

# **2024 RTO Membership Analysis**

## **Appendix 8**

## **Power Supply SEEM Trading Guidance**

### **Background / Market Structure**

The Southeast Energy Exchange Market (SEEM) is an automated, intra-hour system to match buyers and sellers with the goal of adding an efficient bilateral market when unused transmission capacity is available. Power transactions are voluntary and non-firm. SEEM participation for LG&E/KU will be in addition to current participation in existing bilateral and RTO markets.

A new transmission product, NFEETS, has been created for this market. NFEETS is the unutilized transmission that is available after the traditional reservation window has closed. The cost for this transmission is \$0/MWh and it will have the lowest NERC priority. The only transmission costs associated with the SEEM platform will be financial losses paid to the Transmission Service Providers.

The matching process will occur every 15 minutes, with bids and offers submitted no later than 15 minutes prior to scheduled flow. The automated market matching, transmission requests, and tag creation/approval must happen prior to the standard start of the ramping window, five minutes prior to flow.

The matching algorithm seeks to maximize the benefit to participants when pairing bids and offers. The clearing price is a midpoint of the matched bids/offers with an adjustment for financial losses incurred.

Reliability, load conditions, and system conditions determine the real-time level of trading activity.

Power Supply will seek to maximize SEEM benefits to customers by including SEEM considerations into ongoing bilateral/RTO trading decisions. SEEM does not have the after-the-fact price risk of RTO transactions. Power Supply anticipates entering bids and offers into most SEEM trading intervals when system conditions permit.

### **Volume Limitations for SEEM**

The structure of SEEM allows for tag approval up to the start of ramping. The tighter tagging window and the intra-hour variability will be the primary driver of bid/offer volumes provided by Dispatch to Trading for potential SEEM transactions.

Dispatch will provide the Power Trader with a total hourly volume available for purchases and sales in the upcoming trading hour and each SEEM interval (based on load, generation conditions, and ramping capability). Constraints may include unit limitations, weather conditions, and potential variability of large customer demand. Volumes bid or offered into SEEM will not exceed the ramping capabilities of online generation.

### **SEEM Purchasing**

Traders will submit bids for power based on purchasing guidance provided by Dispatch and management. Dispatch will provide a volume for economic purchases for the hour, or 15-minute interval if load or generation conditions change. The trader will utilize the Generation Cost Calculator (GCC) to provide an estimate of the generation costs a purchase would offset. The GCC utilizes forecasted load, real-time generation parameters, and incremental heat rate curves to estimate which units would be lowered by

the Energy Management System (EMS) to accommodate a purchase. This offset generation is then priced by the GCC using FIFO methodology for fuel, thereby simulating the company's After the Fact Billing (AFB) process.

Traders will evaluate RTO markets, third party offers, and SEEM orders and execution trends to determine if power can likely be purchased below generation cost through any of these markets. For SEEM, bids will initially be targeted to be a minimum of 10% below the average cost of the offset generation. This target margin will be adjusted to meet native load requirements and in response to real time market conditions.

Factors, such as fuel supply limitations, may warrant purchasing at a price above the current economic pricing determined by the GCC. Management will provide that guidance to traders. In this situation, when a purchase price is above the economic pricing determined by the GCC and purchase bids are submitted to SEEM, power sales will be prohibited to ensure compliance with the TVA ACT.

### **Purchasing Process**

- 1) Dispatch provides Trading with an hourly volume (MW) and a volume for each 15-minute SEEM interval that could be imported to serve load based on real time system conditions.
- 2) Trader utilizes the GCC to determine the generation costs a purchase would offset.
- 3) Trader canvases available markets and offers and determines if SEEM bids are warranted and enters bids into SEEM accordingly.

### **SEEM Sales**

Traders will be given a total hourly volume and a SEEM volume for each 15-minute interval available for sales by Dispatch. Traders will utilize the GCC to determine the highest cost generation required to meet the sales volume.

Traders will evaluate existing RTO markets, third party bids, and SEEM orders and execution trends to forecast if power can likely be sold above generation cost in hourly markets and/or if offers into SEEM are warranted. For SEEM, margin requirements will be based on the most current Off-System Sales guidance provided by management but will be initially targeted at no less than 15%. This guidance may be impacted by factors including fuel supply limitations, weather conditions, or unit constraints.

SEEM offer volumes provided by Dispatch may be lower than total sales volumes. Traders may offer the maximum volume into SEEM and also participate in RTO or fixed price sales to other counterparties. If traditional bilateral or RTO sales offer a premium margin, a trader may forgo participation in SEEM. Traders will evaluate the potential opportunities associated with each market; RTO pricing is after-the-fact and can be volatile, while a SEEM offer might not be matched. Participating in one market in some cases may result in an opportunity cost of participating in another market.

### **Sales Process**

- 1) Dispatch provides Trading with an hourly volume (MW) and a volume for each 15-minute SEEM interval based on real time system conditions.
- 2) Trader utilizes the GCC to the highest cost generation to meet the total sales volume.

- 3) Trader canvases available markets and bids and determines if SEEM offers are warranted and enters offers into SEEM accordingly.

### **Trading Evaluation and offer evolution**

The SEEM platform provides no pricing data for other participants. Price discovery is limited to orders entered into the system by Power Supply and execution trends. The dynamic order and execution data from the 15-minute SEEM market will be used in conjunction with ongoing evaluations of RTO and third-party markets to inform the next hours' trading decision. All purchase and sales transactions are reviewed dynamically, and adjustments are made real-time by traders.

Daily reports review and confirm margins, assuring pricing tools are accurate. Trading will produce a Quarterly analysis of the trading performance and the benefit to customers derived from each market.