Quarterly Report for Q3 2022: Selected findings

November 15, 2022

MARKET SURVEILLANCE ADMINISTRATOR

Presentation outline

- Scope of this presentation
- Energy market
  - Market power
  - Offer behaviour
  - Carbon emission intensity
- Operating reserves
- Forward market
- Retail market

Scope of this presentation

- This presentation provides a selection of findings contained in the MSA's Quarterly Report for Q3 2022
  - Only selected figures are included here
  - Readers are referred to the Quarterly Report itself for discussion of the figures
- All content in this presentation was copied directly from the Quarterly Report and no additional information, including by exclusion of any material, is provided here.

Energy market

Figure 1: Quarterly average pool price and natural gas price (Q1 2001 to Q3 2022, inflation adjusted)

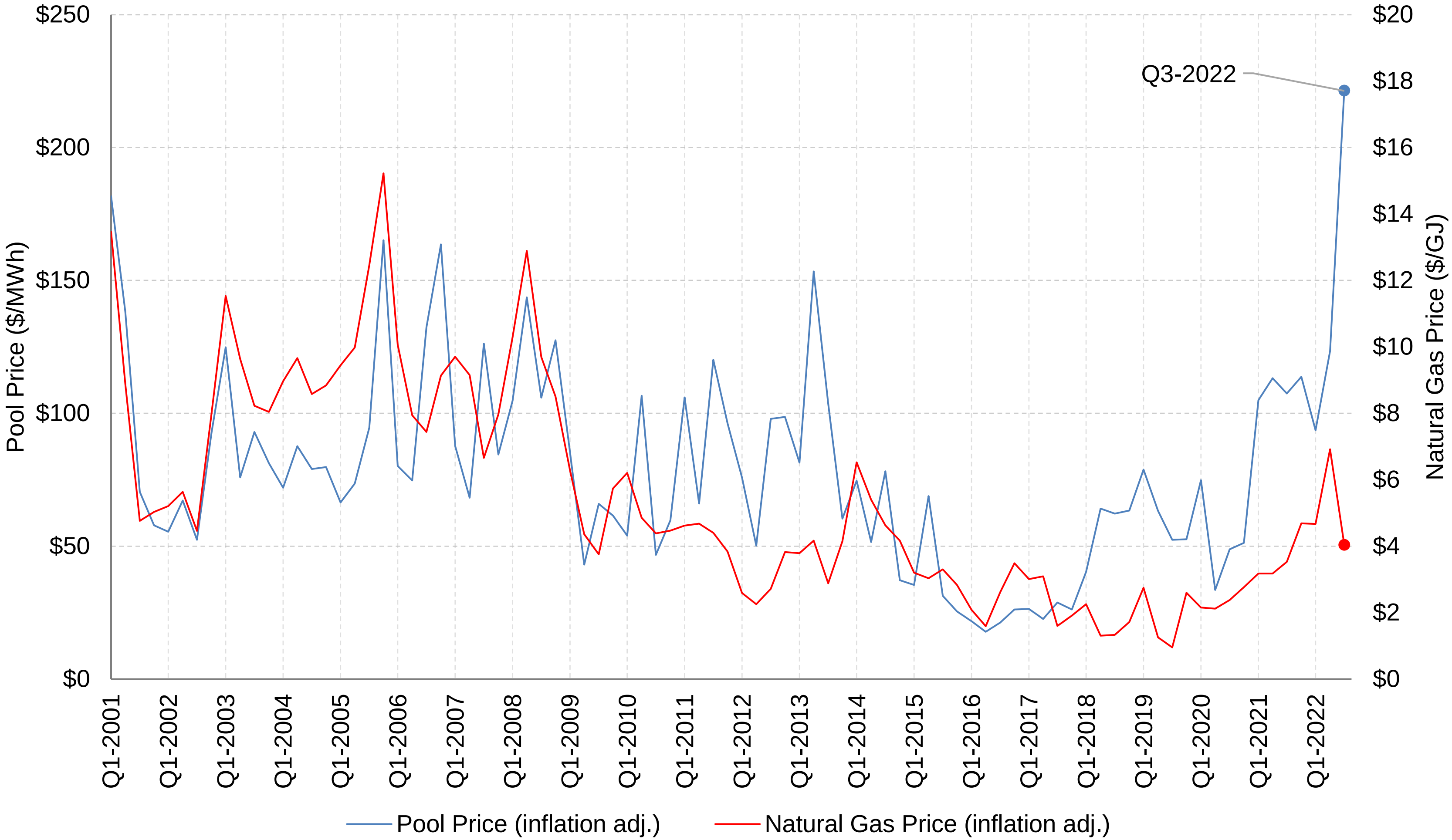

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Figure 2: Daily average pool price (Q3 2022, 2021, and 2020)

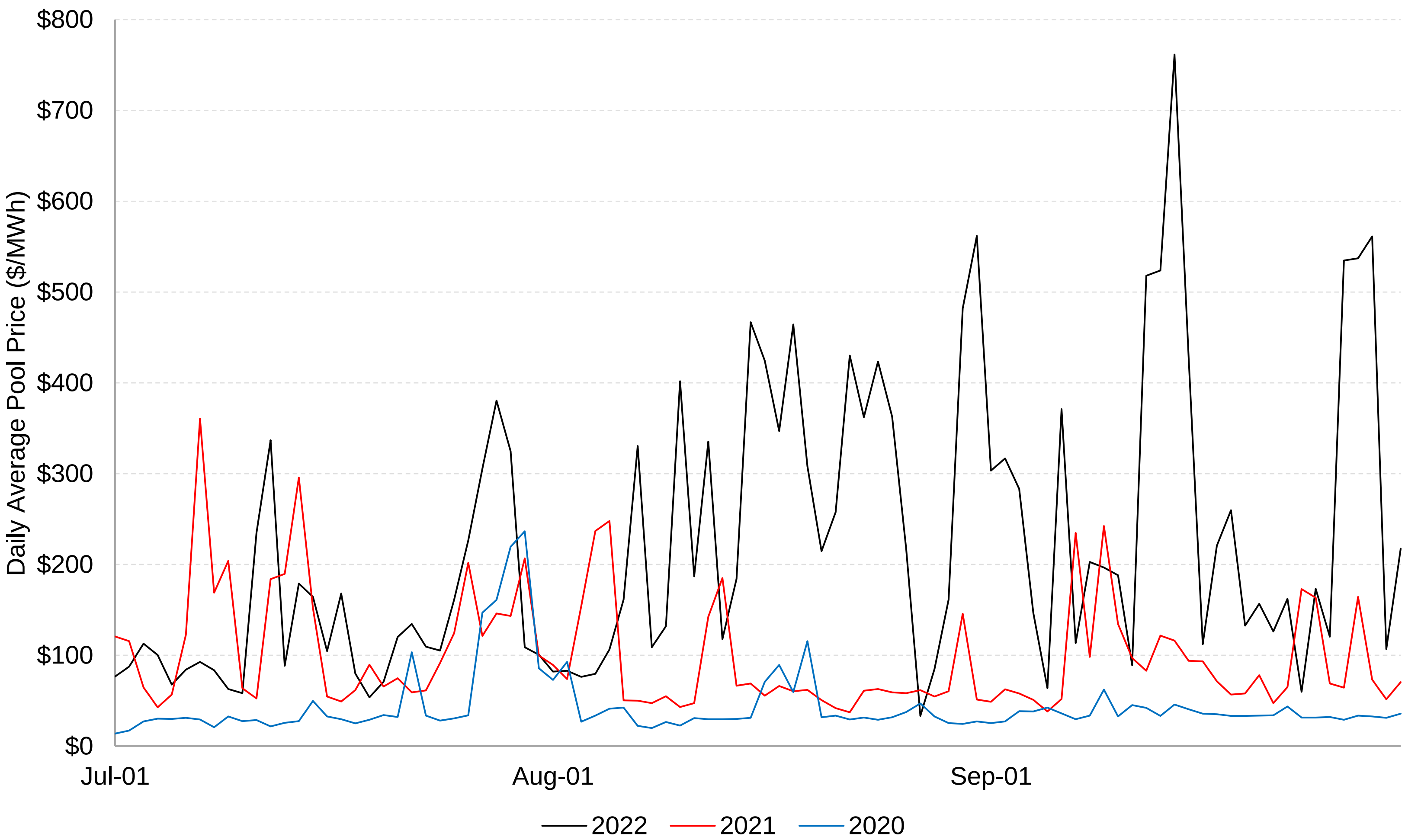


Figure 3: Distribution of offer prices on coal and converted coal capacity (Q3 2022, Q2 2022, and Q3 2021)

