UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Alabama Power Company	)	ER21-1111-000
Dominion Energy South Carolina, Inc.	)	ER21-1112-000
Louisville Gas and Electric Company	)	ER21-1114-000
Duke Energy Progress, LLC Duke Energy Carolinas, LLC	)	ER21-1115-000
Duke Energy Carolinas, LLC	)	ER21-1116-000
Duke Energy Progress, LLC	)	ER21-1117-000
Louisville Gas and Electric Company	)	ER21-1118-000
Georgia Power Company	)	ER21-1119-000
Kentucky Utilities Company	)	ER21-1120-000
Mississippi Power Company	)	ER21-1121-000
Alabama Power Company	)	ER21-1125-000
Dominion Energy South Carolina, Inc.	)	ER21-1128-000 (not consolidated)

MOTION TO INTERVENE AND LIMITED PROTEST AND COMMENT OF PUBLIC INTEREST ORGANIZATIONS

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I. INTRODUCTION

Pursuant to Rule 211 of the Federal Energy Regulatory Commission's ("Commission") Rules of Practice and Procedure, Energy Alabama, Sierra Club, South Carolina Coastal Conservation League, GASP, Southern Alliance for Clean Energy, Southface Energy Institute, Inc., Vote Solar, Georgia Interfaith Power and Light, Georgia Conservation Voters, Partnership for Southern Equity, North Carolina Sustainable Energy Association, Sustainable FERC Project, and Natural Resources Defense Council ("Public Interest Organizations" or "PIOs") respectfully submit this protest in response to the Southeast Energy Exchange Market ("SEEM") Proposal[1] submitted by Alabama Power Company for acceptance under Section 205(c) of the Federal Power Act and Part 35 of the Commission's regulations. The entire proposal includes related filings in the above captions by members of the SEEM Proposal ("Applicants") to modify their Open Access Transmission Tariffs or concur with the Proposal (together, the "SEEM Proposal," "SEEM filings," or "proposal").

After long decades of monopoly utility dominance in the Southeast, the green shoots of competition have started to emerge. State actors and stakeholders across the region have begun exploring and quantifying the benefits of wholesale market and utility reform with the goal of relieving consumers who pay some of the highest electricity bills in the nation and encouraging the Southeast's burgeoning clean energy—particularly solar—industry. These efforts present an opportunity to make meaningful strides towards improving transparency, accountability, and equity in the region's energy systems.

Against this backdrop, the Applicants have put forth the legally deficient SEEM Proposal—an arrangement that purports to address the Southeast's current problems, but is at

[1] Southeast Energy Exchange Market Agreement, Accession No. 20210212-5033 (Feb. 12, 2021) ("SEEM Proposal").

least as likely to exacerbate them. Instead of embracing meaningful reform, the SEEM Proposal represents an incremental improvement to coordination that comes at much too great a cost and risk: increasing the market power of monopoly utilities, disadvantaging clean independent power producers seeking transmission access, and reducing transparency and oversight. If approved, this proposal could lock the region into a flawed market structure and stymie the meaningful reform at work in the states.

The SEEM Proposal has two primary legal infirmities. First, it is a power pool that fails to comply with the Commission's regulatory requirements. Second, it is likely to exacerbate the exercise of market power in the Southeast and produce rates that are unjust, unreasonable, and unduly discriminatory.

The Commission has long exercised its authority under the Federal Power Act ("FPA") to shape the development of competitive wholesale markets and ensure that proposals are just, reasonable, and do not unduly discriminate. The Commission's long-standing emphasis on independence, transparency, independent oversight, and stakeholder inclusion as critical components of wholesale market reform, whether or not that reform takes a precise form such as a Regional Transmission Organization ("RTO") or Independent System Operator ("ISO"). The same concerns the Commission expressed in Order 888 and its progeny regarding market power and non-discriminatory access to transmission are present here.

Therefore, the Commission can and should reject the SEEM filings and issue guidance as described in this Protest. If the Commission does not reject the filings outright, the Public Interest Organizations request that the Commission accept and suspend the filings for the maximum five-month period, subject to the outcome of a technical conference on the SEEM Proposal. The PIOs also request that the Commission direct the SEEM Applicants to provide

additional information on their proposal through a deficiency letter. Finally, the Commission should consider convening a technical conference or joint regional meeting regarding market reform in the Southeast.

