

**Item 4: Recommendation regarding  
ERCOT Board Approval of CPS  
Energy Braunig Units 1 and 2  
Reliability Must-Run (RMR)  
Agreement or Alternative Solution of  
Life Cycle Power Mobile Generation  
– REVISED\***



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**\*Slide 18 added 02/24/25**

# Recommendation regarding CPS Energy Braunig 1 & 2 RMRs and Alternative LCP Mobile Generation Solution

- **Purpose**

- To provide Board information about the anticipated costs, benefits, and risks of contracting for either: (1) Braunig Units 1 and 2 under Reliability Must-Run (RMR) agreements; or (2) an alternative solution for the operation of Life Cycle Power's (LCP) mobile generators.

- **Voting Items / Requests**

- Board action is requested on ERCOT staff's recommendation.

## Key Takeaways

- ERCOT's analysis shows that, based on current cost estimates, contracting for the operation of the LCP mobile generators to mitigate the relevant reliability risks will be more cost effective than committing Braunig Units 1 and 2 through RMR agreements.
- ERCOT recommends Board action on the following:
  1. Authorize ERCOT to finalize an agreement with LCP for the operation of its mobile generators.
  2. Alternatively, authorize ERCOT to enter RMR agreements for Braunig Units 1 and 2 in the event ERCOT is unable to contract with LCP for any reason, including material changes in cost-effectiveness.

## Background

- In March 2024, CPS Energy submitted Notifications of Suspension of Operations (NSOs) proposing to suspend the operation of Braunig Units, 1, 2, and 3 in March 2025.
- ERCOT’s analysis identified significant reliability concerns associated with these proposed suspensions since they reduce overloads on transmission lines importing power into the San Antonio area during certain conditions involving high system load.
- The overloads have the potential to result in cascading outages and are therefore considered an Interconnection Reliability Operating Limit (IROL).
  - ERCOT cannot allow an IROL to be exceeded and must direct firm load-shedding to avoid an exceedance.
- As required by the Protocols, ERCOT issued an RFP in July 2024 seeking “Must-Run Alternatives” (MRA) to an RMR agreement for the three Braunig Units.
  - The RFP did not result in the identification of any permissible MRAs.
- On December 3, 2024, based on ERCOT’s recommendation, the Board approved RMR Service for Braunig Unit 3. The Board deferred its decision on Braunig Units 1 and 2 to allow time to explore an alternative solution involving the use of LCP’s mobile generation.
- Additional detail was presented at the Board’s [October 2024](#), [December 2024](#), and [February 2025](#) meetings.



## LCP Solution

- Fifteen ~30 MW mobile generating units owned by LCP and currently under lease to CenterPoint Energy (CNP) would be moved from the Houston area to the San Antonio area by summer 2025 to provide emergency relief for the South Texas Export IROL.
  - CNP has provided a letter to ERCOT committing to release LCP from its lease obligations for a term of up to 2 years. The units would be returned to CNP's control once the agreement with ERCOT ends.
    - ERCOT is exploring alternative transmission solutions that might allow for early termination of this agreement.
  - CNP will not be part of any contractual arrangement with ERCOT and LCP.
- Just as with RMR arrangements, LCP units would be deployed by ERCOT only during actual or anticipated Emergency Conditions, including pre- or post-contingency exceedances of the South Texas Export IROL and system capacity emergencies (i.e., Energy Emergency Alerts [EEA]).
- Units would be registered as Generation Resources and deployed using Reliability Unit Commitment (RUC) Verbal Dispatch Instructions (VDI), just as with RMR Resources.
- Units could be remotely started and would be subject to deployment 24x7x365.

## LCP Solution

- Units would operate using diesel fuel stored on-site and could reach full output within 10 minutes.
- Current time estimates based on discussions with CPS Energy suggest that units could be interconnected in batches starting in June 2025 and ending in August 2025.
- Under current draft agreement, LCP would be paid based on its actual, incremental costs of moving, interconnecting, and operating the units plus a 10% adder on specific cost categories identified in the agreement.
  - Documentation of all expenses would be required and would be subject to reasonableness review.
  - ERCOT would settle with LCP's QSE (CPS Energy).
  - 10% adder is consistent with Incentive Factor under RMR construct.
- Agreement would not be a traditional RMR or MRA agreement.
  - Draft agreement heavily borrows elements from both RMR and MRA frameworks to achieve feasible, reliable, and cost-effective alternative solution.
  - Solution is adopted under ERCOT's general reliability authority in PURA § 39.151(a)(2), not under RMR or MRA framework.
  - ERCOT continues to work with LCP and CPS Energy on details.

