September 17, 2014

PJM Interconnection  
2750 Monroe Boulevard  
Audubon, PA 19403

Subject: Covanta Comments to PJM Capacity Performance Resource proposal

Covanta Energy (Covanta) is an owner and operator of 12 “Resource Recovery Facilities” (RRF or “the Facilities”) in PJM which provide an environmentally sound resource for the disposal of over 6 million tons of solid waste per year. These facilities represent an important resource for the region in the critical area of waste management. In addition to serving this important public purpose, these plants have a reliable operating history in the power generation industry, providing important fuel diversity to PJM. The ample supply of solid waste as fuel is very different from that of coal, natural gas, fuel oil or nuclear fuel, thereby helping to support the reliability and economic stability of PJM’s supply fleet.

Covanta has reviewed the PJM Capacity Performance Proposal (the Proposal) and finds that instead of recognizing the capacity benefits of solid waste fueled facilities in the regional generation fleet, the Proposal imposes inordinate and unacceptable risk, as well as other disincentives to the continued financial viability of RRFs in PJM.

During the month of January 2014, Covanta’s PJM fleet was able to achieve an 89% boiler available rate that continually provided energy and capacity to the grid due to the presence of on-site fuel and the reliable operation of the assets. Despite this proven contribution to regional reliability, PJM proposes to subject Covanta’s resources to dramatic new penalties, without the explicit opportunity for additional revenues. Covanta is seriously concerned about the impact of the proposed Capacity Performance Resource (CPR) construct if it fails to recognize the suggested changes outlined below.

Based on these considerations and to support PJM’s goal of improving reliability of its grid, Covanta appreciates the opportunity to provide the following recommendations which are necessary to reform CPR into a workable market design. Without these changes, Covanta suggests that PJM will exacerbate any existing reliability concern by forcing RRFs and other resources from the capacity market.

I. PJM Should Retain the Unforced Capacity (UCAP) Measurement for Both Payment and Penalty Assessment in All Aspects of the Reliability Pricing Model (RPM)

As an initial matter, Covanta recommends that PJM remove the requirement that an officer certify to a specific performance requirement. The adverse penalties provided by PJM are sufficient to incentivize performance. In the event PJM feels a certification remains necessary, it should be tied to an understanding that the resource must perform to meet system needs and not a specific capacity commitment.

PJM intends to require a company officer to certify that “Capacity Performance Resources” are able to “operate at their Installed Capacity (ICAP) value for at least 16 hours per day for three consecutive
days throughout the delivery year.”\(^1\) Despite the fact that Covanta’s Facilities have been reliable resources to PJM and have consistently met their UCAP obligations, if required, it could not certify to this provision. The proposal should therefore be amended to remove the ICAP-based commitment and should instead retain the current UCAP commitment.

As PJM is well aware, capacity is the ability to produce energy when called by PJM. Capacity markets should be designed to incentivize resources to be available to enhance reliability by naturally biasing revenues to favor the best performing resources. Currently, the UCAP measure accomplishes this by deducting the forced outage rate from the physical installed capacity (ICAP) value for a resource. Indeed, as the Market Monitor correctly states in its report on RPM fundamentals, reducing net capacity payments to generators that underperform provides “a direct incentive to have low forced outage rates.”\(^2\)

Despite its strong operating history, Covanta’s RRF units (or those owned by others) cannot certify that they are able to “operate at their Capacity Performance Installed Capacity (ICAP) value for at least 16 hours per day for three consecutive days throughout the delivery year.” There are two primary reasons why this is the case: 1) The variability in the composition of waste stream supplied for fuel means that an RRF will not operate at its ICAP; and 2) Forced outages are a natural function of operating a generating unit. In certain cases, no additional amount of operations and maintenance expenditures would improve the unit’s performance to eliminate the possibility of forced outages. While RRFs expect to have sufficient fuel on-site to provide supply for extend periods of time, the quality of that fuel can vary significantly depending on season, rainfall, and other factors. As a result, the Facilities would be exposed to PJM’s penalty regime without reasonable recourse.

