Metro Nashville DES

District Energy System
Program Options Report

August 16th 2018

FVB ENERGY INC

DES Project Summary

- FVB responded to, and was hired after a Request for Proposal (RFP) issuance in 2017
- FVB prepared a comprehensive evaluation report for Metro to summarize the in-depth assessment of the economic viability of the DES
- Options/recommendations are provided for the future of the system
- Four scenarios are developed and compared

DES Project Scenarios

- FVB developed and analyzed four primary DES scenarios:
  - *No Growth* (Business as Usual (BaU)) scenario
    - Based on existing operations with little or no growth
  - *Growth* scenario
    - Based on expanding the system capabilities and customer base
    - Two different and not mutually exclusive expansion options explored
  - Internal management and operations option
    - Metro retains ownership and internally manages and operates DES
  - *Business Exit* case
    - Valuations if Metro exits the business

DES Project Scenarios Overview

- FVB evaluated options for the future of the DES, but no specific option is favored or recommendation explicitly given

DES Project Key Takeaways

- Regardless of the ownership of DES, an active management structure that takes ownership, has accountability, and encourages growth will need to be put in place

- It will be necessary to incorporate an effective marketing scheme into the management structure to successfully capture growth opportunities

- New customers should sign contracts that do not tie debt service to customer revenues, and existing customer contracts need to be revisited and restructured to allow additional capital to flow to the DES to allow for system growth, Energy Generation Facility (EGF) maintenance and improvements, and additional capital expenditure (CAPEX) needs

