Attachment C

Affidavit of Christopher McGeeney and Corey Sellers

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Southern Company Services, Inc.	)	**Docket No. ER21-___-000**

JOINT AFFIDAVIT OF CHRISTOPHER MCGEENEY AND COREY SELLERS
ON BEHALF OF
THE MEMBERS OF THE SOUTHEAST ENERGY EXCHANGE MARKET

Introduction

1. Our names are Christopher McGeeney and Corey Sellers. Mr. McGeeney's business address is 2814 S. Golden Springfield, MO, 65807. Mr. Seller's business address is 600 North 18th Street, Birmingham, AL, 35203.

2. Mr. McGeeney's current title is Senior Manager, Transmission Services at Associated Electric Cooperative, Inc. ("AECI"). Mr. McGeeney has almost twenty years of experience in the electric industry. In his role, he manages a team responsible for generator interconnection and transmission related policy issues. Prior to his current role, Mr. McGeeney has held several positions at AECI related to transmission policy and natural gas and power marketing. Prior to joining AECI in 2002, he worked as an hourly power trader at Aquila Merchant Services, Inc. Mr. McGeeney obtained a Bachelor of Science degree in Agricultural Systems Management from the University of Missouri – Columbia and a Master's in Business Administration from Drury University.

3. Mr. Sellers is the General Manager of Transmission Policy and Services/Energy Policy with Southern Company Services Inc. ("Southern Companies"). In this role Mr. Sellers is responsible for strategic policy activities related to the Federal Energy Regulatory Commission ("FERC") and wholesale transmission customer service through the administration of Southern Companies' joint Open Access Transmission Tariff. Mr. Sellers began his career with Southern Companies as a cooperative education student in 1993. He has held various positions during his career including roles in Energy Management System Services, Generation IT, Energy Trading, Transmission, and most recently as the Assistant to the Chief Operating Officer. Mr. Sellers attended the University of Alabama where he received his Bachelor of Science degree in Computer Science with a minor in Mathematics.

4. Our companies are among the 14 founding members ("Members") of the Southeast Energy Exchange Market ("Southeast EEM"). We are jointly presenting this affidavit ("Affidavit") to describe key aspects of the Southeast Energy Exchange Market Agreement ("Southeast EEM Agreement") and the Southeast EEM Market Rules ("Market Rules") that are attached as Appendix B to the Southeast EEM Agreement. In addition to describing these key elements, we also explain why the Members selected them.

Involvement in Development of the Southeast EEM

5. We have each taken a leading role in overseeing and participating in the team tasked with supporting the Southeast EEM development from an operational perspective (the "Ops Team"). The Ops Team includes individuals from each of the founding Members with significant experience with bilateral trading and transmission arrangements within the Southeast, as well as knowledge of the supporting informational technology ("IT") systems. The main team has met nearly every week since early 2020. In addition, the team established several sub-groups that specifically targeted issues concerning transmission, technology, and algorithm issues and reported their findings back to the main group. The Ops Team considered input from various sources within the membership, including from generator owners, transmission service providers, transmission dependent utilities, as well as stakeholders, including customers. In short, the Ops Team has taken its charge very seriously and has devoted a substantial amount of time and effort to identify potential operational and implementation issues with the Southeast EEM and build consensus around solutions.

6. The charge to the Ops Team has been to develop key design features of the Southeast EEM, with the overriding goal of keeping the design as simple as possible while at the same time maximizing customer benefits. In addition to this goal, the Ops Team always has considered the core principles discussed by witnesses Mr. Aaron Melda and Mr. Lonnie Bellar in their affidavit, included with this filing as Attachment B ("Overview Affidavit")[1] to ensure that the market enhancement that was developed met those principles.

7. The Ops Team developed and had input on many of the elements of the Southeast EEM Agreement and Market Rules, which reflect the principles and goals that the Ops Team sought to achieve.

8. The remainder of this Affidavit describes the key aspects of the Southeast EEM Agreement and Market Rules. Specifically, this Affidavit describes:

    a. An overview of the Southeast EEM's design and proposed operation;

    b. Roles within the Southeast EEM;

    c. Membership and Participation;

    d. Governance;

    e. Market Operations; and

    f. Reliability.

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[1] *See* Overview Affidavit at P 18.

Overview of the Southeast EEM

9. At the highest level, the Southeast EEM is not itself a new market. It is an extension of and enhancement to the existing bilateral market that will utilize an automated trading platform (the "Southeast EEM System") and zero-price transmission to facilitate bilateral energy contracts in the Southeast on an intra-hour basis. This will reduce transactional friction and promote the use of unused transmission capacity, thereby increasing efficiency, allowing for enhanced energy cost savings, avoiding transmission rate pancaking, and facilitating renewable integration in the region, while maintaining current high standards for reliability. The Southeast EEM System will rely on inputs from transmission service providers ("Participating Transmission Providers") and voluntary submissions from bidders and offerors ("Participants"). Using this data, as described below, the Southeast EEM System will match bids and offers based on a computer algorithm that considers all of the inputs and generates a solution set of matches that produces the maximum benefits, market-wide, subject to the defined constraints. The intent is to provide an incremental, but substantial, improvement to, rather than a replacement of, the existing bilateral trading process in the Southeast.

10. The Southeast EEM Agreement is an agreement among the Members that outlines the relationship and obligations between the Members and establishes the structure of and rules for the Southeast EEM. The rules that govern the functioning of the Southeast EEM System and apply to all Participants are called the "Market Rules," and are attached to the Southeast EEM Agreement as Appendix B. Under the Market Rules, the Southeast EEM System will match bids and offers for transactions through an algorithm ("Energy Exchanges"). The associated buyers and sellers of the matched bids and offers will then consummate the Energy Exchanges pursuant to the terms of separate bilateral wholesale power sales agreements between them ("Enabling Agreements"). The Southeast EEM System will not clear or settle transactions and will not be a counterparty to transactions. All sales made by FERC-jurisdictional sellers through the Southeast EEM System will be made pursuant to the seller's market-based rate ("MBR") authorization. Non-FERC jurisdictional entities like AECI also will transact under market-based principles. The Southeast EEM System itself will be developed by a third-party vendor, who will be retained by the Members to develop the software. That same entity or a separate entity will be selected to operate the Southeast EEM System as the "Southeast EEM Administrator."

