer	\$ 751,500	\$ 760,909	101.25%
Fuel Base	\$ 2,115,186	\$ 2,115,186	100.00%
Fuel Contingency	\$ 516,814	\$ 360,623	69.78%
Electricity	\$ 6,329,500	\$ 3,514,183	55.52%
ORF Deposit	\$ -	\$ -	
Debt Service	\$ 5,083,200	\$ 4,172,135	82.08%
<b>Total Expenses</b>	<b>\$ 19,672,900</b>	<b>\$ 14,565,336</b>	<b>74.04%</b>
<b>Total Revenues</b>	<b>\$ 19,042,200</b>	<b>\$ 13,618,705</b>	<b>71.52%</b>
<b>Metro Funding</b>	<b>\$ 630,700</b>	<b>\$ 473,025</b>	<b>75.00%</b>

Actual Costs and Revenues to Date include FY21 True-up Items.

# FY22 Budget

Item	FY21 Budget	FY22 Budget	Percent of FY21 Budget
FOC's	\$ 3,776,800	\$ 3,890,100	3.00%
Pass Throughs			
Administrative Costs	\$ 393,900	\$ 459,600	16.68%
Chemicals	\$ 260,700	\$ 232,200	-10.93%
R&I Fund Transfers	\$ 291,900	\$ 294,800	0.99%
Water/Sewer	\$ 624,000	\$ 751,500	20.43%
Fuel Base	\$ 2,001,900	\$ 2,115,186	5.66%
Fuel Contingency	\$ 431,900	\$ 516,814	19.66%
Electricity	\$ 6,130,100	\$ 6,329,500	3.25%
ORF Deposit	\$ -	\$ -	
Debt Service	\$ 5,098,000	\$ 5,083,200	-0.29%
<b>Total Expenses</b>	<b>\$ 19,009,200</b>	<b>\$ 19,672,900</b>	<b>3.49%</b>
<b>Total Revenues</b>	<b>\$ 18,378,500</b>	<b>\$ 19,042,200</b>	<b>3.61%</b>
<b>Metro Funding</b>	<b>\$ 630,700</b>	<b>\$ 630,700</b>	<b>0.00%</b>

## 8. *Marketing*

### Remaining Capacity for Sale (approximate)

- 2,429 tons of chilled water
- 24,622 pph of steam

### Potential Customers

- Service to Lot K (Peabody Union)
  - Site directly to the east of EGF
  - Declined to be a DES customer; Renewing negotiations
  - Guthrie Street



## *Marketing (con't)*

- New Development North of KVB
  - Potential ~1,100 tons and ~15,000 pph
  - Early stages of discussions
- Union Street Hotel
  - Project development not moving forward
- 1<sup>st</sup> and KVB
  - Potential ~1,100 tons and ~17,000 pph steam
  - Early stages of discussions
- Peabody St Development
- East Bank Technical Advisory Committee

## *Marketing (con't)*

- 2<sup>nd</sup> Ave and Peabody
  - Early stages of discussions
- Printer's and Banker's Alley
  - ~500 to 600 ton Apartment and Retail Development
  - No interest in steam at this point
  - Early stages of discussions
- 7<sup>th</sup> and Commerce
  - Potential ~700 tons and ~11,000 pph steam
  - Hotel, Restaurants and Retail
  - Early stages of discussions



## 9. Capital Expenditure Update

	<b>Spent to End of FY21</b>	<b>FY22 Spending</b>	<b>Balance to Date (04/20/22)</b>
R&I Projects	\$4,270,639	\$71,910	\$221,707
49116-DES Infrastructure Fund	\$2,824,820	\$1,078,880	\$1,504,809
<b>Total</b>	<b>\$7,095,459</b>	<b>\$1,150,790</b>	<b>\$1,726,516</b>

## *Capital Projects Review*

### **Active Capital Projects – General & Marketing**

- DES 133.1: Broadway Tunnel Damage Recovery - ongoing
- DES 139: Options Review - ongoing
- DES 163: Peabody Union – using project number to track time and expenses associated with Guthrie St development
- DES 192: Peabody St Developments – survey of routing down Peabody; TEG developing plan for expansion in that area
- DES 195: DES Parking Area – review of options for developing a parking area on the west side of the EGF to replace space lost in the Guthrie St development
- DES 200: Side-stream Filter – addition of filter on CHW at EGF