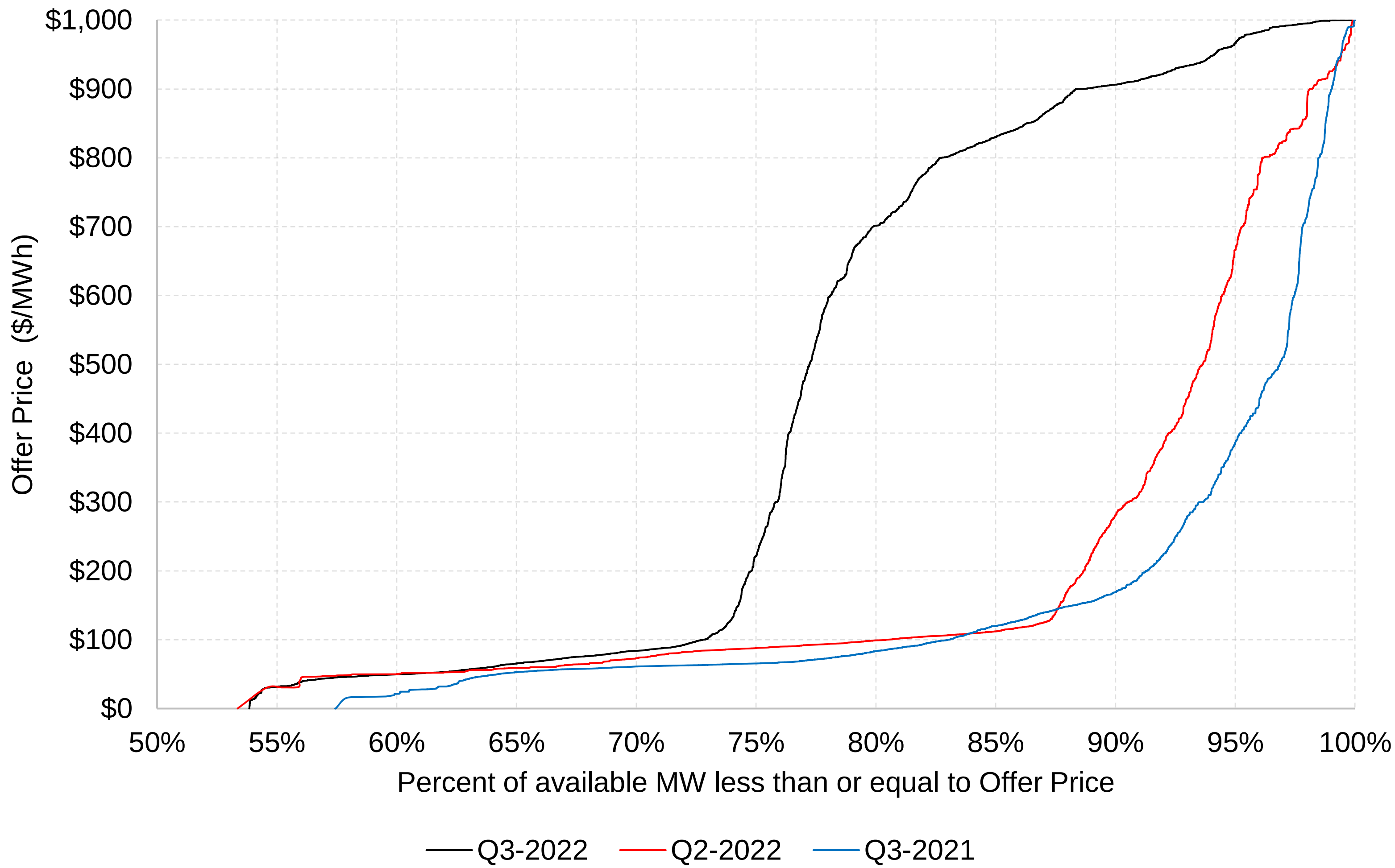


Table 4: Comparison of relevant market metrics during certain hours of recent EEA events

	Dec 27, 2021 (EEA2 event)	Sep 27, 2022 (EEA3 event)	Sep 28, 2022 (EEA3 event)
Hour ending	21	19	17
Pool price ($/MWh)	$999.99	$999.99	$999.99
Demand (AIL) (MW)	11,137	9,978	10,305
Calgary Temperature (°C)	-30	26	28
Wind generation (MW)	217	145	111
Solar generation (MW)	0	93	569
Thermal outages[10] (MW)	2,875	2,982	2,911
Net Imports (MW)	511	60	0

Market power

Figure 15: 1- and 2-firm adjusted PSI, January to September 2022 (30-day rolling average)