11. The inputs to the Southeast EEM System are discussed in more detail below, but, in summary, it will rely on transmission data from Participating Transmission Providers and certain initial pre-transaction inputs from Participants (*e.g.*, counterparties with whom the Participant can transact considering items such as Enabling Agreements, credit limit, and any market-based rate mitigation requirements). Then, for every fifteen-minute increment of every hour of every day (each referred to as a "Delivery Interval"), Participants will be able to submit bids and offers. The submission of bids and offers is voluntary, and Participants may elect to submit, or not submit, as many bids or offers as

they choose at different sources and sinks controlled by that Participant.[2] After it receives bids and offers, the Southeast EEM System will run an algorithm based on all applicable constraints, including available transmission capacity, the Participants' inputs, and the bid and offer information, and will match bids and offers as Energy Exchanges. The Southeast EEM System will generate individual settlement prices for each Energy Exchange on a split-the-savings (*i.e.*, "midpoint") basis.

12. Once a bid and an offer are matched, the Southeast EEM System will generate an e-Tag for the Energy Exchange and submit it to the applicable Balancing Authorities ("BA"), Participating Transmission Providers, and Participants. The Southeast EEM System, however, will not dispatch generation or otherwise consummate the transaction. Rather, each Energy Exchange will be a separate bilateral transaction between the matched entities, subject to the terms and conditions of the underlying Enabling Agreement between them. The automation provided by the Southeast EEM System will improve market efficiencies, as discussed below, and ultimately will benefit customers by reducing the delivered cost of power.

Summary of Southeast EEM Roles

13. Seven different roles each play a part in the functioning of the Southeast EEM, some overlapping. Each of these roles, summarized below, are discussed in more detail later:

Members	Will be the parties to the Southeast EEM Agreement; will fund initial development of Southeast EEM System and on-going costs; will have voting rights; may also be Participants, as described below.
Participants	Will not be parties to the Southeast EEM Agreement unless are also Members; must sign a Market Participant Agreement; will be able to participate in the market; Participants that are not also Members will not have funding obligations or voting rights.
Membership Board	Will be the governing body comprised of a representative from each of the Members.
Operating Committee	Will handle day-to-day operations, comprised of four representatives from the Members.
Agent	Will perform a purely administrative role (*e.g.*, will act as signatory to the agreement with Southeast EEM Administrator); will be one of the Members.
Southeast EEM Administrator	Will be an independent third party contracted to operate the Southeast EEM System; will not be a Member, Participant, Agent, or Auditor.

[2] The Southeast EEM System will have a limitation on how many bids or offers can be submitted at the same source or sink by a single Participant for any one Delivery Interval.

Auditor	Will be an independent third party that reports to Membership Board; tasked with ensuring that the Southeast EEM System functions properly (*e.g.*, that it adheres to the Market Rules); will not be a Member, Participant, Agent, or Southeast EEM Administrator.
Participating Transmission Providers	Will provide "Non-Firm Energy Exchange Transmission Service" ("NFEETS") to Participants under their respective transmission service tariffs or guidelines; may also be Members or Participants; are not a party to the Southeast EEM Agreement or the Market Participant Agreement in their capacity as a Participating Transmission Provider.[3]

Membership and Participation in the Southeast EEM

14. The signatories to the Southeast EEM Agreement are called "Members." As described in more detail below, Members will pay the costs of establishing the Southeast EEM System as well as ongoing operating costs and will have a role in Southeast EEM governance. When developing the governance structure for the Southeast EEM, the Members had two primary goals: 1) fairly allocating voting rights to ensure that higher paying Members have higher voting rights while respecting smaller entities; and 2) respecting and recognizing the diverse Member interests.

15. Each of the founding Members has executed the Southeast EEM Agreement. Several additional entities anticipate executing the Southeast EEM Agreement pending necessary internal and other approvals. Additional Members can join during the annual "open season window" if they meet all Member requirements, which are established in Section 3.2 of the Southeast EEM Agreement. Specifically, Members must be one of the following: (i) a Load Serving Entity located in the Territory;[4] (ii) an association, Cooperative or Governmental Entity that is a Load Serving entity located in the Territory; or (iii) an association, Cooperative, or Governmental Utility created for the purpose of providing Energy to a Cooperative or governmental Load Serving Entities (or the Load Serving Entities being served by an association, Cooperative or Governmental Entity) located in the Territory. The third category is intended to capture disaggregated cooperatives that are not affiliated, but have responsibilities related to the same load ("Disaggregated Cooperatives"). There are several such cooperatives located in the Southeast. The founding Members decided to base membership around load serving requirements because the core goal of the Southeast EEM is to benefit customers through reduced costs gained by more efficient transactions, and the membership criteria ensures alignment of Members' interests around that core goal. While membership is based on load serving obligations, participation in the Southeast EEM was structured to apply

[3] To the extent the Participating Transmission Provider is also a Member, it will be a party to the Southeast EEM Agreement, and to the extent a Participating Transmission Provider is also a Participant, it will be a party to a Market Participant Agreement.

[4] Capitalized terms used in this Affidavit that are not defined have the meaning given to them in the Southeast EEM Agreement.

broadly, as discussed below. The Southeast EEM Agreement requires Members that provide transmission service to provide NFEETS under their tariffs or applicable transmission rules.[5]

16. To provide certainty about cost allocation, discussed further below, Members will be able to join during an annual "Enrollment Period" that will run from July 1 through September 30 of each calendar year. *See* Southeast EEM Agreement at Section 3.2.3. This period aligns with the creation of the annual budget and with the allocation of voting rights for the upcoming year.

17. Use of and participation in the Southeast EEM System itself is voluntary and is open to all resources that have a valid source or sink within the Southeast EEM territory. In other words, generation or load that is physically interconnected to a Participating Transmission Provider and within a Balancing Authority Area and can physically transact in the bilateral markets today can use the Southeast EEM.[6] Entities that wish to participate in the Southeast EEM are required to execute a Market Participation Agreement and are called "Participants." Members can be Participants, but Participants are not required to be Members, nor will all Participants necessarily satisfy the membership criteria.

18. Participants need not be parties to the Southeast EEM Agreement. Instead, Participants can use the Southeast EEM System so long as they meet the criteria established in Part III of the Market Rules. As noted above, Participants must "own or otherwise control a Source within the Territory and/or be contractually obligated to serve a Sink within the Territory." In addition, Participants must: 1) execute and deliver a signed "Market Participant Agreement"; 2) have transmission arrangements to obtain NFEETS from each Participating Transmission Provider; and 3) have Enabling Agreements with at least three other non-affiliated Participants to be able to be matched through the Southeast EEM System. When voluntarily participating in the Southeast EEM, FERC-jurisdictional entities are required to transact pursuant to their market-based rate tariffs. The Market Participant Agreement obligates Market Participants to abide by the Market Rules. There will be no cost to non-Member Participants for participating in the Southeast EEM.