II. THE COMMISSION SHOULD REJECT THE SEEM PROPOSAL BECAUSE IT IS UNJUST, UNREASONABLE, UNDULY PREFERENTIAL AND DISCRIMINATORY, AND FAILS TO COMPLY WITH THE COMMISSION'S REQUIREMENTS

The Commission bears responsibility for ensuring that the nation's electric supply is developed and operated commensurate with the public interest and that all rates and charges associated with the sale or transmission of electricity in the wholesale market are just, reasonable, and not unduly discriminatory.[2] To this end, the Commission has long exercised its authority under the FPA to shape the development of competitive wholesale markets to ensure just and reasonable market conditions.[3] The Commission must exercise this authority and reject the SEEM Proposal because it violates the Commission's regulations for power pools, fails to ensure just and reasonable rates, and is structured in a manner that facilitates discriminatory behavior.[4]

Beginning with Order No. 888, the Commission recognized that unregulated wholesale energy markets – including pooling arrangements – were inherently unduly discriminatory, and found that minimizing the opportunity for utilities to exercise monopoly power was imperative to ensure the competition required by the FPA.[5] As the Commission further developed competitive

[2] 16 U.S.C. § 824d–e.
[3] *Wholesale Competition in Regions with Organized Electric Markets*, Order No. 719, 125 FERC ¶ 61,071, at P 10 (2008).
[4] SEEM Proposal.
[5] *See Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, 61 Fed. Reg. 21,540 (May 10, 1996); *order on reh'g*, Order No. 888-A, 62 Fed. Reg. 12,274 (Mar. 14, 1997); *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997); *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998); *aff'd in relevant part sub nom. Transmission Access Policy Study Grp. v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002).

reform through subsequent regulations (*i.e.*, Order No. 2000[6] and Order No. 719), market power remained the touchstone for whether rates or practices are unjust, unreasonable, or unduly discriminatory. In its market reform efforts, the Commission has consistently emphasized the need for independence, transparency, oversight, and stakeholder inclusion to minimize market power and ensure just, reasonable, and nondiscriminatory rates. As discussed below, regardless of the type of market proposal before it—whether energy imbalance market ("EIM"), energy imbalance services, energy auctions, or power pools—the Commission has consistently returned to these foundational principles. These principles are equally applicable to the SEEM Proposal before the Commission today.

A. THE SEEM PROPOSAL MUST BE REJECTED BECAUSE IT FAILS TO COMPLY WITH FERC'S REQUIREMENTS FOR POWER POOLS

As proposed, the SEEM Proposal would create a loose power pool arrangement without a proposed joint pool-wide tariff in violation of Order No. 888. The Commission should reject the filing and direct the applicants in the above-captioned filings[7] ("Applicants") to file a Commission-approved pool-wide Open Access Transmission Tariff ("OATT") and revise the SEEM Proposal to offer third parties the same transmission services that SEEM Members and Participants provide themselves.

[6] *Regional Transmission Organizations*, Order No. 2000, 65 Fed. Reg. 810 (2000). For subsequent page references found in this document, please see https://www.ferc.gov/sites/default/files/2020-04/RM99-2A.pdf.

[7] "As of the date of filing, the following entities are Members of the Southeast EEM: Alabama Power, Georgia Power Company, and Mississippi Power Company (collectively, 'Southern Companies'); Associated Electric Cooperative, Inc. ('AECI'); Dalton Utilities ('Dalton'); Dominion Energy South Carolina, Inc. ('Dominion Energy SC'); Duke Energy Carolinas, LLC ('DEC') and Duke Energy Progress, LLC ('DEP' (together with DEC, 'Duke'); Louisville Gas & Electric Company ('LG&E') and Kentucky Utilities Company ('KU') (and LG&E and KU Services Company and LG&E and KU Energy LLC, when acting as the agent or representative of LG&E/KU) (collectively, 'LG&E/KU'); North Carolina Municipal Power Agency Number 1 ('NCMPA Number 1'); Power South Energy Cooperative ('PowerSouth'); North Carolina Electric Membership Corporation ('NCEMC'); and Tennessee Valley Authority ('TVA')." SEEM Proposal, at 1 n.1.

FERC's Open Access rules regulating power pools are intended to eliminate undue discrimination endemic to pooling arrangements. As the Commission explained,

> [I]t [is] imperative that this Commission take the necessary steps within its jurisdiction to ensure that all wholesale buyers and sellers of electric energy can obtain non-discriminatory transmission access . . . To do so, we must eliminate the remaining patchwork of closed and open jurisdictional transmission systems and ensure that all these systems, including those that already provide some form of open access, cannot use monopoly power over transmission to unduly discriminate against others. If we do not take this step now, the result will be benefits to some customers at the expense of others.[8]

The SEEM Proposal would undermine these objectives by allowing the operation of a power pool that limits transmission access for independent power producers while providing free transmission for monopoly utilities.[9]

B. SEEM IS A LOOSE POWER POOL

The SEEM Proposal meets FERC's definition of a loose power pool. In Order No. 888, FERC defined a loose power pool as "any multi-lateral (more than 2 public utilities) arrangement, many of which contain discounted and/or special transmission arrangements."[10] On rehearing of Order No. 888, FERC clarified "that a loose pool is any multilateral arrangement, other than a tight power pool or a holding company arrangement, that explicitly or

[8] Order No. 888 at 21,541; *see also id.* ("The legal and policy cornerstone of these rules is to remedy undue discrimination in access to the monopoly owned transmission wires that control whether and to whom electricity can be transported in interstate commerce.").

