



## GreenHat Energy, LLC Default Lessons Learned

On June 21, 2018, PJM Interconnection declared a Financial Transmission Rights (FTR) Market participant, GreenHat Energy, LLC, in payment default for not paying its \$1.2 million weekly PJM invoice issued on June 5, 2018. GreenHat Energy held an 890 megawatt hour (MWh) FTR portfolio when declared in payment default. PJM committed to provide PJM members lessons learned of the events associated with this member default.

### **A. Additional Information should be required on the credit application**

The current credit application may not include all inquiries that may be relevant for PJM to assess the application.

#### ***Recommendations:***

1. Application inquiries should be expanded to address additional items, such as whether an applicant or its owners have been the subject of regulatory investigations in the past, whether an applicant has ever had its market based rate authority suspended or terminated, whether an applicant has ever had its retail supplier license suspended or terminated, etc.
2. Application should include language stating that the responses to inquiries on the member application form authorize PJM to request additional information and may be used as the basis for PJM to deny a membership application.

#### ***Timeline for change:***

This change will be made within the next 30 days.

### **B. GreenHat had a low path-based FTR credit requirement primarily due to the historical congestion on paths acquired not reflecting the likely changes in congestion patterns from planned transmission system upgrades**

GreenHat had a very small credit requirement based on the FTR credit policy in effect when GreenHat acquired their FTR portfolio and their bidding behavior. The paths that GreenHat had acquired appeared to be profitable based on historical congestion. Significant Regional Transmission Expansion Planning (RTEP) upgrades that occurred after the paths were acquired had a material impact on future congestion.

#### ***Recommendation:***

Incorporate PROMOD simulation of congestion changes that are projected from high impact RTEP upgrades into path-specific FTR credit requirements.

***Timeline for change:***

PJM implemented this FTR credit policy enhancement effective April 1, 2018. PJM's calculation of path-based FTR credit requirements now incorporates simulations of future congestion changes on FTR paths based on anticipated future transmission system conditions. These simulations have been 87-90 percent consistent with the actual congestion on FTR portfolios over several recent planning years. This credit policy change PJM made on April 1, 2018, incorporated projected changes in congestion levels due to planned transmission system changes and is estimated to have required GreenHat to provide approximately \$60 million of financial security to acquire the FTR portfolio on which they defaulted.

**C. GreenHat acquired a large volume portfolio with minimal credit requirement**

GreenHat had a very small credit requirement based on the FTR credit policy in effect when GreenHat acquired their FTR portfolio that did not consider the magnitude of FTR positions on which a market participant bid or cleared.

***Recommendation:***

Implement a volumetric minimum FTR credit requirement. The volumetric credit requirement would be applicable when it results in a higher credit requirement than the path specific FTR credit requirement.

***Timeline for change:***

Stakeholders endorsed a 10 cent per megawatt hour volumetric minimum FTR credit requirement. The change became effective on September 3, 2018, subject to refund. This FTR credit policy revision is estimated to have required GreenHat to provide approximately \$90 million of financial security to acquire the FTR portfolio on which they defaulted. PJM is awaiting FERC approval.

**D. Limited discretionary collateral call authority for PJM**

PJM's current credit policy stipulates specific circumstances when PJM may make a collateral call. There are limited provisions for a discretionary collateral call and those provisions are included only under certain headings in the credit policy that are not necessarily applicable in all circumstances.

***Recommendation:***

Add discretionary language for PJM to issue collateral calls that can clearly be applied broadly to a wider range of potential circumstances and all types of market activity.

***Timeline for change:***

To be introduced to the Credit Subcommittee in October 2018 as a component of a proposed problem statement and issue charge to address open items in this Lessons Learned document.

**E. Transition rules for April 1, 2018 path-specific FTR credit changes allowed for additions to FTR portfolios during the transition period**

The transition rules for the FTR credit policy enhancements that went into effect April 1, 2018 allowed members to complete any FTR transaction that reduced their credit requirement resulting from the new credit changes.

***Recommendation:***

Do not allow “buy” transactions in FTR auctions or via bilateral transactions in the transition rules for future credit enhancements.

***Timeline for change:***

This is now incorporated in PJM’s prospective credit changes, including the volumetric minimum FTR credit requirement implemented effective September 3, 2018. The transition rules for that FTR credit policy change only allow sales into FTR auctions or sales via bilateral transactions that would reduce the overall credit requirement.

**F. Current FTR credit policy does not take into effect changes in FTR auction clearing prices**

After acquisition of the majority of the positions in GreenHat’s portfolio, the auction clearing prices decreased without those auction clearing prices being reflected in the FTR credit requirement.

***Recommendation:***

Implement a “mark-to-auction” component into the FTR credit requirement. This would be a third component of the FTR credit requirement. The resulting FTR credit requirement would be the highest of the monthly (1) path specific; (2) volumetric minimum; or (3) “mark-to-auction” credit requirements.

***Timeline for change:***

PJM is currently working with the Credit Subcommittee to develop mark-to-auction packages for voting. The timeline is to have a proposal endorsed at the December 6, 2018 Markets and Reliability Committee (MRC) and Members Committee (MC) meetings with a filing to FERC that month. PJM is targeting implementation of this additional component of the FTR credit requirement in early 2019.

**G. Liquidation of a large FTR portfolio can cause significant impacts to FTR auction prices**

PJM decided it was not prudent to liquidate the GreenHat FTRs in all the months in the FTR auction held in July 2018. The impact of liquidating the significant volume of the portfolio at once could have resulted in distorted FTR market outcomes that might not have reflected expected Day-Ahead Market prices and would have locked in significant losses to PJM members.

***Recommendation:***

Stakeholders a problem statement and issue charge on August 23, 2018 to develop alternate FTR liquidation process options.

***Timeline for change:***

PJM has held two special MRC meetings to discuss various FTR liquidation process options. The poll to narrow the options occurred during the week of September 10<sup>th</sup>. The results of the poll will be discussed at the next special MRC on this topic to be held on September 18, 2018. Next steps are for voting to occur at the MRC and MC meetings on September 27, 2018 with a FERC filing by October 1, 2018 with a requested December 1, 2018 effective date.

***H. Complexity of assessing FTR credit risk***

The FTR market provides unique credit risk challenges as compared to the energy markets. Specifically, there is a decidedly longer time horizon from inception to completion of transactions for FTRs than for energy market transactions. Additionally, there are a wide range of causes of congestion volatility that can affect FTRs. For example, generation and transmission outages, duration of outages, weather, generation additions and retirements, and fuel mix are just a few items that can have a material impact on congestion patterns and levels from when an FTR is acquired until its term ends.

***Recommendation:***

PJM engaged with various experts to identify causes of FTR portfolio volatility and potential enhancements to the FTR credit policy.

***Timeline for change:***

PJM held an FTR Risk Management Workshop with external advisors on August 14, 2018. The results will be shared with the Credit Subcommittee on September 17, 2018. The next steps will be prioritizing potential enhancements and developing problem statements and issue charges to set the work plan going forward.