19. Both membership and participation are voluntary – that is a core principle of the Southeast EEM. A Participant can stop using the Southeast EEM System at any time. In that event, it would be unable to use NFEETS service for any other purpose because it is only available for Energy Exchanges. Thus, to continue using a Participating Transmission Provider's system, such former Participant would need to utilize a different form of service offered by the provider. Members can terminate their membership, subject to the

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[5] Some of the Members do not have transmission tariffs. For example, as discussed in the Overview Affidavit, Tennessee Valley Authority has Transmission Principles. For purposes of this affidavit, we refer to any such transmission rules generically as a "tariff."

[6] To the extent demand response resources or distributed energy resources could have a valid source or sink and be able to participate in the wholesale market pursuant to applicable state laws, they could participate in the Southeast EEM. However, at this time, the Members do not believe such resources would meet those criteria.

notice provisions in the Southeast EEM Agreement. Because the Southeast EEM System relies on a "Network Map" model, entities that are BAs or Participating Transmission Providers must give 90 days' notice, which provides time for the models to be updated. *See* Southeast EEM Agreement Section 4.2.1. All other Members must provide 30 days' notice. In addition, non-Commission jurisdictional Members can withdraw immediately if they believe continued membership would jeopardize their non-jurisdictional status. As discussed in more detail below, withdrawing Members must pay all costs previously allocated to them.

20. The Members view the cost allocation provisions of the Southeast EEM Agreement to be fair and not a barrier to withdrawal. As described in the Overview Affidavit at P 31, the costs to establish and maintain the Southeast EEM are anticipated to be relatively low compared to other models or market designs, which was one of the primary goals of the Southeast EEM. Accordingly, the Members expect that start-up costs will be paid within the first year (rather than recovered over time) and that ongoing costs will remain low.

21. The primary differences between Members and Participants in terms of involvement in the Southeast EEM are cost responsibility and governance, both of which are discussed below. As explained in the Overview Affidavit, Members are responsible for financing the development and operation of the Southeast EEM System, and will have decision-making authority and voting rights.

Governance

22. The highest governing body in the Southeast EEM will be the Membership Board, which will be responsible for all major decisions. The Southeast EEM Agreement also calls for the creation of an Operating Committee to be responsible for day-to-day issues. Both the Membership Board and the Operating Committee will be comprised of representatives from the Members.

23. Article 4 of the Southeast EEM Agreement establishes the rules of the Membership Board. Each Member, including Members with multiple participating affiliates in the Southeast EEM (*e.g.*, Southern Companies) and Disaggregated Cooperatives will have one representative on the Membership Board. Each Representative will have two votes: 1) a single vote ("Popular Vote"); and 2) a weighted vote based on the Member's Net Energy for Load ("MNEL") relative to total NEL for all Members ("NEL Vote"). Votes can only occur if there is a quorum and if the issue was properly noticed. For all votes, the combined NEL vote must represent at least three entities. For "Significant Matters," defined in the Southeast EEM Agreement to include the most critical issues (e.g., amendments to the Southeast EEM Agreement), an action will pass with a majority of the Popular Vote, but requires a supermajority NEL vote. For all other matters, an action will pass with a majority of the Popular Vote and the NEL Vote.

	Popular Vote	NEL Vote	Minimum Members in Support
General Matters	>50%	>50%	3
Significant Matters	>50%	>67%	3

24. The voting rights were carefully negotiated among the prospective Members. The Members desired a voting methodology to ensure that all Members have fair representation since there will be a greater use of some Members' resources. NEL was chosen as an appropriate proxy for Members' use and benefit from the Southeast EEM because Net Energy for Load will reflect Members' relative shares of generation and load responsibilities. The Popular Vote balances smaller Members' interests by giving all Members an equal vote. Additionally, the requirement that a NEL vote must include the MNEL of at least three entities was designed to ensure that no one Member could control the Membership Board.

25. Article 5 of the Southeast EEM Agreement establishes the rules of the Operating Committee. The Operating Committee will handle all day-to-day activities of the Southeast EEM, including interfacing with the Southeast EEM Administrator, and can act on any matter not specifically reserved to the Membership Board. The Operating Committee will have four Members, each with a single, equal vote: two from the Investor-Owned Utility ("IOU") Sector, one from the Cooperative Sector, and one from the Governmental Utility Sector. The Members agreed to this composition because the IOU Sector, at present, makes up about half of the total NEL, with the Cooperative Sector and Governmental Utility Sector making up the other half, as can be seen from the chart of initial NEL values below. Committee Members will be selected by their Sectors and will have year-long terms. Each Sector also has the authority to remove its Operating Committee Member(s). Votes by the Operating Committee must be unanimous, with any issues that cannot be resolved taken up to the Membership Board. All Members have a right to attend, observe, and participate in Operating Committee Meetings, but cannot vote if they are not a Committee Member. These rules were designed, again, to ensure that the diverse interests of the Southeast EEM are represented, that no one Member can control day-to-day activities, and that there will be sufficient transparency for all Members.

Cost Allocation to Members

26. Members are obligated to pay all costs of establishing, operating and maintaining the Southeast EEM System. Section 7.2.3 of the Southeast EEM Agreement provides that the Membership Board will set an annual budget for the upcoming calendar year every on or before October 1, and each Member will be allocated a portion of the budgeted costs at that time. *See* Southeast EEM Agreement at Section 7.2.2. While the costs will be allocated at the beginning of each year, actual payments will not be due until the applicable costs are incurred. The Members desired an upfront annual cost allocation to provide budgeting certainty.

27. Southeast EEM costs will be allocated to Members in two ways: 1) 25% of the total costs will be allocated equally to each Member based on the number of Member

Representatives; and 2) the remaining 75% of costs will be allocated based on each Member's NEL, with Members paying an amount proportionate to their NEL as a percentage of the total NEL. NEL values will be reestablished each year based on the values that NERC reports for each entity in its business plan and budget filed annually with FERC in accordance with 18 C.F.R. § 39.4(b). The breakdown of costs is provided as a formula in Section 7.2 of the Southeast EEM Agreement:

[(1/4)(TC)(1/TNM)] + [(3/4)(TC)(MNEL/ANEL)] = MAC, where:

TC = Total allocable costs.

TNM = the total number of Members.

MNEL = such Net Energy for Load of the Representative's Member and Member Affiliates as of the Record Date.

ANEL = the sum of all Member's Net Energy for Load as of the Record Date.

MAC = Member's allocated costs.

28. This hybrid cost allocation methodology is intended to reflect the reality that some costs of the Southeast EEM will be incurred no matter the number or size of Members and, therefore, should be allocated equally among Members, while other costs will be incurred because of the added scale, use, and benefit of Members with more generation or load and, therefore, should be allocated based on size. By using NEL in both the voting rights and cost allocation methodology, Members have also sought to ensure that those Members which are expected to make more use and receive more benefits from the Southeast EEM based on their larger generation portfolio and load responsibilities will not only have a larger voting interest, but will also bear more cost responsibility.