[9] As explained by the D.C. Circuit in *Transmission Access Policy Study Grp.*, 225 F.3d at 683–684:

> Entry into the transmission market is difficult and restricted, so those utilities that already own transmission facilities enjoy a natural monopoly over that field. The transmission-owning utilities can use their position to favor their own generated electricity and to exclude competitors from the market, whether by denying transmission access outright, or by providing transmission services to competitors only at comparatively unfavorable rates, terms, and conditions. Utilities that own or control transmission facilities naturally wish to maximize profit. The transmission-owning utilities thus can be expected to act in their own interest to maintain their monopoly and to use that position to retain or expand the market share for their own generated electricity, even if they do so at the expense of lower-cost generation companies and consumers.

[10] Order No. 888 at 21,594.

implicitly contains discounted and/or special transmission arrangements, that is, rates, terms, or conditions."[11] FERC intentionally "defined pooling arrangements in the broadest terms possible."[12]

The SEEM Proposal meets both elements of this definition. First, the SEEM Proposal is a multi-lateral agreement in which Members must provide access to their transmission systems for transactions that make use of the pooled facilities.[13] The pooled transmission facilities are incorporated into a Network Map that the SEEM Administrator uses for allocating available transmission through the SEEM Algorithm.[14] These pooled facilities are accessible to any Participating Transmission Provider or Participant with an Energy Exchange, so long as either the Energy Exchange resource or the load has a Non-Firm Energy Exchange Transmission Service ("NFEETS") Agreement with the Participating Transmission Owner.[15] Critically, the transmission service provided by one Participating Transmission Provider "in combination with the other Participating Transmission Providers' provisions of Non-Firm Energy Exchange Transmission Service, . . . allows for a continuous Contract Path for Energy Exchanges[.]"[16] This is what makes SEEM a pooling arrangement. The pooled transmission is the non-firm transmission that is released to SEEM fifteen minutes before the hour for the next hour. It includes all of the potential Contract Path that may be used by Energy Exchange Participants.[17]

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[11] Order No. 888-A at 12,313.
[12] *Wolverine Power Supply Coop.*, 85 FERC ¶ 61,099, 61,355 (Oct. 21, 1998).
[13] *See* Order No. 888 at 21,594; Order No. 888-A at 12,313.
[14] *See* SEEM Proposal, Attach. A ("SEEM Agreement") at App. B. ("SEEM Market Rules"), Section II (Definitions of "Contract Path", "Network Map").
[15] SEEM Agreement at Article 1.1 (Definition of "NFEETS Agreement").
[16] SEEM Market Rules, Section II.
[17] *See id.* Section IV ("Prior to being permitted to provide Non-Firm Energy Exchange Transmission Service, Participating Transmission Providers shall provide sufficient information to permit the Southeast EEM Administrator to create a Network Map of the Southeast EEM *Territory for purposes of confirming available capacity for NFEETS along Contract Paths for all potential Energy Exchanges*.") (emphasis added); *Id.* Section IV (requiring each Participating Transmission Provider to provide their available capacity to the pool 15 minutes prior to the next Clock Hour); *id.* Section II (providing that the Algorithm cannot exceed the available capacity of the Contract Path—i.e. pooled transmission—for Energy Exchange reservations).

The SEEM Proposal meets the second element of FERC's definition of a loose power pool because it contains "discounted and/or special transmission arrangements."[18] In the SEEM Proposal, the definition of NFEETS provides that the transmission rate and rates for Schedule 1 and 2 are provided at a discounted rate of "$0/MWh."[19] The definition also provides for special terms and conditions that will apply to the pooled transmission – it will have "the lowest curtailment priority,"[20] and Energy Exchanges are the only qualified use of the pooled transmission facilities.[21]

It does not matter that only a small portion of the participating utilities' transmission capacity is turned over to the SEEM Algorithm for the use of the power pool. In Order No. 888, FERC specified that "systems, *including those that already provide some form of open access*, cannot use monopoly power over transmission to unduly discriminate against others."[22]

The SEEM Proposal is a multi-lateral agreement that provides special and discounted transmission services to participating utilities. This arrangement falls squarely within FERC's broad definition of a power pool.

C. THE SEEM PROPOSAL DOES NOT COMPLY WITH THE COMMISSION'S REQUIREMENTS FOR POWER POOLS

Because of the risk of undue discrimination in pooling arrangements, FERC has imposed special requirements upon power pools. The primary goal of these requirement is to "ensure comparability regarding transmission services that are offered on a pool-wide basis . . .

