



B R O W N S V I L L E  
P U B L I C U T I L I T I E S B O A R D

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# Fuel & Purchased Energy Cost & Future Outlook

Fuel & Purchased Energy Dept.

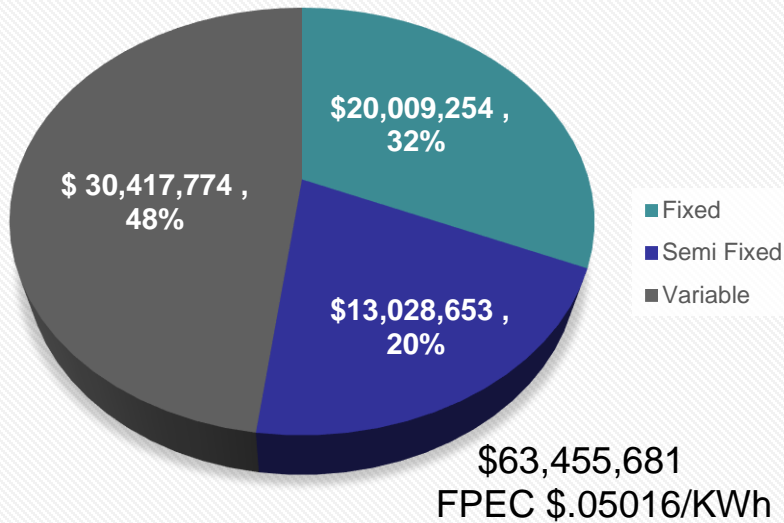
December 7, 2022



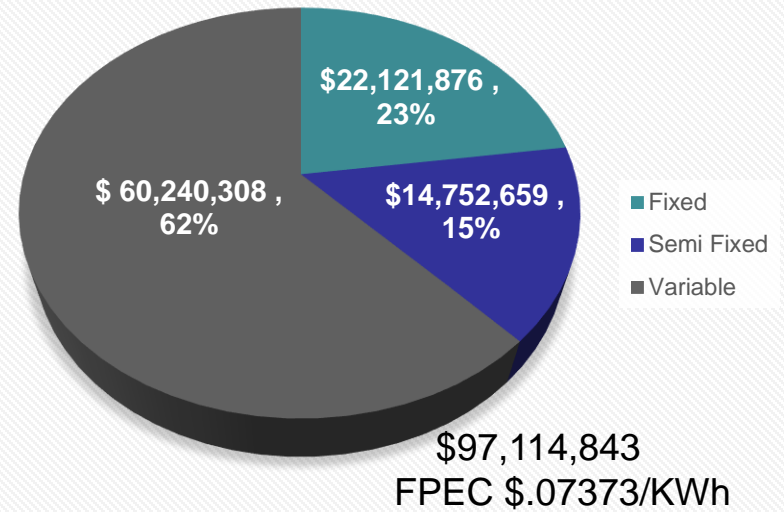
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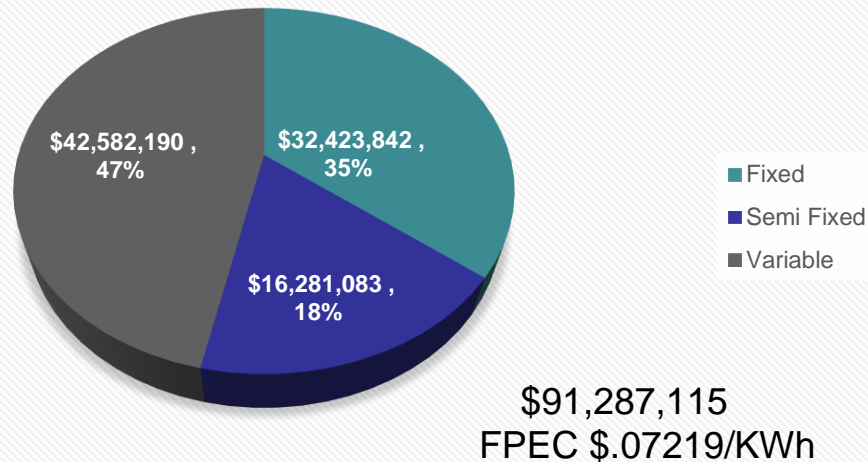
## FY2021 F&PE Total Costs



