



Item 4.1: ERCOT Staff Recommendation to Committee

Kenan Ögelman

Vice President, Commercial Operations

Reliability and Markets Committee Meeting

ERCOT Public

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Purpose of the Recommendation

- On January 19, 2023 the Public Utility Commission of Texas (PUCT) instructed ERCOT to “evaluate bridging options to retain existing assets and build new dispatchable generation until the PCM* can be fully implemented” (*Memorandum attached to Order, Project 53298*)
- Additionally, interest expressed at both the PUCT and the February 2023 Reliability and Markets Committee for mechanisms that could help reduce the frequency of Reliability Unit Commitments (RUCs) for system capacity

*PCM – “[T]he Performance Credit Mechanism (PCM) concept” (*Memorandum attached to Order, PUCT Project 53298*)

ERCOT Staff Recommendation

Key Takeaways

- ERCOT Staff recommends:
 - ORDC changes for online resources in targeted operating reserve ranges that are above emergency levels, while avoiding ORDC increases at times of substantial operating reserve surpluses. The proposed enhancement of price signals that would have positive effects on:
 - Retaining existing assets
 - Adding new dispatchable generation
 - Reducing the frequency of RUCs for system capacity
- Additionally, these ORDC bridging options would:
 - Have minimal system changes and be quickly implementable (estimated at approximately 4 months)
 - Fit within the existing market framework, from day-ahead through Settlement, including credit
 - Continue to be hedgable by market participants through energy positions

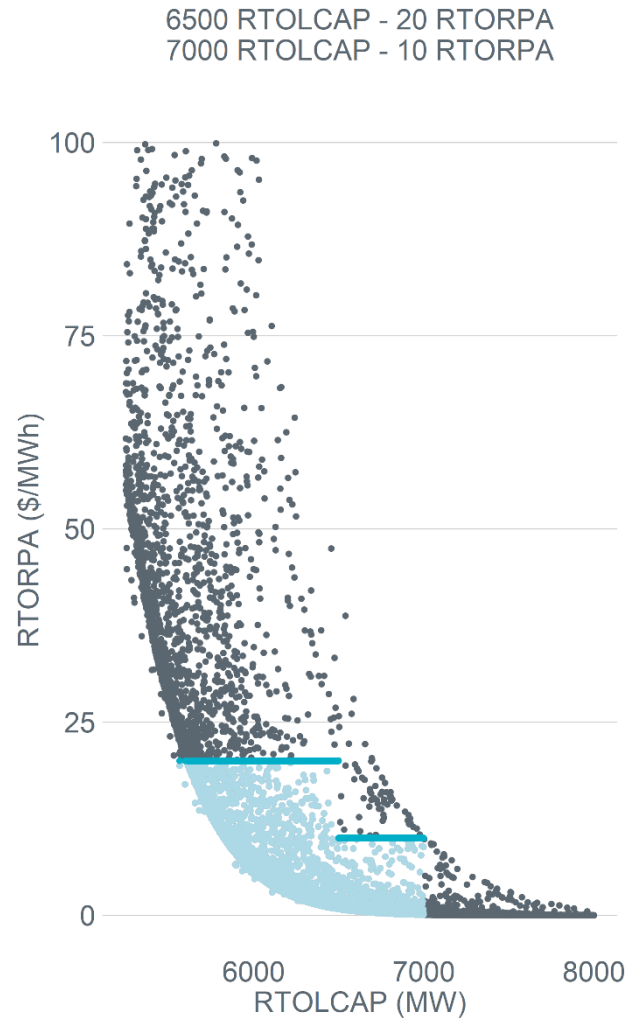
Analysis Summary

- Market wide energy revenue was calculated considering:
 - Generated energy multiplied by total price.
- The revenue for additional capacity that was not dispatched (Market wide headroom) was calculated considering:
 - Available capacity multiplied by the price for reserves
- Changes in revenue were then calculated by creating a floor at varying prices (5,10,15,20,25) when reserves fell below certain thresholds (6500,7000,7500).
- Additionally, we studied adding multi-step floors within the same range of operating reserves
- We executed this analysis for 2020 and 2022. The idea here was to compare a year with mild pricing to a year with higher pricing.

2020 Load Weighted Energy Price	2022 Load Weighted Energy Price
\$25.73/MWh	\$74.93/MWh

- For 2020 we applied the 2022 ORDC parameters for pricing (VOLL = 5000, X = 3000, 2022 seasonal mu & sigma). In order to make the comparisons equivalent.

A Visual Representation of the Recommended Floor in Practice (2020)



Revenue Summary 2020

2020 - baseline energy revenue = \$12.6B , baseline headroom revenue = \$.3B

Floor Level (Online Reserve_Price)	Energy Revenue Increase (\$M)	Headroom Revenue Increase (\$M)	Total Revenue Increase (\$M)
6500_15	186.0	24.2	210.2
6500_20	286.3	37.0	323.3
6500_25	395.7	50.7	446.4
6500_20, 7000_10	440.2	58.7	498.9*
6500_20, 7000_10, 7500_5	524.1	71.5	595.6
7000_15	422.9	57.6	480.5
7000_20	607	82.1	689.1
7000_25	800.6	107.6	908.2
7000_15, 7500_5	506.7	70.5	577.2

* 9% of 2020 intervals adjusted.
Preferred solution. See slide 9.