[18] Order No. 888 at 21,594; *See* Order No. 888-A at 12,313.
[19] SEEM Market Rules, Section II.
[20] *Id*.
[21] *Id*.
[22] Order No. 888 at 21,541 (emphasis added); *see also* Order No. 888-A at 12,313 ("[W]e do not find it to be unduly discriminatory to provide some pool-wide transmission services to members under a pooling agreement and to provide other transmission services to members under the individual tariff of each member, as long as members and non-members have access to the same transmission services on a comparable basis and pay the same or a comparable rate for transmission.")

comparability for loose pools can be achieved if pooling agreements are modified: (1) to allow open membership and (2) to make the transmission service in the loose pool agreement available to others."[23] As proposed, the SEEM Proposal fails to satisfy these requirements. The SEEM Applicants must reform their power pooling arrangement to comply with Order No. 888 and 888-A or else "excise all discounted and/or special arrangements transmission service from the pooling arrangement."[24]

Members of loose pools must offer to third parties the same transmission services that members provide themselves under their pool-wide agreements. Specifically, "utilities must now provide access to their transmission lines to anyone purchasing or selling electricity in the interstate market on the same terms and conditions as they use their own lines."[25] To this end, all power pools must have a pool-wide tariff on file with FERC prior to commencement of operations.[26] Public utilities within a loose pool must take service under that pool-wide tariff for all pool transactions.[27] The pool-wide tariff must be the *pro forma* OATT promulgated by the Commission or another tariff approved by the Commission.[28] This requirement is effective on the date that transactions begin under the arrangement or agreement.[29]

[23] Order No. 888-A at 12,313.
[24] *Id.* The Commission requires public utilities that are members of an existing loose pool to either (1) reform their pooling arrangements in accordance with Order No. 888 or (2) excise all discounted and/or special arrangements transmission service from the pooling arrangement. That is, in the latter case the members could continue to provide other services (e.g., generation), but would cease to be a loose pool for purposes of Order No. 888.
[25] *Transmission Access Policy Study Grp.*, 225 F.3d at 681.
[26] 18 C.F.R. § 35.28(c)(3) ("Every public utility that owns, controls, or operates facilities used for the transmission of electric energy in interstate commerce, and that is a member of a power pool. . . must have on file a joint pool-wide or system-wide open access transmission tariff"). Moreover, any public utilities that have a "multi-lateral trading arrangement or agreement that contains transmission rates, terms or conditions" must have a FERC-approved joint pool-wide or system-wide OATT. *Id.*
[27] Order No. 888 at 21,594.
[28] 18 C.F.R. § 35.28(c)(3)
[29] *Id.*

In addition to facilitating open access to transmission, a pool-wide OATT allows entities to challenge a pool's choice to include certain transactions as pool transactions and to exclude other transactions as non-pool transactions on the grounds that the choice was unduly discriminatory or anti-competitive based on the particular facts surrounding the pool and its members.[30] In other words, the presence of a pool-wide OATT allows the members of a power pool to be held accountable if they engage in unduly discriminatory or anti-competitive conduct.

Not only have the SEEM Applicants proposed a power pool without filing a pool-wide OATT—a straightforward violation of FERC's rules—but the terms of the SEEM Proposal exclude participation in the pooling arrangement by anyone but SEEM Members and Participants. To become a Participant and gain access to SEEM's transmission services, an entity must meet several requirements, including entry into an Enabling Agreement—"a bilateral agreement for the purchase and sale of Energy"—with at least three SEEM Participants.[31] However, SEEM Members, who by definition are load-serving entities, are under no obligation to enter into Enabling Agreements with other entities, and nothing in the SEEM Proposal prevents them from entering into Enabling Agreements in a discriminatory manner. Even if an entity does meet all the requirements, the Participant Agreement only becomes effective when countersigned by the Southeast EEM Agent "at the direction of the Operating Committee."[32]

FERC has long recognized that "the inherent characteristics of monopolists make it inevitable that they will act in their own self-interest to the detriment of others by refusing transmission and/or providing interior transmission to competitors in the bulk power markets."[33]

[30] Order No. 888-C.
[31] SEEM Market Rules, Section III.
[32] *Id.* Section III. As previously noted, the Operating Committee is made up entirely by transmission-owning SEEM Members. SEEM Agreement at Article 5.
[33] Order No. 888 at 21,567.

So it is here—by exercising unmitigated authority over who is permitted to execute Enabling Agreements and become a SEEM Participant, the Applicants cement their control over the transmission system and all but guarantee that competitors will be provided inferior transmission service. This is the exact harm that Order No. 888 and its progeny were intended to correct.

D. THE SEEM PROPOSAL DOES NOT ENSURE JUST AND REASONABLE RATES AND ITS STRUCTURE LENDS ITSELF TO UNDUE DISCRIMINATION AND MUST THEREFORE BE REJECTED

Independent of its status as a power pool,[34] the SEEM Proposal falls short of the applicable FPA Section 205 standard for organized markets. The proposed market structure creates opportunities for the Applicants to abuse their market power through SEEM, is needlessly complex in a manner that discourages participation, and lacks adequate analytical support. Additionally, the SEEM Proposal lacks the elements of good governance that the Commission requires when reviewing organized markets including market mitigation, market monitoring, independence, and transparency. For all these reasons, as detailed below, the Commission should reject the SEEM Proposal for being unjust, unreasonable, and unduly discriminatory.