## FY2022 F&PE Total Costs



## FY2023 F&PE Total Costs (Projected)



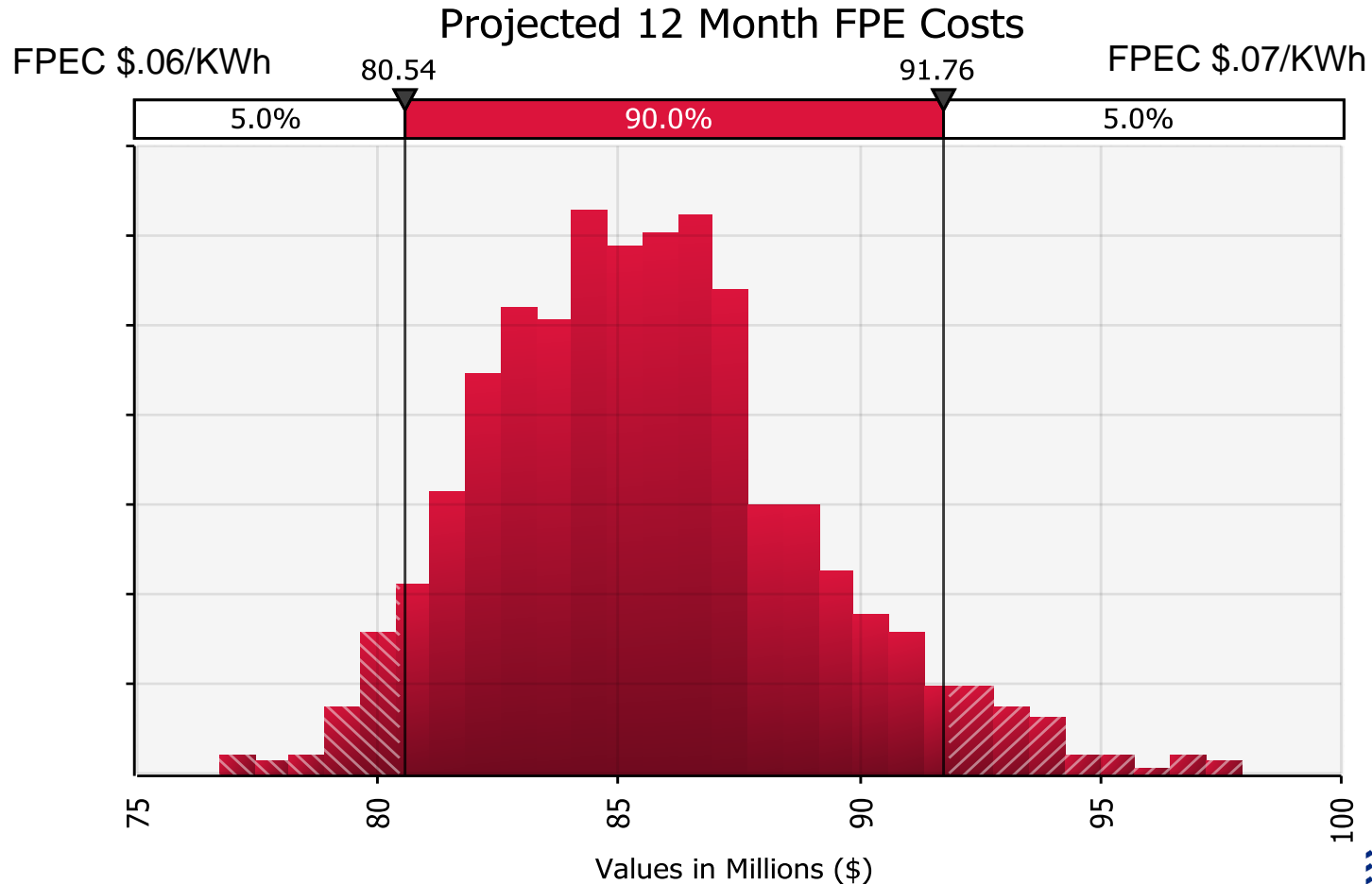
BROWNSVILLE  
PUBLIC UTILITIES BOARD

\*February 2021 averaged due to outlier

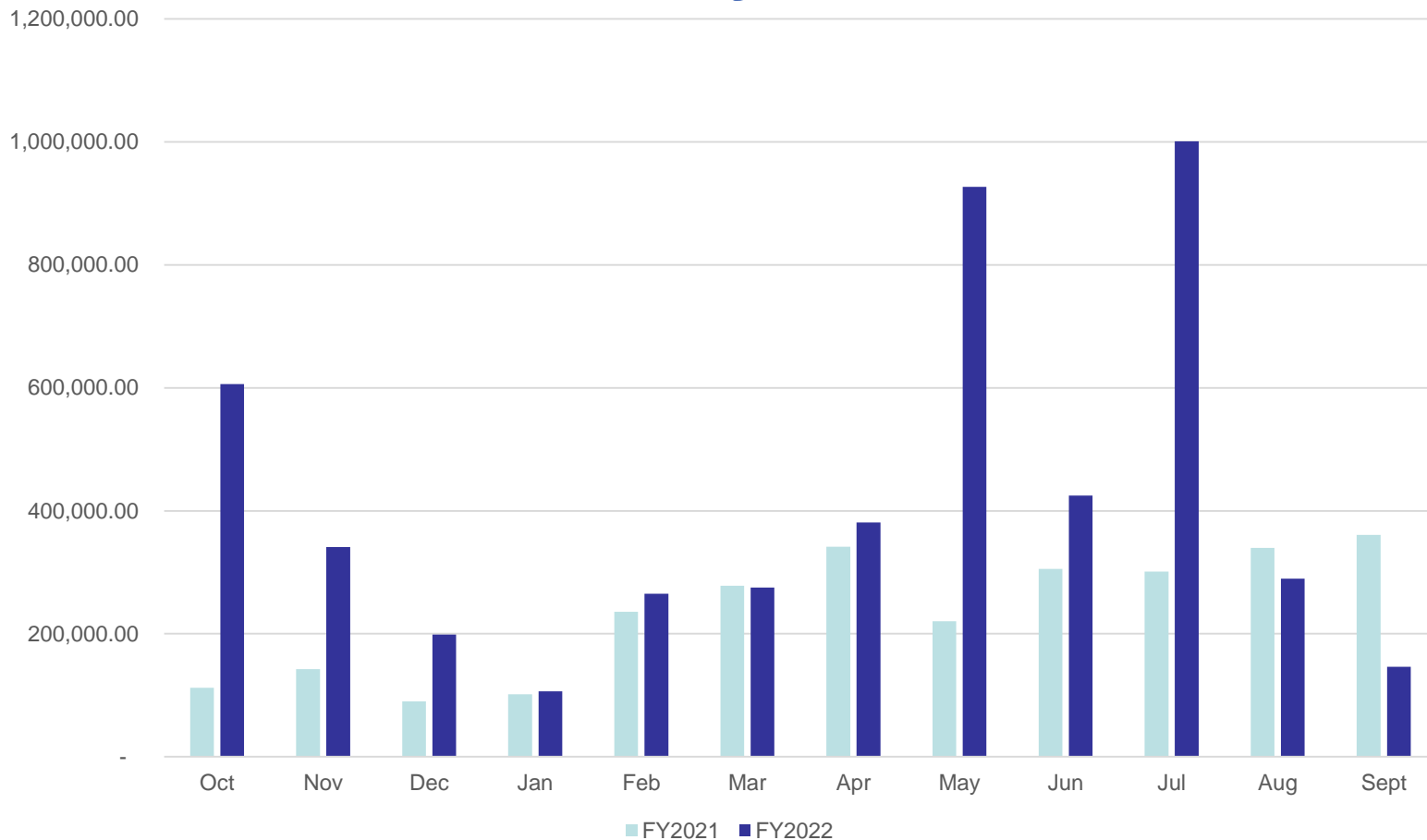
# February 2021

- The financial impact of February 2021 for fuel cost was \$122,135,899. Of this amount \$2,567,584 was collected from customers at an FPEC rate of \$.02952. The shortfall of \$119,568,315 was paid by BPUB through other Board approved sources and not passed on to the customer.
- February 2021 was averaged based on the remaining 11 months of fiscal year 2021 for comparison purposes.

# FY 2023 F&PE Projected Cost



# Ancillary Costs



As part of ERCOT's increased focus on reliability and increase in gas prices, greater spinning and non-spinning reserves are being maintained on the system each day.



*\*February 2021 averaged due to outlier*

# F&PE Cost Outlook

- Although uncertainty exists, we expect fuel and purchase energy costs to gradually decline based on the current forward prices. The market for gas and energy prices are constantly changing, however, the FY 2023 figures are the best assumptions to date.

