



Metro Nashville
DISTRICT ENERGY SYSTEM

DES Advisory Board Meeting
First Quarter FY22
November 18, 2021



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
8. FY22 Budget
9. Marketing
10. Capital Projects Review & Status
11. Other Board Member Items
12. Adjourn

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

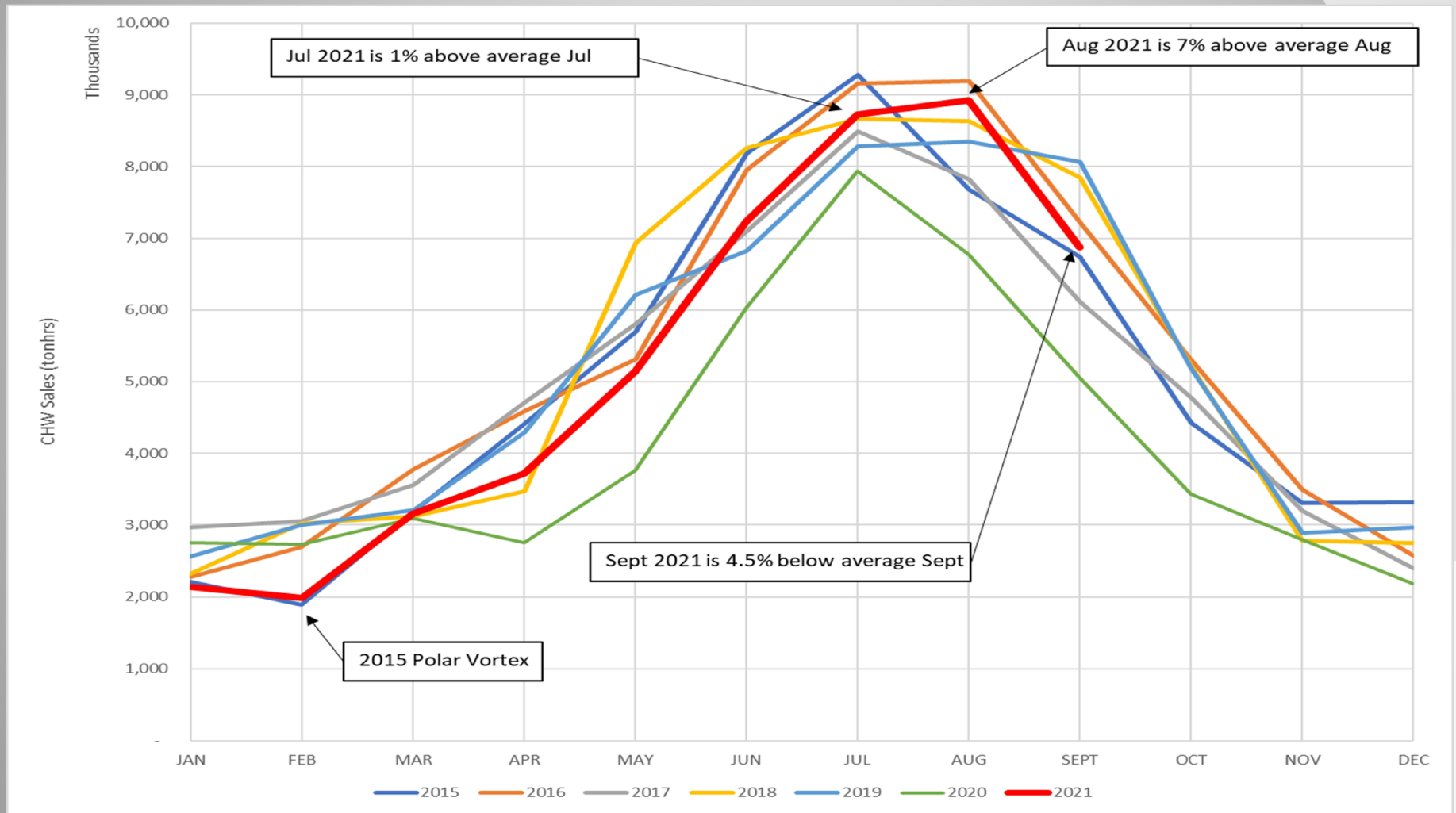
3. Customer Sales

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

		Steam - Rolling 12 Month			Chilled Water - Rolling 12 Month		
		Oct 2019 - Sept 2020	Oct 2020 - Sept 2021	% Diff.	Oct 2019 - Sept 2020	Oct 2020 - Sept 2021	% Diff.
Private	Cost	\$ 1,230,328	\$ 1,330,840	8.17%	\$ 3,638,079	\$ 3,867,021	6.29%
	Usage (lbs or tonhrs)	86,805,428	85,100,994	-1.96%	16,757,242	19,737,760	17.79%
State	Cost	\$ 1,599,789	\$ 1,800,911	12.57%	\$ 3,213,054	\$ 3,277,227	2.00%
	Usage (lbs or tonhrs)	104,058,073	112,665,296	8.27%	12,280,175	13,402,819	9.14%
Metro	Cost	\$ 1,583,498	\$ 1,673,236	5.67%	\$ 4,493,648	\$ 4,382,443	-2.47%
	Usage (lbs or tonhrs)	147,083,197	131,247,412	-10.77%	22,879,367	23,158,627	1.22%
Aggregate	Cost	\$ 4,413,615	\$ 4,804,987	8.87%	\$11,344,781	\$11,526,691	1.60%
	Usage (lbs or tonhrs)	337,946,698	329,013,702	-2.64%	51,916,784	56,299,206	8.44%
	Unit Cost	\$ 13.06	\$ 14.60	11.8%	\$ 0.219	\$ 0.205	-6.31%