1. The SEEM Proposal is an organized wholesale market whose rates must be just, reasonable, and not unduly discriminatory.

The SEEM Proposal improperly characterizes SEEM as an "expansion to the existing . . . bilateral market in the Southeast."[35] The proposal describes SEEM as a "trading platform" and claims that "neither the sale of power nor the sale of transmission service will be effectuated

[34] A market's status as a power pool is independent of its status as an organized market. A power pool can also be an ISO, RTO, or other organized market. Notable examples include MISO, which is both a power pool and ISO; PJM, which is both a power pool and an ISO; and SPP, which is both a power pool and an RTO. *Electric Power Markets*, FEDERAL ENERGY REGULATION COMMISSION, https://www.ferc.gov/industries-data/market-assessments/electric-power-markets (last updated Oct. 23, 2020).

[35] SEEM Proposal at 13.

through the Southeast EEM System or under the Southeast EEM Agreement."[36] Throughout its filing, the Applicants attempt to cabin the Commission's jurisdiction over SEEM to the service of each utilities' transmission tariffs and SEEM's relationship to that service,[37] incorrectly asserting that SEEM "is not . . . a contractual vehicle for the sale or transmission of electric energy at wholesale" and that "the Southeast EEM Agreement is not required to be reviewed by the Commission by virtue of its relationship to [power sales.]"[38] Applicants argue that "[w]hile Southern Company is filing the entire Southeast EEM Agreement, the Commission's authority to review it remains limited by its statutory authority."[39]

Contrary to these assertions, SEEM is an organized marketplace for the sale of wholesale power over which the Commission has clear jurisdiction. SEEM has rules that control who participates and how prices are generated, replacing the negotiations that are definitional to bilateral contracting. Participants are no longer entering into bilateral contract negotiations with one another directly and are required to defer such negotiations to the SEEM algorithm.

Contract rates are a defining component of a bilateral agreements.[40] By contrast, auctions and other organized markets produce tariff rates are subject to a different standard under Section 205 than contract rates.[41] In *Devon Power LLC*, the Commission explained that rates produced by an auction produced tariff rates rather than contract rates because prices are set by a rate methodology and the contracting parties had little active participation in the auction.[42] Similarly, under the rules of the SEEM Proposal, the algorithm makes matches and sets rates for a

[36] *Id.* at 14.
[37] *Id.*
[38] *Id*.
[39] *Id.*, *citing California Indep. Sys. Operator Corp. v. FERC*, 372 F.3d 395 (D.C. Cir. 2004) (finding that the Commission exceeded its statutory authority to examine practices "related to" rates when it attempted to replace CAISO's governing board based on its own method of selection).
[40] *See generally Devon Power LLC*, 134 FERC ¶ 61,208, 62043 (Mar. 17, 2011).
[41] *See id.* at 62,043–44.
[42] *Id.* at 62,044.

transaction. The individual Participants do not participate in this process beyond making initial bids/offers and fulfilling matches once they are made. This system does not reflect the benefits of free negotiation that is assumed when reviewing contract rates. Consequently, the Commission can and should review the SEEM Proposal as an organized market rather than as an expansion of the existing bilateral market as the Applicants claim. As the Commission stated when evaluating the appropriate scope of its jurisdiction over and applicable requirements pertaining to an algorithm-based energy exchange in *Automated Power Exchange*:

> We agree … that the rate schedule APX submitted does not meet all of the Commission's requirements. APX argues that it does not need to meet these requirements because they are inconsistent with market-based rate authority. We disagree. APX is not merely selling power at market-based rates. APX is a power exchange, a concept that reflects a fundamental restructuring of the industry which substantially alters the operation of the electric power market. Under a typical market-based transaction the price is determined through arms-length negotiations between the buyer and seller. In contrast, the electronic operation of APX's Market Engine and APX's decisions in that regard will determine the market price.
>
> Moreover, APX's power exchange is starkly different from the traditional way power is sold, i.e., through explicit rates on file with the Commission which guarantees that all market participants have the same information about the market, and protects consumers by providing rates that are just, reasonable, and not unduly preferential or discriminatory. Consequently, in this new power exchange environment the Commission has the same responsibility . . . .[43]

The Applicants' characterization of the SEEM Proposal as a "market enhancement" of the existing bilateral market[44] does not insulate the SEEM Proposal from the level of review given to other markets and the filing itself acknowledges the Commission's authority under 205(c) to review the SEEM Proposal under the just, reasonable, and not unduly discriminatory standard of review.[45]

[43] *Automated Power Exchange, Inc*., 84 FERC ¶ 61,020, 61,090 (1998); *upheld Automated Power Exchange, Inc. v. FERC*, 204 F.3d 1144 (D.C. Cir. 2000).
[44] SEEM Proposal at 4.
[45] SEEM Proposal at 1 and 5.

2. The Commission should rely on core principles and lessons learned from its regulation and review of other organized markets.

