

# EPFSTF Survey Results

Susan Kenney, Facilitator

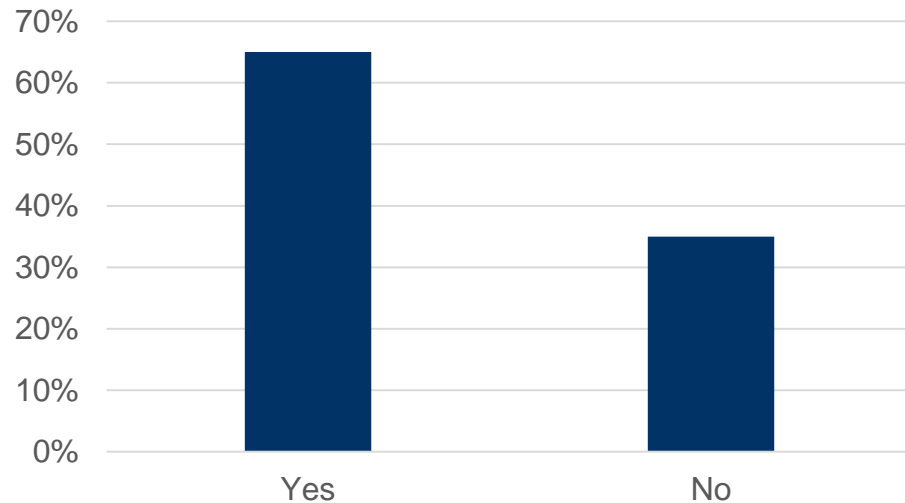
EPFSTF

June 30, 2022

- Purpose of Survey
  - To gather feedback on design components and options preferred by stakeholders for the Circuit Breaker
- Survey Dates
  - Thursday, May 26, 2022 through Friday, May 10, 2022

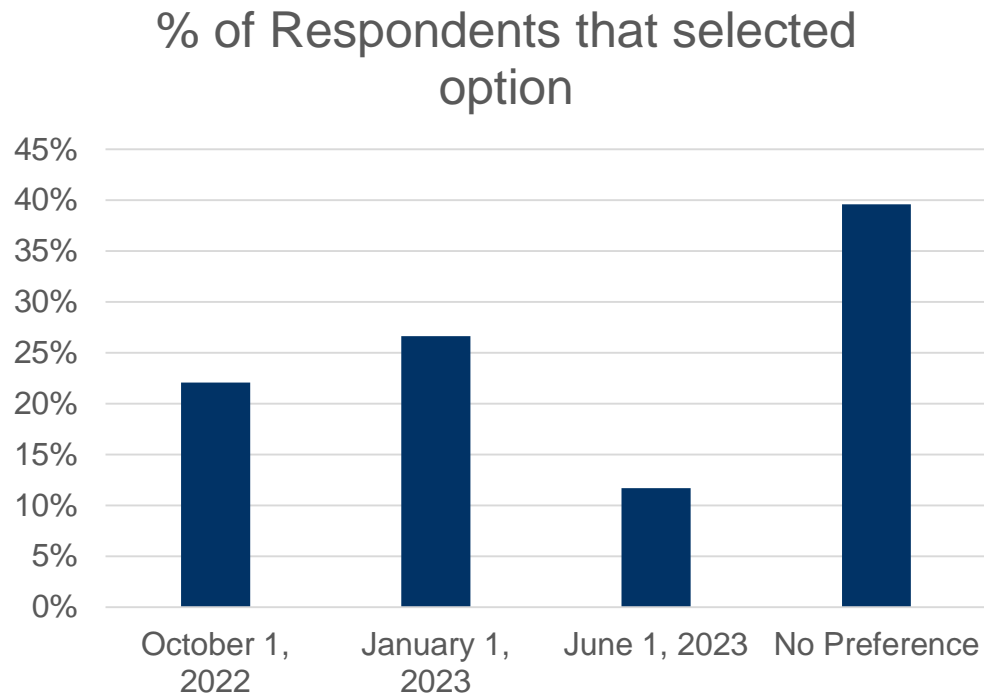
Do you support implementation of a circuit breaker to account for extreme circumstances even with the status quo ORDCs?

