Auditor Report on the Southeast Energy Exchange Market

Presented to:

2024 Annual SEEM Board Meeting

By Potomac Economics
Independent Market Auditor

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2024 Board Report

- Potomac Economics serves as the independent Market Auditor for the SEEM.

- This presentation provides a Board summary for recent activity including

  - ✓ Auditing SEEM system performance

  - ✓ Trading and Liquidity;

  - ✓ Market Concentration

  - ✓ Prices, and

  - ✓ Network Usage and Constraints

  - ✓ Conclusions and Recommendations

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Market Auditing Function

- SEEM is audited by calculating screens, metrics, and other analyses on a daily basis.

- Screens are based on specific requirements in Auditing Process in the SEEM Market Rules.

- In 2023, the screens verified that the market software and outcomes functioned as intended.

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Key Findings

- SEEM Trading volumes have increased since the project began in November 2020

  - ✓ Both March and August 2024 had over 100,000 MWh cleared.

  - ✓ The twelve-month average as of Oct 20202 is over 80,000 MWh

- The charts on slides 5 and 6 show the time trend in trading growth

  - ✓ Over the entire history of SEEM, the trend is steeper due to new members joining in July 2023.

  - ✓ Since July 2023, the trend is positive, but slower.

- We observed over time that in periods of unusual demand (e.g., winter storms), trading would decline.