## LCP Solution – Cost

- Current total estimated cost from LCP for a two-year contract term is \$29 million. Major costs:
  - Labor: ~\$19.5 million
  - Transfer of mobile generators to and from San Antonio: ~\$4 million
  - Fuel storage & infrastructure: ~\$1.4 million
  - Remote operations center: ~\$1.6 million
  - Initial fuel fill: ~\$800,000
- Total anticipated fuel cost based on projected dispatch: \$2.1 million
- Current total estimated cost from CPS Energy to provide interconnection of the LCP units and QSE services is \$23 million. Major costs:
  - Construction of generator interconnection facilities: ~\$9 million
  - Removal of interconnection facilities: ~\$2.4 million
  - Metering/telemetry: ~\$4.3 million
  - Wholesale Distribution Service charges: ~\$5.4 million

**Key Takeaway:** The total cost of LCP solution is projected to be ~\$54 million.

# LCP Solution – Air Emissions Permitting Issues

- Air emissions permitting approach for the LCP solution remains unclear.
  - LCP generators operate under a different emissions framework in Houston area due to use as emergency backup generation islanded from ERCOT grid.
  - Under ERCOT’s proposal, LCP generators would provide power to the grid during emergencies.
  - LCP generators may not meet NOx emissions limit for standard permit.
- ERCOT has been working with LCP and TCEQ to identify a path forward, including feasibility and possibility of special enforcement discretion policy.
- If ERCOT is not able to identify an appropriate solution under current regulatory framework, it may need to seek an order from the Secretary of Energy under section 202(c) of the Federal Power Act (FPA).
  - FPA section 202(c) authorizes Secretary of Energy to direct “temporary connections” of generating facilities and the “generation . . . of electric energy” when needed to address “a shortage of electric energy or of facilities for the generation or transmission of electric energy.”
  - An order issued under FPA section 202(c) would supersede any federal, state, or local environmental laws or regulations that conflict with the order.

**Key Takeaway:** ERCOT is working with LCP and TCEQ to identify a suitable approach to addressing air emissions permitting issues.