% of Respondents that selected option



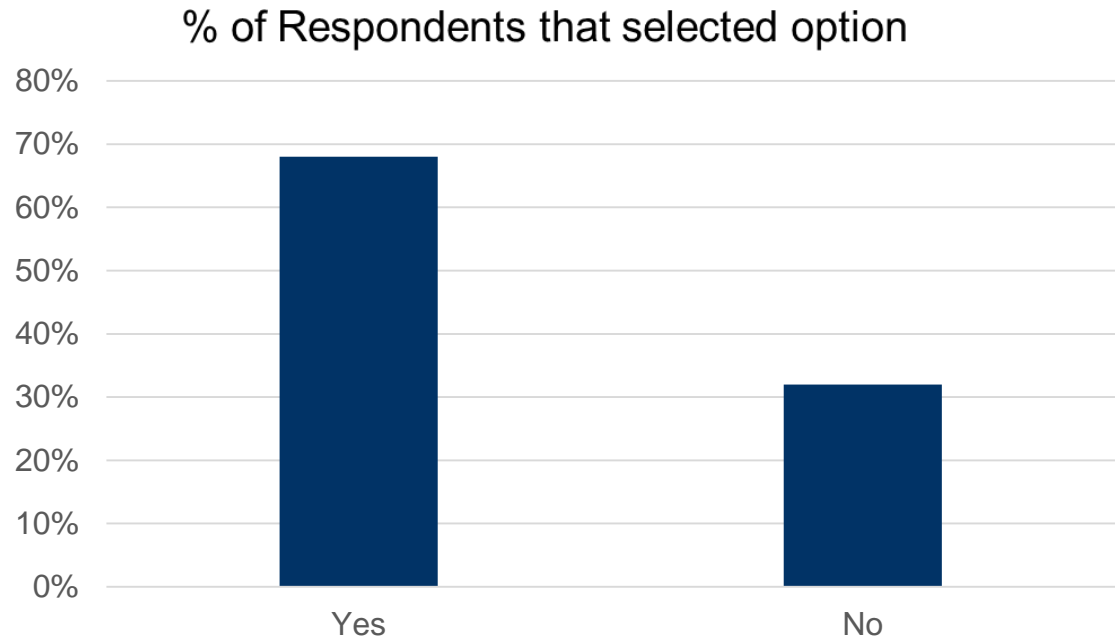
	#	%
Yes	130	65%
No	70	35%
Abstain	0	

If you selected yes to the question above, when is your desired implementation date of a circuit breaker?



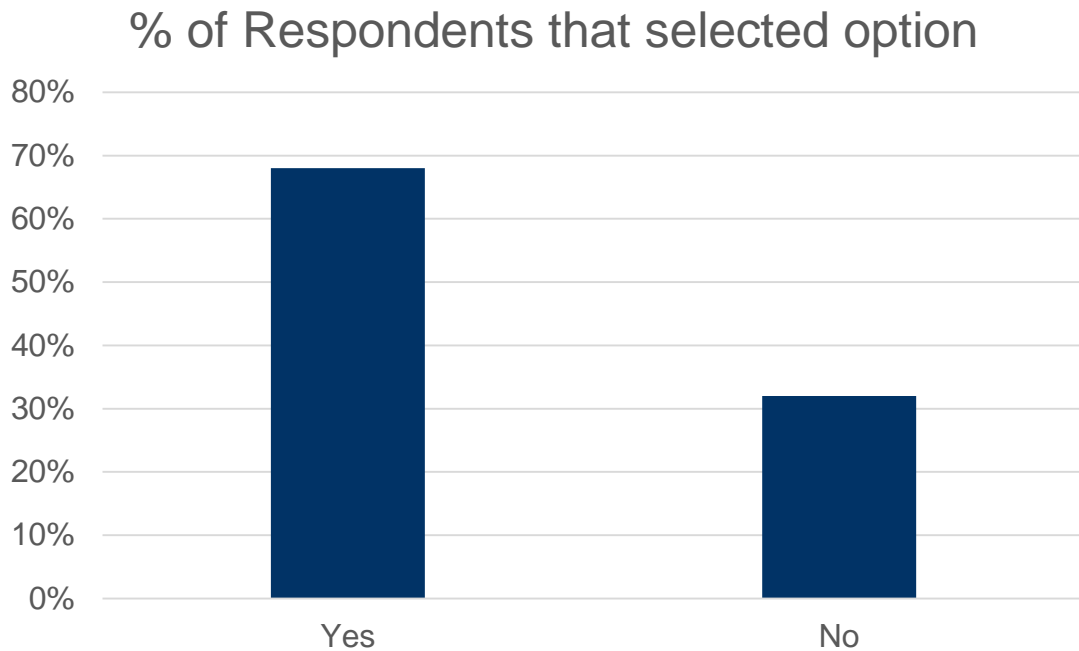
	#	%
October 1, 2022	34	22%
January 1, 2023 (in time for winter operations)	41	27%
June 1, 2023 (in time for summer operations)	18	12%
No Preference	61	40%

Do you support operational considerations for capacity deficiencies (such as Manual Load Dump) to be included in the Circuit Breaker trigger criteria?