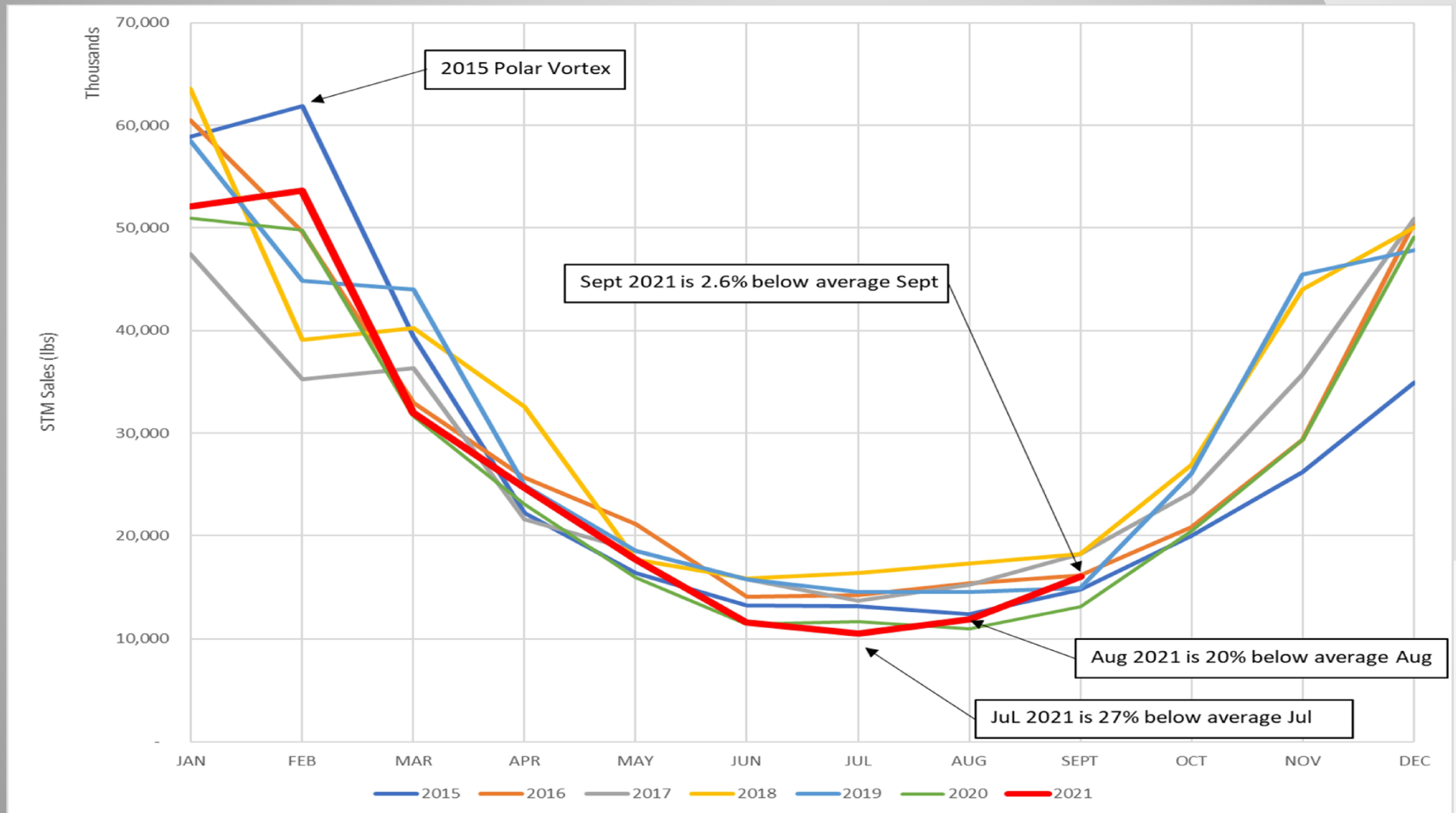
MFA, True-up, late fees and misc. are not included in values shown

Figure 3A. Historic Chilled Water Sales



Averages include the years 2015, 2016, 2017, 2018, and 2019.

Figure 3B. Historic Steam Sales






Averages include the years 2015, 2016, 2017, 2018, and 2019.