  - ✓ The Table on slide 7 shows an evaluation of trading activity and underlying electricity demand (measure using degree days).
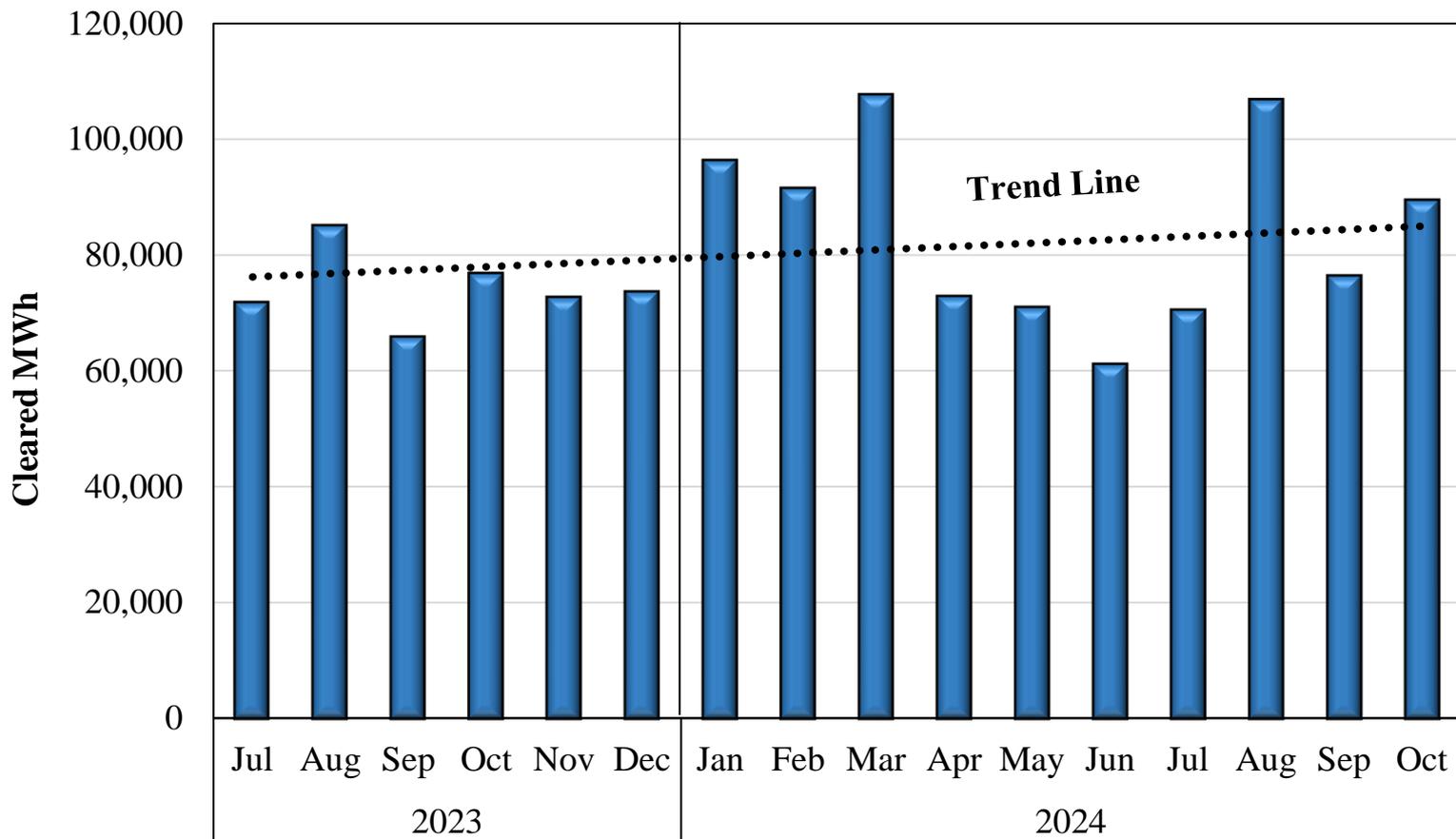
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Trend in Cleared Trades Since Inception
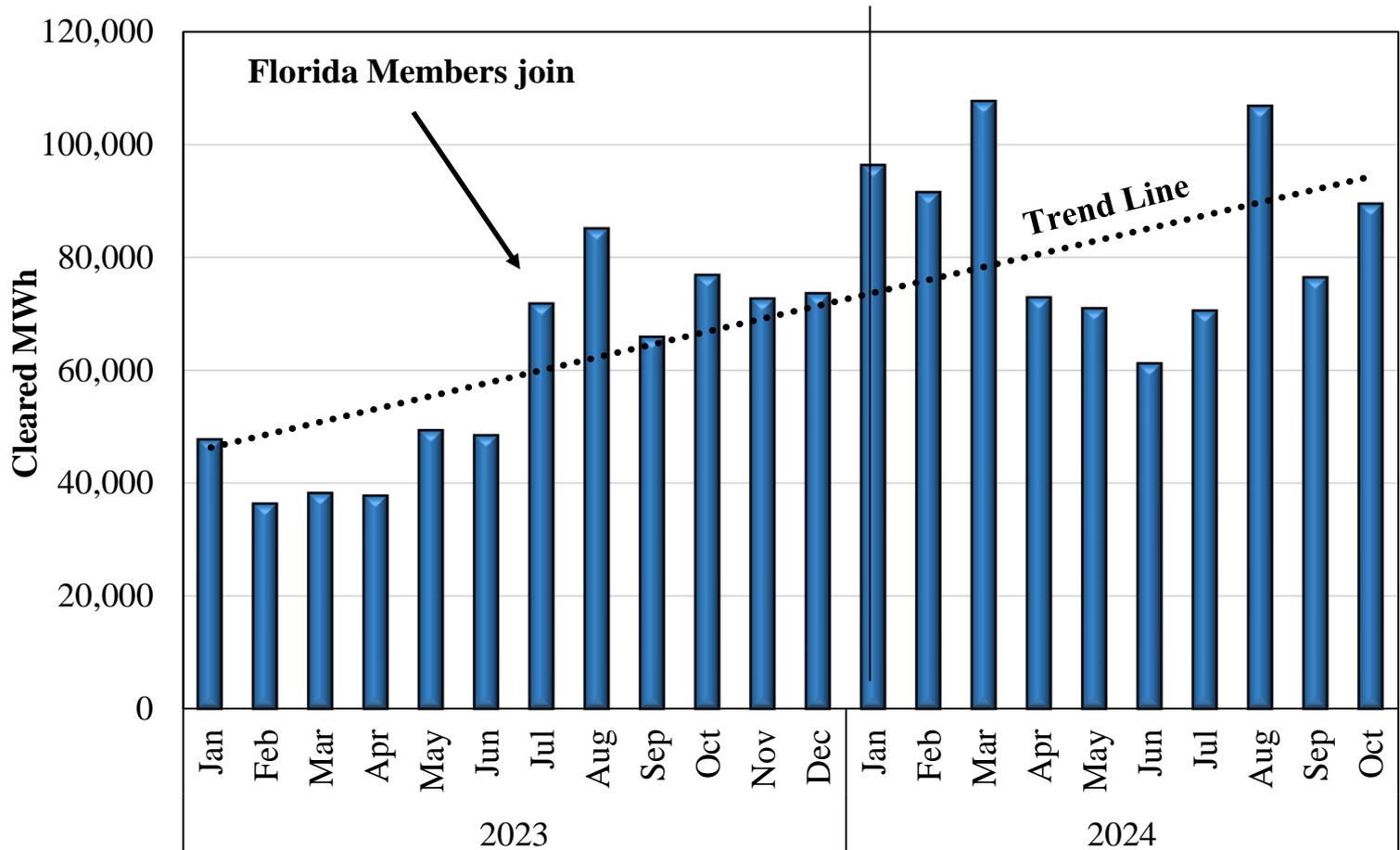
Trend in Cleared Trades Since July 2023