29. The current breakdown of MNEL based on the current membership (and anticipated membership)[7] is as follows:

Party		2021 MNEL (MWh)[8]
AECI		23,474,005
Dalton		2,067,319
Dominion Energy SC		23,120,146
Duke		133,066,383
	Duke Energy Carolinas	86,663,827
	Duke Energy Progress	46,402,556

[7] Entities that have not yet executed the Southeast EEM Agreement, but have stated their intent to do so subject to necessary approvals are included for completeness and designated with an asterisk.

[8] The NEL values in this chart are based on the values reported to the North American Electric Reliability Corporation ("NERC") in its August 24, 2020 "Request for Acceptance of 2021 Business Plans and Budgets of NERC and Regional Entities and for Approval of Proposed Assessments to Fund Budgets," filed in Docket No. RR20-6-000.

Party	2021 MNEL (MWh)[8]
GSOC, GTC, OPC*	41,261,927
LG&E & KU	33,165,655
MEAG*	11,326,212
NC Municipal Power Agency 1 (Electricities)	4,921,479
NCEMC	13,323,038
PowerSouth	9,228,988
Santee Cooper*	8,728,235
Southern Companies	153,910,118
Alabama Power Company	56,216,517
Georgia Power Company	87,610,754
Mississippi Power Company	10,082,847
TVA	159,328,344
Total ANEL	616,921,849

30. As an example of this cost allocation methodology, if the costs for this year were $1,000,000, the amounts allocated to each of our companies (AECI and Southern Companies) would be calculated as follows:

AECI Sample Cost Allocation

a) [(1/4)($1,000,000)(1/13[9])] + [(3/4)($1,000,000)(23,474,005/616,921,849)]

b) [(0.25)($1,000,000)(0.0769)] + [(0.75)($1,000,000)(0.0381)]

c) [($250,000)(0.0769)] + [($750,000)(0.0381)]

d) [$19,225] + [$28,575]

e) [$19,225] +[$28,575]= $47,800

Southern Companies Sample Cost Allocation

a) [(1/4)($1,000,000)(1/13)] + [(3/4)($1,000,000)(153,910,118/616,921,849)]

b) [(0.25)($1,000,000)(0.0769)] + [(0.75)($1,000,000)(0.2495)]

c) [($250,000)(0.0769)] + [($750,000)(0.2495)]

d) [$19,225] + [$187,125]

e) [$19,225] + [$187,125] = $206,350

[9] Note, because the cost allocation, like representation on the Membership Board, considers affiliated entities and Disaggregated Cooperatives as one entity, under the anticipated membership list above, the total number of Member Representatives that would be subject to the 25% allocation of costs is 13.

The Southeast EEM Agreement provides a mechanism to adjust these values if new Members join or if Members withdraw. New Member cost allocations are addressed in Section 7.3 of the Southeast EEM Agreement. Because new Members can only join during the annual Enrollment Period, costs will be allocated to them in accordance with the annual budgeting process. Withdrawing Members will remain responsible for all costs previously allocated to them (*i.e.*, all costs of the Annual Budget or additional costs assessed by the Membership Board), but not for any costs assessed on or after the date of their notice to withdraw. *See* Southeast EEM Agreement Section 4.2.1.

Pre-Market Activities

31. Before the Southeast EEM can begin operations, the Members must select a vendor to develop the Southeast EEM System. That vendor may or may not be the same vendor ultimately selected to be the Southeast EEM Administrator, the entity that will operate the Southeast EEM System once developed in accordance with the requirements and obligations established in the Southeast EEM Agreement and Market Rules. The Members are about to begin a request for proposals ("RFP") process to select a vendor to design the Southeast EEM System. In the early stages of the Southeast EEM development, the founding Members reached out to a number of vendors with general specifications to test the feasibility and cost of creating the Southeast EEM System. As a result of those initial discussions, the Members are comfortable that there are available vendors to achieve their goals for the Southeast EEM System. Selection of a vendor for the Southeast EEM System and an entity for the Administrator are "Significant Matters" under the Southeast EEM Agreement and will require a majority Popular Vote and a supermajority NEL Vote. The Members anticipate responses to the RFP in the first quarter of 2021, and intend to select the vendor in early 2021. However, the Members do not presently intend significant new capital expenditures – and will condition the commencement of performance of any vendor contract on FERC acceptance of the Southeast EEM Agreement – until the Commission has accepted these filings without material modification, and thereby has provided regulatory certainty.

32. In addition, before the market can commence, each of the Members that is a transmission service provider must amend its tariff to provide NFEETS. Entities that provide this transmission service are called Participating Transmission Providers. At the outset, all of the Participating Transmission Providers are also Members, but the Southeast EEM Agreement does not preclude non-Members from providing the service. NFEETS must have the following characteristics:

- It is non-firm transmission;
- It is available on an as-available basis (*i.e.*, it is only available after all other uses have been taken into account);
- It is provided solely for 15-minute Energy Exchanges;
- It has the lowest curtailment priority;
- The rate for service is $0/MWh;
- There are no associated Schedule 1 or Schedule 2 ancillary service charges;

- Real Power Losses ("Losses") will be "financial" in that they will be supplied by the applicable Participating Transmission Provider and paid for by the matched bidder and offeror to each Energy Exchange. Such financial losses will be assessed based on the loss factor and loss rate in the Participating Transmission Provider's tariff and equally shared between the matched bidder and offeror;
- It may be obtained only using the reservation, scheduling and tagging functions of the Southeast EEM System (rather than directly through Open Access Same Time Information System or other reservation, scheduling or tagging requirements applicable to other forms of transmission service offered by the Participating Transmission Provider);
- It may not be reassigned, sold, or redirected;
- It can only be provided by a Participating Transmission Provider whose system, if added to the other Participating Transmission Provider systems, creates a continuous Contract Path; and
- The Participating Transmission Provider must provide the information required by the Southeast EEM Market Rules (*e.g.*, available transmission).

