The Gas Unit Owner’s Coalition (“Generators”) welcomes this opportunity to provide feedback on PJM’s proposed capacity market redesign. We recognize the substantial effort undertaken by PJM’s staff and Board of Managers (collectively “PJM”) to craft a capacity market design that better serves the region’s evolving reliability needs. We commend PJM for their response to stakeholders’ feedback on the August 22 Proposed Solution. While Generators uniformly viewed the initial construct as unworkable and overly punitive, PJM’s Capacity Performance (“CP”) Updated Proposal (“Proposal”) is a meaningful improvement that, with the implementation of the necessary and reasonable components identified below, could enhance the current Reliability Pricing Model (“RPM”) design.

I. Summary.

Fundamentally, generation resources must have the ability to submit capacity market offers that reflect the long-run marginal cost to deliver supply based on the owner’s assessment of risk without fear that the owner’s judgment will be overridden. Without the ability to submit capacity offers that reflect long-run marginal cost, including a rate of return on invested capital, the construct fails entirely. This concept is well grounded in FERC precedent.1 Generators therefore support PJM and the Market Monitor’s (“IMM”) recognition that RPM clearing prices should support long-run marginal costs.2 However, it is incumbent upon PJM to ensure that the ensuing Open Access Transmission Tariff (“OATT”) language accompanying the Proposal unequivocally states that offers reflective of long-run marginal costs are permissible and not the subject of enforcement investigations. Supply resources must be free to bid with confidence at a level reflective of cost and risk. This component is the cornerstone of the CP construct.

In order for resources to invest the capital to assure fully reliable service year round, as is the goal of the Proposal, PJM’s market rules must provide confidence to investors that potential capacity offers that do

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1 See, Southwest Power Pool, Inc. FERC Docket No. ER-06-451-002 at P. 10-11. In approving an offer mitigation construct “tied to the short-run marginal cost and the long-run fixed costs of an efficient generic gas turbine,” FERC found that “mitigation based on a theory of new entry is just and reasonable for several reasons.” The Ninth Circuit Court of Appeals took this logic a step farther when invalidating a FERC decision on the basis that “rates that exceed long run marginal costs . . . [but resulted] from normal market forces and [were] part of a trend towards rates that reflect costs” are reasonable. See, Snohomish County v. FERC, Opinion No. 03-74208, FERC No. EL02-26, December 19, 2007.

2 PJM Capacity Performance Proposal, October 7, 2014 at P. 30-31 (hereafter “Proposal”), “Based on the IMM’s proposed approach, PJM proposes to implement a “safe harbor” offer value for the Capacity Performance resource offer equal to the Net CONE established for the CONE Area in which a given resources resides. Under this approach, Capacity Performance offers up to the Net CONE value will not be subject to mitigation based on the individual resource’s Avoidable Cost Rate.”
not exceed a reasonably calculated Net CONE are not subject to reversal. RPM should provide a reasonable expectation that these costs will be recovered from the market.

Generators also support many of the other market reforms articulated by PJM, including elimination of the Short-Term Resource Procurement Target\(^3\), a reasonable and proactive transition for Demand Response (“DR”) out of PJM’s supply-mix\(^4\), the creation of a multi-year investment signal\(^5\), and linking performance obligations to Unforced Capacity (“UCAP”) values\(^6\). These design components are reasonable, incremental steps towards creating a long-term, sustainable RPM design. Generators welcome their inclusion in the final CP construct.

However, any effective market design is a function of appropriate risk allocation: What risks exist in the market and which parties are best able to manage those risks is the fundamental question to be answered by PJM. This question is paramount to the long-term viability of RPM and its ability to both create an economic environment where needed investment will occur and result in competitive pricing for the region. A sustainable market design insulates market participants from unhedgable and uncontrollable risk while providing a clear understanding of the potential opportunity. Both PJM and FERC have recognized the need for this type of certainty, as evidenced by the significant efforts taken to limit load-interests’ exposure to unforeseen up-lift payments. Supply and load-side interests benefit from a transparent expression of risk and opportunity. PJM’s Proposal dramatically increases the risk profile for Generators from events that are wholly outside of their control. These aspects of the proposal should be modified.