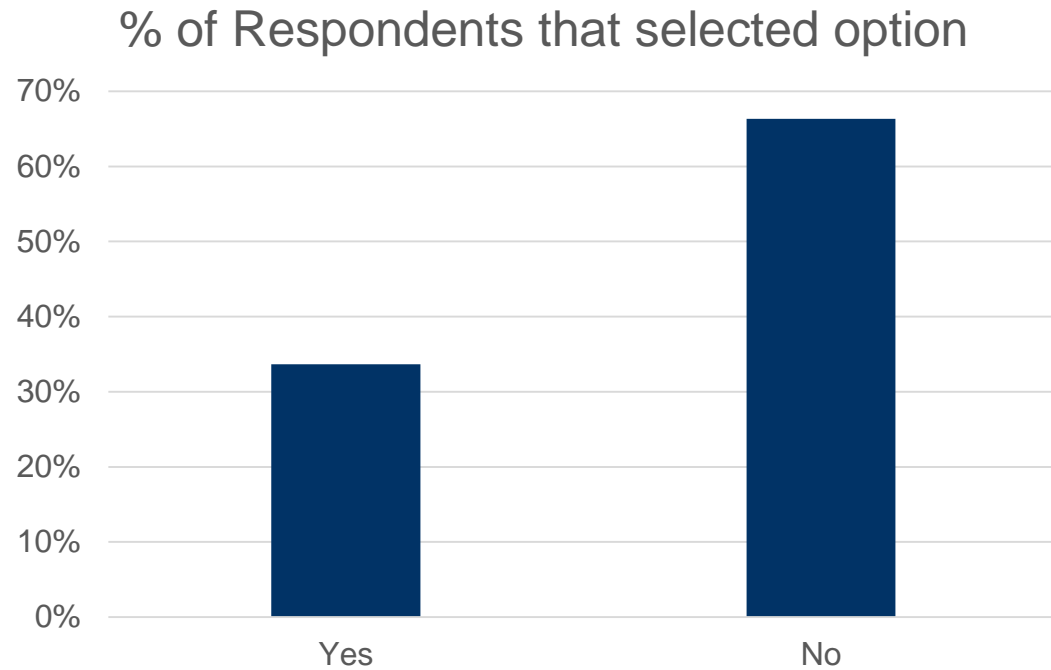
	#	%
Yes	123	68%
No	59	32%
Abstain	18	

Do you support unforeseen events (such as failure of fuel delivery systems or cyber attacks) to be included in the Circuit Breaker trigger criteria?



	#	%
Yes	125	68%
No	58	32%
Abstain	17	

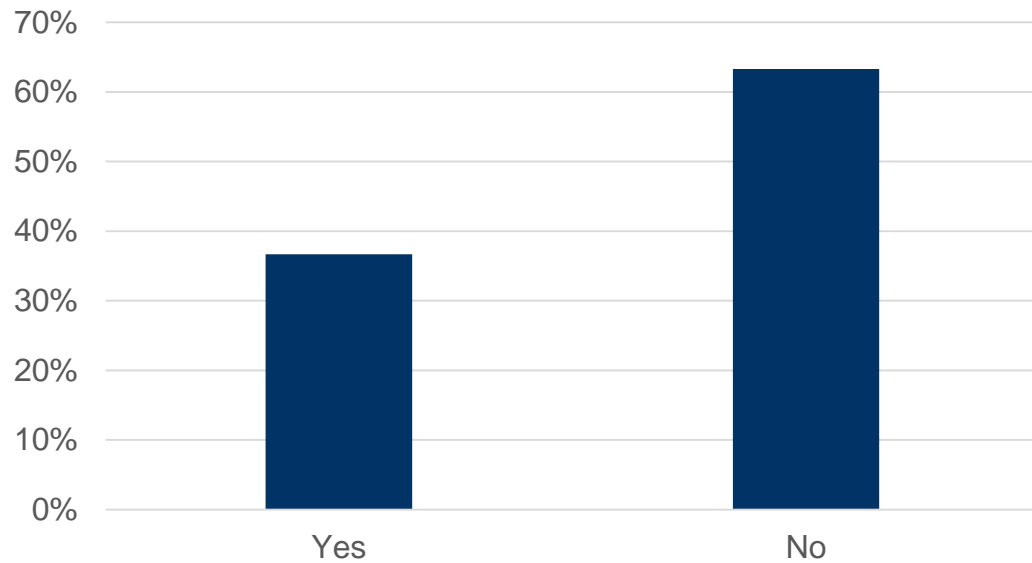
# Do you support PJM having discretion on when the Circuit Breaker should be triggered?