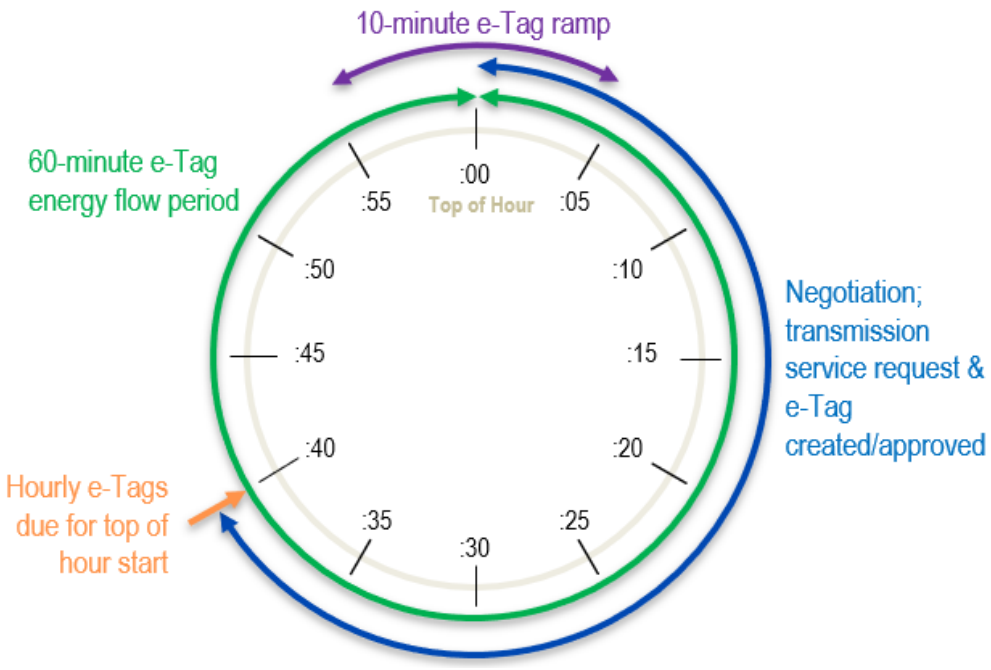
33. Of note, like all forms of transmission service, Losses will be incurred in the provision of NFEETS and, consistent with FERC precedent, the Participating Transmission Providers are not obligated to provide such Losses. When considering how to incorporate the recovery of Losses into the Southeast EEM System, the Ops Team determined that the best option would be to require all Participating Transmission Providers to utilize financial losses for Energy Exchanges, rather than allow for in-kind losses. Use of financial losses permits losses to be considered by the algorithm when evaluating benefits to match bids and offers for Energy Exchanges. Because in some cases, the benefit margin between an individual bid and an offer may be small, it is important to consider Losses upfront in the matching process to ensure that the transaction, as a whole, after considering Losses, results in a net benefit for the buyer and seller.

Market Operations Overview

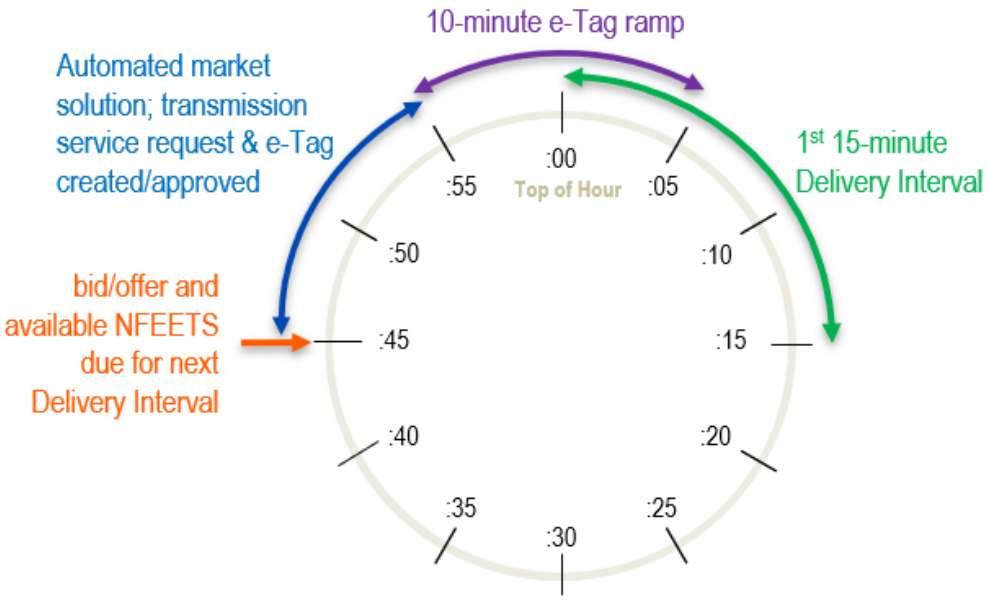
34. One of the Southeast EEM's biggest enhancements to the bilateral market is the ability to compress the timeline for bilateral trading to facilitate intra-hour trading availability on a wide scale. Although the bilateral markets as they exist today are robust, intra-hour transactions have historically been limited by practical time constraints. Today, buyers and sellers must discover each other, negotiate key terms (like price), and make transmission service arrangements to consummate a deal. Introducing technology to automatically find buyers and sellers, set the price based on their parameters, and tag energy transactions, combined with the new zero-cost, as-available NFEETS that will reduce hurdle rates, will make intra-hour trading more practical, beneficial, and economic on a large scale.

35. For comparison, the two illustrative charts below show timing in the hourly market versus the Southeast EEM intra-hour market:

Existing Hourly Market



Southeast EEM Intra-Hour Trading



The Southeast EEM will rely on data provided by Participating Transmission Providers and Participants to enable the algorithm to run within the time requirements above.

During initial market set up, and to accommodate any new or withdrawing Members, the Southeast EEM System will create a Network Map of all potential Contract Paths within the Southeast EEM footprint. This will require Participating Transmission Providers to provide sufficient information to detail all TSP areas, valid transmission paths, and source and sink locations. This baseline Network Map will be the foundation for running the algorithm for every fifteen-minute period. The algorithm will be programmed with certain market rules (referred to as "Generally Applicable Constraints"), *e.g.*, it will not allow a match between a Participant's own Bid and Offer. In addition, the algorithm will consider the following information submitted by Participants and Participating Transmission Providers:

Information Description	Provided By	Deadline for Algorithm Input
Available transmission	Participating Transmission Providers, calculated in accordance with their Tariffs and adjusted for other scheduling impacts	15 minutes before the top of each hour (may be updated on an intra-hour basis if Participating Transmission Provider has that functionality)
Real Power Loss Factor and Financial Loss Rate	Participating Transmission Providers, provided in accordance with their Tariffs	Can be updated prior to any 15-minute Bid/Offer submission deadline
Participant Specific Constraints (counterparty or geographic limitations)	Participants	Established as general conditions; may be updated at any time before the 15-minute Bid/Offer submission deadline
Bid/Offer Information	Participants	15 minutes before the start of each applicable Delivery Interval

We discuss this information in more detail below. Importantly, these data inputs ensure that Energy Exchanges can only use transmission that is voluntarily made available to the Southeast EEM. The algorithm will not generate matches that rely on Contract Paths that are not modeled in the Network Map. Additionally, the algorithm will not generate matches that would cause the available NFEETS transmission (as reported by the respective Participating Transmission Providers) to be exceeded on any Contract Path. In other words, there are protections built into the algorithm that prevent unauthorized use of transmission systems.