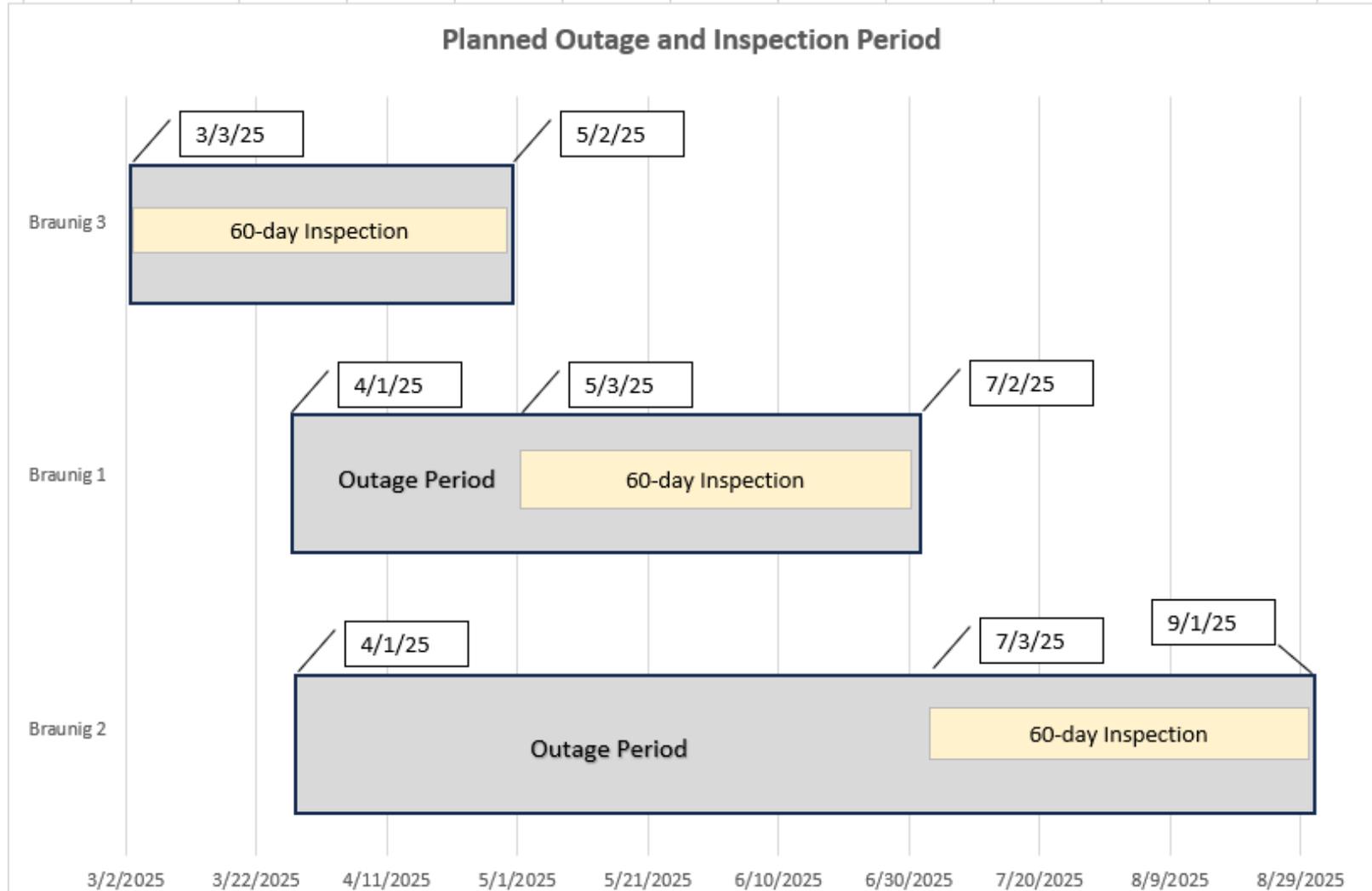
# Braunig Units 1 & 2 RMR Option

- Under RMR agreement, ERCOT would reimburse CPS Energy for the cost of inspecting, repairing, and operating Braunig Units 1 & 2.
- ERCOT would pay CPS Energy for its actual costs plus a 10% Incentive Factor.
- ERCOT would have a right to terminate with 90 days' notice.