4. nCOVID-19 Response

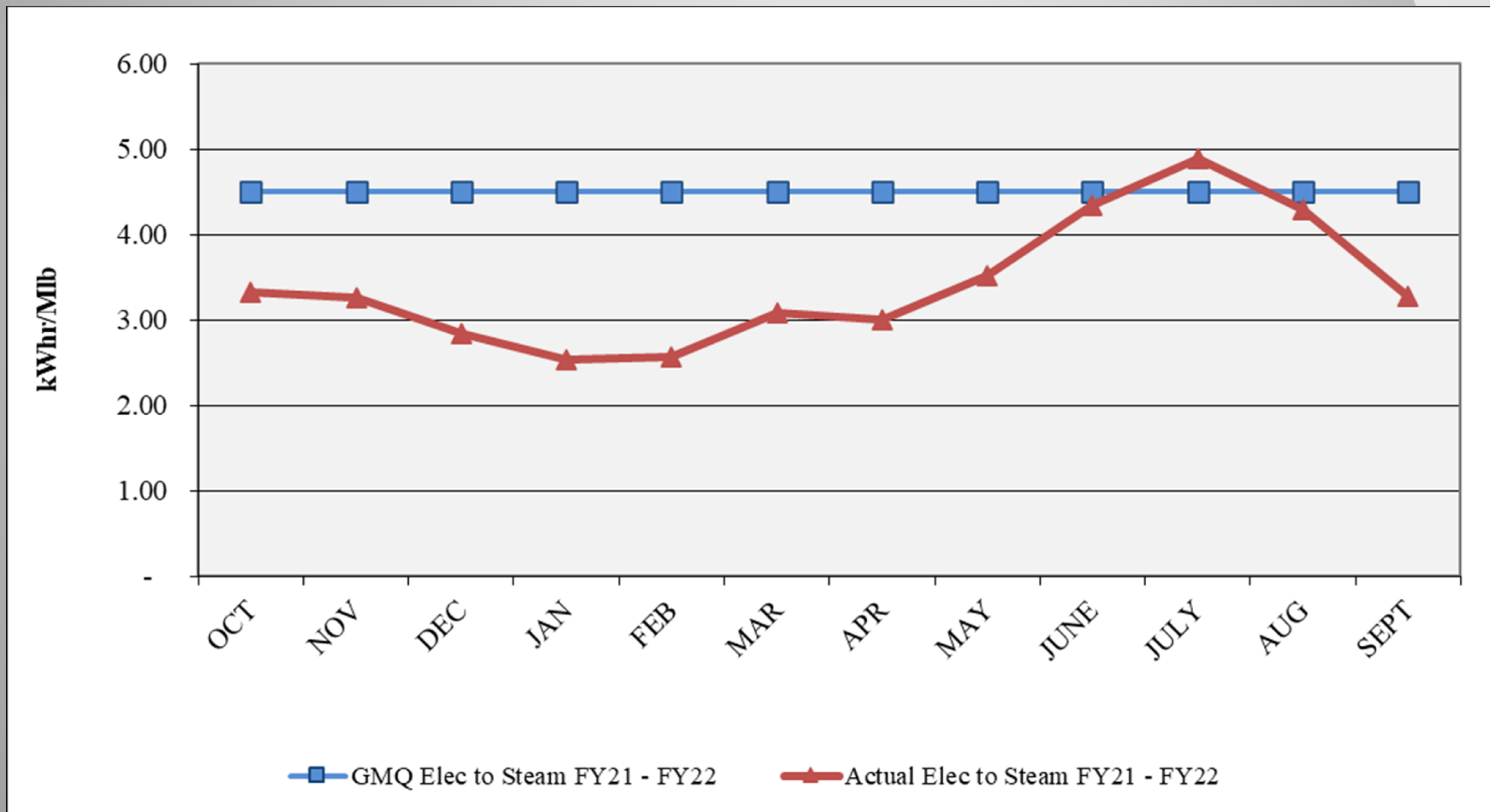
- Late fees re-activated May 2021
- Two customers opted for COVID deferral; all paid and deferral period over
- There is 1 customer currently in arrears more than 30 days
- CNE continues to limit access to EGF to essential personnel only
- Tele-meetings and job-site meetings still occurring

5. Review of DES Contractor Performance

Contractor (CNE) has failed to meet all of the new performance guarantees during the 1st Quarter FY22 and during FY21. CNE is developing plan to address the failure to meet the new performance guarantees.