36. Based on these inputs, the algorithm will run to produce a set of matches. The algorithm will solve using a mixed integer linear programming concept and will produce a set of matched Bids and Offers that creates the most benefit during each market interval while

adhering to all constraints. The total benefit will be calculated as the "savings" produced by each of the Energy Exchanges (*i.e.*, the difference between the sum of all matched Bid Prices and the sum of all matched Offer Prices, less the cost of Losses allocated to the Energy Exchanges and multiplied by the total MWh).

Market Operations – Bids, Offers, and Matching

37. The algorithm will consider two categories of constraints, as set forth in the Market Rules: 1) Generally Applicable Constraints; and 2) Participant-Specific Constraints.

38. Generally Applicable Constraints, as the name suggests, apply equally to all Participants. The constraints are transmission availability and pre-set market rules on matching. Section IV.C.6 of the Market Rules provides the following rules that the algorithm must abide by for all matches:

- In matching Bids and Offers, the Southeast EEM Algorithm shall not make any Energy Exchanges that would cause the available transmission capacity reported to the Southeast EEM System to be exceeded on any given segment of the Contract Path. A segment of the Contract Path means a unidirectional path between a Point of Receipt ("POR") and Point of Delivery ("POD") on a Transmission Service Provider's system.
- Energy Exchanges shall not be made that cause:
  - A Buyer to purchase more MWs than the amount set forth in its Bid;
  - A Seller to sell more MWs than the amount set forth in its Offer; and
  - For matched Bids and Offers, the Energy Exchange Price (determined based on the split the saving method discussed below) to be less than the Offer Price or more than the Bid Price considering any applicable Losses.
- Total MW of potential Energy Exchanges in any Delivery Interval shall not exceed the volume of Offers for such Delivery Interval. Also, total MW of potential Energy Exchanges in any Delivery Interval shall not exceed the volume of Bids for such Delivery Interval.
- All transmission flows in a Delivery Interval related to Energy Exchanges on any Contract Path should be greater than or equal to 0 MW but less than or equal to the Contract Path's available transmission for such Intra-Hour Segment.
- A Bid of a Participant shall not be matched with an Offer of the same Participant.
- The Southeast EEM Algorithm shall not create Energy Exchanges in the same Delivery Interval that would create offsetting Energy Exchanges whereby Participant 1 sells to Participant 2 while Participant 2 sells to Participant 1 during the same interval at the same location.

39. Participant-Specific Constraints, again, as the name suggests, are constraints that are submitted by individual Participants and only apply to Bids and/or Offers submitted by

that Participant. The rules for Participant-Specific Constraints are established in Section IV.A.b of the Market Rules. When joining the Southeast EEM, Participants will be required to create a "User Profile" that includes basic information about the Participant. As part of this process, the Participant will also need to reflect any Participant-Specific Constraints. These constraints will be recognized by the Participant's decision to "toggle on or off" its ability to be matched with counterparties or in specific geographic areas (*e.g.*, Balancing Authority Areas). The settings may be different for Bids versus Offers depending on the Participant's selection. *See* Market Rules Section IV.A. However, to be eligible for matching, a Participant's Participant-Specific Constraints must be set such that there are at least three other non-affiliated Participants with whom the submitting Participant can be matched. An Offeror seeking an Energy Exchange must have its Participant-Specific Constraints set to permit matching with at least three other non-affiliated Participants who can be matched for an Energy Exchange as Buyers. A Bidder seeking an Energy Exchange must have its Participant-Specific Constraints set to permit matching with at least three other non-affiliated Participants with whom the submitting Participant can be matched for an Energy Exchange as Sellers (the "Three Eligible Counterparty Requirement"). The requirement applies only to the number of potential counterparties that are enabled to transact with the participant submitting a Bid or Offer; it does not require that each of the potential counterparties submit a Bid or Offer in the relevant interval.

40. Participant-Specific Constraints could be entered for a number of reasons. For example, a Participant could toggle off a counterparty because it does not have an Enabling Agreement with them or because credit limitations have been exceeded. The constraints will also be the mechanism through which some Commission-jurisdictional market-based rate ("MBR") Sellers ensure compliance with their MBR authorization and the Commission's affiliate restrictions. Each of the Commission-jurisdictional entities has MBR authority with some mitigation in place for specific BAAs. Those entities will be able to program that mitigation into their bids and offers, by setting up Participant-Specific Constraints. For example, our understanding is that, because they are not permitted to make sales at market-based rates in their own BAAs, Dominion Energy South Carolina, Inc. ("Dominion Energy SC"), Duke Energy Carolinas, LLC ("DEC"), Duke Energy Progress, LLC ("DEP"), and Louisville Gas & Electric Company("LGE&E") and Kentucky Utilities Company ("KU") have each decided to turn off their ability to be matched with buyers within their own BAAs. To comply with its mitigation requirements, Southern Companies will instead be submitting a "maximum match price" that will be used to modify the Energy Exchange Price if that price is above the "maximum match price" for buyers in its mitigated BAAs. The adjustment will be made after the optimization function of the algorithm is performed to ensure that there are no unintended impacts on optimization. This will retain the same overall benefit for the Energy Exchange but shift a greater portion of the benefit to the buyer. Similarly, entities subject to the Commission's affiliate restrictions that are affiliated with other Participants will be able to ensure that they are not matched with their affiliates by turning them off as counterparties in all geographic locations. In addition, as explained by Mr. Melda in the Overview Affidavit, TVA will establish geographical constraints to respect the "TVA fence." While the Southeast EEM will provide the necessary tools, it will be each

Participant's responsibility to ensure that its User Profile accurately reflects its constraints and that its selected Participant-Specific Constraints will ensure compliance with any regulatory requirements.

41. As in the bilateral market today, the onus to ensure compliance with MBR authority obligations, affiliate restrictions, and all other Commission requirements will remain with the individual jurisdictional entities. The Southeast EEM System will not monitor Participant-Specific Constraints or require Participants to submit a reason for their selection. Rather, the Southeast EEM Agreement establishes tools – *e.g.*, the toggle on and off – to allow the Participants to ensure their own compliance. As an added protection, the default setting for all locations and all counterparties will be "off," so that the Participants must affirmatively turn on their ability to trade with specific counterparties and in specific locations. The Commission will be able to monitor the FERC-jurisdictional entities' compliance with their MBR authorization and affiliate restrictions in the same manner they do today – by reviewing the transactions in each Participant's EQRs or through audits. As of filing, thirteen Members submit EQRs. Specifically: Alabama Power, Georgia Power, Mississippi Power, AECI, Dominion Energy SC, DEC, DEP, LG&E, KU, North Carolina Municipal Power Agency Number 1, PowerSouth Energy Cooperative, North Carolina Electric Membership Corporation, and Tennessee Valley Authority.[10] This represents approximately 98% of total NEL of the Members. Southeast EEM transactions will be recognizable in EQRs because the transaction terms will be for 15 minutes. Although it is possible that a non-Southeast EEM transaction could have a 15-minute term, such transactions are rare.