In reviewing the SEEM Proposal for whether it is unjust, unreasonable, or unduly discriminatory, the Commission should draw upon its long history of regulating and evaluating various types of organized markets. The core principles used by the Commission when evaluating other market structures are equally applicable to this filing.

The Commission's development of competitive market structures through regulation is highly relevant and applicable to the SEEM filing. Order No. 888 was one of the first major steps towards competitive wholesale market reform and set the groundwork for subsequent regulation and market reform. Order No. 888 opened up transmission by ordering functional unbundling, yet the Commission recognized that this was only a first step and that "additional safeguards are necessary to protect against market power abuses."[46] The Commission specifically noted that "the filing of open access tariffs by . . . members of a power pool is not enough to cure undue discrimination" where membership is open to some but not all and noted that "the same holds true of bilateral arrangements that allow preferential transmission pricing or access," stating that "[t]hese agreements and arrangements need to be changed."[47] The Commission opened the door for utilities to engage in market restructuring to address concerns of discrimination and market power abuse.[48] It noted that several organized markets were considering reorganization as an Independent System Operator ("ISO") as only one available method and set standards designed to ensure that "a properly constituted ISO [would be] a means by which public utilities can

[46] Order No. 888, at 21,552.
[47] *Id.* at 21,593.
[48] "Thus, we intend to accommodate other mechanisms that public utilities may submit, including voluntary corporate restructurings (e.g., ISOs, separate corporate divisions, divestiture, poolcos), to ensure that open access transmission occurs on a non-discriminatory basis. We also will continue to monitor—and stand ready to work with parties engaging in—innovative restructuring proposals occurring around the country." Order No. 888, at 21,552.

comply with the Commission's non-discriminatory transmission tariff requirements."[49] To assist in guiding the restructuring process, the Commission established general principles that it would apply in determining whether such reorganized markets would meet the Commission's non-discriminatory tariff requirements, which included: (1) governance should be structured in a fair and non-discriminatory manner; (2) market operations and finances must be independent of transmission owners; (3) tariffs must be clear and neither favor nor disfavor any user or class of users; (4) trading rules should promote efficiency in the marketplace; and (5) information on system operation, conditions, available capacity and constraints, and all contracts or other service arrangements of the ISO should be made publicly available.[50]

The Commission built upon these principles when it issued Order No. 2000 based on the understanding that the risk of market power abuse was still prevalent even after functional unbundling.[51] Order No. 2000 set minimum criteria specifically designed to address problems common to *all* competitive markets and specifically expanded market monitoring functions in organized markets, noting that "[s]ince the inception of organized energy markets, the Commission has required RTOs and ISOs to employ a market monitoring function" as monitors "have consistently played a vital role in reporting on the state of the markets and ferreting out wrongdoing by market participants."[52] In Order No. 719, the Commission implemented even more regulations addressing remaining market power issues and setting requirements for the relationship between organized markets and market monitoring units. There the commission noted that "[i]mproving the competitiveness of organized wholesale markets is integral to the

[49] Order No. 888, at 21,596.
[50] *Id.* at 21,596-597.
[51] "[F]unctional unbundling does not change the incentives of vertically integrated utilities to use their transmission assets to favor their own generation, but instead attempt to reduce the ability of utilities to act on those incentives." Order No. 2000, at 35.
[52] *Id.* at 64,137.

Commission fulfilling its statutory mandate to ensure supplies of electric energy at just, reasonable and not unduly discriminatory or preferential rates."[53]

The SEEM Proposal presents the same fundamental market power issues that the Commission addressed while regulating organized markets. The Commission created ISOs and RTOs as exemplar organized market structures, that if designed in a thoughtful and fair way, address these issues, but the strategies the Commission used in these regulations are applicable to addressing market power issues in all organized markets. In developing Order Nos. 888, 2000, and 719, the Commission determined what was required to avoid undue discrimination. Those determinations are highly relevant in understanding whether the SEEM Proposal similarly avoids undue discrimination as an alternative market design.

The Commission's decisions to date regarding market structures similar to SEEM should guide its analysis here. These include the Commission's review of California Independent System Operator's ("CAISO") Western Energy Imbalance Market (WEIM), SPP's imbalance market, and Southern Company's power auction. Each of these market structures is voluntary and separate from traditional RTO/ISO wholesale markets. In each case, the Commission reviewed the filings under Section 205, examined the market power issues, and issued requirements to ensure that the filing was just, reasonable, and not unduly discriminatory.

There are core principles for ensuring just, reasonable, and not unduly discriminatory rates for organized markets that can be drawn out from the Commission's regulation and evaluation of individual organized markets. The Commission consistently returns to the same requirements for curtailing market power: market mitigation, market monitoring, good governance, independence, and transparency. The Commission has long applied lessons learned

[53] Order 719 at 64,101.

from previous actions to guide its analysis of active proceedings,[54] and should do so here. The SEEM Proposal fails to sufficiently integrate any of these core principles and should be rejected for failing to meet the Commission's standards of just, reasonable, and not undue discrimination for organized markets.