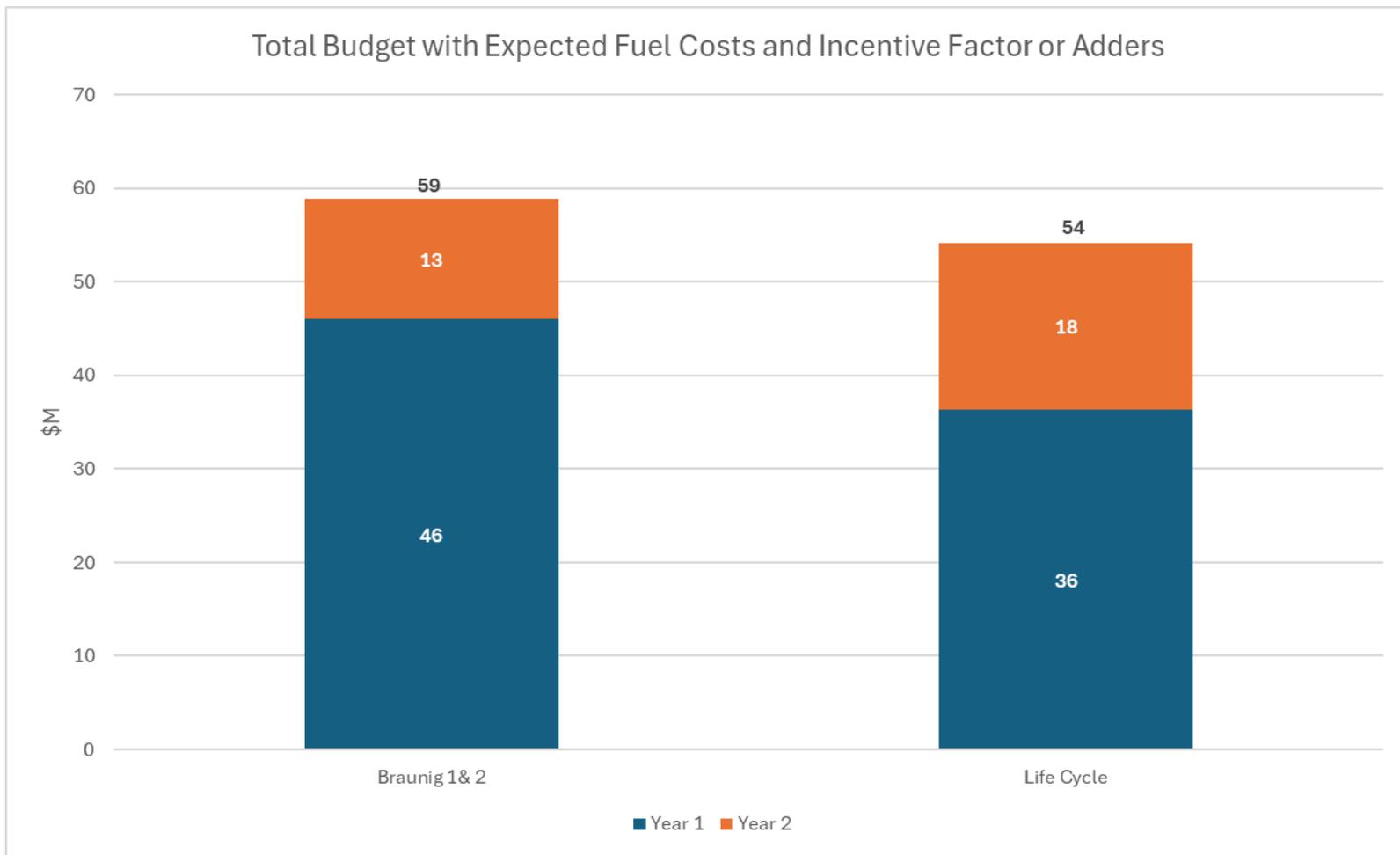
Resource	Summer Max Rating in NSO	Summer Max Rating per CPS Update	Year in Service	Proposed Suspension Date
BRAUNIG_VHB1	217 MW	217 MW	1966	03/31/2025
BRAUNIG_VHB2	230 MW	175 MW	1968	03/31/2025
BRAUNIG_VHB3	412 MW	400 MW	1970	03/02/2025

- Braunig Units 1 & 2 are nearly 60 years old.
- CPS Energy has informed ERCOT that these units will need lengthy outages and expensive inspections and repairs to ensure they can be safely operated.
  - CPS Energy had proposed to suspend operations of the units just before the next major maintenance work would be needed in April 2025.
  - Units will need to be inspected consecutively.