42. Besides constraint information, the algorithm will also rely on information submitted with Bids and Offers. All Bids and Offers must include the following information, specified in Section IV.B.3 of the Market Rules:

- Participant name.
- Whether the submission is a Bid or an Offer.
- An amount of Non-Firm Energy for the Bid or Offer in increments of four MW,[11] and an indication of whether the block size is allowed to be partially matched, referred to as the "All or Nothing" flag.
    - Additionally, there will be a limit on the number of bids or offers submitted by a Participant at any one Source or Sink during the same Delivery Interval.
- For all Offers, an Offer Price and for all Bids, a Bid Price (both in $/MWh).

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[10] Additionally, while not a Member at the time of filing, Oglethorpe Power Corporation also files EQRs.

[11] The requirement to use a four MW increment for all Bids and Offers is to allow for intra-hour integration, thus avoiding rounding issues in the settlement process.

- For all Offers, a Source and for all Bids, a Sink.
- The specific Delivery Interval for which the specified Bid or Offer is valid.

In addition, Offers may include a maximum match price. Moreover, to be able to submit bids and offers for a particular Delivery Interval, the Participant's Participant-Specific Constraints must be set such that they comply with the Three Eligible Counterparty Requirement described above.

43. Using all constraint information and rules and Bid and Offer data, the algorithm will use a mixed integer linear programming concept to determine the optimal solution. That solution will be a set of matches that creates the most market benefit. The benefit will be measured by the total "savings," (*i.e.*, the difference for all matched transactions between the sum of matched Bid Prices and the sum of matched Offer Prices). The algorithm will not be sequential – *i.e.*, it will not create one match, and then another, and so on. It will create an entire data set based on all Bid and Offer data and respecting all constraints.

44. To the extent that there are Bids/Offers that are identical in terms of price and Sink/Source and, therefore, provide the same benefit, a randomized prioritization will be used. Additionally, randomization will be employed in the algorithm in all other situations if a heuristic is required to resolve ties or ambiguities. For instance, if more than one set of matches yields the same (maximal) benefit, a randomized process will be used to determine the final set of matches

45. Constraints will ensure that the algorithm only matches feasible Bids and Offers. For example, if a Participant has toggled off another Participant, the algorithm will not consider their Bids and Offers as potential matches. Transmission availability will be handled similarly with one important difference. If both counterparties to a potential match have indicated a willingness to accept a partial match, a transmission constraint could potentially decrease the volume of the match rather than prohibit it entirely. For example, if Participant A and Participant B submitted a Bid and Offer, each for 100 MW, and only 80 MW of transmission was available along the Contract Path, the algorithm could match the two participants for an 80 MW match.[12] This example assumes that the match reflects all other constraints and, along with all other matches, represents the optimal solution.

46. In addition, each Bid or Offer may be matched with one or more counterparties. For example, if Participant A submitted an Offer of 100 MW, it may be matched with Participant B for 20 MW and with Participant C for 80 MW,[13] where each of the two

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[12] This partial matching functionality would nevertheless be subject to the requirement that each Energy Exchange transaction will be in increments of four MW.

[13] This result would be possible even if Participant A designated its 100 MW Offer as "all or nothing," as this constraint applies to whether the full quantity of the Offer or Bid is matched, and does

Energy Exchange transactions may have a different Sink and may be delivered on differed transmission paths.

47. Matches made through the Southeast EEM System are for non-firm energy and will be consummated in accordance with the underlying Enabling Agreement for the matched Energy Exchange. Each such Enabling Agreement will be entered into separately between the Participants, under terms and conditions of their choosing – the Southeast EEM will have no role in that. If an Offeror is matched with a Bidder but does not alter its dispatch to effectuate the match, its under-generation will be treated as imbalance, just as it would with bilateral physical transactions today. The same is true if a load fails to dispatch its owned or contracted generation down to reflect a Southeast EEM purchase. As the Ops Team says, "submitted is committed" in terms of Bids and Offers. This is necessary to make the Southeast EEM System function properly and will also help ensure that participants submit only *bona fide* Bids and Offers they are able and willing to physically perform on if matched.

48. Based on the running of the algorithm, the Southeast EEM System will generate the following information:

    - e-Tags to be submitted to appropriate TSPs/BAs and Participants.
    - Notifications to matched Participants of the Energy Exchange, including the Energy Exchange Price and volume.
    - Data to Participating Transmission Providers necessary for Participating Transmission Providers to settle financial losses with appropriate Participants.

49. The prices for matches will be on a split-the-savings basis (*i.e.*, "midpoint"), and will incorporate transmission losses for Participating Transmission Provider systems that are utilized in a transaction. The Members evaluated and considered several options for match pricing. Specifically, the Members considered: 1) bid-based matching, in which the price would be set based on the buyer's bid price; 2) offer-based matching, in which the price would be set at the seller's offer price; and 3) split the savings, in which the price would be set at the midpoint between buyer's bid price and the seller's offer price. In all three scenarios, benefits would be measured as the difference between the bid price and offer price, and so market-wide benefits would be the same. However, in individual transactions, bid-based pricing would give all the benefits to generators while offer-based pricing would give all the benefit to load. The Members selected split-the-savings pricing because they desired a methodology that would evenly distribute market benefits to buyer and sellers and ultimately benefit customers. Further, the Members believe that split-the-savings pricing will incentivize Participants to submit bids and offers at or near their marginal costs (generation) or avoided costs (load) to have a higher chance of matching.

50. As mentioned above, the price for NFEETS will be $0/MWh, so the algorithm will not factor in any incremental transmission cost. However, parties will be responsible for

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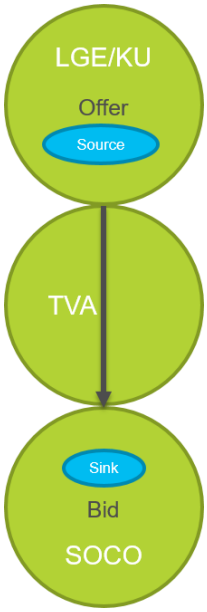
not necessarily constrain the algorithm to matching the full quantity via a single Energy Exchange transaction.