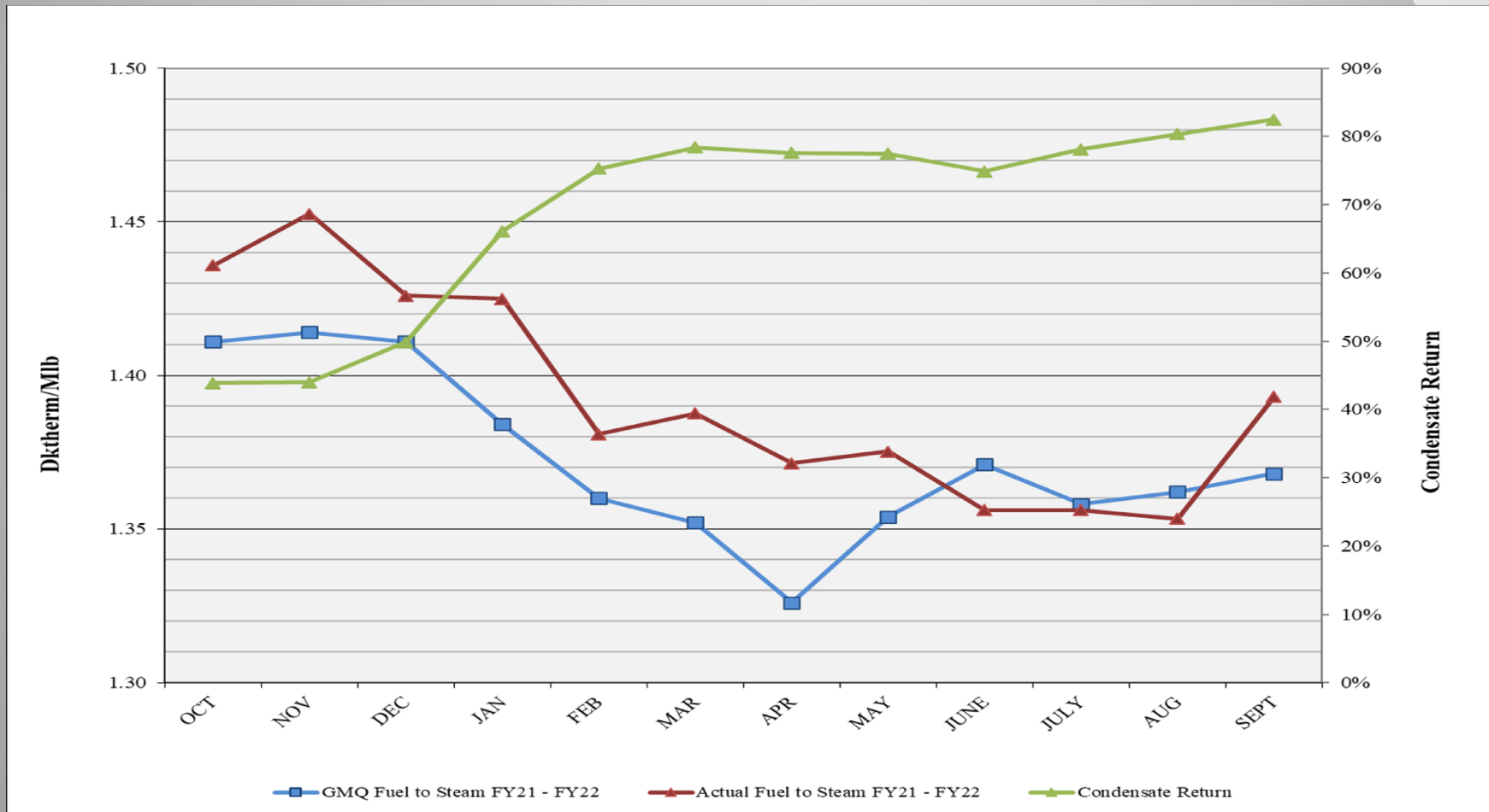
-  Excellent Performance – No Improvement Necessary
-  Satisfactory Performance – Some Improvement Could Be Made
-  Poor Performance – Much Improvement Necessary

Performance Measurement FY22: Steam Electric Conversion ●



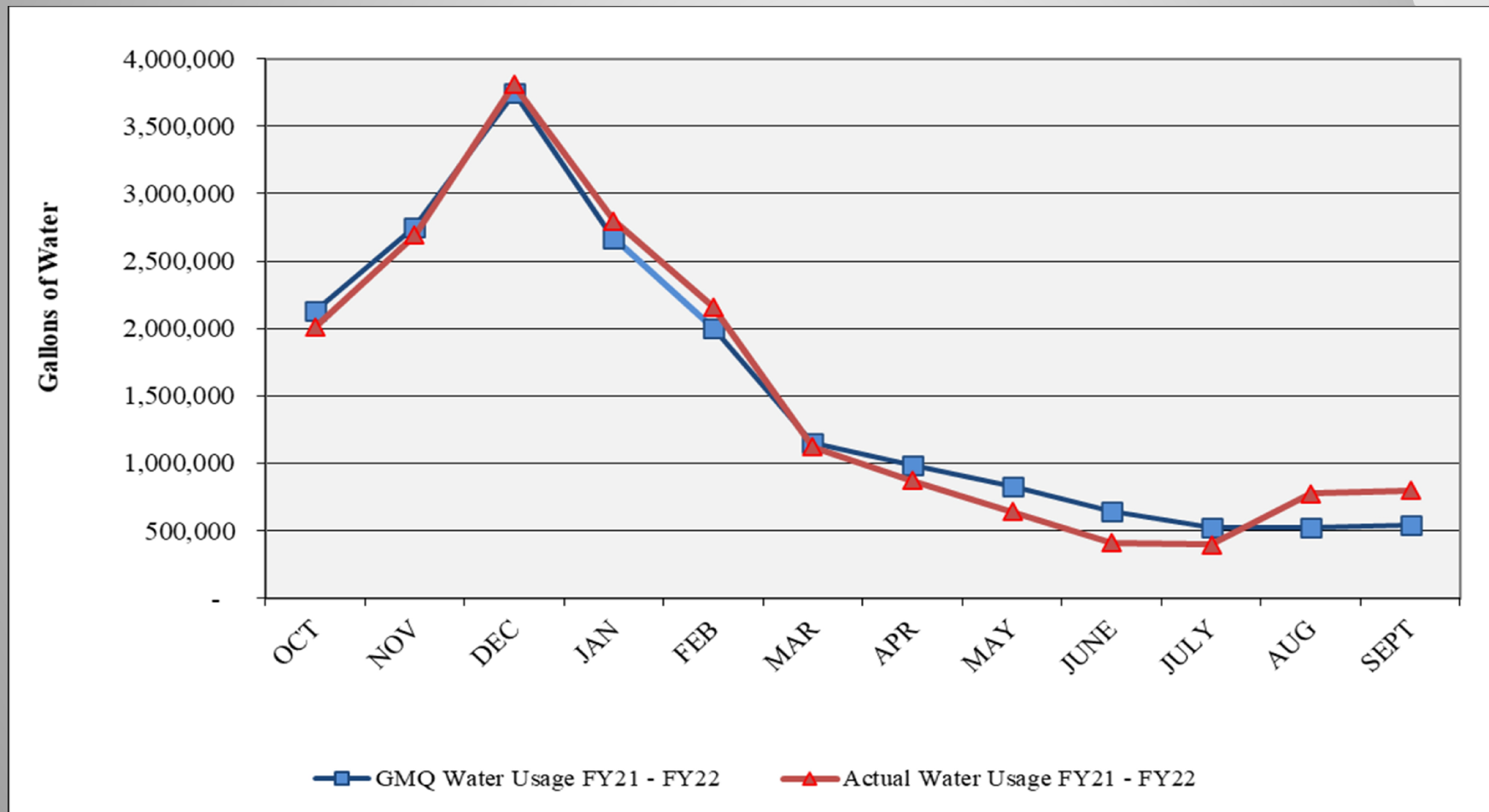
GMQ exceeded in July.

