



roscommon

analytics

Investment manager of the parent fund of Apogee Energy Trading LLC

GreenHat Portfolio Liquidation Proposal for Consideration

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A single FTR path can represent the GreenHat portfolio

- Simplify the representation of the GreenHat portfolio by grouping the sources and sinks into aggregate pricing nodes X and Y
- 1 MW FTR from X to Y has the same impact as if 1 MW “slice” of the portfolio; so entirety of the portfolio becomes transactable

Illustrative Example : PY1819 OnPeak Portfolio

Geographical footprint



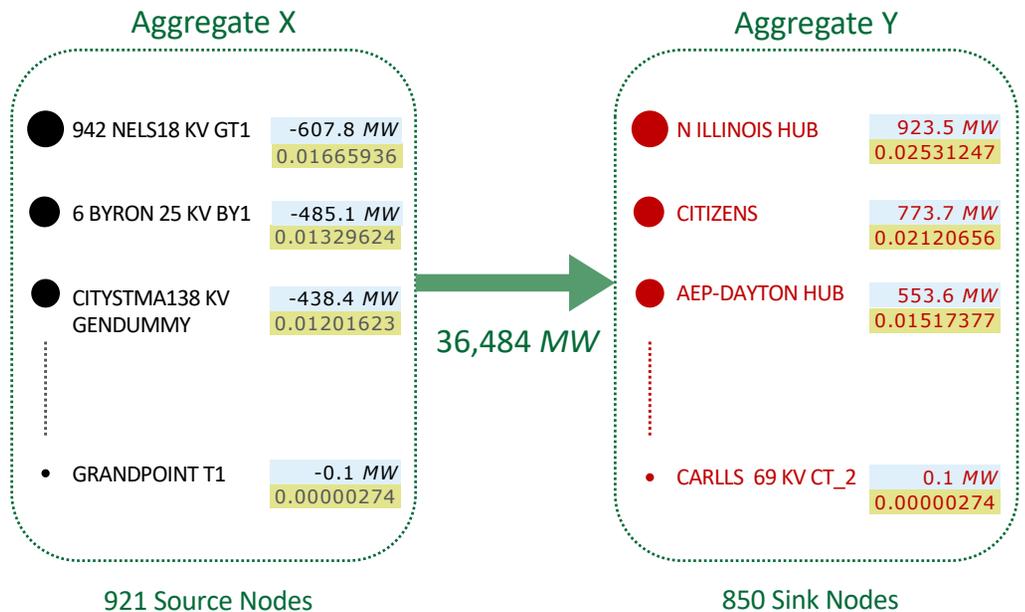
8,005 FTR Paths

63,146.4 MW

2018 August Auction Valuation for OnPeak

	SEP – NOV	DEC - FEB	MAR - MAY
Portfolio Value	\$-7,349,605	\$-10,016,010	\$-5,444,769