Much of PJM’s perceived reliability threat is a side effect of the broader societal push towards cleaner energy supply, and not improper generator behavior. Increasing supplies of natural gas have erased the price differential between natural gas-fired and coal-fired generation. Stringent environmental standards including the recently implemented Mercury and Air Toxics Standards, Cross-State Air Pollution Rule, enhanced regulation of cooling water intakes and pending limits on Carbon Dioxide pollution are driving increased reliance on the nation’s natural gas infrastructure to provide fuel to meet electricity needs. Inefficiencies regarding the need to allocate fuel to meet both home heating and electric generation demand creates a unique set of risks to reliability that must be reflected in PJM’s market rules. These risks are currently outside of supply resources’ physical and financial control.

For example, PJM proposes to penalize resources whose physical ability to deliver energy has changed due to pipeline-imposed fuel nominations periods. Generators believe that the “no-notice” gas

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\(^3\) Proposal at P. 33.
\(^4\) *Id.* at P. 5.
\(^5\) *Id.* at P. 14.
\(^6\) *Id.* at P. 9 (“Generation Capacity Resources must provide market-based and cost-based non-emergency energy offers into the PJM Day-ahead Energy Market up to the committed UCAP value of the resource every day during the Delivery Year unless the resource is unavailable due to a forced or scheduled outage.”).
transportation and commodity packages that would be needed to support this penalty structure are not available to all resources throughout the PJM footprint. Therefore, natural gas fired resources will likely continue to be required to schedule their assets pursuant to these pipeline-imposed delivery periods regardless of the financial incentives provided by the CP construct. PJM should recognize that the gas markets need sufficient time to develop and expand the availability of the type of fuel procurement contracts contemplated by the Proposal. Penalizing resources for the inability to respond outside of these gas-transmission system imposed windows is unreasonable and will negatively impact reliability by chilling investment in low-cost, low-emission resources, which are among the highest availability generators. Reasonable protections from penalties and EFORd exposure are needed during this transition.

PJM’s proposed penalty structure must also be modified to a more reasonable level and include provisions to ensure single forced outage events do not cause violations of debt-coverage ratios or hedging agreements. Eliminating all Outside of Management Control (“OMC”) outages and force majeure provisions unreasonably exposes supply resources to short and long term financial risk for circumstances that are solely outside of their control. To address this concern, the Proposal should be modified to recognize narrow protections for systemic failures in the natural gas transmission system and unforeseen “act of God” type events such as natural disasters. This will ensure that the financial viability of supply resources is preserved and reliability continues to be achieved. Addressing these needed reforms will also allow investors to accurately assess risk and reward opportunities, thereby facilitating capital formation and efficient entry and exit from RPM.

PJM should also remove the requirement that any unit subjectively deemed to be “capable” of obtaining firm fuel must offer as CP. This conditional provision exposes supply resources that are unable to shoulder PJM’s substantially increased penalty exposure and capital costs to uninvited and potentially unreasonable risk. Units should be permitted to elect to become subject to this new risk profile and in doing so willingly accept a must offer requirement.

Finally, the Cost of New Entry (“CONE”) calculation should encompass all capital costs necessary to become CP compliant. This is especially critical given PJM’s intent to phase out all non-CP products from its market. The current CONE was calculated before this capacity market redesign. In the future, CONE must be amended to reflect all capital costs incurred to meet the more rigid standards prior to the time at which generators need to offer into RPM. This change is pivotal to ensuring RPM revenues equilibrate with long-run marginal costs and needed investment in “reliability based” infrastructure can occur.