# Questions?

# Supplemental Information



# BPUB Energy Portfolio Model (BEPM)

- In 2015, BPUB engaged Experience on Demand to provide assistance in developing a robust analytic model suitable for projecting fuel and purchase energy costs and supporting energy risk management activities.
- BPUB Energy Portfolio Model (BEPM)
  - Uses Microsoft Excel in tandem with @Risk add-in from Palisade Corporation
  - Simulates BPUB system operations and economics using the Monte Carlo analysis technique
- Model is continuously improved and enhanced

# BPUB Energy Portfolio Model (BEPM)

- The model is capable of producing the following:
  - Generation Requirements
    - Generation for native load
    - Generation for off-system sales
  - Fuel consumption and cost
  - Power purchases and sales
  - F&PE costs
  - Total costs
  - Energy risk metrics

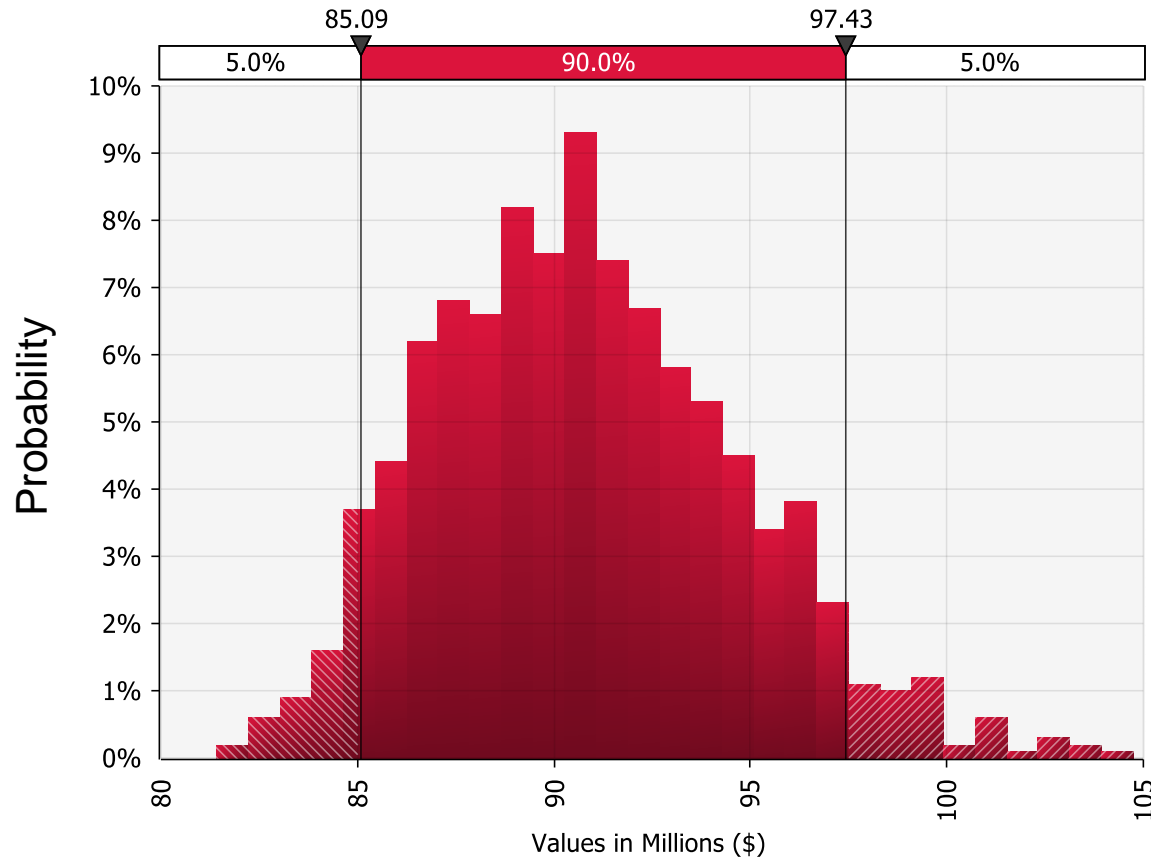
# BPUB Energy Portfolio Model (BEPM)