PJM should also adopt a “block bidding” construct to permit resources to nominate specific quantities of capacity from their units as CPR. This construct would allow a resource to manage the risk associated with the increased penalty posed by PJM by only offering a portion of a unit’s capacity into RPM. It would also provide PJM with the assurance that the quantity of CPR provided to PJM was available when needed, while permitting resource owners with limited portfolios to manage risk across commitments, and possibly cover shortfalls with owned capacity.

The requirement that RRFs certify to its ability to “operate at their ICAP value for at least 16 hours per day for three consecutive days throughout the delivery year” should also be amended to “16 hours per day for one day” assurance. Covanta also recommends that the requirements be based upon the UCAP value of the resource and not ICAP. This restriction will allow RRF facilities to confidently certify that they are available to provide CPR when needed by PJM.

Requiring RRFs to offer at their ICAP value could also exacerbate PJM’s concerns with both reliability and the over-reliance on uplift. If the RRF resource failed to meet its ICAP value due to fuel composition, PJM would be forced to rely on output from other units out of merit order to fill the void. The end result would be an overestimate of the fleet capability coupled with the need to run resources outside of economic merit. Ultimately load would be harmed by this change.

Retaining the UCAP measure for both payment and penalty allocation preserves it as both a performance incentive and risk management tool necessary to allow Covanta to reliably perform as a CPR resource when called by PJM. PJM would be provided with the reliability assurance that the

\(^1\) PJM Capacity Performance Proposal at P.8.
\(^2\) Id. at 11.
necessary capacity would be available during all hours when needed by PJM by accurately accounting for the likely operational ability of its resources. Therefore, PJM should retain the UCAP performance obligation in the CPR construct.

II. The “Non-Performance Penalty Offset” Provisions Should be revised to Allow Bilateral Transactions Between Unaffiliated Entities and Base Annual Capacity to Limit Penalty Exposure

PJM proposes that a “Capacity Market Seller may offset the penalties applied to its Capacity Resource via energy production from an uncommitted unit . . . defined as a unit for which all or part of the unit’s capability does not have an RPM commitment for either the Capacity Performance or Base Annual Capacity products for the Delivery Year . . . and applies to units in the Generation Owner’s portfolio.”

A more equitable and appropriate market design would continue to reflect RPM’s current accommodation of transactions for capacity between buyers and sellers. Currently, PJM provides for unit-specific bilateral transactions defined as the transfer of “rights to or control of a specified amount of installed capacity from the Seller to the Buyer.” Auction Specific MW Transactions are similar transactions that entail the “physical MW of capacity from a seller to a buyer at the location of the physical resource identified as supplying the transaction.”

PJM should explicitly state that the Non-Performance Penalty Offset includes available capacity purchased through the existing bilateral contracting mechanism. PJM should ensure all market participants are able to participate in RPM on equal footing. Expanding the Non-Performance Penalty Offset to allow bilateral transactions between unaffiliated buyers and sellers (as permitted under current rules) would address the inequity inherent in PJM’s current proposal.

PJM should also allow resource owners to replace a capacity shortfall with a Base Annual Capacity product that over performs during a scarcity event. This will allow resource owners to truly reflect the reliability value of their portfolio.

III. PJM Should not Alter the Penalty Construct for Base Annual Capacity Resources

PJM proposes to “apply the hourly energy penalty [applicable to CPR resources] for non-delivery, but limited to those periods when PJM has loaded Maximum Generation of any more severe emergency procedures during the months of May and October.” The existing EFORp penalty would be eliminated. Covanta believes that PJM should not alter the penalty construct for Base Annual Capacity resources.