Trading Activity

- We measured the statistical correlation among various market indicators and over different time periods.

  - ✓ We found positive statistical correlation between prices and bids – more demand, higher prices, Consistent with economic theory

  - ✓ We found negative statistical correlation between prices and offers – more supply, lower prices; Also consistent with economic theory

  - ✓ Degree Days (DD) are used as a proxy for demand. DD are essentially the temperature departure from 65 degrees.

  - ✓ However, we found no statistical correlation between trade volume and DD;

    - – We found a strong and **negative** between correlation supply offers;

    - – We found a strong and positive correlation bids DD;

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Market Concentration

- Next slide shows seller market shares and concentration
- Market shares are measured to view competitiveness
  - ✓ Not determinative of market power
- Top seller share declined with Florida participants
  - ✓ Favorable decrease in top market shares
- HHI measures market concentration
  - ✓ Used to determine market competitiveness
  - ✓ Calculated by squaring market share of each firm
  - ✓ Lower values indicate less concentrated market
- HHI in SEEM market highly concentrated
  - ✓ Significant decrease over time is favorable to market effectiveness
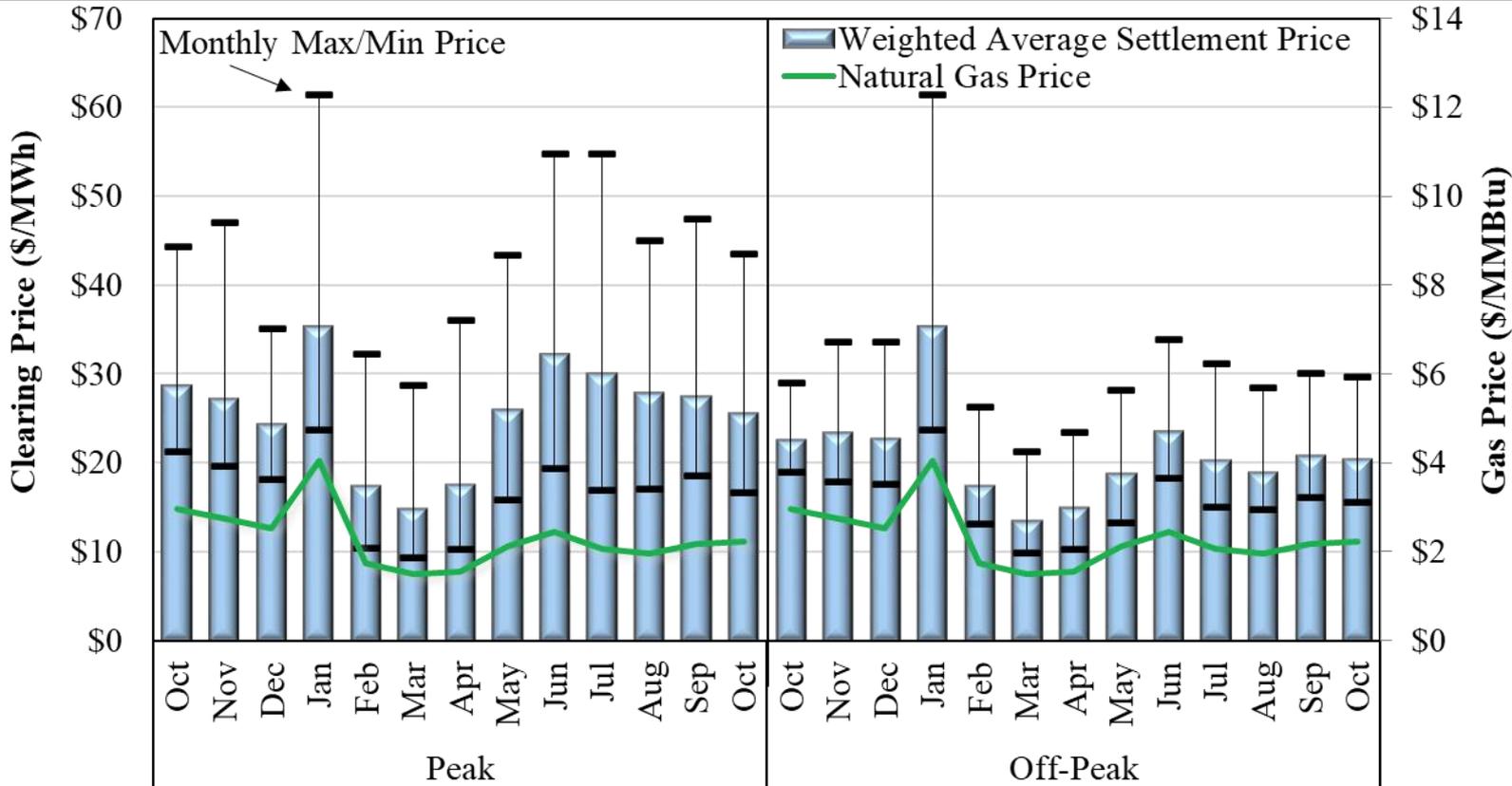- Buyer market share shows similar trend to seller market share