However, as discussed further in section II.C, in rejecting the filing, Commission should provide guidance to the Applicants as to what modifications are required to meet the Commission's just and reasonable standard for their proposed market.

3. The SEEM Filing as proposed is unjust, unreasonable, and unduly discriminatory.

The SEEM Proposal as filed fails to meet any of the core principles required by the Commission to ensure that organized wholesale markets are just, reasonable, and not unduly discriminatory. Contrary to Applicants' assertions, the SEEM Proposal does not appear to improve upon the status quo, has failed to establish that its potential benefits outweigh its costs, and, if anything, increases the potential for market power abuse. Nor has SEEM instituted any of the structural mechanisms deemed necessary to counteract such potential abuse. The SEEM's governance structure heavily favors its largest members, lacks transparency, independence, robust monitoring, or mitigation measures designed to deter noncompetitive behavior. As a result, the proposal as filed fails to meet the 205 standard and must be rejected.

a. The SEEM Proposal fails to improve upon existing markets or provide sufficient safeguards against market power abuse.

PIOs have long advocated for competitive market reform in the Southeast and commend the stated goals of SEEM to "reduce transactional friction in the Southeast and increase the

[54] Order No. 2000, at 632; *e.g.*, *Sw. Power Pool, Inc.*, 112 FERC ¶ 61,303, 62, 343 (Sept. 19, 2005) ("SPP September 2005 Order").

efficiency of the existing bilateral market."[55] However, as explained in the written testimony of Dr. Paul Sotkiewicz, the SEEM Proposal not only fails to meet this target, but "raises more questions than it provides solutions to problems."[56] As an initial matter, Applicants have failed to demonstrate that SEEM's market design is computationally feasible. Additionally, the proposed design fails to improve upon the status quo and is in some ways worse. Most troubling, the SEEM design also facilitates the exercise of market power and manipulation not present in the current bilateral market. Finally, the cost-benefit analysis provided in support of the SEEM Proposal is not well supported, non-transparent, and does not provide sufficient information or detail to assess the reasonableness of the results.

i. The SEEM Algorithm may not be computationally feasible.

The proposed SEEM market design also employs a complex programming algorithm that matches buyers and sellers and is designed to preserve much of the existing bilateral market structure by allowing participants to set a number of different constraints.[57] The programming algorithm is a mixed integer program with constraints that include: (1) the unfettered ability of Participants to choose who they do and do not wish to transact; (2) the ability to submit block bids or offers that require either the whole bid or offer be accepted or otherwise be rejected; (3) a requirement there must be at least three eligible, non-affiliated counterparties for which a Participant can exchange energy in order to be matched; and (4) an unknown set of potential contract paths that could be used to match bids and offers between different Balancing Authority areas ("BAAs").[58] In light of the timing of the market and the proposed bidding, the model has to be able to solve what is possibly a large and difficult mixed integer problem in only 5

[55] SEEM Proposal at 2.
[56] Sotkiewicz Aff. at P 113 (attached hereto as Exhibit A).
[57] SEEM Proposal at 15–16; SEEM Market Rules, Section IV.A.b.
[58] Sotkiewicz Aff. at P 85; SEEM Market Rules, Sections IV.A.1.b, IV.A.2, IV.B.3.a.

minutes.[59] Applicants have not yet chosen a vendor and no prototype of the program has been shown in the SEEM Proposal.[60]

Such a large number of integer constraints can be computationally burdensome within such a short solution time.[61] As Dr. Sotkiewicz points out, despite often encompassing a larger footprint or having more generators on the system, current ISO/RTO market dispatch algorithms and software are simpler and more complete in concept and operation than the proposed SEEM market algorithm due to the lack of mixed integer constraints.[62]

The SEEM matching algorithm has not even been developed yet, and thus has not been shown to be computationally feasible given the limited time to run the algorithm and schedule transactions across multiple BAAs.[63] Surprisingly, Applicants have not acknowledged the computational complexity of the proposed model and appear not to have considered the possibility that the market design may not be feasible.[64]

ii. The proposed SEEM design is worse than the status quo.

Currently, wholesale energy is in the Southeast is traded in bilateral markets where buyers and sellers of wholesale power execute transactions that could be hourly, daily, weekly, monthly or even multi-year long-term contracts.[65] Existing trading in the Southeast is quite common and sophisticated, with almost every utility participating and either maintaining their own in-house trading desk and expertise or outsourcing it to professional services.[66] Information about available resources and operating costs used to inform bidding are publicly available and

[59] Sotkiewicz Aff. at P 84; SEEM Market Rules, Section IV.B.2.
[60] Sotkiewicz Aff. at P 84.
[61] *Id.* at PP 82–92.
[62] *Id.* at PP 90–92.
[63] SEEM Filing at 11; Sotkiewicz Aff. at 84.
[64] Sotkiewicz Aff. at P 89.
[65] *Id.* at P 15.
[66] *Id.* at P 24.