	#	%
Yes	67	34%
No	132	66%
Abstain	1	

# Do you support PJM having discretion on when the Circuit Breaker should not be triggered?

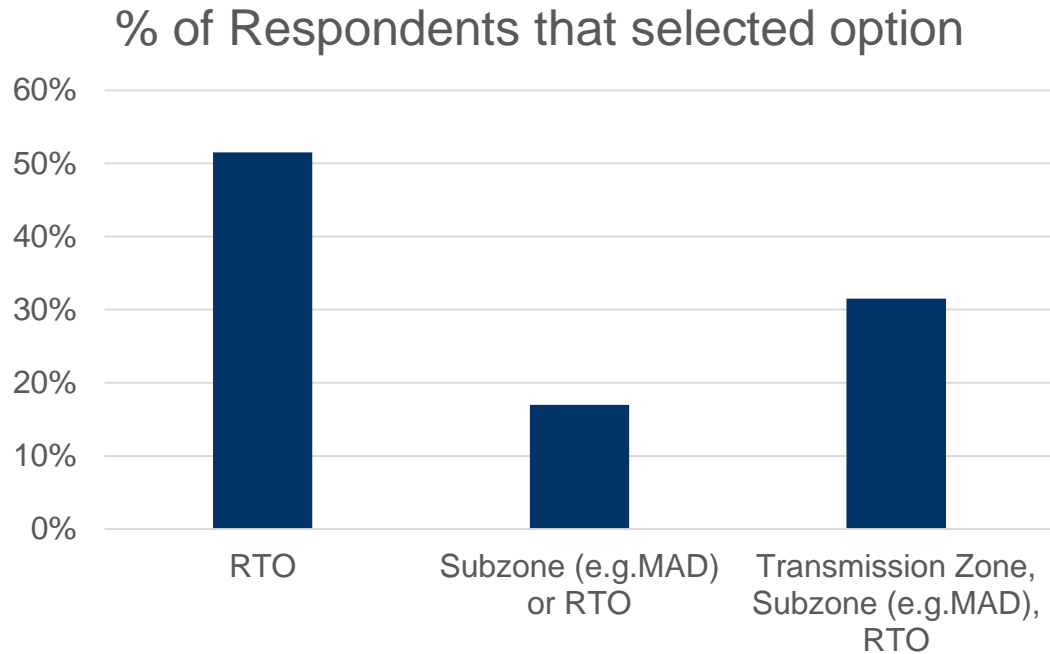
% of Respondents that selected option



	#	%
Yes	73	37%
No	126	63%
Abstain	1	

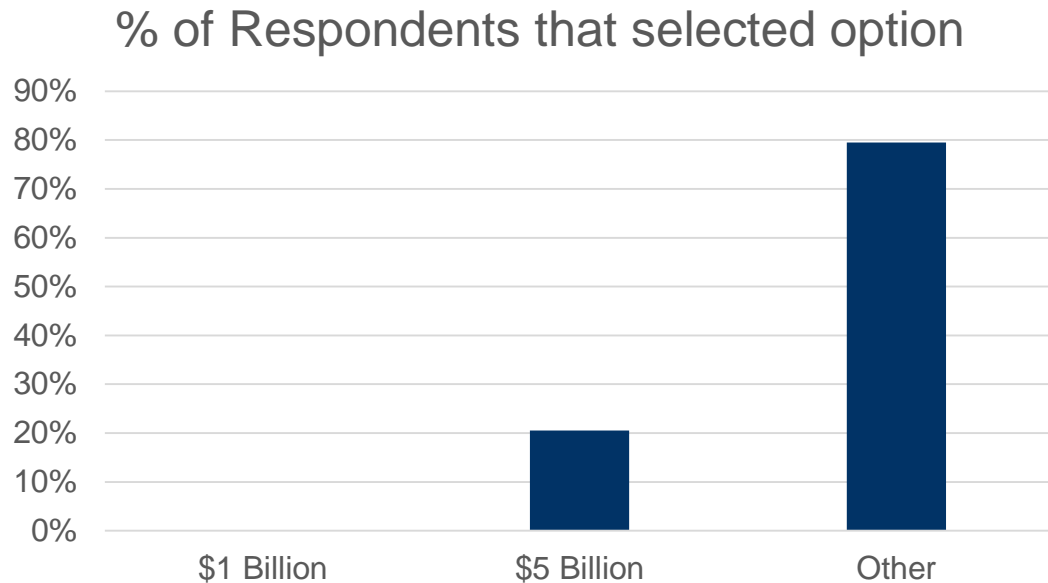


# At what locational level do you think a circuit breaker is needed?



	#	%
RTO	103	52%
Subzone (e.g. MAD) or RTO	34	17%
Transmission Zone, Subzone (e.g. MAD), RTO	63	32%

If a revenue-based (or event-based and revenue-based) circuit breaker is proposed, at which level of energy market billing do you think is appropriate to trigger a circuit breaker?