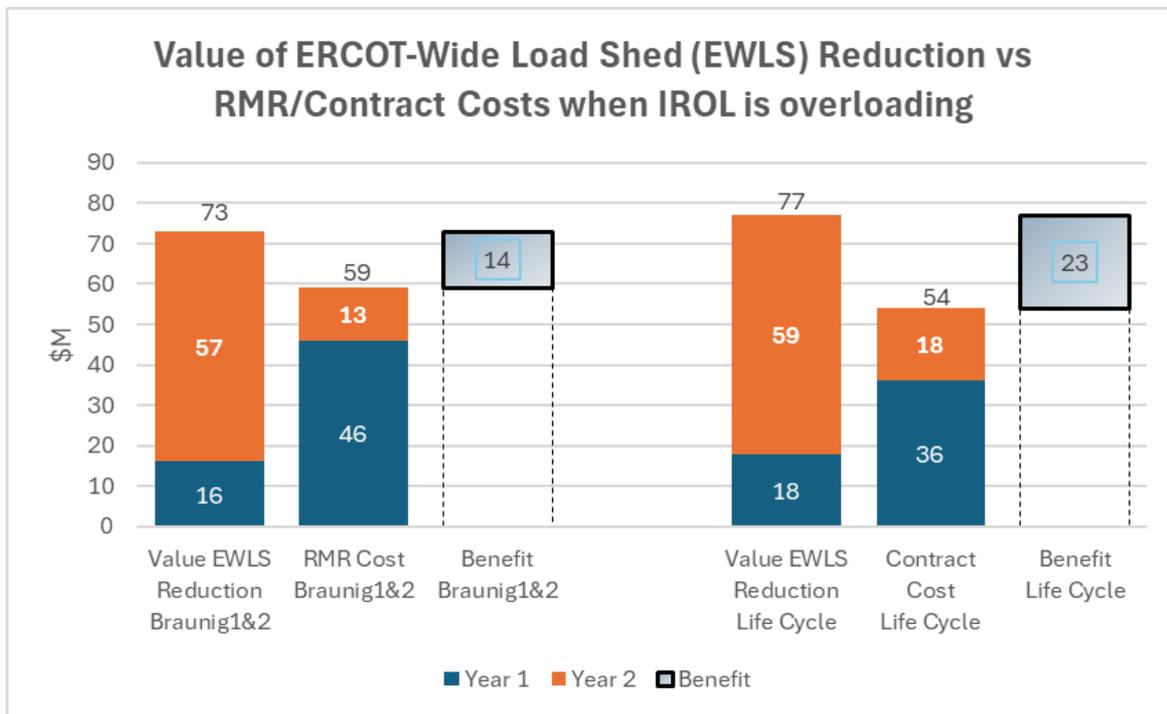
# Braunig Units 1 - 3 Planned Outages and Inspections Timeline



# Total Cost Estimates for Braunig Units 1 & 2 and LCP



# Value of Reduced ERCOT-Wide Load Shed (EWLS) vs. Costs for Braunig Units 1 & 2 and LCP Solution



- Costs include cost of fuel from projected dispatch.
- Year 2 carries a much larger risk of ERCOT-wide Load shed due to IROL violations.
- Both the RMR and LCP options provide a cost-effective means of reducing the projected IROL violations, but LCP has higher benefit-cost ratio vs. RMR.
- Neither solution entirely eliminates the risk of load-shedding due to IROL violations.

## Key Takeaways:

- Benefit-cost ratio of LCP solution is approximately 15% higher than RMR solution based on anticipated deployment for IROL conditions.
- If units are needed for significantly more hours than projected, LCP still provides a greater benefit-cost ratio even considering higher fuel costs.

# Potential Savings Due to Early Termination

Potential Avoided Cost with Early Contract Termination (12 Month Minimum Contract)							
	Total Budget	15-months		18-months		22-months	
		Sunk Costs	Avoided Costs	Sunk costs	Avoided Costs	Sunk costs	Avoided Costs
Braunig 1&2	\$58.1	\$52.6	\$5.5	\$54.5	\$3.6	\$56.9	\$1.2
Life Cycle	\$52.1	\$41.7	\$10.4	\$45.2	\$6.9	\$49.8	\$2.3

Note: Total budget figures exclude operating fuel cost based on projected dispatch (\$782K for Braunig; \$2.1M for LCP) but include Incentive Factors and adders.

**Key Takeaway:** Terminating LCP agreement early would be expected to result in additional savings relative to the Braunig 1&2 RMR solution.

## Risks and Other Considerations - Braunig 1 & 2 RMR Agreements

- Additional unforeseen costs associated with repairing Braunig Units 1 and 2 could be significant.
  - CPS Energy’s budgets for each unit are based on anticipated work needed to ensure safe operations.
  - CPS Energy’s budget for Braunig Unit 3 has increased 33% since its November 26, 2024 budget submission as CPS Energy has begun to prepare for the outage and inspection.
  - Budgets for Braunig Units 1 and 2 have already increased 8% since November 26, 2024, and no decision has yet been made to commit those units for RMR.
  - Given age of units, additional necessary repair work will likely be discovered once the inspections of Units 1 and 2 are underway.
- Discovery of additional needed repairs could extend the duration of the outages.
  - Any extension of the outage of Unit 1 could remove the unit from operation during summer peak conditions.
  - Availability of parts could be hampered by supply chain problems, which could extend outage durations.
- Given the age of the Braunig units, these Resources may have higher than normal Forced Outage rates, even after repair.