With these recommended principles, which are described in further detail below, Generators believe that PJM will arrive at an RPM design that is likely to support long-term, reliable, and sustained supply development. Generators look forward to working productively with PJM towards continued positive refinement of the Proposal.
II. PJM’s proposed penalty construct is overly punitive and should be modified to reflect the fact that capacity prices are not guaranteed to clear at or near Net CONE.

The Proposal continues to expose Generators to unreasonable penalty risk should RPM prices fail to mirror long-run marginal costs. By way of example, if the CP product clears at $50/MW-day in an LDA with a Net CONE of $300/MW-day, a unit’s maximum penalty exposure approaches nine times its annual capacity revenue. This places resources at a significant risk of insolvency.

Low capacity prices should signal that an LDA is oversupplied, sufficiently reliable, and therefore not ripe for new entry. Conversely, higher clearing prices signal that reliability is compromised and new entry is warranted. PJM’s penalty structure sends a disruptive inverse price signal to resources located in oversupplied markets by subjecting them to significant penalty risk relative to resources in undersupplied LDAs. This inequitable result is likely to create significant volatility in risk profiles and clearing prices as resources enter and exit the markets relative to the penalty risk.

Generators propose that the maximum penalty rate be set at 150% of the CP product clearing price and that PJM eliminate the shortage hours pricing penalty. This construct is optimal because supply would be subject to a single penalty rate that is not dependent on scarcity events, while also recognizing that risk should be tangibly linked to revenue opportunity. This construct will provide a sufficient negative incentive for resources that are unable to meet their capacity obligations.

In the alternative, Generators suggest that PJM consider better defining the hours during which resources are subject to penalty risk. PJM’s two-tiered penalty structure increases the risk paradigm for supply during all hot weather, cold weather, maximum emergency generation, and (to an even more significant extent) shortage conditions. This overly broad application of penalties could be remedied by adopting the approach FERC approved relative to ISO-NE capacity market redesign: Penalties only attach during shortage conditions.

In addition to the reasonable stop-loss mechanisms provided in the Proposal, any penalties imposed by PJM should be recovered by forfeiting capacity revenues that the resource would otherwise be paid. In the event the penalty exceeds the total monthly capacity revenues paid to the resource, the additional remainder should be allocated to future capacity payments until the debt is fulfilled. Requiring generators to pay large penalties from both capacity and energy revenues in a single month creates significant liquidity risk for suppliers, which invites the real potential for bankruptcy. Lenders regularly require that borrowers maintain certain monthly and quarterly debt service coverage ratios, violations of which can result in default.
and ultimately bankruptcy. This risk jeopardizes the generator’s ability to maintain its business operations and therefore runs counter to PJM’s reliability needs.\(^7\)

The penalty also imperils hedging agreements that are regularly required by lenders to mitigate price volatility risk. As part of these agreements, suppliers exchange energy market revenues for a fixed payment from the hedge counterparty. PJM’s penalty structure could cause resources to violate these agreements, which invites default on credit obligations and likely bankruptcy.

With respect to projects that are currently under development, lenders regularly require developers to hold sufficient capital to cover any penalty exposure in designated reserve accounts. Requiring resource owners to outlay large amounts of cash on a short-term basis to cover PJM’s substantial increase in penalty risk could exceed the resources reserve requirements, thus negatively impacting underlying financial agreements. This result would chill the lending environment and limit market entry from new and efficient resources. Allocating the penalty as discussed herein is likely to stabilize the financing environment for both existing and planned resources, thus resulting in efficient entry and exit from RPM.

### III. PJM should reinstate the OMC designation for narrowly defined Force Majeure events.

PJM’s overly constrictive definition of OMC fails to recognize the extreme short and long term revenue impact posed by circumstances that are entirely outside of supply’s control. PJM should instead adopt and include a narrowly tailored OMC definition for a very limited set of circumstances that include instances when: 1) The natural gas pipeline declares a force majeure event; and/or 2) The natural gas transmission system or physical generation resource was impacted by a natural disaster or other “act of God” event.