Seller Market Concentration
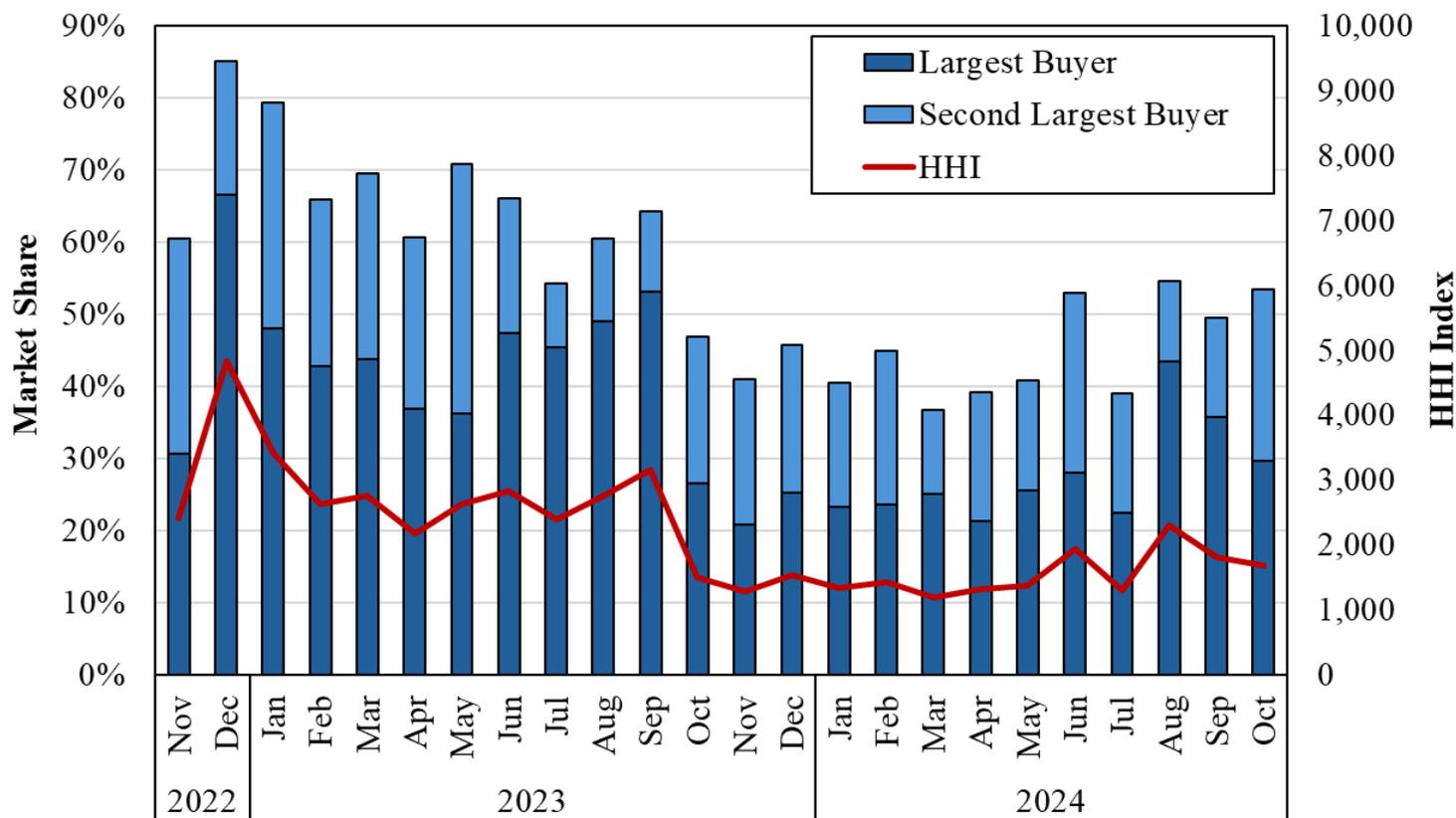
- The market has become less concentrated as new participants joined in July and as liquidity has increased