Performance Measurement FY22: Steam Plant Efficiency



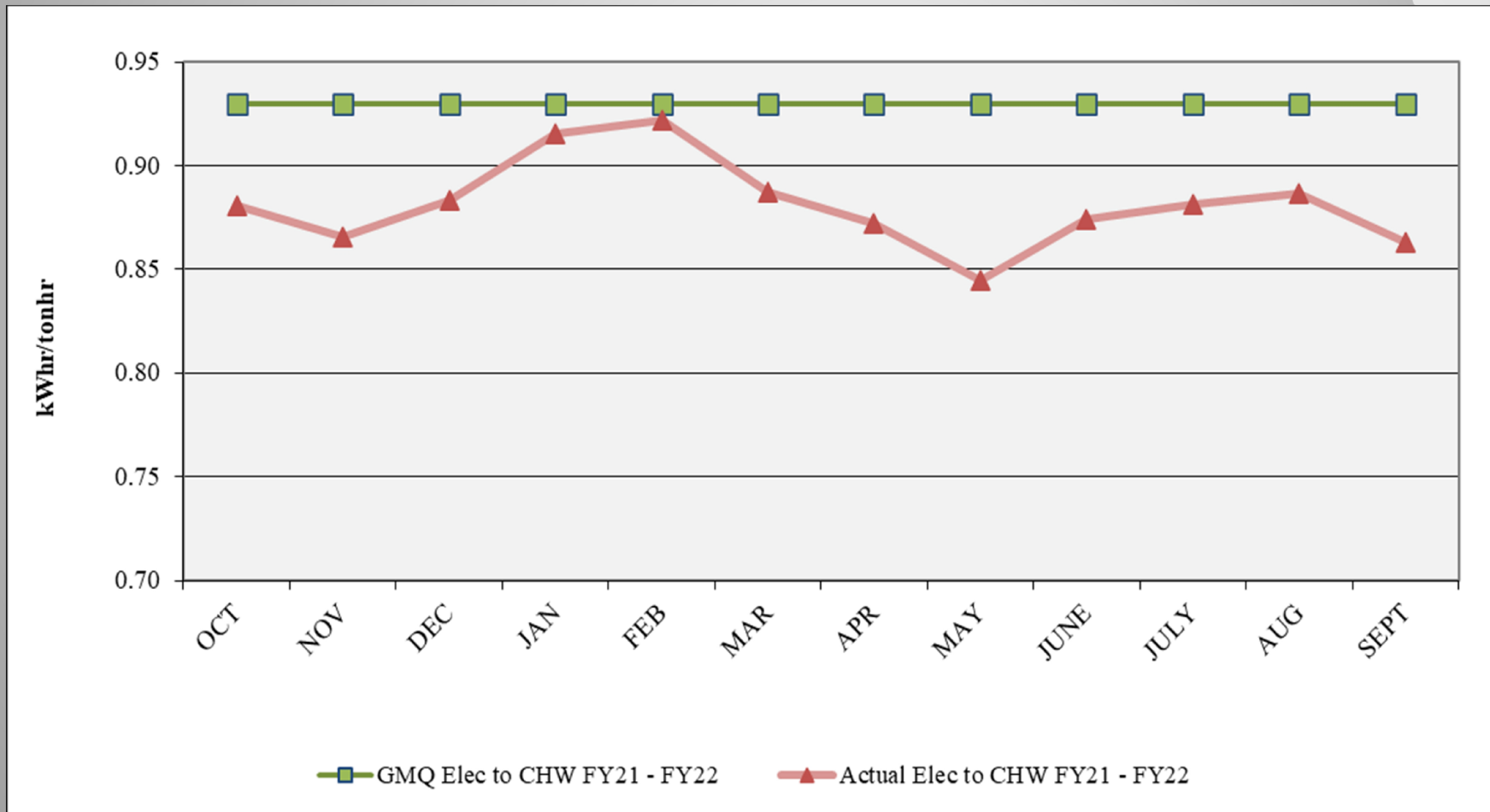
GMQ exceeded in Oct, Nov, Dec, Jan, Feb, Mar, Apr, May and Sept 21.