- Cost forecasting methodology used in model

Cost Type	Treatment
Fixed	Forecasted based on historical
Semi-Fixed	Forecasted based on historical
Variable	Simulated via BPUB Energy Portfolio Model (BEPM)

# BPUB Energy Portfolio Model (BEPM)

Forward 12 Months / F&PE Cost Projection



*Sample output for illustration purposes.*

# Brownsville, TX Code of Ordinances Sec. 102-193

## Fuel, Purchased Energy and Marketing Charge (F&PE)

- Definition. Fuel, purchased energy and marketing charge is defined to include (a) all fuel used for electrical generation and all variable costs of operation and fuel delivery, including, without limitation, costs for fuel handling, fuel transportation (whether by pipeline, rail or other means), fuel storage, modification of generation facilities for fuel intake, fuel metering, contract preparation, regulatory and litigation expenses related to fuel, and (b) all purchased power costs for firm, non-firm, economy and hourly energy, and all associated variable charges related thereto, including, without limitation, transmission charges, congestion charges, costs of congestion revenue rights, balancing costs, reliability must run costs, scheduling charges, ERCOT administrative fees and charges, load forecasts, engineering, contract preparation and regulatory expenses and litigation fees, and (c) All variable power marketing costs related to wholesale sale of power in excess of load requirements not recovered in the revenue from the sale, including, without limitation, qualified scheduling entity and other power marketing fees, ERCOT administrative fees and charges, congestion charges, cost of congestion revenue rights, balancing charges, reliability must run costs, transmission charges, load, forecasts, contract preparation fees, and related regulatory and litigation costs.

# F&PE Cost Components

- Fuel and purchase energy costs charged to customers include fixed, semi-fixed, and variable components
  - Fixed
    - Costs that are not primarily driven by energy for load
      - Long-term purchase power agreements
      - Hidalgo O&M
      - Qualified Scheduling Entity (QSE) Fees
      - Legal Fees

# F&PE Cost Components

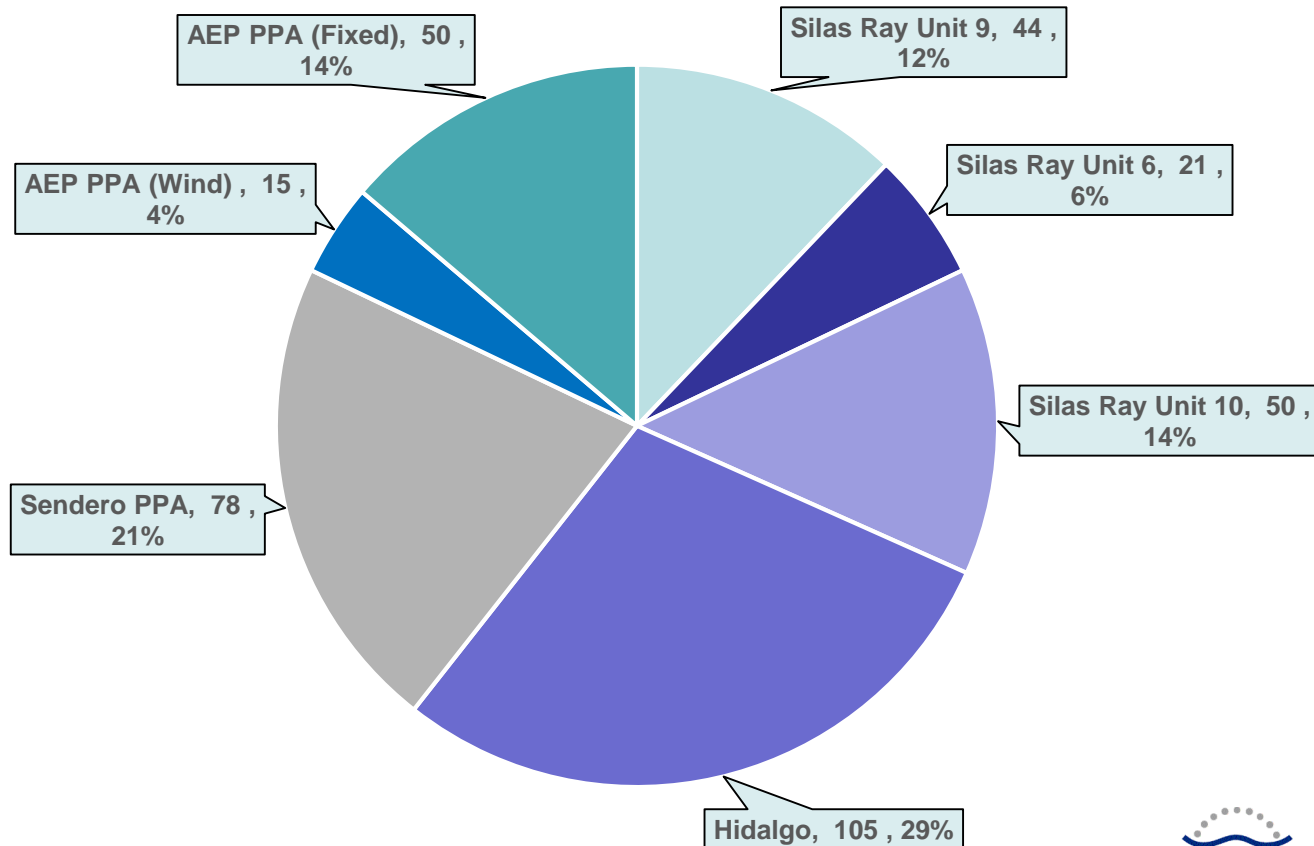
## – Semi-Fixed

- Costs that are partly driven by energy for load
  - Transmission charges
  - Ancillary service charges
  - QSE marketing Fees