## *Capital Projects Review*

### **Active Capital Projects – Corrosion Repair/Prevention**

- DES 143: MH N1 and N2 Insulation – structural steel to be cleaned/coated and piping insulation to be installed/added; rec'd pricing on MH N1 awaiting contract modification; anticipate construction to begin late 4<sup>th</sup> Qtr FY22/early 1<sup>st</sup> Qtr FY23.
- DES 154: MH K Repairs – corrosion/concrete repairs; base work complete; had some change orders; work will be completed during 4<sup>th</sup> Qtr FY22
- DES 178: MH 5 Repairs – corrosion/concrete/insulation repairs; work to begin during 4<sup>th</sup> Qtr FY22; anticipate work completion during 1<sup>st</sup> Qtr FY23
- DES 179: MH 11 Repairs – corrosion/insulation repairs; under construction; had some change orders, material delays and discovered some piping corrosion; anticipate completion 4<sup>th</sup> Qtr FY22; may open new project to address pipe corrosion

## *Capital Projects Review*

### **Active Capital Projects – Corrosion Repair/Prevention**

- DES 188: 4<sup>th</sup> & Church Bldg Access Tunnel Repairs – tunnel metal liner plates and piping supports corroded; awarded during 2<sup>nd</sup> Qtr FY22; tunnel not constructed as anticipated which has caused delays; anticipate completion during 4<sup>th</sup> Qtr FY22
- DES 189: MH 4 Structural Steel & Insulation Repair – corrosion and insulation repairs; insulation blankets ordered; corrosion work to begin 4<sup>th</sup> Qtr FY22; anticipate completion late 4<sup>th</sup> Qtr FY22/early 1<sup>st</sup> Qtr FY23
- DES 193: MH 13 Pipe and Pipe Support Repairs – awaiting insulation repairs; anticipate work to be completed during 4<sup>th</sup> Qtr FY22
- DES 194: MH B4 Repairs – cleaning and coating of structural steel; re-insulation of piping; anticipate construction to begin during early 1<sup>st</sup> Qtr FY23; anticipate work completion late 1<sup>st</sup> Qtr FY23

## *Capital Projects Review*

### **Active Capital Projects – Corrosion Repair/Prevention**

- DES 197: MH 3 Coatings and Repairs – clean/coat structural steel; work to begin during 4<sup>th</sup> Qtr FY22; anticipate completion during 4<sup>th</sup> Qtr FY22; anticipate close-out during 1<sup>st</sup> Qtr FY23.

## *Capital Projects Review*

### **Active Capital Projects – Repairs/Modifications**

- DES 177: MH B1 Platform & Ladder – bids rec'd; verbal award; dispute over CES mark-up
- DES 185: 5<sup>th</sup> Ave N Exploratory Excavation – all work complete; cost substantiation occurring during 4<sup>th</sup> Qtr FY22; anticipate close-out during 4<sup>th</sup> Qtr FY22
- DES 187: Exploratory Excavation at MH 22B (Metro Public Library) – work complete; cost substantiation occurring during 4<sup>th</sup> Qtr FY22; anticipate close-out during 4<sup>th</sup> Qtr FY22
- DES 191: MH 20 Repairs – condensate return piping leaking (corrosion); ground/surface water collection/diversion needed; new access ladder needed; bid in late 3<sup>rd</sup> Qtr FY22; construction to start during 4<sup>th</sup> Qtr FY22; anticipate close-out during 1<sup>st</sup> Qtr FY23.

## *Capital Projects Review*

### **Active Capital Projects – Repairs/Modifications**

- DES 196: Exploratory Excav. & Cond. Leak Repair at MH 9 – in planning stage; awaiting information on corroded piping at MH 11; anticipate construction to begin late 4<sup>th</sup> Qtr FY22 or early 1<sup>st</sup> Qtr FY23.
- DES 198: MH18 Condensate Pump Replacement – replace pumps with new configuration to improve reliability and automation.
- DES 199: MH D3 Sparge Tube Addition – existing pipe support needs replacement due to corrosion and adding sparge tube because of steam hammer; CES obtaining pricing; anticipate construction to begin late 4<sup>th</sup> Qtr FY22 or early 1<sup>st</sup> Qtr FY23.

***Constellation Energy Solutions,  
LLC  
System Operator***





# *11. Other Board Member Items*

*March 3 Virtual Customer Meeting was Successful!*

*TEG Contract Renewed for 6 months*

*RFQ for DES PA Deadline June 7*

*Chris Proctor (Private ISC Board Member Representative)  
no longer with 5<sup>th</sup> and Broadway*

## *12. Adjourn*

- *Advisory Board Meeting Schedule*
- FY22 – 4<sup>th</sup> Quarter Meeting – August 18, 2022
- FY23 – 1<sup>st</sup> Quarter Meeting – November 17, 2022
- FY23 – 2<sup>nd</sup> Quarter Meeting – February 16, 2023
- FY23 – 3<sup>rd</sup> Quarter Meeting – May 18, 2023