This enhancement to PJM’s proposal is necessary to preserve long term viability for supply resources. Consider the following situation: A new combined cycle natural gas resource that holds a no-notice firm transport and commodity gas contract is serviced by a pipeline that experiences a catastrophic equipment failure that forces the unit off-line for six months. Not only is that resource subject to significant weather-dependent penalty exposure, but it also will have at least 50% EFORd for the following delivery year. This resource, which was impacted by a circumstance entirely outside of its control, may no longer be economically viable despite the fact that it had taken all available proactive steps to prevent the outage.

The example above is analogous to the transmission related OMC relief afforded under the current Proposal. In both circumstances the resource would have invested significant capital in upgrades the surrounding gas or transmission infrastructure either through the development of a dedicated natural gas lateral or interconnection upgrades. Both hypothetical units were forced out despite these best efforts and not

\(^7\) In reality, a CP resource has multiple points of financial exposure, which effectively pancake on top of each other from a single event, including the CP penalty exposure, balancing charges. EFORd impact for future capacity years, and emergency load response charge assessments.
due to any economic conditions within the resource owner’s control. Therefore, it is arbitrary and capricious to eliminate force majeure protection for events imposed by the natural gas transmission system but recognize such relief for the electric transmission system. The same logic is true for resources that are impacted by severe weather events like hurricanes or other natural disasters. These are both reasonable grounds for OMC relief. PJM should afford the resources relief from these unpredictable, unhedgable, and unreasonable risk by including force majeure events as OMC.

Generators recognize PJM’s concerns that load does not receive the capacity market’s benefit when resources are forced out irrespective of the OMC designation. Therefore, Generators propose a reasonable compromise whereby impacted by OMC force majeure events will forego capacity revenues for the duration of the outage, but will not be subject to penalties or the associated EFORd deduction. Generators further suggest that these forfeited capacity revenues should be paid to overperforming resources, thus creating a reasonable, “revenue neutral” paradigm for Load that also recognizes the additional reliability benefit provided by these assets. To the extent that a load shed event results from the deficiency, load may be refunded capacity revenues. This reasonable balance recognizes the continued reliability benefit provided by resources that are negatively impacted by circumstances outside of their control.

IV. Inefficiencies in the gas and electric markets are primary reliability drivers and expose supply to significant risks beyond their control. These market design flaws must be remedied as part of the CP transition.

PJM and FERC recognize that there are systemic failures in gas and electric market design that fundamentally impact reliability and increase generator risk. Generators are left without recourse to remedy these flaws without additional proactive action by PJM. Supply resources are captive participants in these markets and will be subject to substantial new risks under the CP construct.

The supply sector alone cannot drive the type of change that is required to ensure that supply can reliably accommodate the type of resource flexibility sought by PJM. Recently, stakeholders failed to approve several reasonable compromises to increase the outdated cap on energy market offers, despite the clear and convincing evidence that variable fuel costs can and do drive supply costs well above $1,000/MWh. Generators lack confidence that PJM’s current stakeholder process will produce the required reforms that were initially contemplated as part of the Enhanced Liaison Committee process. PJM must ensure that the reliability concerns resulting from the interplay between the gas and electric markets do not continue to negatively impact reliability. As eloquently articulated to FERC by one market participant:

“As a matter of policy, the Commission should not allow shortcomings of tariff provisions to place RTOs and generators in a situation where economics are pitted against reliability. During emergency events such as those experienced in January, the clear focus and job one
between the RTO and generators is to keep the lights on, not to interpret complicated tariff requirements or seek to minimize economic risk to the detriment of reliability because there is no clear assurance of cost recovery.”