PJM’s Base Annual Capacity product will retain the current requirement that “in return for capacity market revenues, each unit type must be available at any time during the year that they are needed to meet the demand for energy from PJM customers.” In the event these resources are not available, they are subject to numerous penalties in the form of balancing charges, Peak Hour Period Availability Charges, and the potential loss of future capacity revenue through an increase in the

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3 PJM Capacity Performance Proposal at P. 28.
4 PJM Manual 18: PJM Capacity Market at Sec. 4.6.1, P. 62.
5 Id.
6 PJM Capacity Performance Proposal at P. 28.
unit's force outage rate. These penalties are sufficient to incentivize resources to meet their obligation to deliver supply.

Moreover, the CPR construct is a voluntary product, meaning that resource owners unwilling to accept the additional risk posed by the proposal can continue to provide supply to meet load. Increasing the risk to these resources could have the opposite effect as intended by PJM: It could drive additional supply to retire. Therefore, PJM should retain the current penalty structure for Base Annual Capacity products. In the event PJM feels the need to further penalize Base Annual Capacity resources, PJM should cap the annual exposure at 100 percent of the annual capacity Base Annual Capacity revenue paid to these resources.

IV. PJM's Penalty Construct Creates Risk that is Not Viable for Generation Asset Owners Thereby Forcing Resources to Unnecessarily Exit the Capacity Market and Reducing the Amount of Resources Available to Meet PJM's Reliability Goals

PJM's proposed construct fails to recognize the ever-present incentive already in place to provide energy to the PJM. While capacity revenues are a vital component of the overall economics for generation assets, selling energy into PJM's market remains the key revenue source for RRFs (and most other base load generation). Scarcity events are often coupled with the most profitable opportunity for generation resources—the opportunity to capture high energy revenues during times of system stress. This opportunity provides the correct incentive to resource owners to provide energy to the grid. PJM's proposed penalty construct places a generator at risk in the event its resource was forced out during a scarcity event. PJM has articulated the penalty exposure for a 100 MW unit in PSEG territory that was forced out for all hours on January 7, 2014 at about $1.8 million. However, this penalty does not include the balancing charges and operating reserves incurred by that unit during the same period. It is reasonable to assume that the all-in penalty exposure (inclusive of balancing charges) is effectively twice that articulated by PJM—making the RRFs penalty exposure that much more significant. This substantial risk factor has the potential to significantly harm the economics for CPR resources and could greatly discourage participation in this construct.

The performance period for calculation of penalties should be reduced to either Max Emergency hours (approximately 132 hours over twelve months) or the predefined annual EFORp hours. The current proposal includes All Hot/Cold weather and Max Emergency hours, which totals to over one thousand hours in the last twelve months. The quantity of Hot and Cold weather alerts can vary significantly and are not necessarily indicative of increased system need. We suggest that the expansive commitment imposed by PJM dramatically increases the risk on supply resources relative to the system's needs. Both of these metrics are sufficient to incentivize performance and allow PJM to provide reliable service.

PJM's proposed penalty factors are exacerbated by the elimination of Out of Management Control (OMC) outages. This includes force majeure events like Hurricane Sandy or a catastrophic failure of the regional transportation system (for delivery of solid waste fuel). Indeed, contract law recognizes the longstanding forgiveness from performance for "impossibility". Following Hurricane Sandy, certain units in New Jersey were submerged under several feet of water. No amount of CapEx or maintenance dollars could have allowed local resources to provide supply under these conditions. PJM must retain a narrow exception for forgiveness from performance for events that are exclusively outside of the generators control.

While Covanta believes that resources should be forgiven from all performance obligations during force majeure events like natural disasters, PJM may feel compelled to provide some additional
incentive to prevent against potential abuse of this narrow exception. To that end, Covanta suggests that resources that avail themselves of the force majeure provisions should refund a pro-rata share of the daily capacity revenues paid to the unit during the hours of the scarcity event. A single 24 hour period would result in forfeiture of the entire daily capacity revenues paid to the asset. It would be forgiven from paying the remaining balancing or penalty charges.