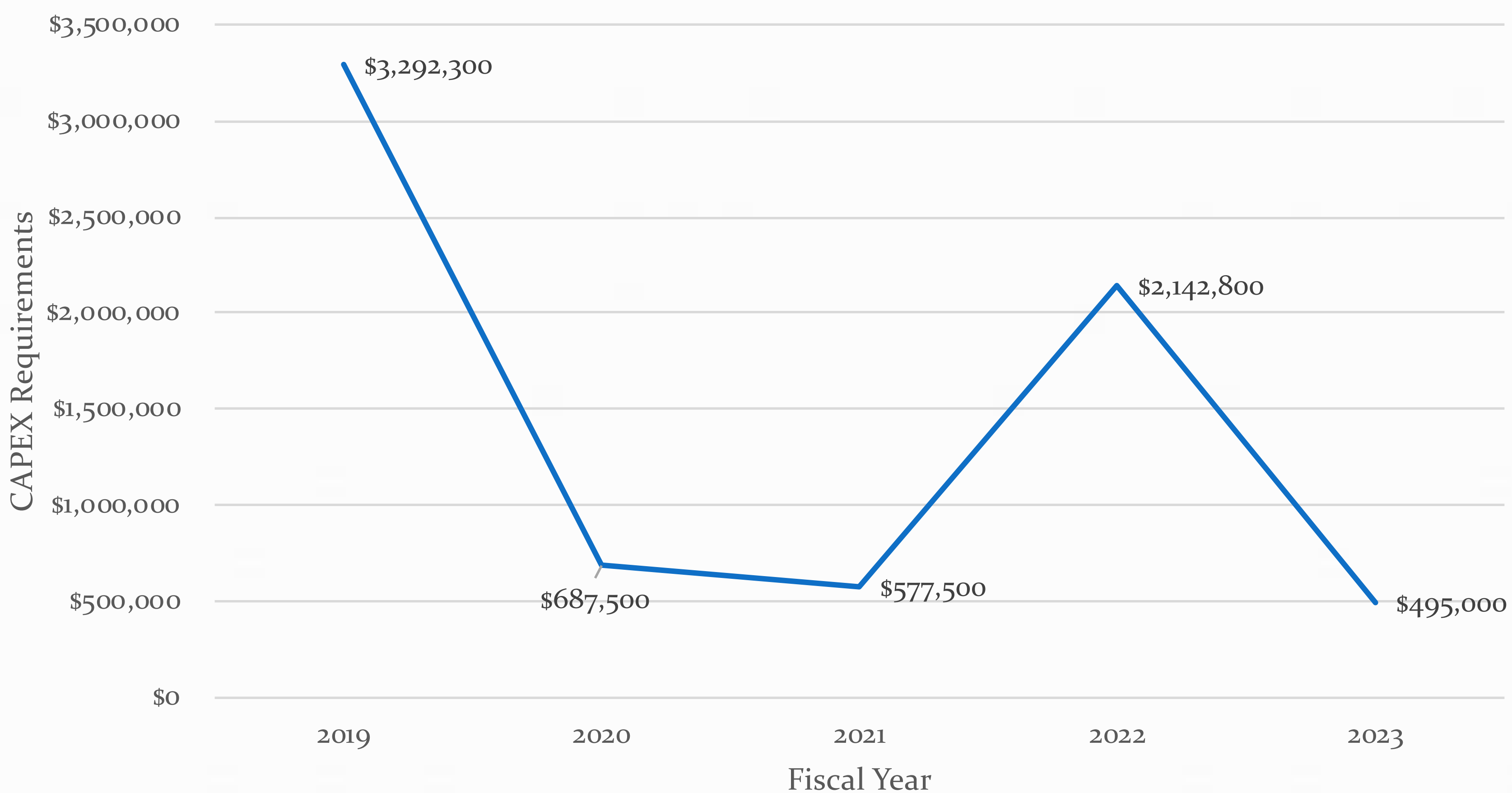
Scenario Overview

- DES currently receives a yearly subsidy from Metro in the form of the Metro Funding Amount (MFA) – Fiscal Year (FY) 2019 MFA is $1,640,300
- The MFA will go down over time in any scenario, but at different rates
- NPV (Net Present Value) is the difference between the present value of the benefits of a project and its costs.

BaU Scenario: Takeaways

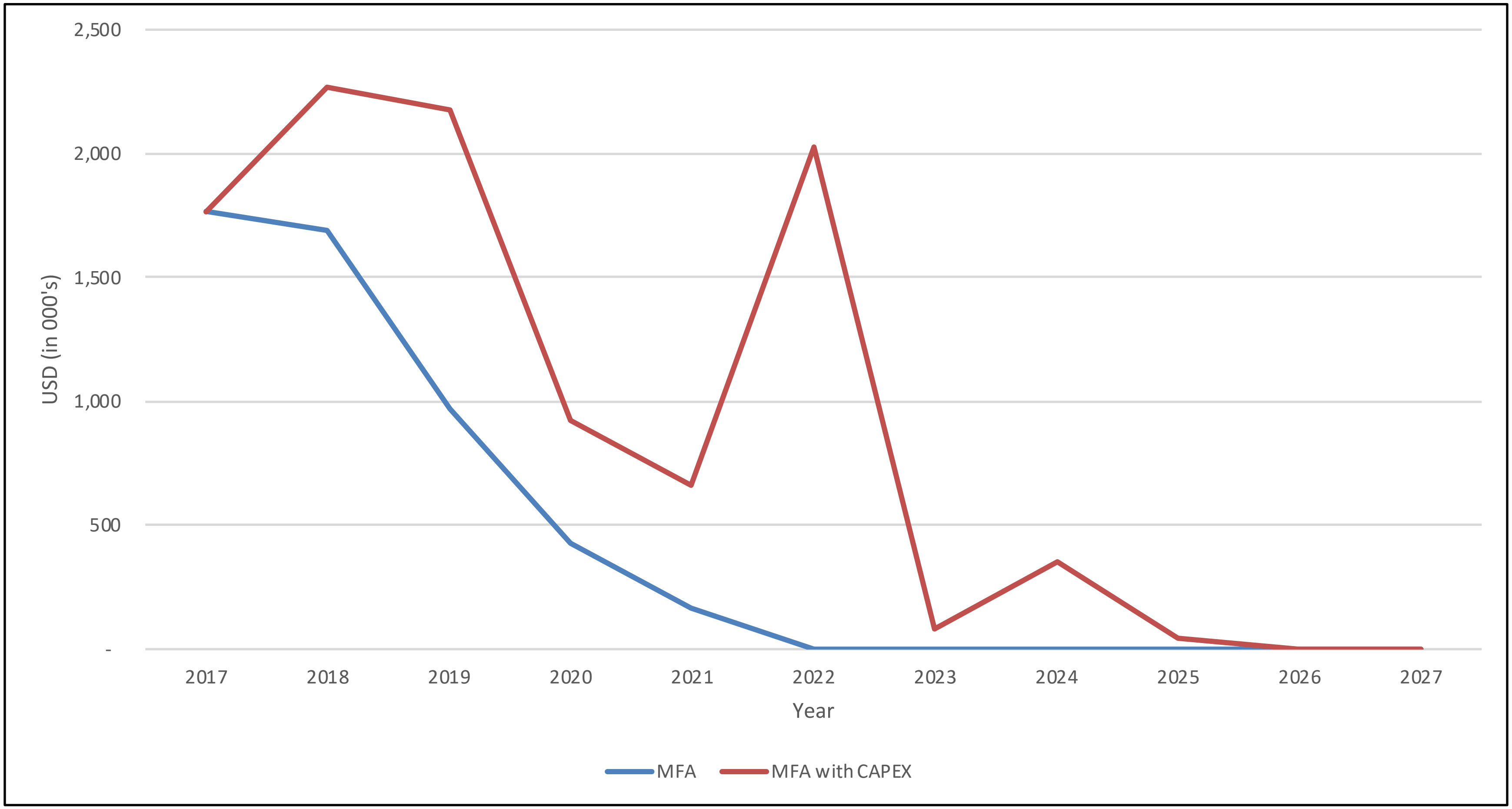
- NPV of future MFAs discounted at 4.33%:
  - $4.9 MM <u>without</u> additional CAPEX
  - $10.4 MM <u>with</u> additional CAPEX
- Sales value will decrease over time:
  - Energy Generation Facility (EGF) equipment will age and require additional CAPEX
  - Contracts will move towards expiration
  - Potential additional growth opportunities will be missed