Performance Measurement FY22: Steam Water Conversion



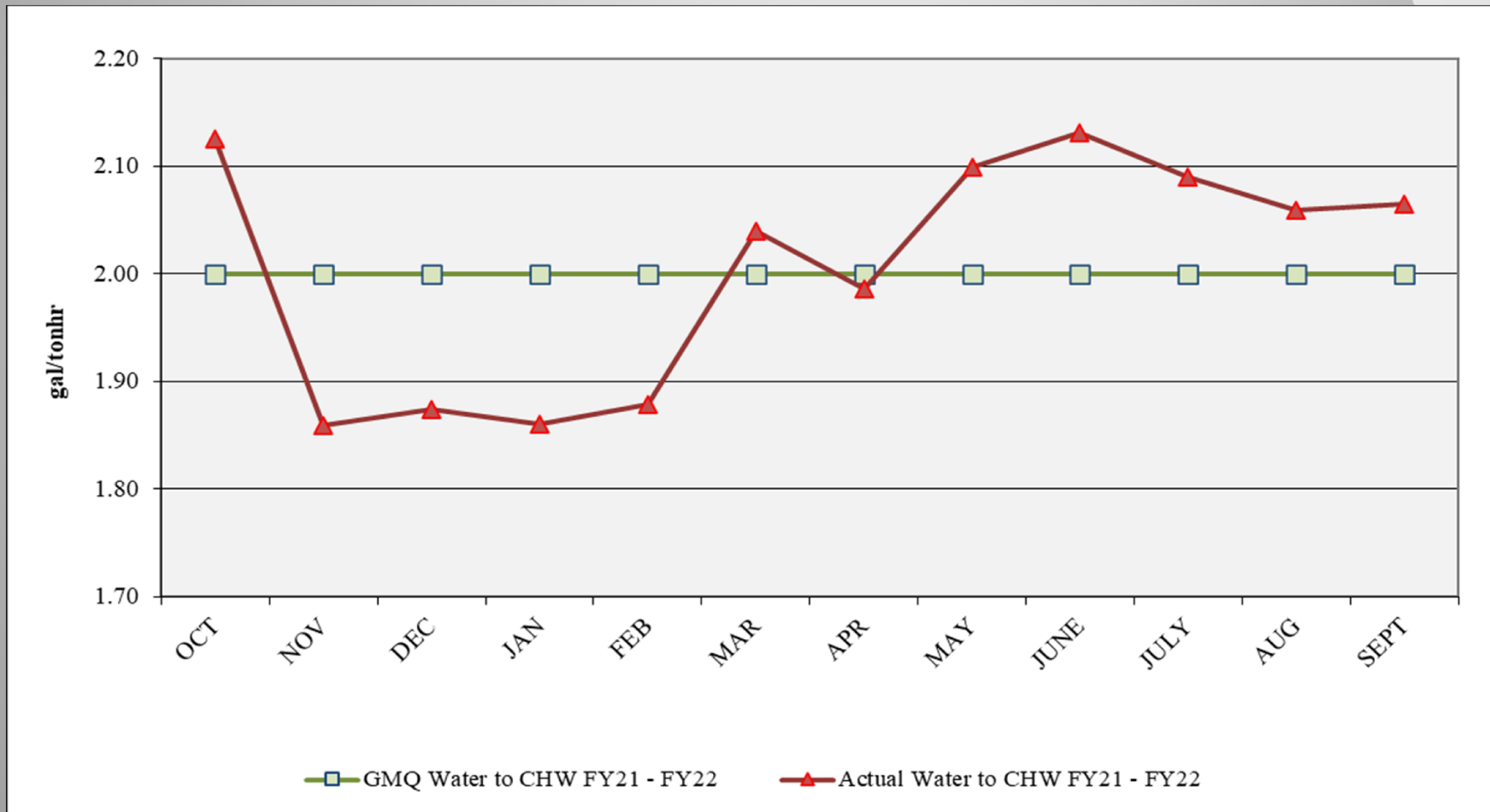
GMQ exceeded in Dec, Jan, Feb, Aug and Sept. Meter issues reported for 1st Qtr FY22.

Performance Measurement FY22: CHW Electric Conversion ●



No excursions shown.

Performance Measurement FY22: CHW Water Conversion ●



GMQ exceeded Oct, Mar, May, June, July, Aug and Sept.