Aggregate Representation



921 Source Nodes

850 Sink Nodes

1 FTR Path

36,484 MW

2018 August Auction Valuation for OnPeak

	SEP – NOV	DEC - FEB	MAR - MAY
1 MW Path Value	\$-201.45	\$-274.53	\$-149.24

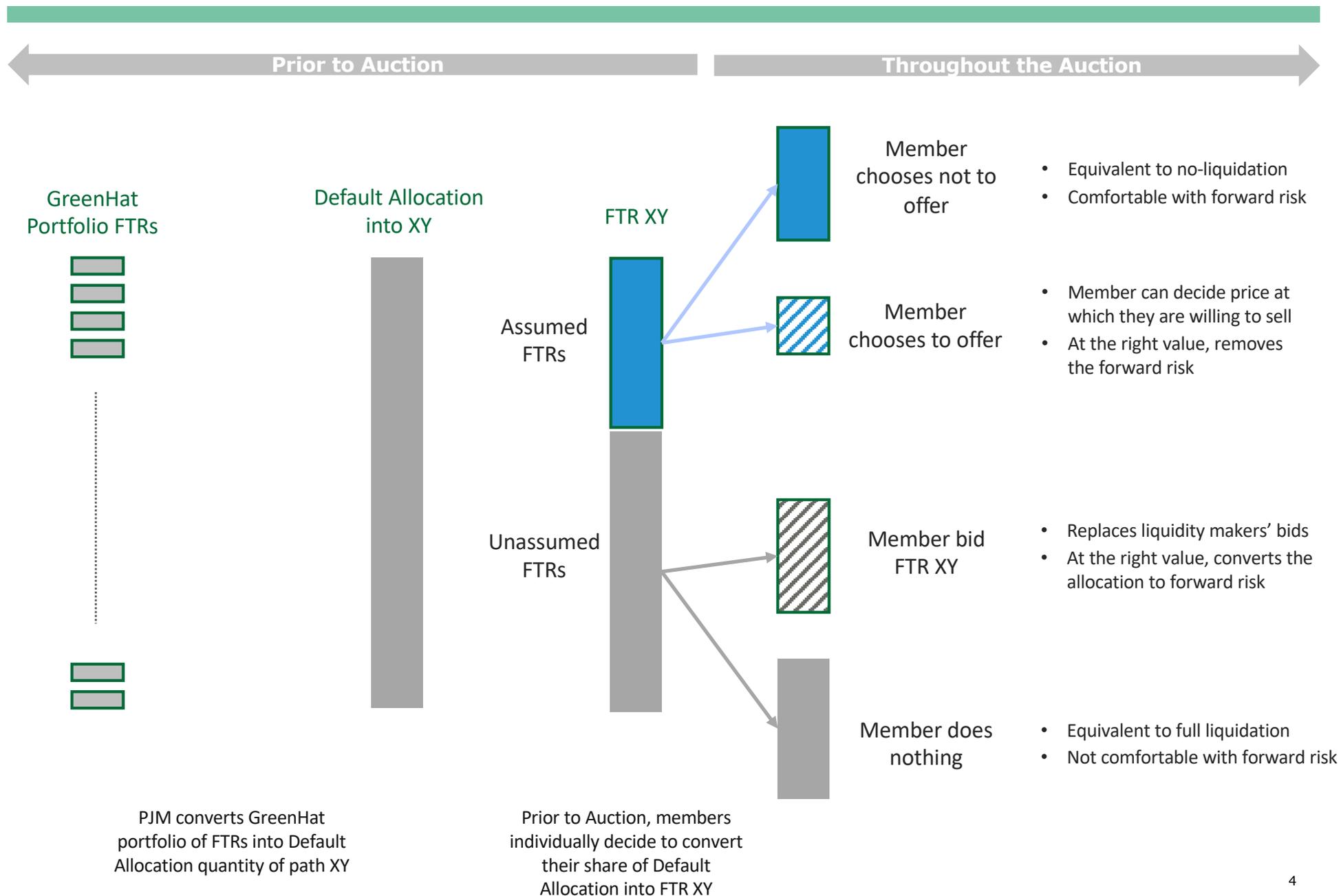
Market mechanics provide ample capabilities to have an orderly liquidation

Apogee Energy Proposal

- PJM to create new (X) and (Y) pricing points¹, each aggregating the sources and sinks of the entire GreenHat portfolio. The pricing nodes are available for FTR Auctions. This process will be replicated for on- and off-peak and round the clock, as well as for each planning year.
- Any market participant can assume the equivalent MW of their Default Allocation percentage of the GreenHat portfolio volume in FTR XY1819, FTR XY1920 and FTR XY2021 in lieu of paying their share of the default allocation. Credit requirements for each FTR XY will be calculated in accordance with the operating agreement.
- Market participants have to make the FTR XY assumption decision prior to the next monthly auction. After PJM knows the total conversion request, they will convert that percentage of the GreenHat portfolio into FTR XYs.
- Those members who choose not to convert will vote on the method of liquidation, knowing the amount of FTRs left to be sold:
 - Follow the Tariff – sell in subsequent auctions without setting price
 - Sell in special auctions in tranches
 - Other?
- In all subsequent auctions, bids and offers on FTR XYs will continue to be accepted, and settle like any other FTRs.

Footnote 1: Market mechanics may need different naming conventions, PJM is best situated to name them. Possible considerations are holding company name, tenure and class indications

Members are given opportunity to decide for themselves



Proposal addresses members and PJM concerns

Members

- Puts all members on an equal footing. Allows each member to decide what is the best market outcome for themselves, not for everyone else
- Gives members easy hedging flexibility. If a member assumes their share of FTR XY, they can decide every auction whether to liquidate or take to settlement, deciding at what price they are willing to liquidate - while still having the flexibility to buy or sell individual FTRs that are part of the GreenHat portfolio
- For members who choose not to convert, they collectively decide on the best method of liquidation

PJM

- Has clear direction on path forward from its members
- overcomes the issue of allocating any path in less than 0.1 MW increments
- Mitigates future member default risk on GreenHat Default Allocation; those that assume FTR XY have standard credit requirements; those that don't will have a defined obligation which PJM can monitor their ability to pay
- Follows the spirit of the Tariff

Market has the desired outcome

- more sellers and more buyers with more liquidity
- no one has competitive advantage through mechanics; whether through scarcity or through no-liquidation approaches

APPENDIX

“Aggregates” improves liquidity in electricity markets

- We have the notions of Hubs, Zones, Aggregates and Interfaces, these are merely weighted averages of selected nodes
- From market solution mechanisms, there is nothing special about aggregate price nodes

Illustrative Example : AEP-DAYTON HUB to WESTERN HUB FTR