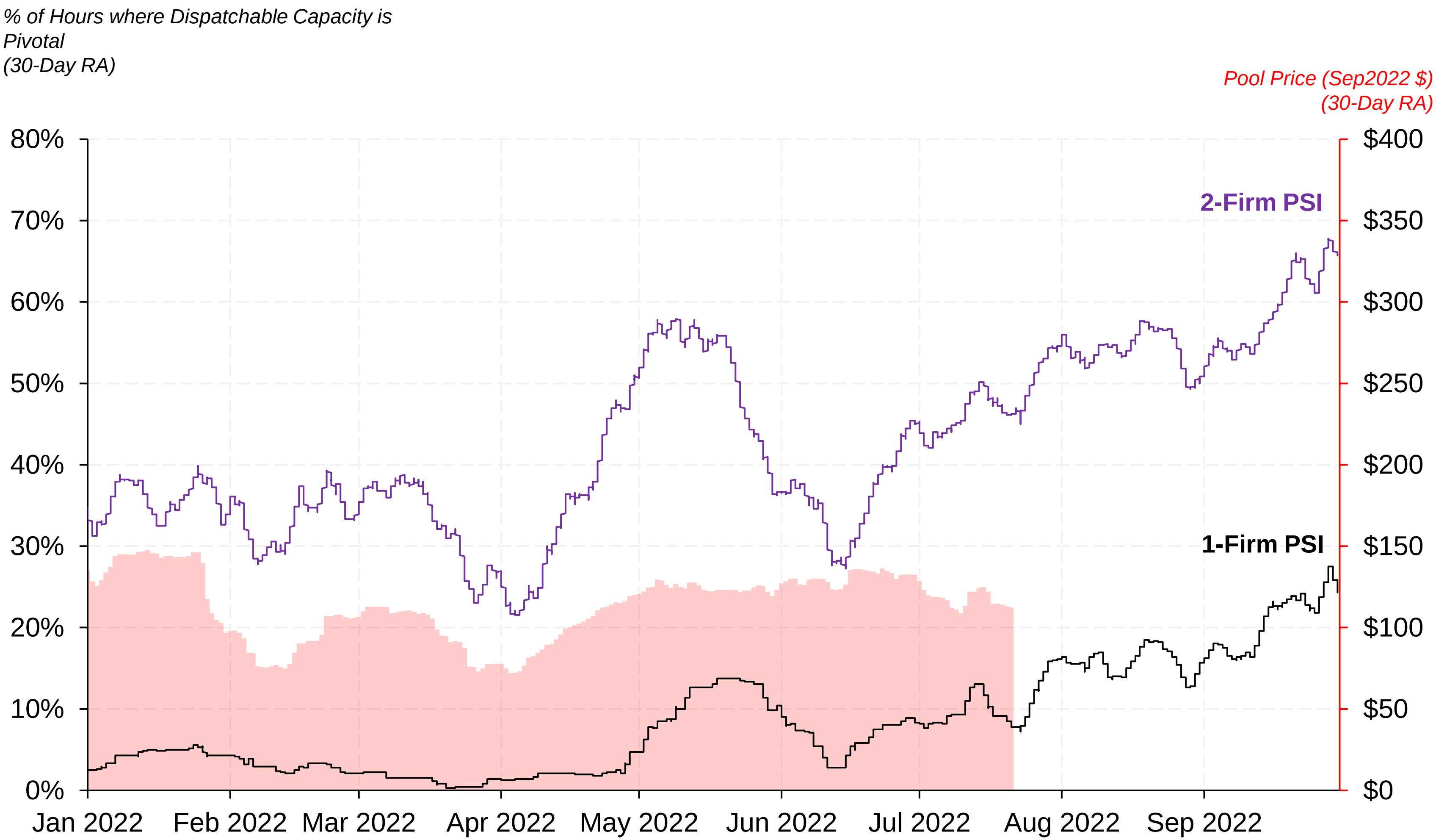


Figure 10: Monthly market markups, January to September 2022

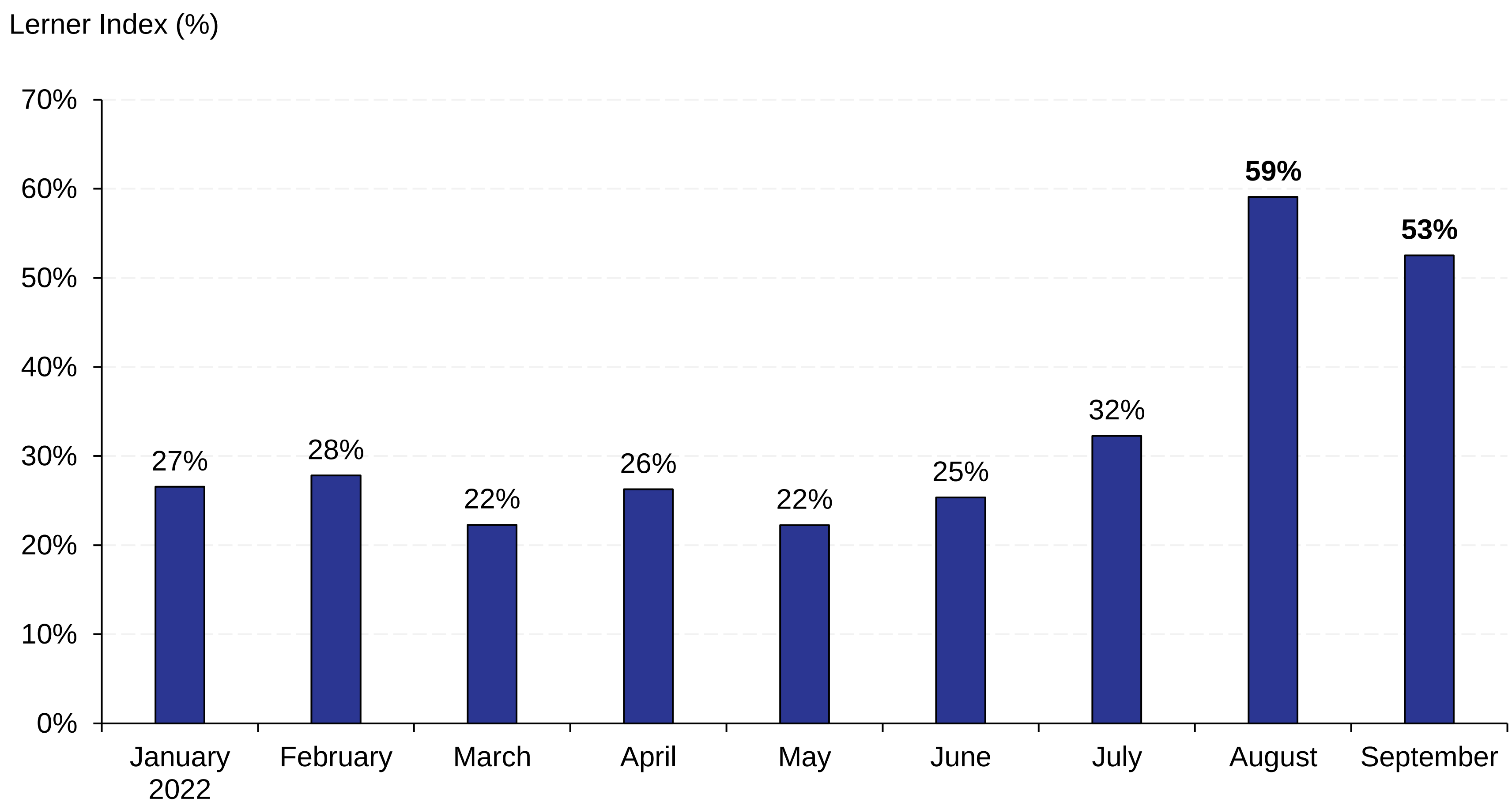


Figure 17: 1- and 2-firm adjusted PSI, 2013 to September 2022 (30-day rolling average)

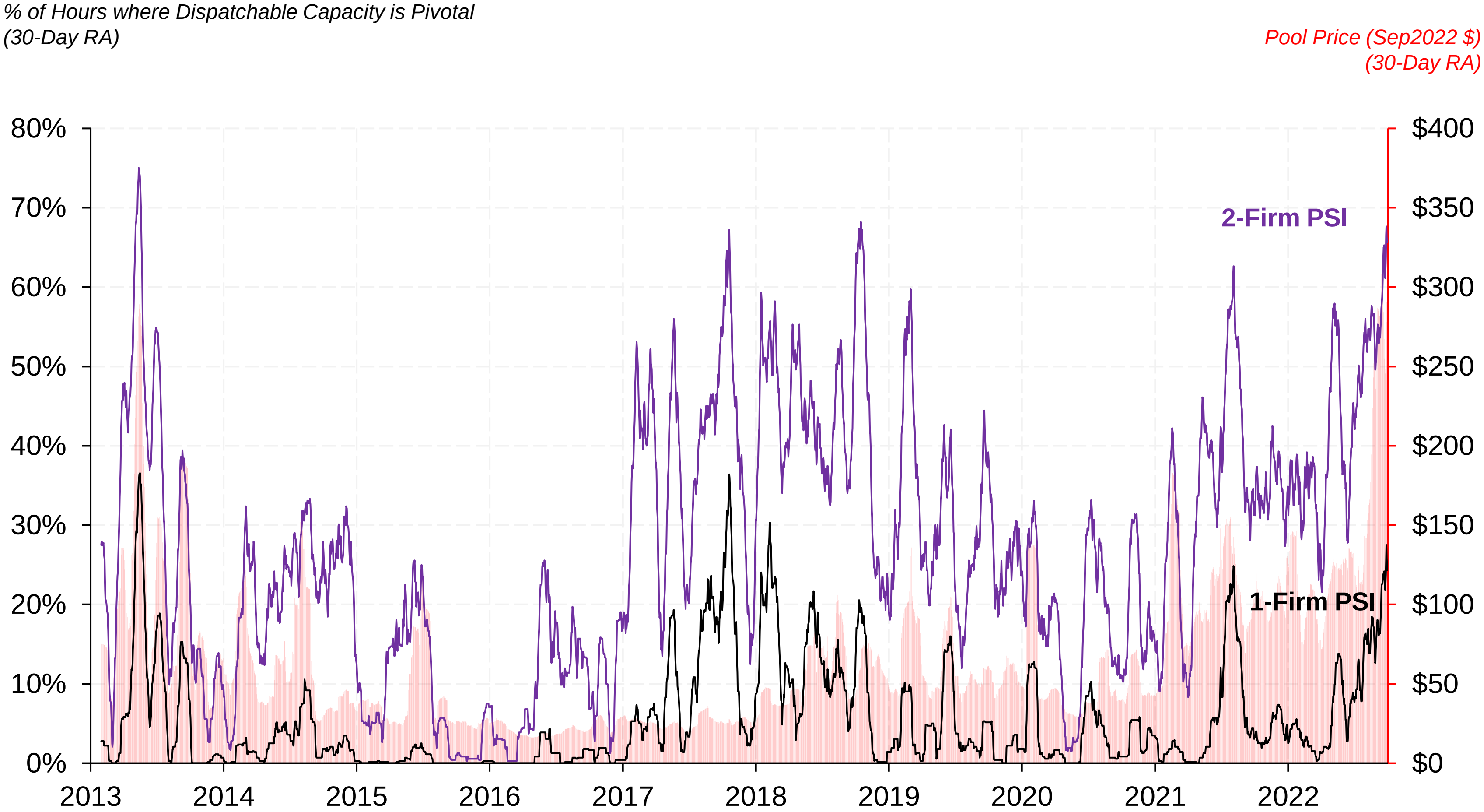
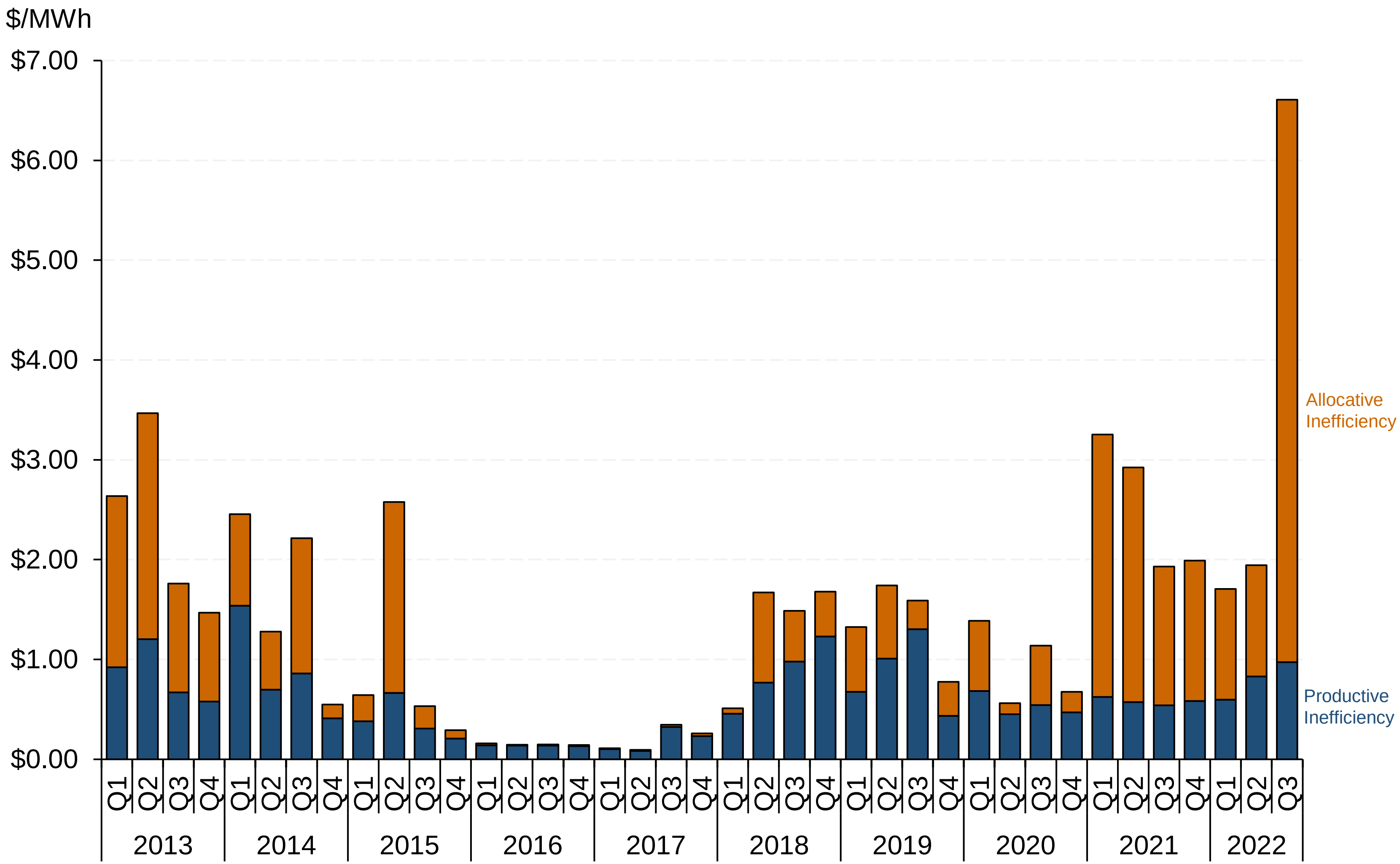