## – Variable

- Costs that are primarily driven by energy for load
  - Fuel
    - » Hidalgo
    - » Silas Ray
  - Fuel transport
  - ERCOT Imbalance/Settlement Charges
  - Purchase power
  - Congestion costs

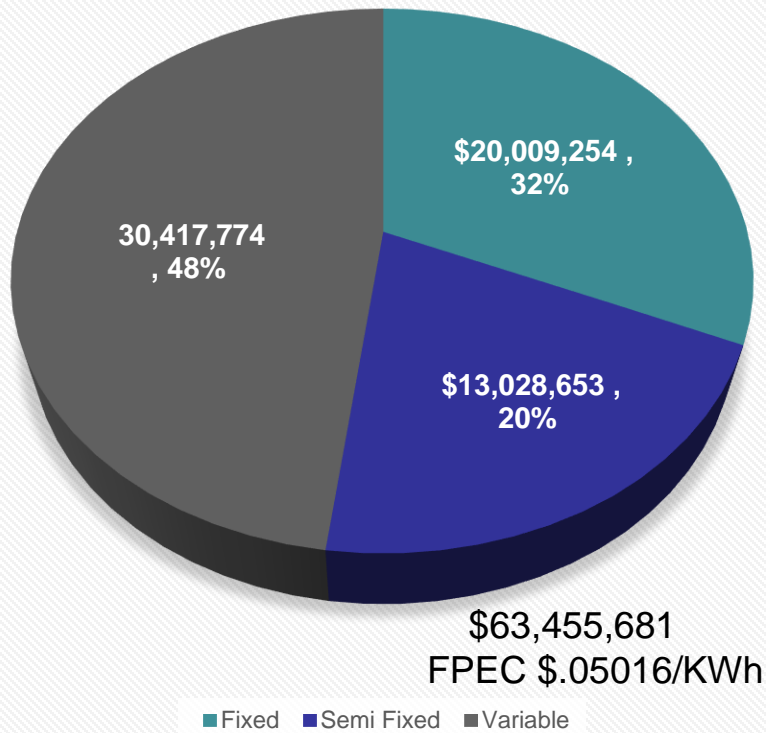
# Resource Name Plate Capacity (MW)