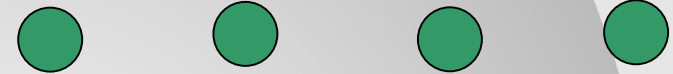


Water Treatment

Q1FY22 Q4FY21 Q3FY21 Q2FY21

❖ Steam and Condensate

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



❖ Condensing Water

- ❖ Conductivity
- ❖ Biologicals



❖ Chilled Water

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



❖ Chem-Aqua completed equipment replacement in Q1



EGF Walkthrough

	Q1FY22	Q4FY21	Q3FY21	Q2FY21
✓ Equipment Maintenance	●	●+	●+	●+
✓ Operations	●	●	●	●
✓ Electrical	●	●	●	●
✓ Housekeeping	●	●	●	●
✓ Building Structure	●	●	●	●
✓ Building Exterior and Grounds	●-	●	●	●



EDS Walkthrough

	Q1FY22	Q4FY21	Q3FY21	Q2FY21
✓ Vault/Tunnel Housekeeping	● -	● -	● +	● +
✓ Maintenance Items				
✓ Piping	● -	● -	NR	NR
✓ Insulation R/R	● +	●	●	●
✓ Water Infiltration	●	●	●	●
✓ Corrosion of Structural Metal Components	● +	●	●	●
✓ Safety Items	●	●	●	●

NR – not reported previously

6. *Natural Gas Purchasing*

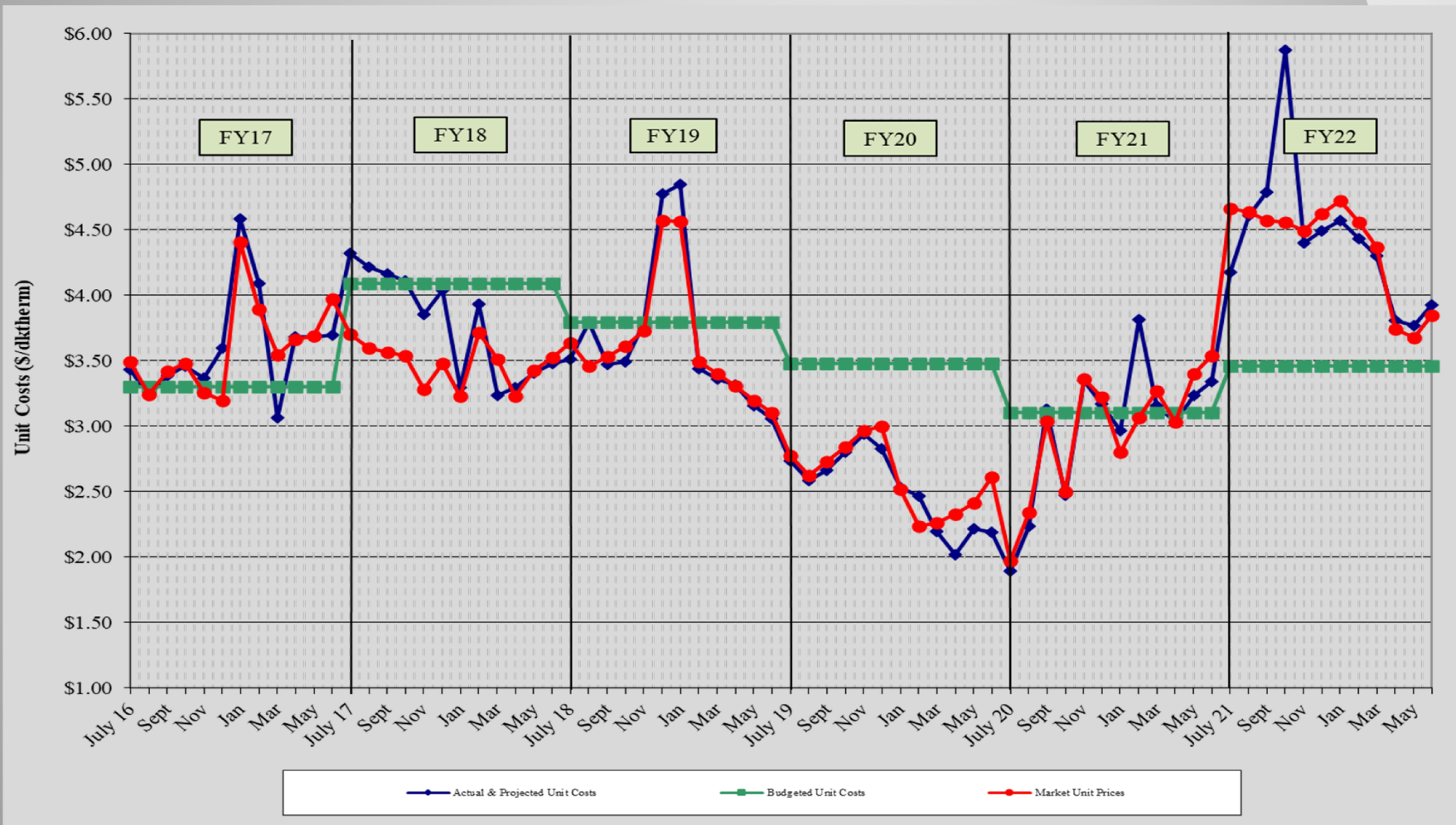
- ❖ Natural Gas Purchasing Review
 - ❖ Table 6: FY22 Gas Spending & Budget Comparison
 - ❖ Figure 6: Actual and Projected Fuel Cost Comparison