Figure 13: Average static inefficiency by quarter, Q1 2013 to Q3 2022 (2022$)



Offer behaviour

Figure 23: Available MW offered above $250
(30-day rolling average, January 1, 2018 to September 30, 2022)

Figure 24: Illustrative Q3 2022 supply curve (August 10, 2022, HE15)

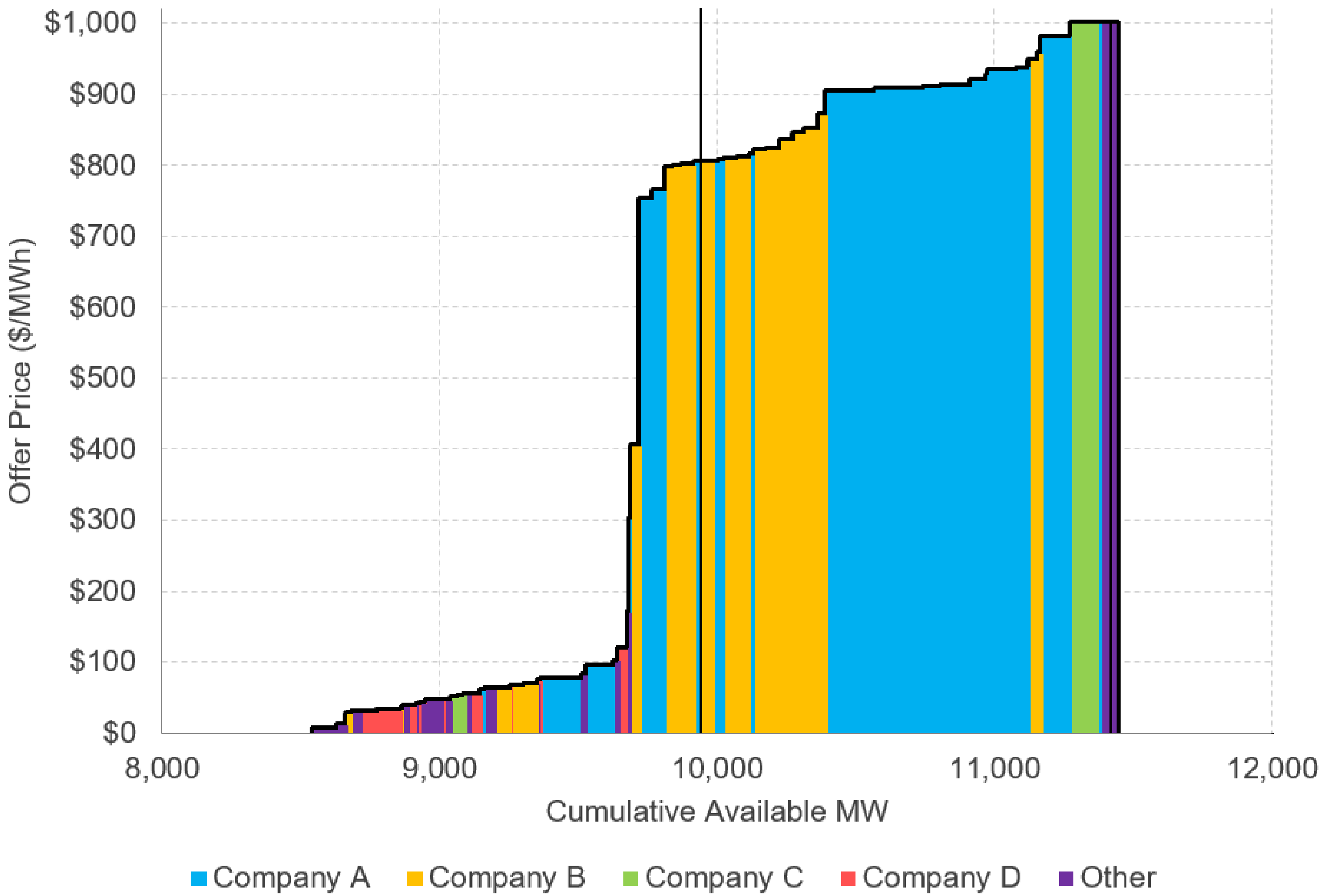
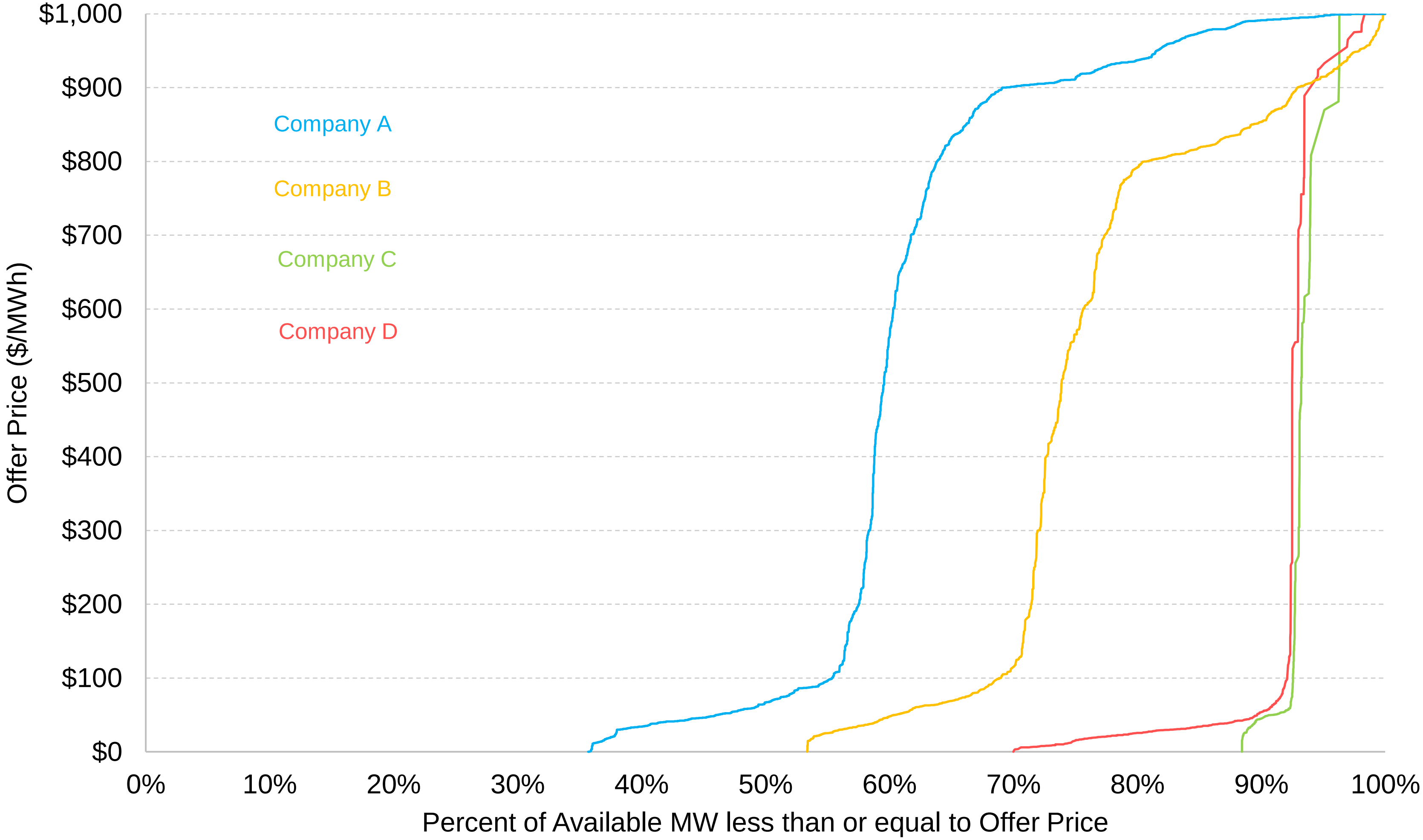