V. PJM’s Construct Should Allow Resources to Include a Unit-Specific Risk Premium in CPR Offers

The risk premium proposed by PJM is not sufficient to cover the potentially significant downside risk associated with PJM’s proposed penalty construct. PJM proposes to apply the following formulaic risk premium to all CPR market offers:

\[ \text{Risk Premium} = (\text{Poolwide EFORD}) \times (\text{Historic Hours of Hot and Cold Weather Alerts}) \times (\text{Average Real Time LMP during Hot and Cold Weather Alerts}) \]

Using the metrics reported by PJM, the total risk premium is about $11.50 per MW-Day. Alternatively, PJM should allow generators to calculate their own risk premium. Covanta proposes that PJM adopt a construct similar to the market design approved by the Federal Energy Regulatory Commission (FERC) as part of ISO-New England’s Pay for Performance Capacity Market redesign. Therein, FERC allowed market participants to provide documentation to the Market Monitor and ISO "separately detailing any risk premium included in the bid."⁸ FERC went on to clarify that this documentation “should address all components of physical and financial risk reflected in the bid, including, for example, catastrophic events, a higher than expected amount of reserve deficiencies, and performing maintenance during reserve deficiencies.”⁹ As discussed above, the $11.50 risk premium level proposed by PJM is insufficient to compensate generators for their risk of participation. If generators are permitted to calculate (and offer) their own risk premium, the market will naturally sort out the most efficient sources on behalf of consumers. PJM, the Market Monitor, and FERC should then determine whether the explanation of risk proposed by the resource is sufficient.

If PJM does not strike the proper balance between risk and revenue opportunity, resources will not be able to accept the risk of the proposed penalty construct and will exit the CPR market (or the entire market). The result for PJM will be a less reliable system.

Per the comments above, the suggested formula could be adjusted for OMC/FM Penalty accordingly:

\[ \text{Risk Premium} = (\text{Poolwide EFORD}) \times (\text{Historic Hours of Hot and Cold Weather Alerts}) \times (\text{Average Real Time LMP during Hot and Cold Weather Alerts}) \times (1 + \text{Historic-Estimated OMC/FM Events/Days])**

** Where each Event = 0.20. (A 5 day event estimate would effectively double the Risk Premium.)

[Rather than a formula, allow each generator to derive its own risk premium independently.]

VI. PJM Should Distribute Penalty Revenue From Underperforming Resources to Those That Over Perform

Covanta believes that it is paramount that the CPR construct adequately compensate resources for the reliability they provide. To that end, PJM should redistribute penalties collected from

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⁹ Id.
underperforming resources to those resources which exceed their reliability requirement and provide supply during critical reliability periods. Creating a more robust system where adequate generation has an additional incentive to increase its availability during scarcity events is likely to send the correct market signal to supply to perform when needed to serve load. This suggestion lends itself to apply to Base Annual Capacity volumes, yes?

Adoption of these amendments will increase both unit flexibility and availability to support the reliable operation of PJM’s system.

VII. Conclusion

In summary, Covanta believes that any reforms to the capacity market must include the following provisions:

- Total annual penalty exposure should be capped at 100% of the gross capacity revenues paid to an asset;

- Monthly penalties should be capped at 150% of monthly capacity revenues;

- Limit Performance Period Hours to Max Emergency hours only

- Generators that over perform during penalty hours should receive compensation from generators that underperform;

- OMC and force majeure events should be excluded from the calculation of penalty hours;

- Market participants should be allowed to offer a portion of their capacity into the market so they can hedge their overall exposure to risk; and,

- The requirement for Officer Certification should be removed since the penalty associated with non-performance is sufficient to incentivize the type of performance sought by PJM.

- Base Capacity rules should remain the same

- Retain UCAP measurement for both payment and penalty assessment

Respectfully submitted,

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