BaU Scenario:
CAPEX Requirements



CAPEX requirements are estimated and subject to revision. $495,000/year is assumed after starting in 2023.

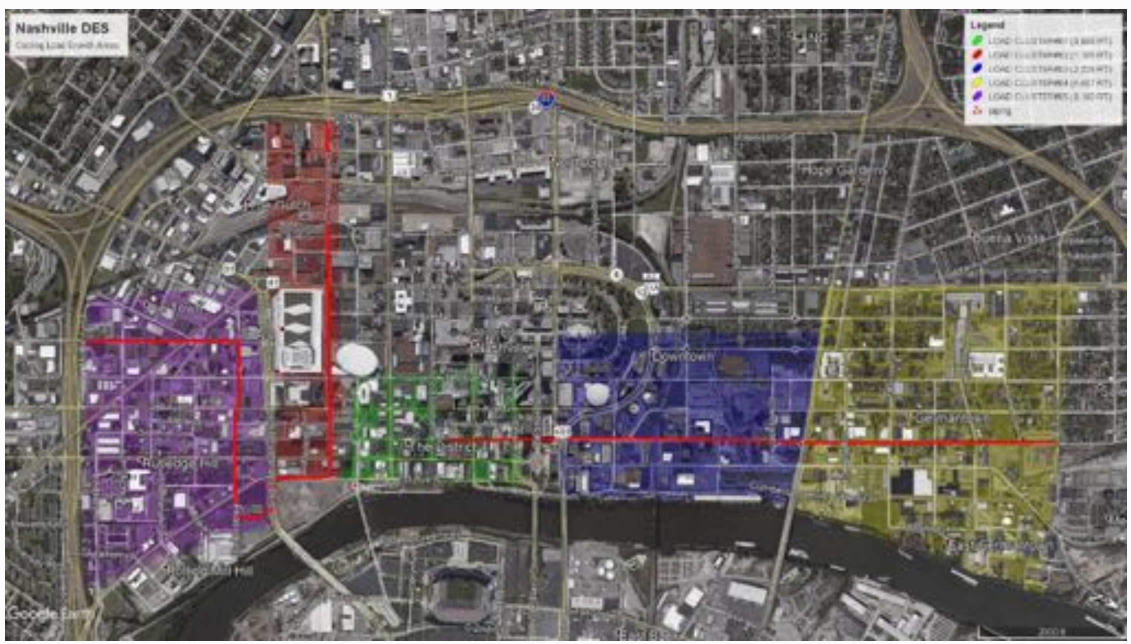
BaU Scenario:
The Metro Funding Amount (MFA) Over Time



A 10% reduction in System Operator (SO) costs beginning in Fiscal Year 2019 is assumed.