PJM should commit to taking prompt unilateral action, if necessary, to ensure that these market inefficiencies do not continue to expose supply resources to significant, unhedgable risk that is beyond their control. The reforms discussed below should be adopted as a part of the transition to the CP construct.

a. **PJM must recognize that the natural gas market does not accommodate the type of resource flexibility contemplated by the CP Product.**

The ability to flow fuel to specific plants is dictated by individual tariffs associated with each pipeline. It is entirely possible that a historically reliable natural gas fired resource cannot meet its nameplate start-up time solely due to pipeline-imposed nomination periods regardless of the economic decisions made by the generator. Generators believe that PJM is taking an unrealistic view that gas markets will instantaneously evolve to meaningfully expand the availability of no-notice service, which is required to insulate resources from the significantly increased penalty risk. Therefore, Generators will be required to rely on other types of fuel delivery arrangements going forward. Generators therefore propose that resources called upon to operate in Real-Time (“RT”) for reliability reasons should be permitted to update their notification times to reflect gas delivery windows. The resource would not be subject to penalties when the nomination period exceeds its normal start-up time. Resources called within the Day-Ahead (“DA”) market would remain subject to penalties for failure to follow its dispatch schedule.

Generators recognize that the natural gas markets may eventually accommodate the substantial increase in no-notice service contemplated by PJM; therefore, Generators propose that this provision be reviewed as part of the quadrennial review process. We believe this modification complements the transition mechanism already proposed by PJM while providing the necessary opportunity for no notice gas arrangements to mature within the market.

b. **PJM must improve reliability and mitigate unreasonable risk to supply by synchronizing the gas and electric days.**

It is widely known that the regional electric and natural gas days are not synchronized. PJM’s electric day runs from 12:00 AM ET to 12:00 AM ET, whereas the natural gas day runs from 10:00 AM ET to 10:00 AM ET. Transaction volume and liquidity in the gas market is at its peak within 120 minutes prior to the

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Timely Nomination cycle deadline at 12:30 PM ET on the business day prior to delivery; however, DA awards are not posted until 4:00 PM ET on the calendar day prior to delivery. Aligning these two markets is vital to improving reliability because it maximizes the value of firm fuel gas transport agreements.

PJM must also improve the DA market clearing protocol to determine obligations within one hour. Awards made by 12:00 PM ET would provide generators the ability to timely nominate fuel, thereby substantially increasing the likelihood that fuel can be delivered to resources, ultimately increasing their reliability. This reform would also reduce the risk to supply that prices change dramatically during scarcity events which should manifest itself in better energy price formation for load.

PJM’s natural gas fleet will continue to rely on a variety of different fuel contracts governed by the natural gas pipelines. Aligning the gas and electric days so that DA awards are known before the timely nomination window is the optimal way to ensure that resources can procure firm fuel to accommodate PJM’s dispatch instructions, and is a necessary reform for reliability on the electric system. This reasonable change both supports reliability and provides supply resources with a reasonable opportunity to mitigate the substantial risk posed by PJM’s proposed penalty structure.

c. PJM should allow unit min-run times to reflect ratable take limits imposed by natural gas pipelines.

The most recent Gas Unit Commitment Coordination (“GUCC”) proposed the opportunity for pipeline imposed reliability requirements to be an acceptable deviation from Parameter Limited Schedule (“PLS”) operating parameters. This change may relieve gas fired unit owners from penalty when min-run times are a product of pipeline-imposed fuel purchase limits. Generators applaud PJM for this timely and much needed reform.⁹ We request that PJM definitively state that it will commit to this reform as part of the CP construct. Failure to adopt this change leaves generators in the untenable position of having to decide between the financial risk associated with severe gas balancing penalties, potential violations of gas pipeline tariffs, or PJM’s proposed CP penalty structure.

V. The subjective requirement that all resources “capable” of obtaining firm fuel must offer as a CP resource is arbitrary, unreasonable and should be eliminated.