Summary of Market Pricing in 2023

- Prices have been correlated with fuel prices as expected in a competitive market.
- Locational differences caused by network constraints explain much of the range in prices – average price by segment ranged from $10 to $60/MWh.

Evaluation of Network Usage

- We evaluation the SEEM transactions by path - segments
  - ✓ 309 unique segments with ATC values, 51 without ATC (unlimited)
  - ✓ Evaluated all segments and all intervals
- This evaluation shows that segments generally remained available for SEEM trades
  - ✓ Many top paths have over 90% of their intervals uncleared
  - ✓ Less than 7 percent of the segments were constrained;

Cases	Intervals	%
Partially Used	208,729	2.2%
Fully Used	7,405	0.1%
Unavailable	611,740	6.5%
Uncleared	8,634,008	91.3%

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Conclusions and Recommendations

- SEEM platform implementation and operation has been successful
  - ✓ Florida participants integrated in 2023
  - ✓ Liquidity and competitiveness increased over the year
  - ✓ Traders have provided positive feedback on SEEM
- Recommendation to Improve Current Market
  - ✓ SEEM publishes the daily average price for transactions after the day
  - ✓ *We recommend SEEM publish hourly average prices in real time to improve the price discovery for participants*
- Benefits of improved price discovery
  - ✓ Would help inform more competitive and efficient bids and offers
  - ✓ Could inform other real-time decisions by participants (e.g., starting a fast start unit)

Long-Term Potential Improvements

- SEEM's current market has performed well under its limited scope
  - ✓ It facilitates very short, near-term exchanges of economic energy
- Additional benefits and efficiency could be achieved by transacting further ahead and for longer periods.
- If there is interest, SEEM could consider implementing additional transaction timeframes within the operating day or day-ahead.
- Such an expansion would require:
  - ✓ Bids by buyers and offers by sellers that are comparable to the current market; *and*
  - ✓ Offers by the holders of transmission reservations to make them available at a submitted cost (does not exist in the current market).
- For example, an hourly day-ahead market could facilitate fuller utilization of transmission that would improve resource commitments.

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Thank You