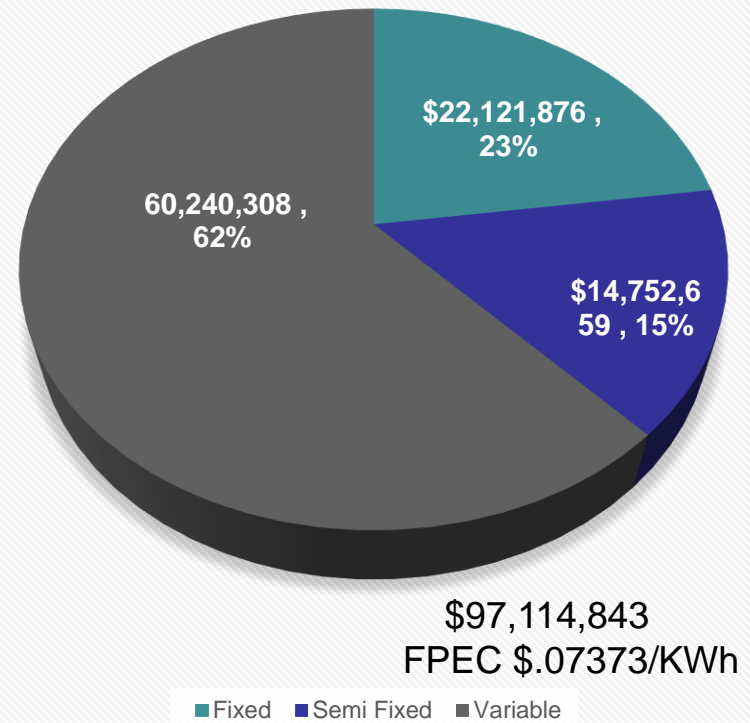


# F&PE Total Costs

FY2021 F&PE Total Costs



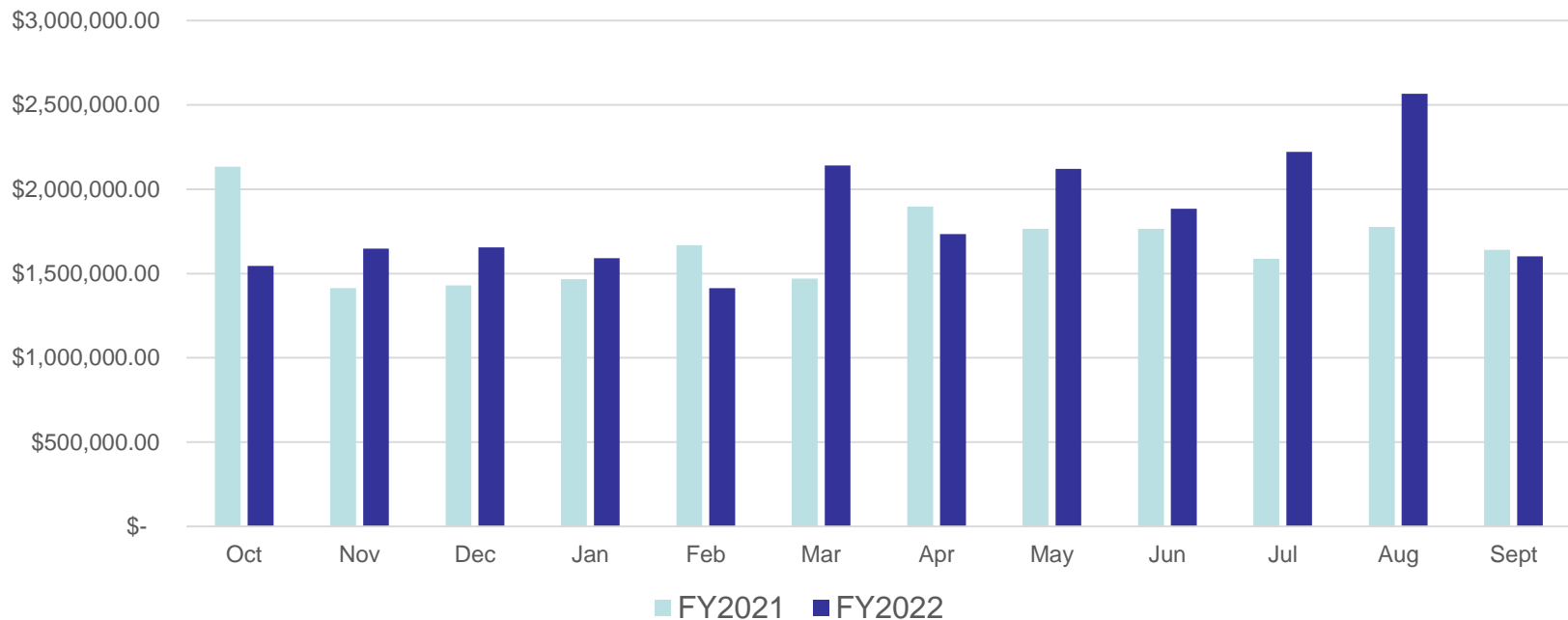
FY2022 F&PE Total Costs



*\*February 2021 averaged due to outlier*

# F&PE Cost Components

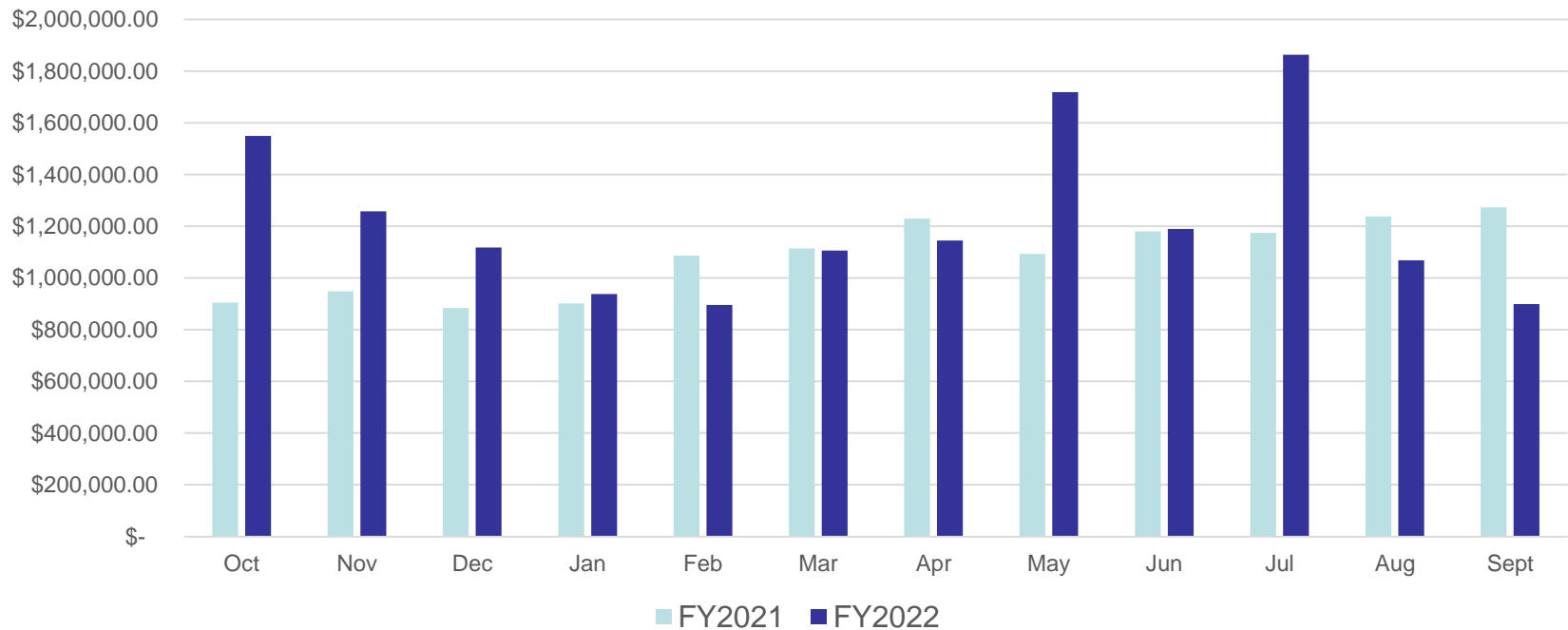
## F&PE Fixed Cost



*\*February 2021 averaged due to outlier*

# F&PE Cost Components

## F&PE Semi Fixed Cost

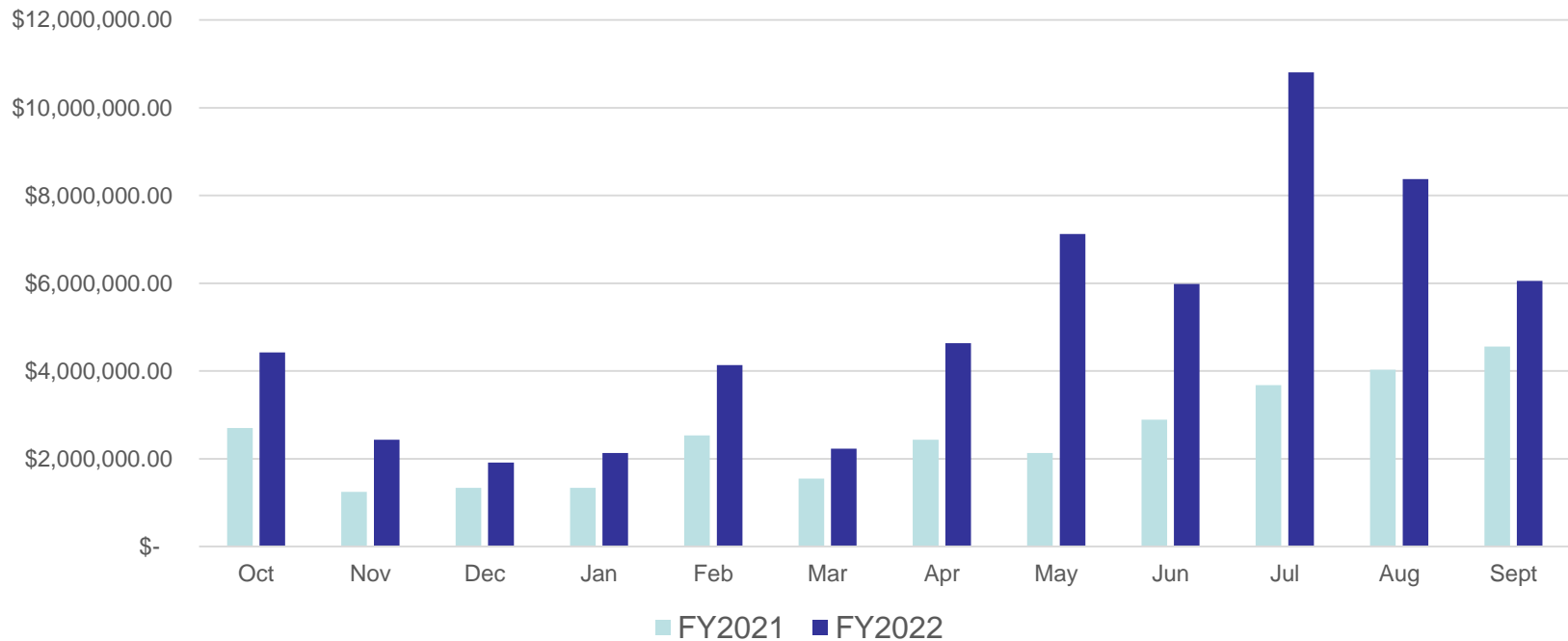


*\*February 2021 averaged due to outlier*



# F&PE Cost Components

## F&PE Variable Cost

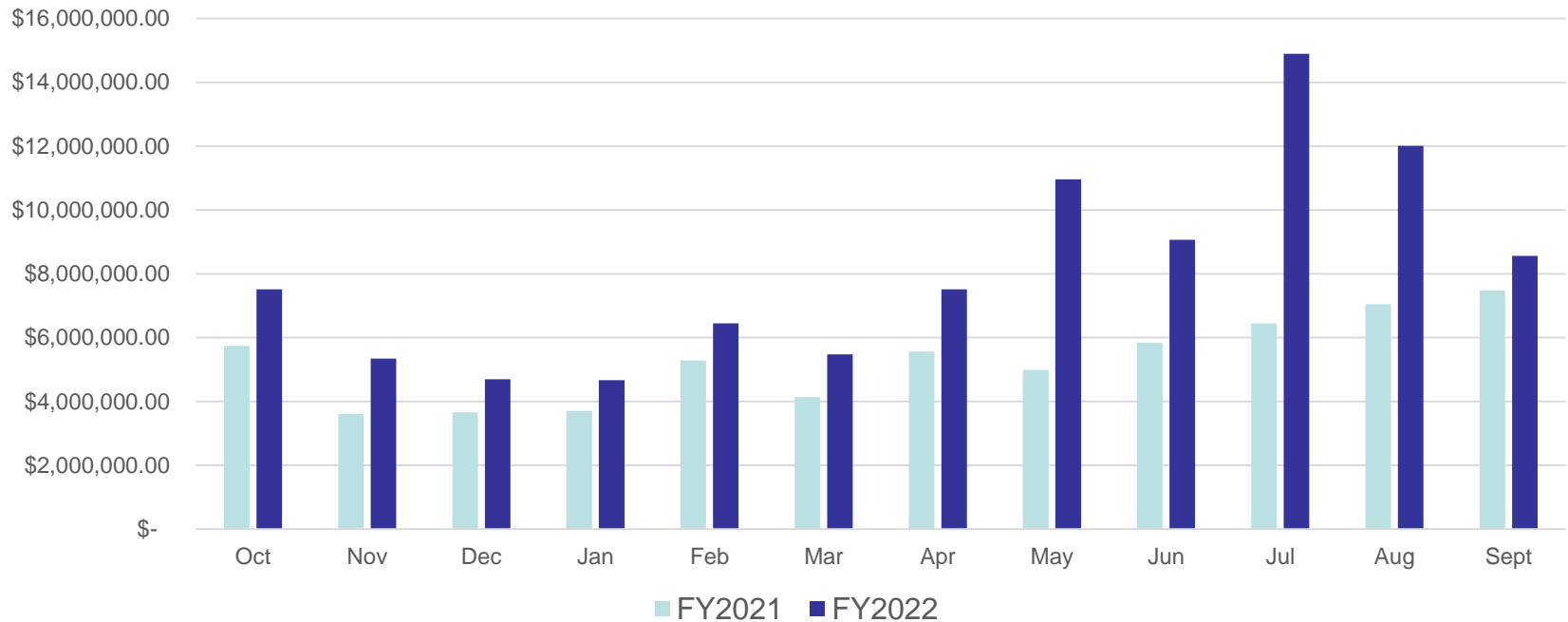


*\*February 2021 averaged due to outlier*



# F&PE Cost Components

## F&PE Total Cost



*\*February 2021 averaged due to outlier*



# F&PE Cost Outlook

- Fixed and semi-fixed costs, rely on the future of how ERCOT protocols evolve.