	#	%
\$1 Billion	0	0%
\$5 Billion	41	21%
Other	159	80%

# Question 7 – Other (please specify)

Energy market billing	1	Closer to \$1 billion. The order of magnitude should be just shy of \$1 billion - not in excess. The '14 PV1 can be instructive as a good benchmark for when a circuit breaker should kick in.
	2	We think \$5B could work for the RTO, but to the extent that a subzone level is part of the solution, a different trigger needs to be in place for the subzone.
	3	\$15B = 3 consecutive slightly higher than average load days
	4	\$10 bil
	5	2.5 M MWh at \$3,700/MWh = \$9.25B;
PJM Discretion	6	PJM should have some discretion. There could be an event where cost is above the \$2000 cap where Generators could be hurt.
	7	PJM should have some discretion here. Rather than a certain price level, the circuit breaker should be employed when price signals no longer incent or facilitate actions that help the situation causing its need.

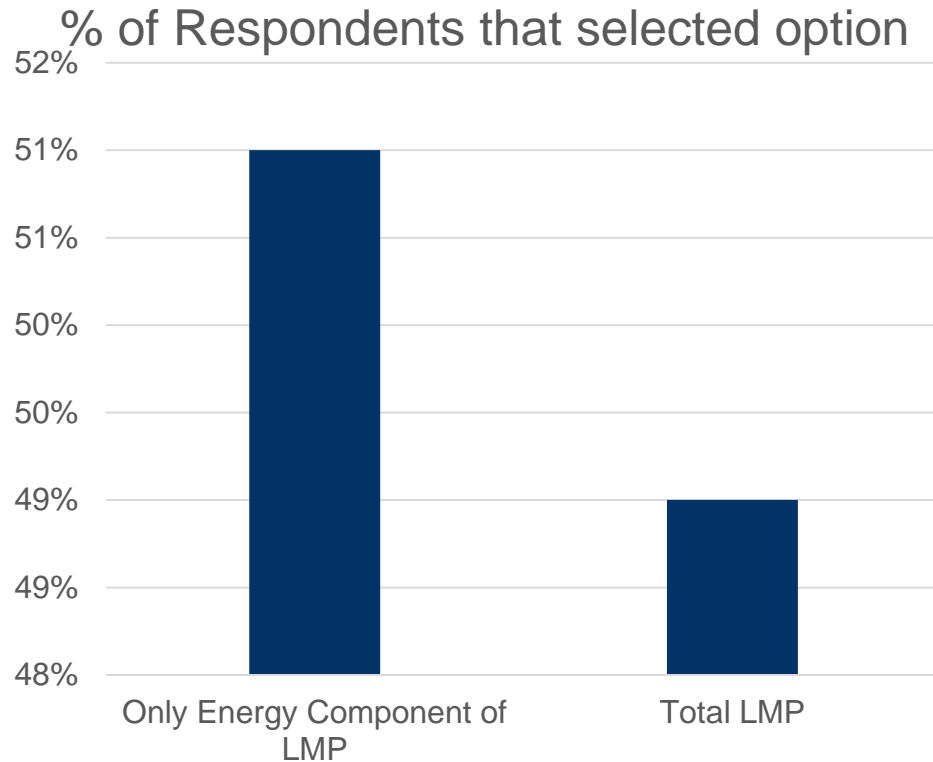
Gas price index	8	Any revenue based trigger (not necessarily supportive of one) should be indexed to the price of natural gas.
	9	Any revenue based trigger should be indexed to the price of natural gas.
Event based only	10	support an event-based circuit breaker
Credit Risk	11	Instead of looking at aggregate daily amounts, I recommend you bill out real customers, and then have the Risk Department establish new credit requirements based on the billed amounts, including uplift. Use those credit requirements as criteria to determine how long the ORDC should remain in effect.
Combination	12	A hard dollar trigger is not compatible with triggering a circuit breaker at a local level. A combination of triggers may be appropriate (e.g., sustained penalty factors, percentage increase in revenues)
Other	13	Supply/Demand can no longer respond to increases in price.