Table 6: FY22 Gas Spending & Budget Comparison

		Actual FY22 To Sept 30	Budget FY22	Percent Difference
Steam Sendout (Mlbs)		57,909	63,669	-9.0%
Fuel Use (Dth) (includes propane)	●	79,291	92,447	-14.2%
Plant Eff (Dth/Mlb)	●	1.369	1.452	-5.7%
Total Gas Cost (includes propane)	●	\$361,019	\$307,849	17.3%
Unit Cost of Fuel (\$/Dth)	●	\$4.553	\$3.330	36.7%

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 20% of natural gas through FY22; 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	\$ 972,529	25.00%
Pass Throughs			
Administrative Costs	\$ 459,600	\$ 75,127	16.35%
Chemicals	\$ 232,200	\$ 64,895	27.95%
R&I Fund Transfers	\$ 294,800	\$ 98,267	33.33%
Water/Sewer	\$ 751,500	\$ 361,896	48.16%
Fuel Base	\$ 2,115,186	\$ 374,730	17.72%
Fuel Contingency	\$ 516,814	\$ -	0.00%
Electricity	\$ 6,329,500	\$ 1,793,315	28.33%
ORF Deposit	\$ -	\$ -	
Debt Service	\$ 5,083,200	\$ 1,475,046	29.02%
Total Expenses	\$ 19,672,900	\$ 5,215,804	26.51%
Total Revenues	\$ 19,042,200	\$ 4,870,995	25.58%
Metro Funding	\$ 630,700	\$ 315,350	50.00%

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

8. 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%
Total Expenses	\$ 19,009,200	\$ 19,672,900	3.49%
Total Revenues	\$ 18,378,500	\$ 19,042,200	3.61%
Metro Funding	\$ 630,700	\$ 630,700	0.00%

9. *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
 - Active negotiations for chilled water service
 - Anticipated 550-ton capacity
 - 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
 - Potential 100 tons and no steam
- 1st and KVB
 - Potential ~1,100 tons and ~17,000 pph steam
 - Early stages of discussions
- Peabody St Development
- East Bank Technical Advisory Committee

10. *Capital Expenditure Update*

	Spent to End of FY21	FY22 Spending	Balance to Date (10/29/21)
R&I Projects	\$4,270,639	\$23,666	\$122,551
49116-DES Infrastructure Fund	\$2,824,820	\$369,779	\$2,213,910
Total	\$7,095,459	\$393,445	\$2,336,461

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 – ongoing

Capital Projects Review

Active Capital Projects – Corrosion Repair/Prevention

- DES 152: MHs A, B & M – anticipate construction in 3rd Qtr FY22
- DES 161: MH S6 Insulation – existing corroded anchor to be replaced; piping to be insulated; drawing issued; anticipate completion 3rd Qtr FY22
- DES 172: Viridian Service Line Support Repairs – will be completed 2nd Qtr FY22
- DES 174: 7th Avenue Tunnel Pipe Support Repairs – will be completed 2nd Qtr FY22

Capital Projects Review

Active Capital Projects – Corrosion Repair/Prevention

- DES 179: MH 11 Repairs – corrosion/insulation repairs; to be bid/awarded during 2nd Qtr FY22; anticipate completion 3rd Qtr FY22
- DES 188: 4th & Church Bldg Access Tunnel Repairs – tunnel metal liner plates and piping supports corroded; to be bid/awarded during 2nd Qtr FY22; anticipate completion 3rd Qtr FY22

Capital Projects Review

Active Capital Projects – Repairs/Modifications

- DES 177: MH B1 Platform & Ladder – bids rec'd; verbal award; anticipate completion 3rd Qtr FY22
- DES 185: 5th Ave N Exploratory Excavation – piping repairs complete; concrete repairs completed late 1st Qtr FY22; anticipate close-out during 3rd Qtr FY22
- DES 187: Exploratory Excavation at MH 22B (Metro Public Library) – water flowing through steam casing into MH 22B; excavated and found buried steam & condensate pre-insulated piping in need of repair; awaiting delivery of replacement piping; anticipate completion during 2nd Qtr FY22 (pipe rec'd – repairs underway)
- DES 191: MH 20 Repairs – condensate return piping leaking (corrosion); ground/surface water collection/diversion needed; new access ladder needed; in design – anticipate bidding during 3rd Qtr FY22, construction late 3rd Qtr/early 4th Qtr FY22

Capital Projects Review

Capital Projects – Anticipated Construction in FY22

- DES 143: MH N1 and N2 Insulation – piping insulation to be installed/added
- DES 154: MH K Repairs – corrosion/concrete repairs; awaiting results of sealing MH N2
- DES 178: MH 5 Repairs – corrosion/concrete/insulation repairs
- DES 180: State Tunnel Pipe Support Repair – corrosion repairs
- DES 189: MH 4 Structural Steel & Insulation Repair

Capital Projects Review

Capital Projects – Closed/In Close-out

- DES 182: MH B10 Exp Jt Replacement
- DES 186: Printers Alley Exploratory Excavation
- DES 190: MH 2 Spare Tube & Trap Modifications

11. Other Board Member Items

12. Adjourn

- *Advisory Board Meeting Schedule*
- FY22 – 2nd Quarter Meeting – February 17, 2022
- FY22 – 3rd Quarter Meeting – May 19, 2022
- FY22 – 4th Quarter Meeting – August 18, 2022
- FY23 – 1st Quarter Meeting – November 17, 2022