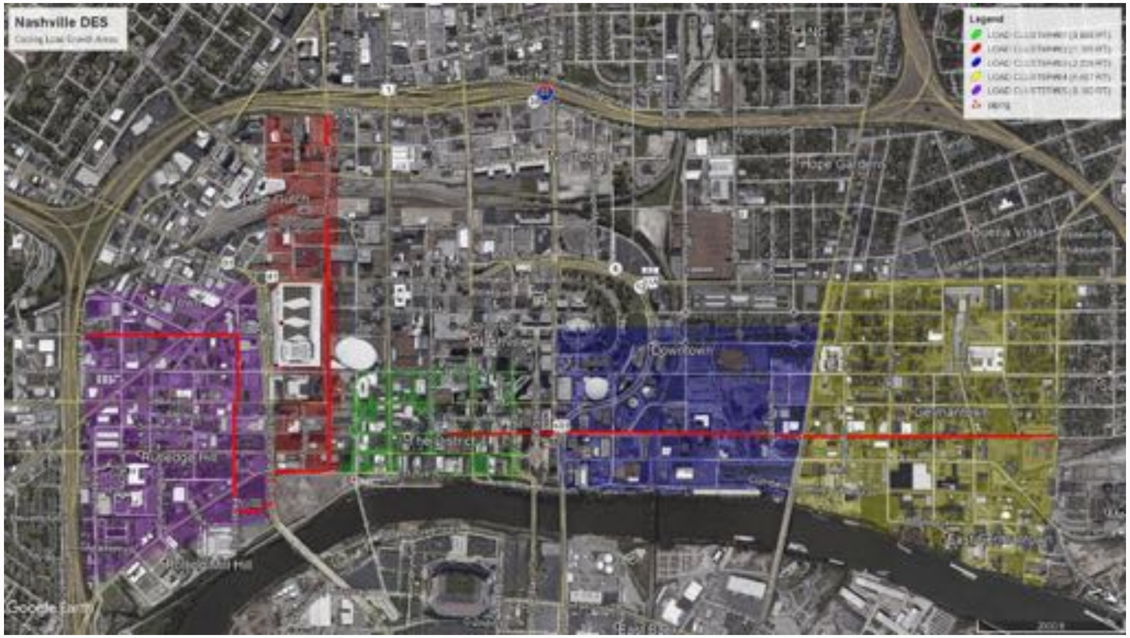
Growth Scenario:
Energy Generation Facility (EGF) Expansion

- Expand the existing EGF to its maximum site capacity by serving additional customers in the growing SoBro area



Growth Scenario: Thermal Energy Storage (TES) Tank

- Construct a TES to serve additional customers in the downtown area



Growth Scenario: Takeaways

- Promising option
  - Will require substantial upfront capital investment
    - Energy Generation Facility (EGF) Expansion
      - Present day capital cost: $52.7 MM
      - Investment has a positive return but negative cash flows would need to be funded for the first eight years
    - Thermal Energy Storage (TES) Expansion
      - Present day capital cost: $38.5 MM
      - Investment has a positive return but negative cash flows would need to be funded for the first five years