## Risks and Other Considerations - Braunig 1 & 2 RMR Agreements (continued)

- Given the age and technology of the Braunig units, ERCOT would need to commit these Resources many hours in advance due to the long lead times required to start and have the units ready to operate at full output, compared with ten-minute notice for LCP.
  - Would not help with fast-developing emergencies.
  - Longer lead-times could result in some deployments that would ultimately end up not being necessary under real-time conditions.
- Braunig units have long minimum up times and minimum down times, resulting in greater cost of operation in the event of deployment.
- Each Braunig unit represents a much larger single point of failure compared with the smaller LCP units.
- Braunig units have a slightly less beneficial shift factor relative to the South Texas Export IROL constraint.
- NOx emissions limits might impact operation of Braunig units in certain scenarios.

**Key Takeaway:** Committing Braunig Units 1 and 2 through RMR agreements carries significant cost and operational risk due to the advanced age and the technology of the units.

## Risks and Other Considerations – LCP Solution

- Actual cost could end up being higher than estimated.
  - ERCOT’s value analysis is based on LCP-provided cost estimates, but ERCOT will ultimately pay based on actual cost for most LCP costs.
- While the mobile generators are more fuel-efficient than the Braunig units, the price of fuel oil per MMBtu used by the mobile generators is nearly six times the price of natural gas used by the Braunig units.
  - If the units were dispatched far in excess of what ERCOT projects, the cost of the LCP solution would eventually exceed the cost of the Braunig units due to fuel cost.
- The cost-effectiveness of the LCP solution is impacted by the anticipated operating hours and the price difference between diesel and natural gas. If the Resources are needed for many more hours and at output levels much higher than expected, the LCP solution becomes less cost-effective.
- NOx emissions limits might impact operation of LCP units in certain scenarios.

**Key Takeaway:** The LCP mobile generation solution also presents some risks, but these appear to be less concerning than the risks associated with the Braunig RMR solution.

# Summary: Key Considerations and Risk Comparison

Item	Which option is superior based on current information?
Benefit-Cost Ratio	LCP Solution (15% better)
Expected Forced Outage Rate	LCP Solution
Cost Certainty	LCP Solution
Start-time & Temporal Constraints	LCP Solution
Fuel Price per MWh	Braunig 1 and 2
Expected Availability and Performance	LCP Solution
Savings from Early Termination	LCP Solution
<b>OVERALL</b>	<b>LCP Solution</b>

**Key Takeaway:** From a cost, risk, and reliability perspective, the LCP solution is preferable to committing Braunig Units 1 and 2 through RMR agreements.

# Request to PUCT for Good-Cause Exceptions

- As discussed at the February 4, 2025 Board meeting, if the LCP solution is selected, ERCOT would plan to request that the PUCT grant good-cause exceptions to various rules to allow timely implementation of this proposal while still ensuring reliable interconnection.
  - Examples:
    - Modeling timelines
    - Interconnection study requirements
- ERCOT anticipates filing its request for good-cause exceptions no later than April 2025.



# ERCOT Recommendation Summary

## ERCOT Staff Recommendation:

- ERCOT recommends the following:
  1. Board authorize ERCOT management to finalize an agreement with LCP for the operation of its mobile generation, assuming the cost-effectiveness of the proposal does not materially change.
  2. Alternatively, Board authorize ERCOT to enter RMR agreements for Braunig Units 1 and 2 as an alternative in the event ERCOT is unable to contract with LCP for any reason, including material changes in cost-effectiveness.

## Next Steps

- Update the Board on the status of negotiations with LCP and/or CPS Energy.
- Upon resolution, issue a Market Notice informing stakeholders of the final solution.
- Provide RMR exit solutions to the Board at its April meeting.