PJM proposes that generators that are “capable” of making certain firm-fuel arrangements must become CP resources. Generators recognize that the reliability issues identified by PJM are significant and require a fundamental shift in the definition of capacity that also addresses gaming and manipulation concerns. However, in attempting to remedy the forthcoming reliability issues, PJM must balance the need

for additional flexible generation resources with the ability of current generation resources to effectively provide the desired capacity product. Therefore, the must offer requirement should only apply to resources that elect to become CP, and not when an external entity arbitrarily deems it “capable” of procuring a certain fuel contract.

Accordingly, generation owners should be free to determine their own tolerance for the significant risk posed by the CP product. They should not be forced to shoulder this additional exposure unilaterally. This is especially true for existing resources that made investment decisions in reliance on PJM’s then-existing market design. Resources that are unable or unwilling to accommodate the CP requirements may be forced to prematurely retire based on this “change in law”. Such a condition would signal that PJM is an unstable business environment and could chill future development, which runs counter to PJM’s goal of enhancing reliability.

In particular, the fact that “a single-fueled gas-fired generator that is capable of obtaining a secured fuel supply delivered to its generation facility” will be “required to submit an offer as a capacity performance resource”\(^\text{10}\) is founded on the vague and subjective notion of “capability”. One could suggest that a resource is capable, with proper funding, of building a direct pipeline of any length to carry firm fuel to its generation facility; however, it would not be reasonable to do so. Requiring a resource to build a designated gas lateral or effectively retire could unnecessarily drive needed resources from the market.

Moreover, this notion runs contrary to PJM’s often stated mantra that it is not making fuel procurement decisions for generators. PJM modified the eligibility requirements for “resources to choose to offer as Capacity Performance.”\(^\text{11}\) PJM should not retreat from this positive reform. Instead, the must offer requirement should only attach after a resource has assessed the CP value proposition, and elected to take on the additional risk. If a generation owner is unsure or uncomfortable with their facility’s ability to meet the CP resource standards, then PJM certainly should be as well. Otherwise this requirement could negatively impact reliability by forcing potentially non-CP compliant resources to meet reliability benchmarks that are beyond their reach.

Generators also suggest that PJM eliminate the explicit prohibition against development of non-CP planned resource. Instead, PJM should allow the opportunity for potentially increased revenues to attract the appropriate quantity of CP resources into the market. Failing to allow any Base Capacity development could harm reliability because there may be areas within the footprint where it is impossible to develop CP resources regardless of cost.

Overall, shifting the product-type decisions to resource owners assures a more reliable electric grid while also allowing market forces to influence investment. PJM should adopt these necessary reforms.

\(^{10}\) Id. at P. 30.
\(^{11}\) Id. at P 4.
VI. CONE must reflect all additional costs to comply with the capacity CP product definition.

PJM recently filed reforms to the CONE calculation that would determine CONE value for the next four years, during which it will transition to a CP regime. However, these values are based on the needs of the current capacity system, and are inadequate, relative to the cost, to provide the proposed CP product. PJM should revisit these calculations to ensure that they accurately reflect the cost to provide CP supply.

The additional increase in capital investment needed to become CP compliant should be incorporated into CONE. Examples include: 1) the cost of assuring that resources have start up and notification times of less than 24 hours; 2) the cost to fully man units to achieve a notification time of less than 1 hour; 3) the cost of winterization including improved O&M, heat, or on-site storage; 4) the cost for on-site fuel or dual-fuel backup capability for at least 16 hours of continuous operation per day for three consecutive days; and 5) the additional risk premium generation owners will include based upon the significant penalties associated with participation in CP.

Without CONE accurately representing the cost of entry into the market, suppressed capacity prices are inevitable. This would continue to increase market inefficiency and degrade reliability. PJM must ensure that CONE captures all costs needed to become CP compliant.

VII. Conclusion

Generators applaud PJM for the significant improvement in the current Proposal. With the inclusion of the core principles articulated above, this construct could meaningfully improve upon RPM’s current design. The Generators also believe that including the principles above is important to ensure continued and efficient access to the “project financing” markets upon which they rely. Generators thank you for the opportunity to provide these comments and welcome additional discussion with PJM.

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