## Please provide any thoughts on why you believe the value selected/specified in question 7 above is appropriate.

- |   |   |
|---|---|
| 1 | As an alternative way to structure the cap, we would support a system weighted average price being at (or within 95% of) \$2,000 for 2 days.  |
| 2 | We think a number around \$5B properly reflects truly extraordinary circumstance on the system, rather than a normal event that market participants should have been able to anticipate and hedge against. A similar extrapolation of sub-zonal revenues could provide a workable number for the sub-zones. We think sub-zone makes sense, rather than going as low as the transmission zone, because the solution appears to be to cut the reserve penalty factors – which apply on a reserve sub-zone basis, not a TO zone basis. |
| 3 | It is very difficult to foresee the actual event or events that will trigger a circuit breaker.   |
| 4 | During a higher than average load day the PJM system is already under greater stress and the ability of increased prices to incent deployment is more limited.  |
| 5 | Looking at aggregate values such as \$1 billion tells us nothing. We need to understand the impact of sustained high prices on customers, whether they be LSEs or generators.   |
| 6 | Without additional information, we are reluctant to endorse a revenue cap. The proposed \$1B level is certainly too low. It would be informative to understand the revenue impact of the 2014 polar vortex event as a benchmark. We are also wary of setting price caps at levels that foreclose generator cost recovery as FERC has demonstrated that it will foreclose recovery for legitimate, significant, documented costs incurred at PJM direction.  |

7	Energy market billing in a market with \$12 gas will be higher than the billing in a market with \$2 gas. This is not indicative of a problem with infrastructure or a sustained operational event; it is simply a function of higher input costs.
8	Warrants consideration of a fuel-adjusted trigger. Also, to the extent that there is a subzone trigger, the revenue basis should be proportionately lower.
9	Prices is indicative of reserve shortage. Duration trigger should be coincided with the point in time in which market participants can no longer respond.
10	Should only apply in extreme situations. In addition to no further response to price, external events should also be drivers.
11	Notwithstanding the election above, I will offer that, PJM should have discretion to trigger a rev-based Circuit Breaker, i.e., if underlying fuel prices are such that a multi-billion dollar day does represent the cost to serve load, in terms of fuel, then it is questionable whether automatic triggering of the CB is always wise. Perhaps this facet (the \$ revenue threshold) of the CB merits further articulation, so as to account for hitherto unexperienced fuel price levels.
12	unsure as it depends on whether the application is going to be RTO wide, Zonal or sub zonal.
13	\$5 Billion represents a value roughly equivalent to extended prices at or close to the energy price cap that would still allow resources to respond. Triggering too early may artificially suppress price signals.

# If an administrative price capping methodology is implemented, what level of capping do you support?

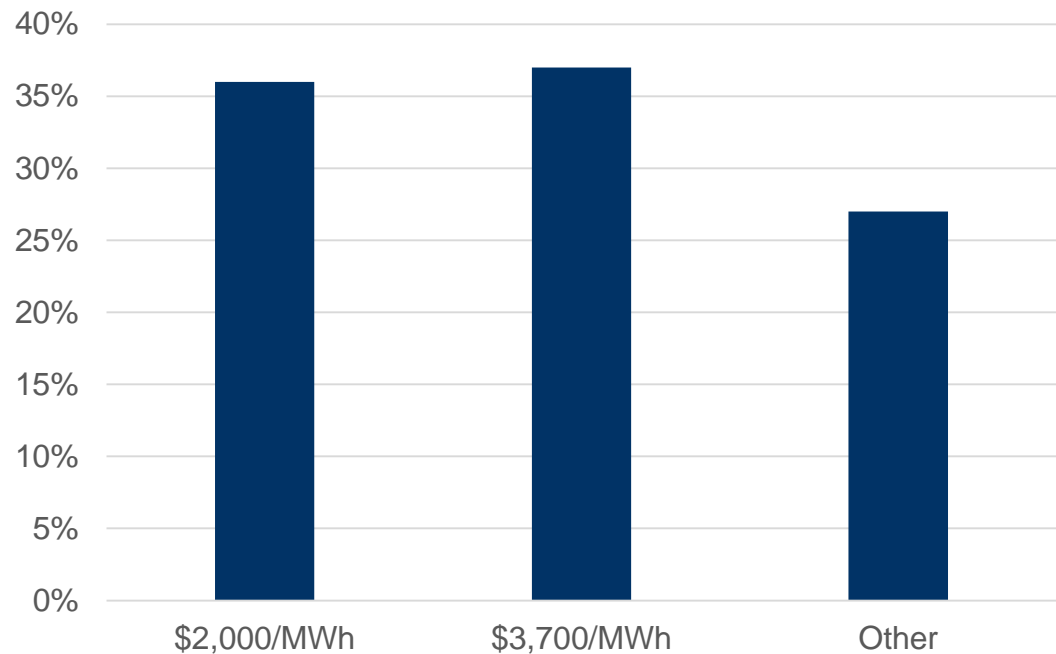


	#	%
Only Energy Component of LMP	102	51%
Total LMP	98	49%



If an administrative price capping methodology is implemented, what value do you think is appropriate?