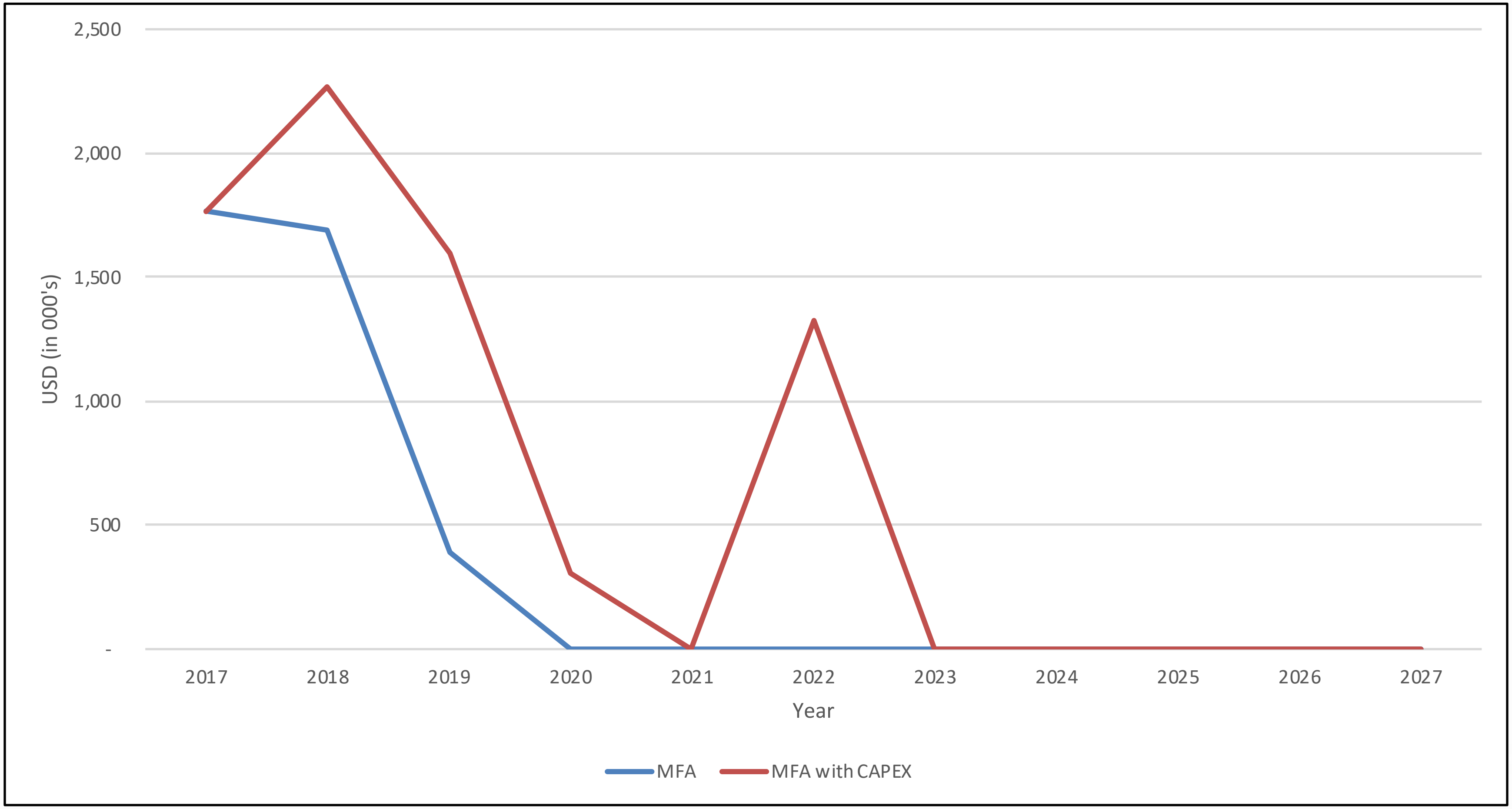
Growth Scenario: The MFA Over Time

- The *Growth* scenario generates a sustained cash surplus starting in 2031, consequently:
  - Contributes to the value of the DES in the long run and demonstrates promise to a potential acquirer.
  - Does not contribute to a more rapid decline of the MFA.

Internal Management and Operations Option: Takeaways

- Possible cost savings and operational efficiencies to be gained could yield a 19% reduction in annual operations & maintenance (O&M) costs enabling the MFA to be eliminated faster
- A well-defined transition plan, management structure, and capital plan are needed

Internal Management and Operations Option: The MFA Over Time



Business Exit Case: Takeaways

- Sale of the DES is likely to repay all existing debt obligations
- The MFA will no longer be required

Business Exit Case: Valuation Metrics

- Potential growth
- CAPEX requirements (based on the age and condition of the system)
- Customer contracts (structure and term)
- Commodity risk (mitigated by pass-through contract provisions)

Business Exit Case:
DES Market Valuation Range with Reduced System Operator Costs and System Growth

Valuation*	Valuation Net of Debt*
$46.7 MM	-$4.9 MM
$56.1 MM	$4.5 MM
$65.4 MM	$13.8 MM

An active market for DE assets and strong market participants suggest that the higher valuation range may be achieved.

*DES net debt as of the end of FY 2017 is $51.6 MM.

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Summary of Scenarios

BaU Scenario	*Growth* Scenario
• CAPEX funding not adequate • Sales value will decrease over time • Will continue to require subsidization through FY 2021	• Two promising and not mutually exclusive growth options • Will require substantial upfront capital investment
Internal Management and Operations Option • Possible cost savings and operational efficiencies to be gained could yield a 19% reduction in annual operations & maintenance (O&M) costs • A well-defined transition plan, management structure, and capital plan are needed	***Business Exit* Case** • Sale of the DES is likely to repay all existing debt obligations • The MFA will no longer be required

Questions?