- The BEPM model treats each variable costs explicitly which are a function of load, power prices, fuel prices, unit availability, and dispatch decisions.
- In view of ERCOT's increased focus on system reliability, we expect that transmission costs of service and ancillary costs may increase going forward. However, the degree of this is uncertain.

# Ancillary Services

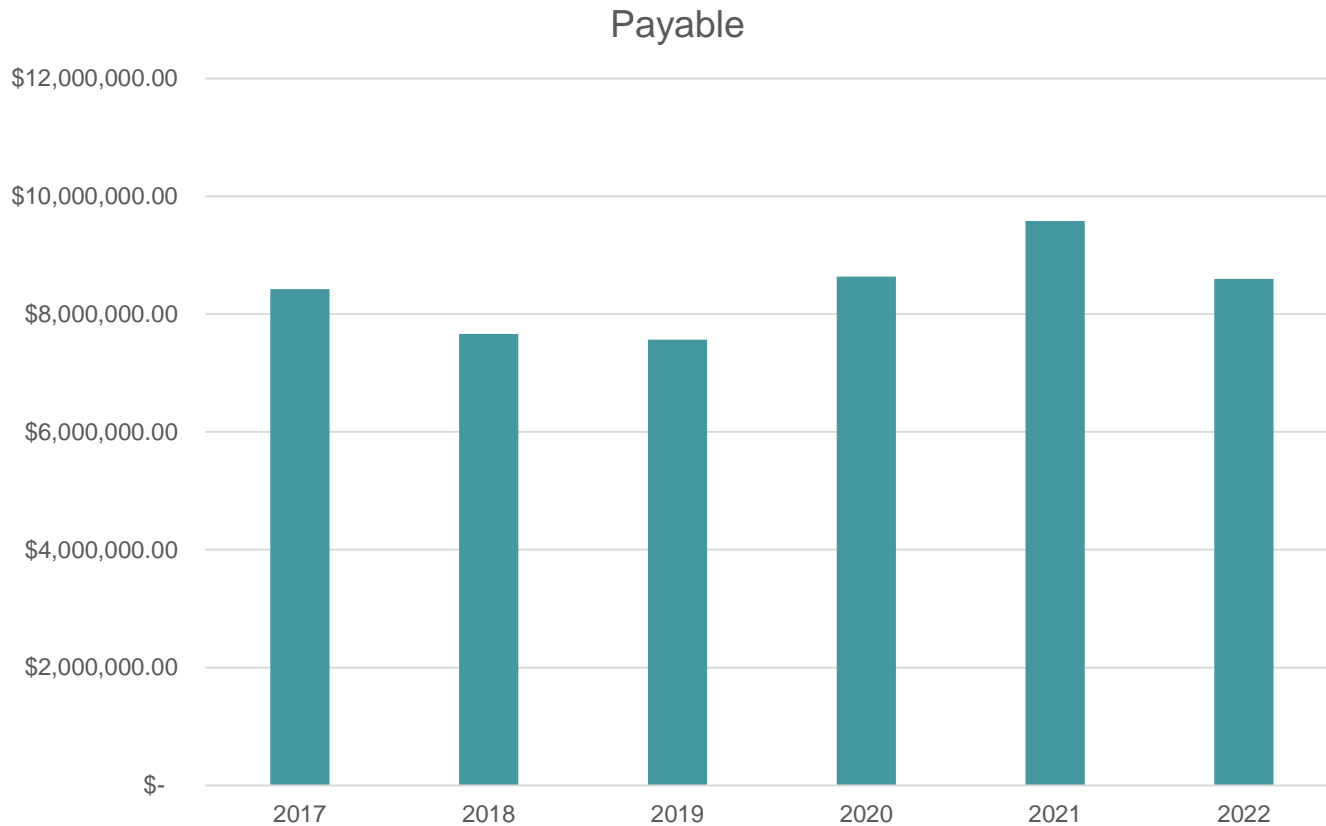
- We recently explored the outlook for ancillary service costs with our QSE.
- As part of ERCOT's increased focus on reliability and increase in gas prices, greater spinning and non-spinning reserves are being maintained on the system each day.
- This, combined with the run-up in gas prices, has led to increases in ancillary services costs.
- In addition, ERCOT is exploring market design changes that may place greater responsibility on load serving entities for maintaining capacity reserves.
- These changes may lead to continued increased costs to BPUB for ancillary services and related items.

# Transmission Costs

- As part of recent discussions with our QSE and ERCOT, we explored the outlook for transmission charges.
- ERCOT has multiple projects in motion which will likely lead to higher transmission costs for BPUB.
- The new transmission investments, particularly in the RGV should create greater grid resiliency, improved import/capability, and reduced congestion costs.



# Transmission Cost of Service (TCOS)



# F&PE Cost Outlook

- The market for gas and energy prices are constantly changing, however, we expect fuel and purchase power costs to gradually decline based on the current forward gas prices.