% of Respondents that selected option



	#	%
\$2,000/MWh	72	36%
\$3,700/MWh	74	37%
Other	54	27%



## Question 9 – Other (please specify)

1	Irrelevant for a circuit breaker approach that caps dollar expenses on a daily basis. Generators are permitted to recover revenues equal to their cost-based offer. We do want to encourage imports.
2	Something less than \$2,000.
3	Flexibility is needed. Removal of penalty factors is one option. Lower LPMs along with lift payments is another. PJM needs to be empowered to respond to substantial sustained infrastructure damage that market forces alone cannot address.
4	More important to base trigger on event more so than just a price point.

## Please provide any thoughts on why you believe the value selected/specified in question 9 above is appropriate

\$3,700	1	The \$3,700/MWh price cap should only be applied if total LMP is used to calculate the price cap.
	2	The \$3700/MWh number only works if all of LMP (and not just energy) is included.
	3	The higher level provides pricing consistency across seams and mitigates arbitrage between neighboring ISOs.
	4	The \$3,700 cap is consistent with established scarcity pricing. This conversation started seeking relief from the proposed nested constraints within the ORDC, not as a means to unwind established scarcity pricing.
	5	My response above is \$3,700/MWh, but I write to express confusion over the \$2k/MWh adder in the TCPF, if invoked. I assume that the TCPF is additive, if so, my answer is \$3,700 (\$2k/Energy, \$850 for two reserve products) + \$2k/MWh cap TCPF.
	6	The value is equal to the energy offer cap.

\$2,000	7	\$2000 seems to be a fair circuit breaker for both supply and demand.
	8	\$2000 is a justifiable level based on the risk profile; \$1000 similarly is justifiable. Note that at \$3700, there would be close to \$10 B in market value at risk.
	9	Capping at \$2,000 would still allow \$5 billion days. But, we would need to ensure that the price capped level does not invalidate demand response's commitments, which will be needed and important during a circuit breaker event.
	10	\$2000/MWh is essentially cutting the reserve price penalties, because presumably during the event the reserve pricing has not produced the constraint relief and reliability value it's there for. But to some extent, the final answer depends on the components of an entire package that we might end up wanting to support.
	11	It at least ties to the cost-based \$2,000/MWh offer cap. A case could be made to lower it to \$1,000 in certain cases where there would be many days at the \$2,000.

Other	12	Consistent with Question 8 (capping only energy component of LMP) this caps the energy component of LMP at the energy market offer cap and effectively eliminates scarcity pricing adders from the reserve markets.
	13	Triggers such as cyber attack, wide area loss of fuel supply, and/or extreme weather in conjunction with federal and state input could all be reasons to suspend markets until conditions return to normal.
	14	From the context of a scarcity event, where the next MW cannot be procured for any price, penalty factors have no effect. However, competitive pricing may elicit power imports from neighboring ISO's. Please consider import pricing separate from this RTO wide event. This may be a viable way of incentivizing energy imports while mitigating against ineffective/non-incentivizing pricing.
	15	Reducing the energy component only consistent with the resource energy offer cap will mitigate uplift and undue harm to the market during extended pricing events but still allow LMPs to send differentiated pricing signals that help preserve reliability and maintain base case and N-1 contingencies.
	16	It is consistent with the current rule limiting the additivity of penalty factors/shortages to two products.

## Are there any additional comments you'd like to share on the Circuit Breaker at this time?

1	Changes to the ORDC do not by themselves eliminate the need for circuit breakers. For example, reserve shortages and supply chain issues are current conditions that necessitate circuit breakers being implemented ASAP.
2	We need to ensure that there is always a route to cost recovery, regardless of the administrative price cap or the price of gas. We think the existing rules are sufficient, but any gaps should be explored and addressed.
3	The answers to many of these questions really depend on the interactions of various elements of the proposals, and that when we get to evaluating full proposals it will be easier to provide a full response.
4	We appreciate PJM and the stakeholders willingness to address this topic.
5	At the last EPFSTF, PJM discussed several event based triggers (force majeure events, etc.). Further discussion on this issue is warranted. Additionally, PJM should have the discretion to deploy a circuit breaker prospectively if they know an event is likely to cause extreme out-of-market disruption and costs (i.e., a pipeline is down and a Polar Vortex type cold weather snap is forecasted).
6	The primary purpose of the circuit breaker methodology should be to mitigate systemic financial risk to PJM and its Members. There needs to be more of a Risk perspective, and not simply an historical statistical analysis.