Figure 26: Offer price duration curves, August 2022



Carbon emission intensity (CEI)

Figure 36: The distribution of average carbon emission intensities in Q3 (2019 to 2022)

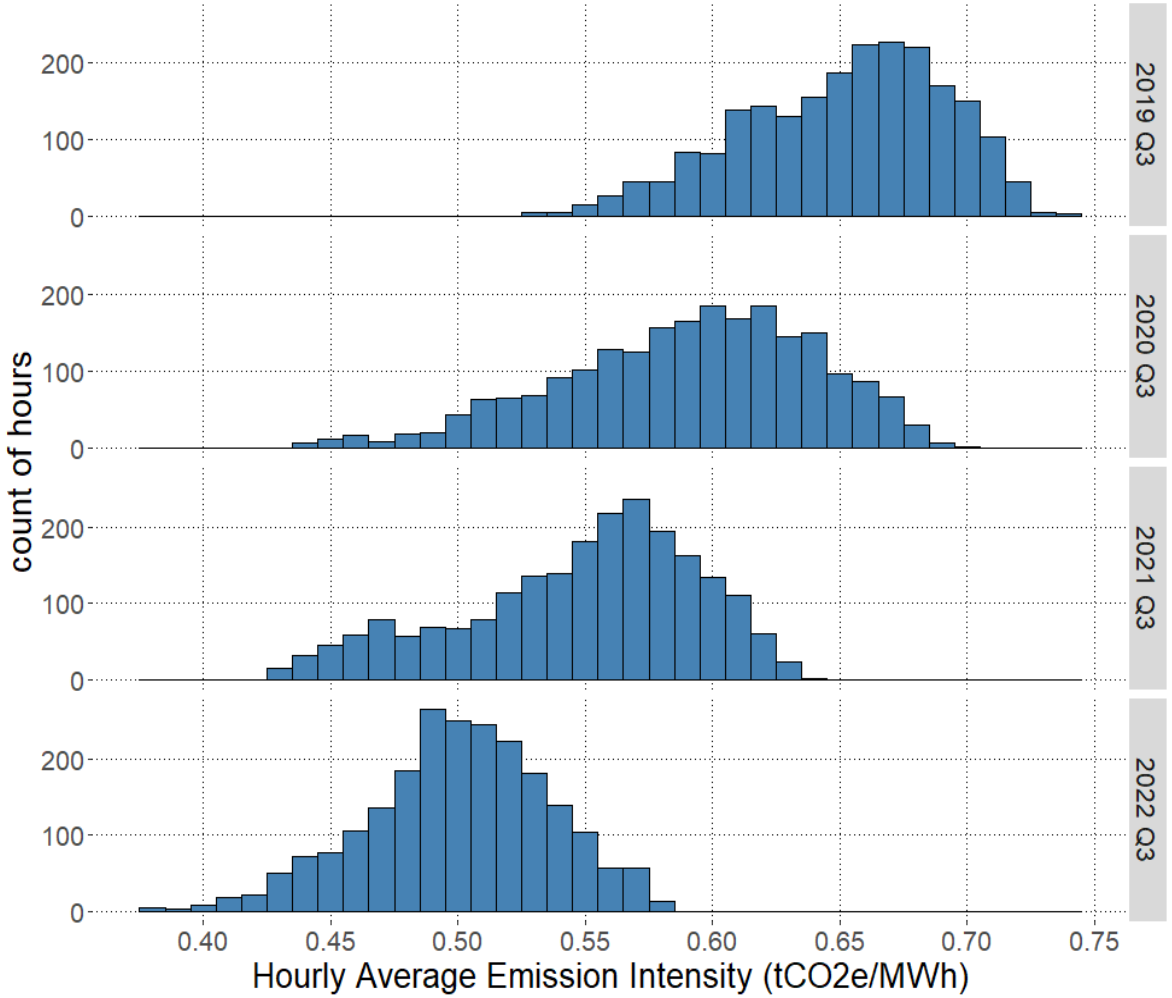


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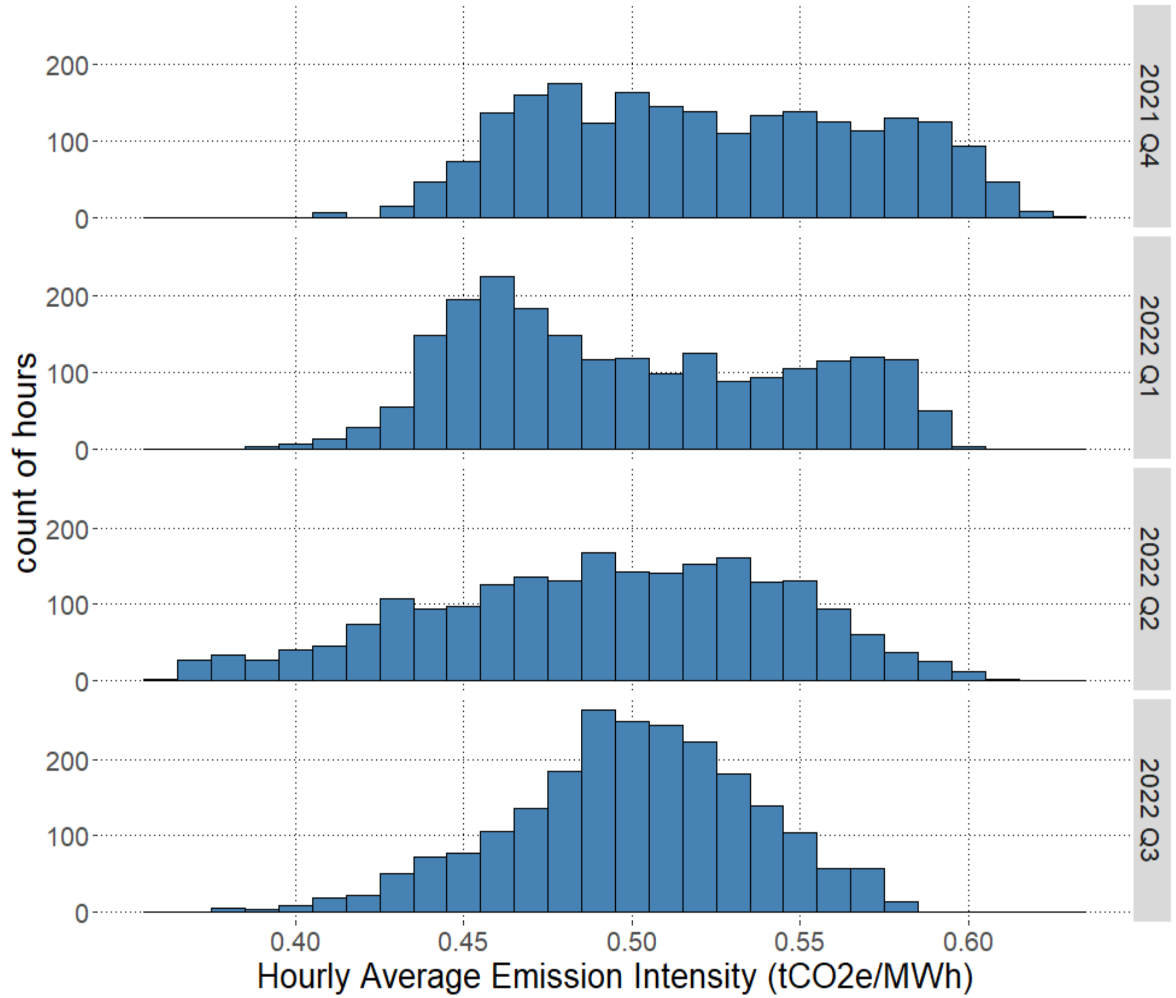
Figure 37: The distribution of average carbon emission intensities in the past four quarters (Q4 2021 to Q3 2022)



Operating reserves

Figure 53: Total cost of active and standby reserves and average pool price by month