Losses on each transmission system that the transaction utilizes. As with other types of transmission service, Losses will be the responsibility of the transmission customer, not the Transmission Provider. As noted above, NFEETS Transmission Customers are required to pay financial losses and will not have the option to provide physical losses. The Members determined that requiring financial losses to be paid by all customers would be fair and would allow the algorithm to solve in the necessary time frame. Financial losses will be based on the loss factor and loss rates established in each Participating Transmission Provider's tariff. Losses will be charged by the Participating Transmission Provider to the transmission customer in each Energy Exchange, as is the case today. However, the algorithm will factor Losses into the split-the-savings match price and will allocate the total costs for Losses equally between the buyer and seller. It will be up to the seller and buyer to settle the financial loss charge with the applicable Participating Transmission Provider(s). Recovery for financial losses is appropriate and necessary to ensure that Energy Exchanges do not "lean" on other generation to provide system losses. The Ops Team determined that using financial losses would best achieve the goal of market simplicity.

51. The below simplified example shows how matching will occur and Energy Exchange Prices will be determined under the Southeast EEM System:



- Source A: 100 MW Offer @ 20.00 $/MWh matched to
- Sink B: 100 MW Bid @ 30.00 $/MWh
- Midpoint without Losses: 25.00 $/MWh ($2,500.00 total)
- LGE/KU to charge Losses to Offeror from Source A: 3.0 MW @ 22.00 $/MWh = $66.00
- TVA to charge Losses to Offeror from Source A: 2.8 MW @ 26.00 $/MWh = $72.80
- SOCO to charge Losses to Bidder in Sink B: 2.2 MW @ 31.00 $/MWh = $68.20
- Must add ½ of the Seller Losses to the Midpoint
  - $2,500.00 + ($66.00 + $72.80)/2 = $2,569.40
- Must subtract ½ of the Buyer Losses from that Price
  - $2,569.40 – ($68.20)/2 = $2,535.30
- Midpoint with Losses (*i.e.*, Energy Exchange Price): 25.35 $/MWh (rounded price)

Auditing and Reporting

52. Subject to approval by the Membership Board, the Southeast EEM Agent will engage an independent entity to periodically review the operation of the Southeast EEM System and be responsible for responding to questions from Participants and/or regulators regarding the integrity of the matching process (the "Auditor"). Selection of the Auditor will be a "Significant Matter." The Auditor will not be a market monitor. Rather, its purpose is to ensure that the Southeast EEM functions in accordance with the Market Rules. In addition, the Auditor may also receive complaints from Participants, which it will refer to the Membership Board and investigate at the Membership Board's discretion.

53. The Southeast EEM Administrator will publicly publish information about the Southeast EEM on an hourly, daily, and monthly basis. The information is intended to provide market transparency and give confidence to Participants and other stakeholders that the Southeast EEM is performing as anticipated and providing benefits. At the same time, the information provided is intended to ensure that commercially sensitive information is protected. For that reason, pricing information will not be provided at all until the next trading day and will be aggregated. The Members believe the information to be shared (outlined below) strikes the proper balance between the two competing interests. Individual transaction data will continue to be made available in EQRs for those entities that are required to file. Specifically, the Southeast EEM Administrator will generate the following information, to be publicly posted on the Southeast EEM website:

- Monthly:
    - Minimum, maximum, and weighted average match prices;
    - Amount of energy offered and sold as well as bid and purchased over specified intervals;
    - Amount of energy that flowed once matched;
    - Total amount of energy transacted;
    - Total number of transactions;
    - Total benefit;
    - Minimum, maximum, and average MW match amount; and
    - Matches made but not executed.
- For the prior day provide aggregated summary data (at 6:00 AM CPT) including:
    - Total number of bids and offers during an hour;
    - Amount of energy offered and sold as well as bid and purchased during that hour;
    - Number of transactions executed for an hour;
    - Total number of Participants; and
    - Weighted average match price per hour.
- For the prior hour provide summary data including:
    - Total number of bids and offers during that hour;
    - Amount of energy offered and sold as well as bid and purchased during that hour;
    - Number of transactions executed for that hour; and
    - Total number of participants.

54. These reports will provide more transparency than exists today in the Southeast bilateral markets.

The Southeast EEM does not Harm Reliability

55. The Ops Team considered potential reliability implications when developing the key elements of the Southeast EEM, and ultimately selected the framework discussed herein in part because it does not negatively impact reliability and indeed is expected to improve reliability by adding another tool to manage generation and load balance in shorter increments of time. Part of the simplicity and strength of the Southeast EEM design is that it does not change any current reliability roles, responsibilities, or the way transmission capacity availability is calculated and provided to transmission customers. The reliability obligations that BAs and TSPs have today are unchanged under the Southeast EEM.

56. The Southeast EEM cannot be used to meet a LSE's resource adequacy obligations. LSE's must meet those obligations independently of their Southeast EEM participation. That means that LSEs must have owned or purchased generation sufficient to meet their needs. To the extent they participate in the Southeast EEM and are matched for an energy exchange, purchases would permit the LSE to back down generation.

57. The requirements for NFEETS were designed so that the service will not negatively impact other customers. It is a truly "as available" service.[14] It will be available only if capacity remains after all other uses have been reserved. The Southeast EEM Administrator will submit e-Tags so that any Participating Transmission Provider and BA whose system is used for an Energy Exchange Transaction will be notified and can take that transaction into account. Further, if a reliability issue arises, NFEETS will be the first to be curtailed. The bottom line is that transmission customers will be in no worse position operationally because their transmission service provider offers NFEETS.

Conclusion

58. The Southeast EEM is an operationally sound proposal that has relatively low costs to implement and will provide cost savings for Participants without negatively impacting reliability. It is a thoughtful and carefully designed proposal.

59. This concludes our affidavit.

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[14] Because it is an as-available service with the lowest priority, there is no need for the performance of transmission studies for the provision of NFEETS to a customer.

VERIFICATION OF CHRISTOPHER MCGEENEY

Pursuant to 18 U.S.C. § 1746 (2020), I state under penalty of perjury that the foregoing testimony is true and correct to the best of my knowledge, information, and belief, with the exception of Paragraph 3.

Executed this 10th day of February, 2021.

Christopher McGeeney
Associated Electric Cooperative, Inc.
Senior Manager, Transmission Services

VERIFICATION OF COREY SELLERS

Pursuant to 18 U.S.C. § 1746 (2020), I state under penalty of perjury that the foregoing testimony is true and correct to the best of my knowledge, information, and belief, with the exception of Paragraph 2.

Executed this 10 day of February, 2021.

Corey Sellers
Southern Company
General Manager of Transmission Policy and Services/Energy Policy