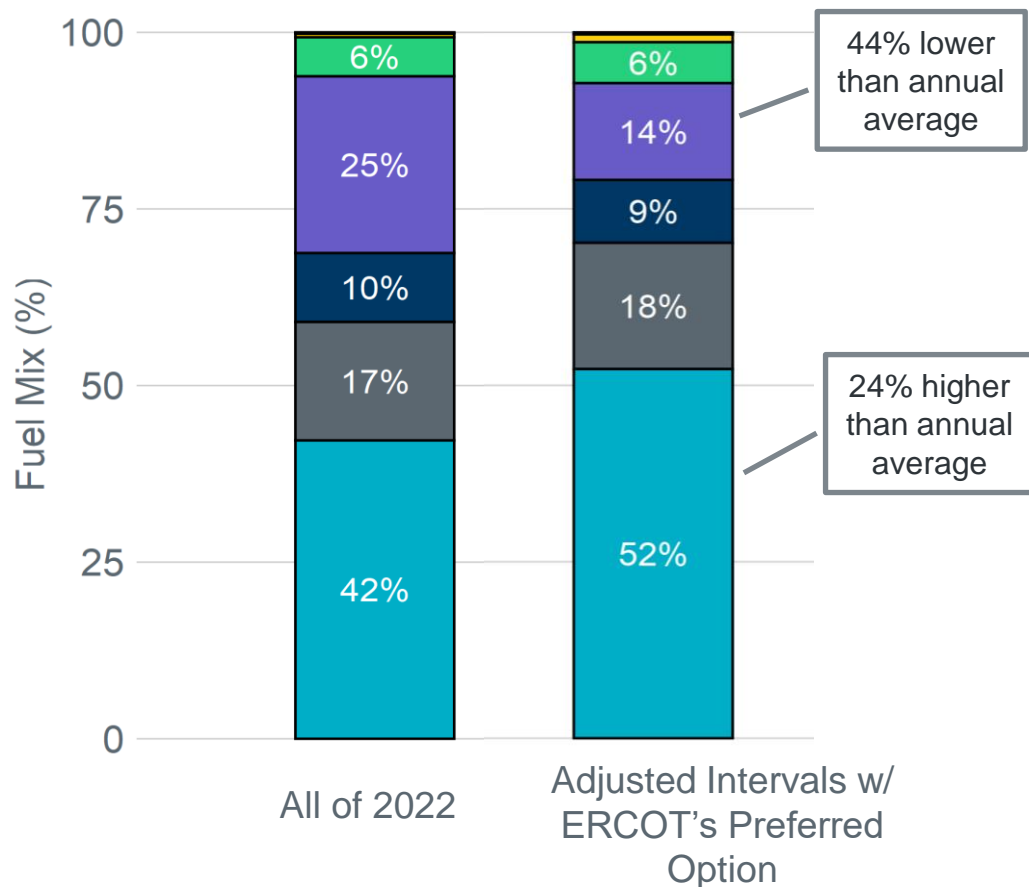
Revenue Summary 2022

2022 - baseline energy revenue = \$32.1B , baseline headroom revenue = \$.3B

Floor Level (Online Reserve_Price)	Energy Revenue Increase (\$M)	Headroom Revenue Increase (\$M)	Total Revenue Increase (\$M)
6500_15	182.1	21.3	203.4
6500_20	274.3	31.8	306.1
6500_25	373.1	42.9	416.0
6500_20, 7000_10	438.0	52.8	490.8*
6500_20, 7000_10, 7500_5	533.7	65.9	599.6
7000_15	433.6	53.5	487.1
7000_20	613.9	75.1	689.0
7000_25	800.9	97.4	898.3
7000_15, 7500_5	529.3	66.6	595.9

* 7.9% of 2022 intervals adjusted.
Preferred solution. See slide 9.

2022 Average Fuel Mix During Intervals Impacted by Studied and Proposed Price Floors



Estimated distribution of additional revenue for 2022 due to ORDC price adder floors

Resource Type	Revenue (\$M)
Natural Gas	261.6
Coal and Lignite	87.9
Nuclear	44.0
Energy Storage	1.0
Hydro	0.3
Wind	67.1
Solar	28.5
Other	0.5



Preferred Solution

Multi-step floor - 6500MW @ \$20/MWh & 7000MW @ \$10MWh

1. Aligns with PCM: The back-cast analysis for 2020 and 2022 indicates that by applying these floors the total revenue increase would be in the \$500M range. While we recognize the analysis does not account for behavioral changes, this level of increase aligns with the additional average revenue PCM would provide (as calculated by E3).
2. Targeted to the right resources at the right time: The back-cast analysis for 2022 confirms that when applying these floors the increase in revenue would be largely directed to dispatchable resources. In the preferred scenario 80% of the revenue increase would be directed to dispatchable resources. The floor prices are also having impact when ERCOT is seeing the greatest need for increased generator commitment.
3. Helps address RUC: Applying a floor that kicks in initially in the 6500-7000MW range provides a self-commitment incentive better aligned with conservative operations. Adding multiple steps to the floor incorporates feedback provided by market participants, provides for tiering in the strength of the self-commitment signal, and provides some mitigation of risk for generators that self-commit.