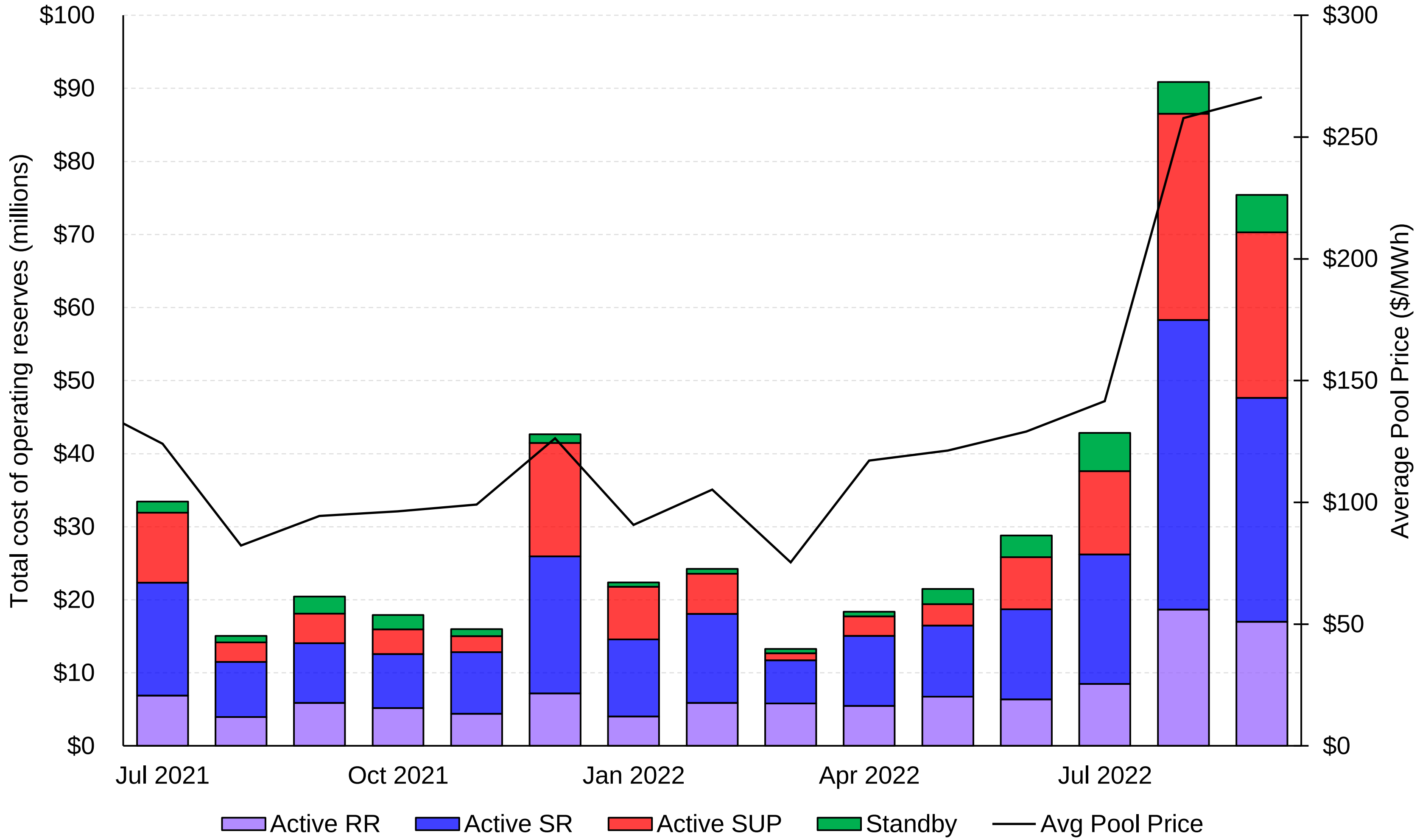


Figure 56: Daily active on-peak spinning equilibrium price and received price

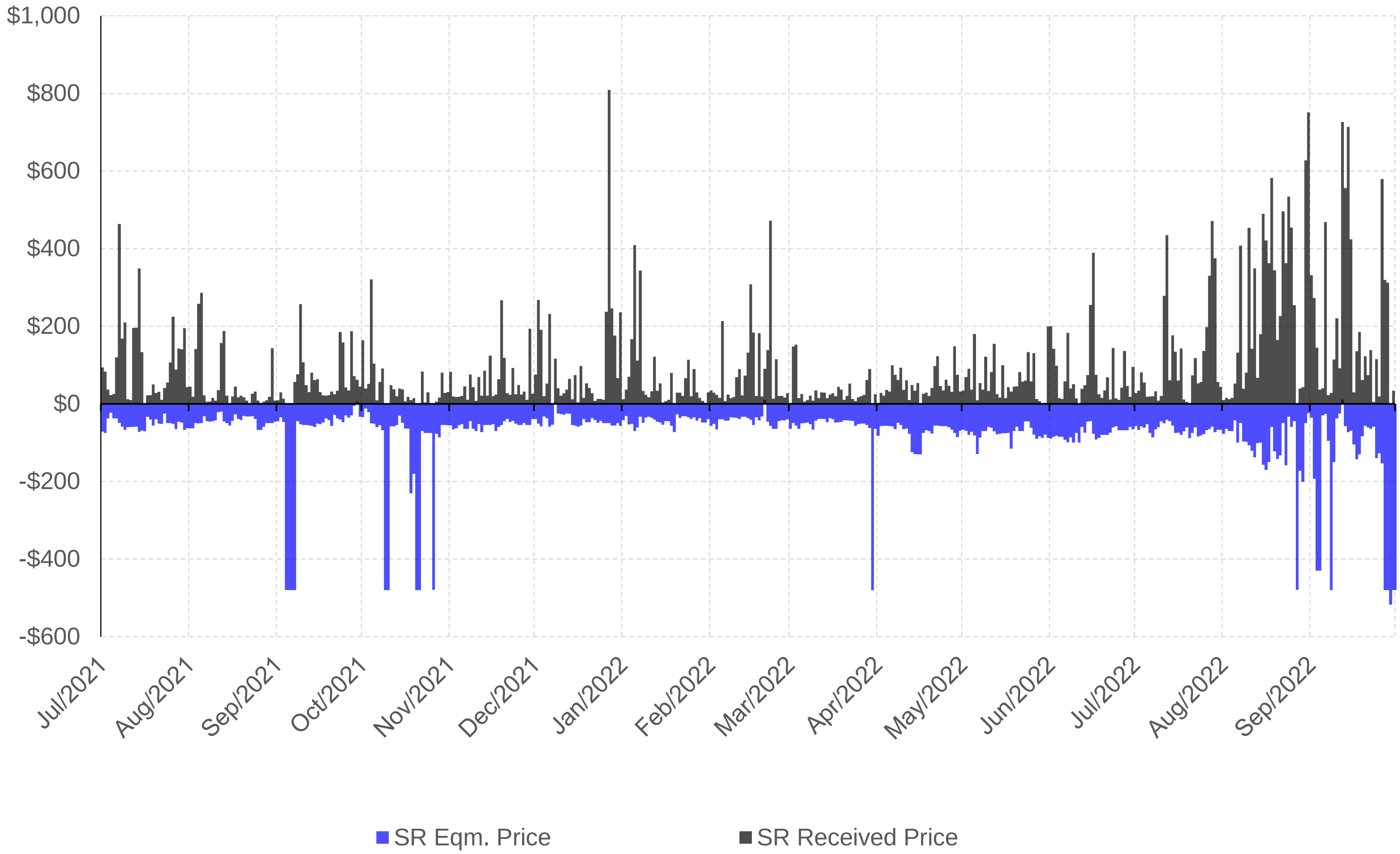


Table 11: Quarterly standby activations (MWh)

Quarter	SR	SUP	RR
Q3 2021	12,826	5,168	2,395
Q4 2021	14,972	6,984	10,875
Q1 2022	15,522	6,281	2,004
Q2 2022	14,939	5,098	14,518
Q3 2022	11,522	3,435	49,151

Forward market

Figure 64: Forward prices and realized pool prices for monthly flat contracts (January to September 2022)