- 7 Our firm believes that scarcity pricing provides an important market signal, consistent with widely-held interests in revealing investment signals in the energy market. Circuit breakers can undermine that market signal and thus should only be invoked to truncate sustained, inactionable price signals. Also, application should be mechanical and tariff-based(not discretionary) so that market participants can anticipate the conditions under which prices would be artificially limited. With regard to implementation timing, our firm feels strongly that well-developed circuit breaker rules are more important than a rush to implementation. Thus, we have selected the 6/1/23 option in Question 1a, but we do not think stakeholders should be constrained by that deadline (or any other). With regard to Question 2, it seems that operational consideration, such as MLD, should not be a triggering criteria unless sustained. Whatever the trigger for a circuit breaker, it must signal a persistent condition that constrains further supply/demand response to scarcity prices, not a transient condition. Regarding Question 3, our firm abstained although we see merit for an "unforeseen event trigger." Events such as a cyberattack, with consequences that we have not experienced before, may be appropriate for implementation of a circuit breaker. However, failure of fuel delivery is a condition that can be controlled or mitigated, certainly foreseen, and thus does not seem to be appropriate absent truly novel circumstances. Regarding Questions 4 and 5, our firm suggests that the circuit breaker should be mechanical, not discretionary in application. Regarding Question 6, our firm believes that the circuit breaker is more likely to be applied in smaller geographic areas, (i.e., Transmission Zones) and thus should be applied granularly, subject to conditions on mechanical (not discretionary) application.
- 8 Operational issues triggering or threatening load shed events (e.g. voltage reduction alerts in DA and manual load dump action in RT) should trigger the circuit breaker. To trigger the circuit breaker, these events should be sustained and anticipated to last for several operating days. Where market or operations measures exist to address differences in supply and demand those should be utilized prior to triggering the circuit breaker. To trigger the circuit breaker, unforeseen events should result in physical infrastructure becoming unavailable and substantially impacting the ability of generation to meet load – i.e. the unforeseen event itself should not trigger the circuit breaker, but rather the downstream impact on the performance of the electric system should. Any revenue based trigger (not necessarily supportive of one) should be indexed to the price of natural gas. Energy market billing in a market with \$12 gas will be higher than the billing in a market with \$2 gas. This is not indicative of a problem with infrastructure or a sustained operational event; it is simply a function of higher input costs.



9	Clearly define what is actionable and what is not actionable in triggering the circuit breaker.
10	It's not clear, within the survey or the EPFSTF, whether or not PJM's discretionary use of the Circuit Breaker (CB) would be tempered by an event or LMP. If the latter, then we are concerned that there would be the potential for a CB to be used to mitigate high prices under normal market conditions. We support the implementation of the CB following the announcement of an event (RTO wide) and after traditional methods to solve the event (shortage/constraint, etc.) have failed. In other words, the market conditions are such that pricing, at any level, cannot incentivize additional supply.
11	PJM should not have the discretion to arbitrarily turn on or off the circuit breaker. Given the conditions to trigger a circuit breaker can mean a mass wealth transfer, the more transparency in triggering conditions and less subjectivity will improve market signals, predictability, and reliability. If PJM absolutely must have discretion, PJM should only be allowed to remove the trigger to allow higher prices to return and incentivize market participants to respond.
12	Generally not supportive of circuit breakers. If PJM moves forward, need clarity on specific events and durations that trigger the breaker. No PJM discretion to intervene in competitive markets.
13	Relative to Q1A, we prefer implementation of a circuit breaker as soon as possible; our support for January 1, 2023 implementation reflects a pragmatic perspective. Relative to Qs 4/5, while we do not support PJM having real-time discretion regarding implementation or suspension of the circuit breaker, we do support PJM having discretion to seek waivers, on a prospective basis, from FERC, as did PJM in early 2022. Any circuit-breaker language in the OA the OA/Tariff should make clear that the circuit-breaker rules are not intended to preclude such prospectively applied waivers.
14	We do not want circuit breakers and therefore please ignore responses to questions 6, 7, 8, 9, 9a. I would have not responded to those questions but the poll would not allow that and i had to respond. the responses are meaningless and irrelevant.

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