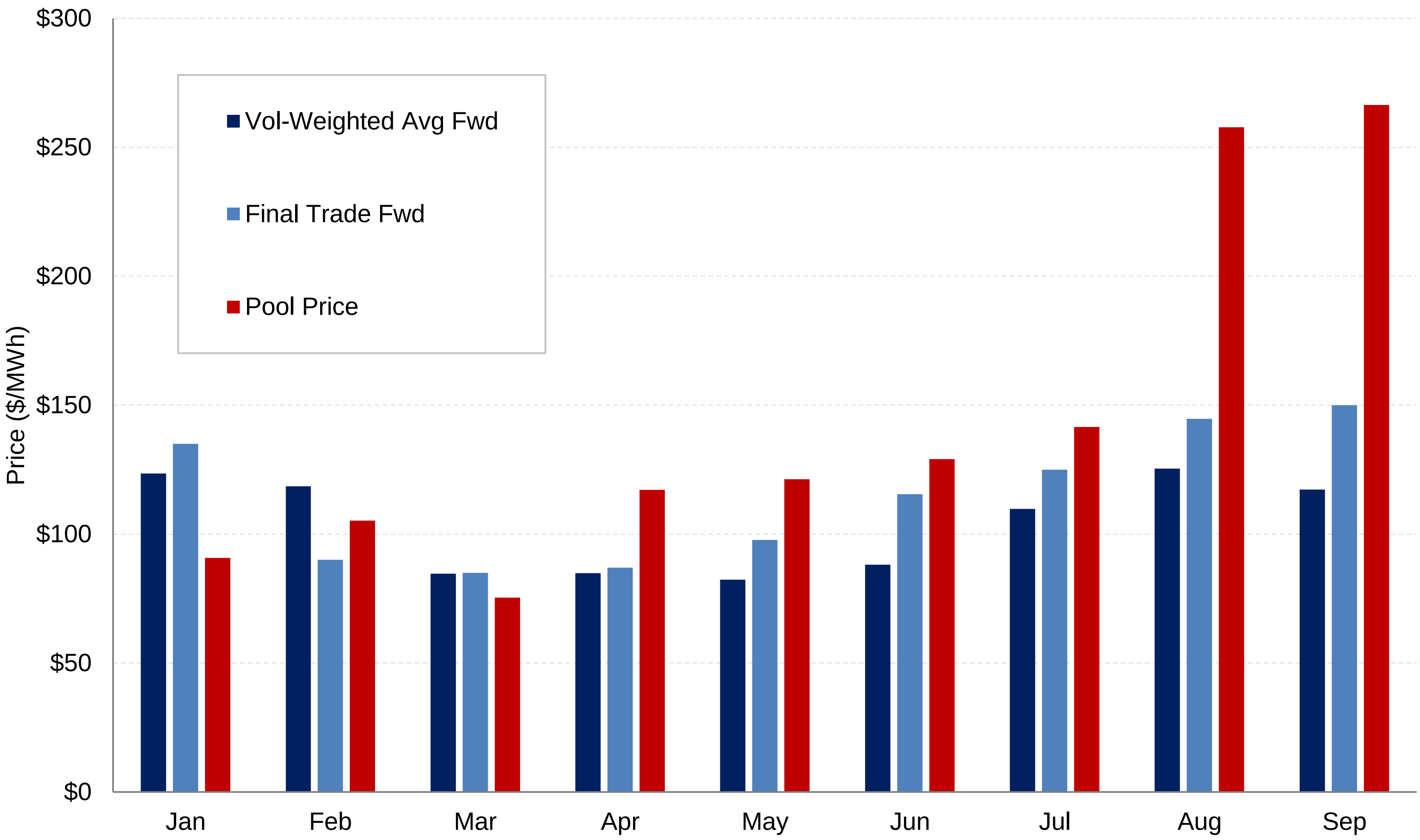


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Figure 65: Forward power prices for flat monthly contracts

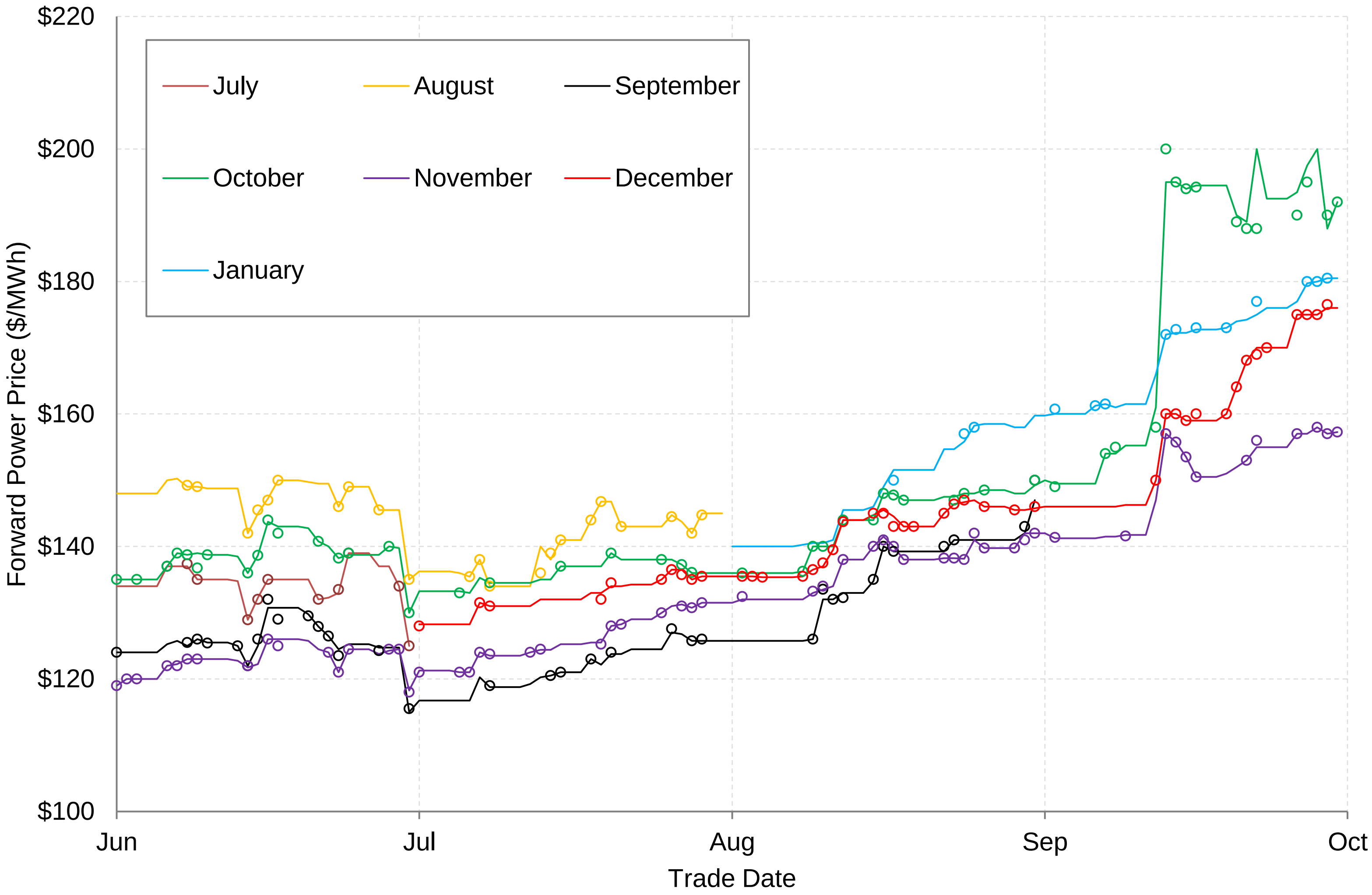
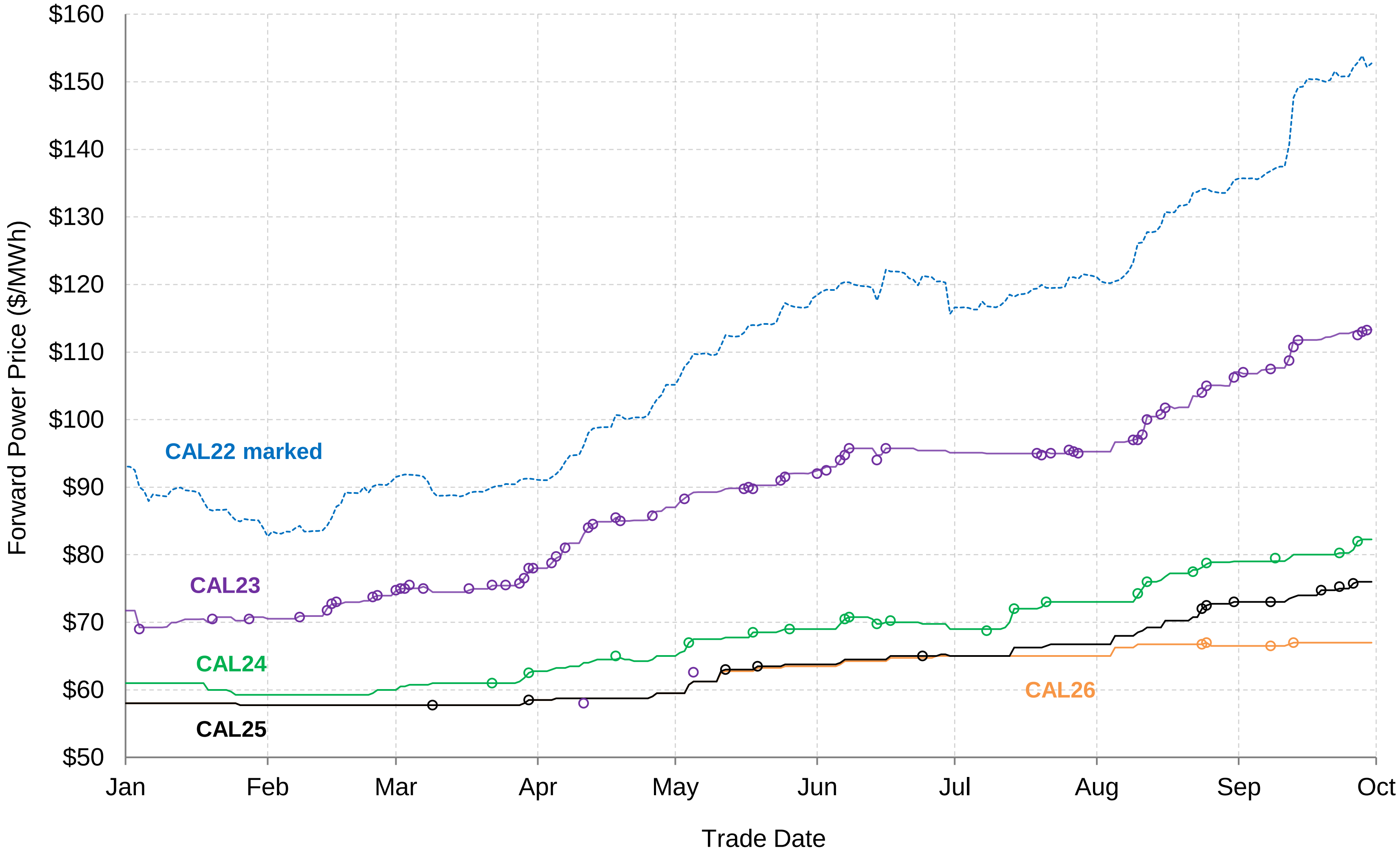


Figure 67: Annual forward prices for CAL22 to CAL26 (January 1 to September 30, 2022)



Retail market

Figure 69: RRO customer losses & gains, Q1 2020 to Q2 2022 (residential customers)

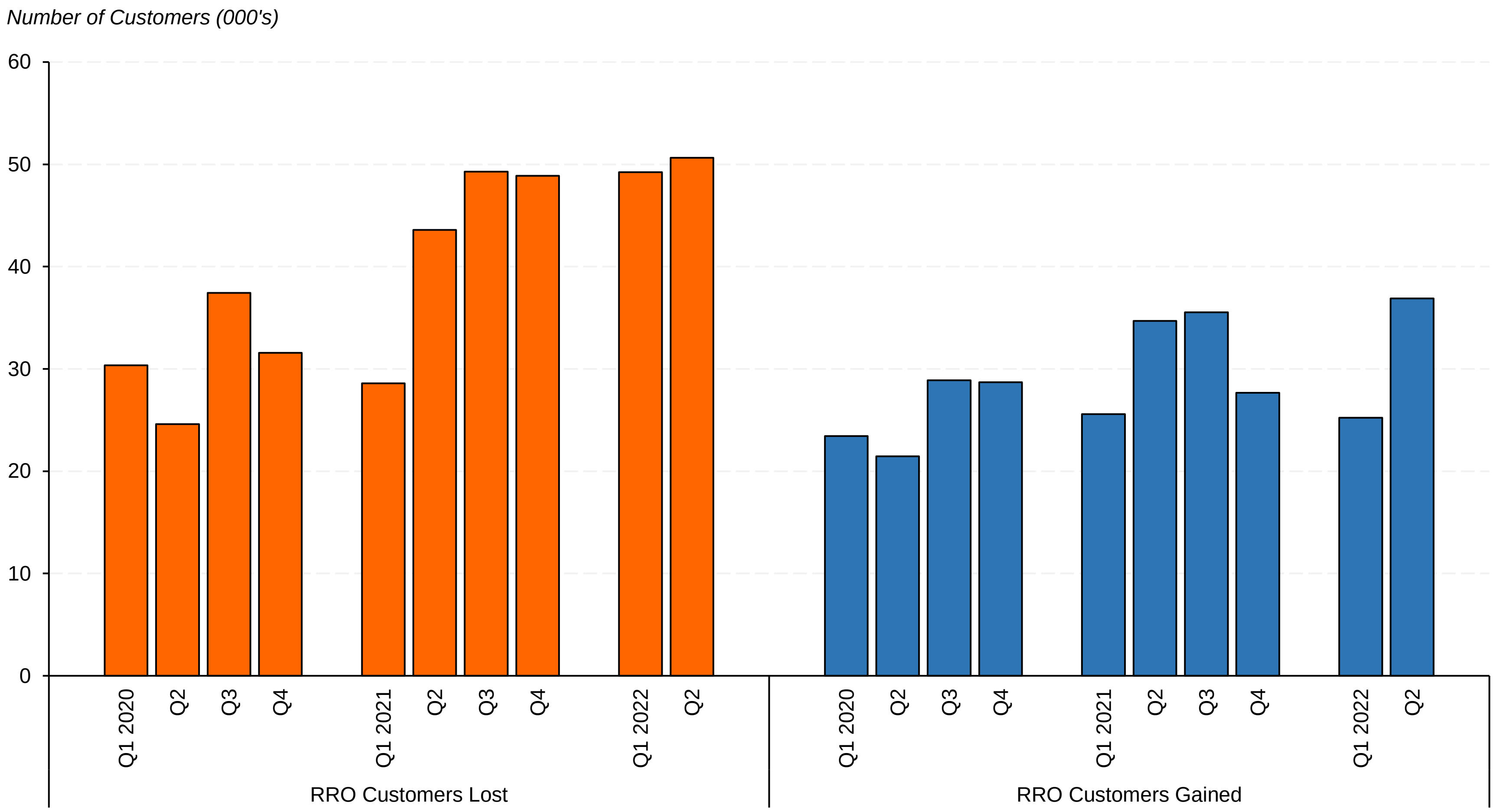


Figure 87: Estimated competitive variable electricity rates vs. RRO, residential customers, ENMAX service area (Q1 2021 to Q3 2022)

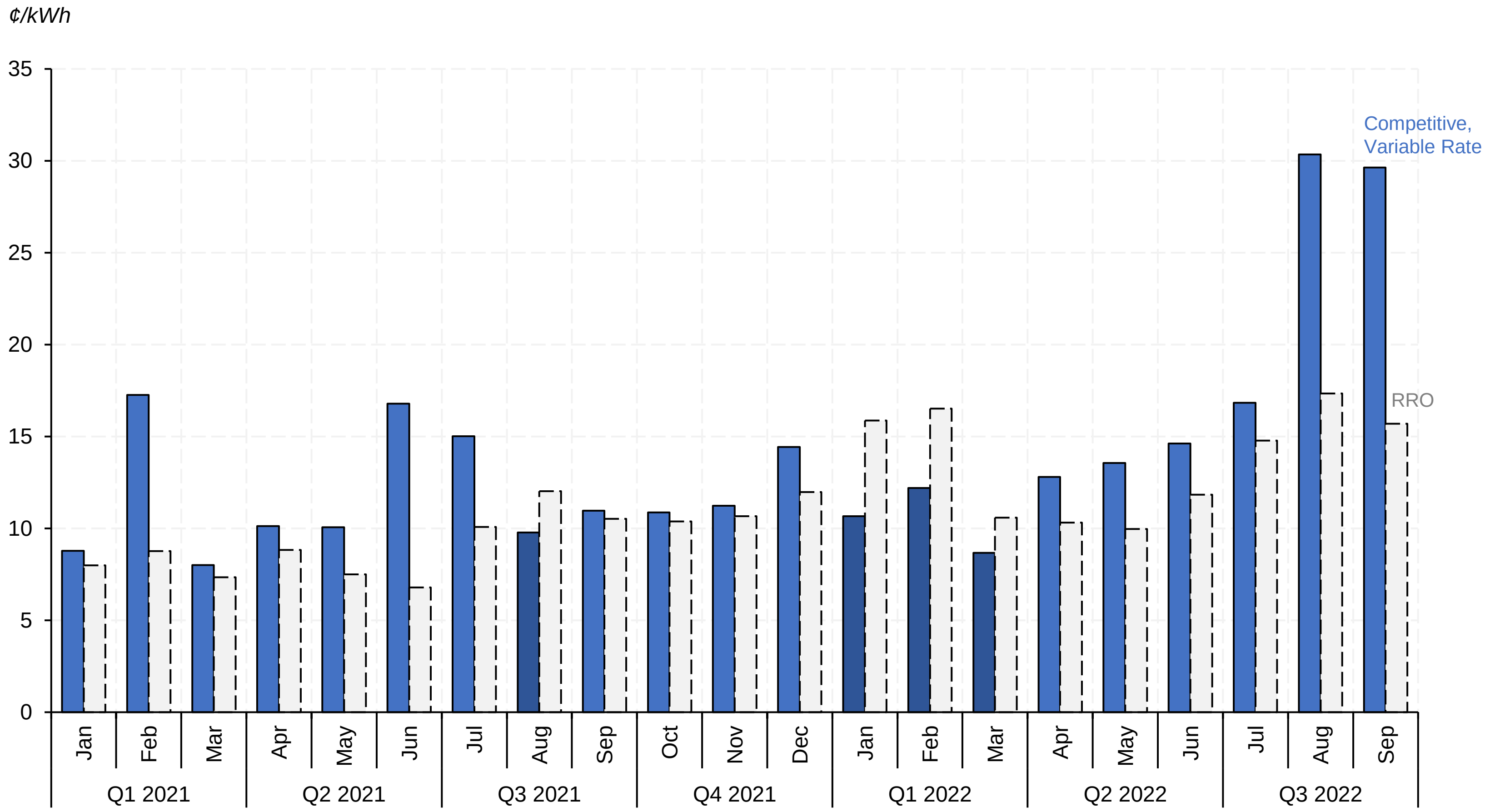


Figure 89: November 2022 to October 2023 residential RRO estimates (EPCOR service area), estimates as of July 6 vs. October 2, 2022