easily located on the Open Access Same-time Information System ("OASIS"), making search costs minimal, and submission of eTags for scheduled transactions are largely automated.[67] Short-term bilateral contracts might use non-firm transmission, which can lower costs but also carries the risk that it could be curtailed.[68] Long-term contracts use firm transmission, which has higher costs because it cannot be curtailed.[69] If the counterparties are located in different BAAs, as the exchange travels between the source and sink, transmission rates are incurred and are added - or "pancaked" - on top of each other, making trade across BAAs more expensive.[70] Pricing tends to represent a split of the savings for each party generated by the trade.[71]

The Applicants argue that SEEM would advance the efficiencies and lower costs compared to the existing bilateral market by using an automated software system with an algorithm designed to match bids and offers voluntarily submitted for 15-minute intervals of non-firm, zero-cost transmission, with prices based on a "split-the-savings" basis.[72]

Because the existing market is so sophisticated and widely used, any reduction in transaction costs from SEEM are likely minimal.[73] The split-savings pricing proposal is also largely a reflection of current price formation.[74] And while zero-cost transmission eliminates some of the costs of transacting across a wider area, since SEEM only allows trading of 15-minute increments of non-firm transmission, the likelihood of being curtailed for such a low-

[67] *Id.* at PP 24–27.
[68] *Id.* at PP 17–18.
[69] *Id.* at P 19.
[70] *Id.* at P 21.
[71] *Id.* at P 30.
[72] SEEM Proposal at 4.
[73] Sotkiewicz Aff. at PP 43–45.
[74] *Id.* at PP 50–52. While Dr. Sotkiewicz and PIOs do not specifically opine on whether the proposed split-savings model is unjust or unreasonable *per se*, it is generally thought to be inefficient when compared to other pricing models. *See id.* at P 32, n.17. The Commission itself noted in Order 2000 raised concerns about split-savings pricing, stating that "[m]arket designs that base prices on the averaging or socialization of costs, may distort consumption, production, and investment decisions and ultimately lead to economically inefficient outcomes." Order 2000 at 941. For this reason, PIOs recommend that the proposed pricing model be addressed as part of a technical conference (see Section V below).

priority product is high, especially in light of the existing seams with the PJM Interconnection LLC ("PJM"), Midcontinent Independent System Operator ("MISO"), and Southwest Power Pool ("SPP") markets.[75]

But there are also ways in which the SEEM Proposal is worse than the status quo. For example, the current bilateral market is governed by rules set by FERC and no one party or coalition has control over the rules governing bilateral transactions. Under SEEM, however, the rules were developed by a coalition that gives preferences to some Members over others.[76] In this way SEEM represents a regression in the equality of opportunity and treatment than is currently available.[77]

iii. The proposed SEEM design facilitates the exercise of market power.

Of greatest concern is that the proposed SEEM design erects new barriers to trading that do not exist in the current bilateral market. In particular, the SEEM structure provides large market participants the opportunity to prevent transactions from taking place at all.[78] Such barriers can facilitate the exercise of market power by large market participants in ways that would not be detected by SEEM's own reporting requirements, the typical Market Based Rate ("MBR") authority evaluations, or by Electric Quarterly Reports data.[79]

Applicants argue that SEEM does not have market power implications because most SEEM Members have MBR authority for selling outside of their own BAAs.[80] But MBR authority focuses on the ability to raise prices above competitive levels through the exercise of

[75] *Id.* at PP 39–41.
[76] *Id.* at P 37.
[77] *Id.* at P 38.
[78] *Id.*
[79] *Id.* at P 53.
[80] SEEM Proposal at 39.

horizontal market power, and Applicants' expert, Dr. Pope, also focuses her analysis on the ability of SEEM Participants to act together to raise market prices.[81]

But market power and manipulation can come in forms other than raising prices above competitive levels through the exercise of horizontal market power. The SEEM Proposal exists in a market structure where the major players are all state-regulated, franchise monopolies whose returns are based almost entirely on capital investments, which results in short- and long-term incentives that are quite different from other organized markets.[82] In the Southeast, competition and the availability of lower cost suppliers erodes the potential profits that come from a monopoly's main source of revenue: building additional generation.[83] Competition and lower cost options threaten most parties in the Southeast system: Investor-Owned Utilities ("IOUs") need to show their regulators that existing (higher-cost) assets are "used and useful" and that future supply needs can be met by more investment – upon which they receive a regulated rate of return – rather than just purchasing supply on the open market.[84] For public power generation and transmission entities, they do not want business decisions that lead to a request in change of strategy or management.[85] Transmission owning utilities do not want to appear as if they have excess capacity, which could be a signal that transmission is overbuilt.[86] For all of these parties, to signal through SEEM that there is sufficient NFEETS available could send a signal to parties paying for Firm and Non-firm transmission with pancaked rates to satisfy those needs through

[81] *Id.* at 40–42.
[82] Sotkiewicz Aff. at P 56.
[83] *Id.* at P 57.
[84] *Id.*
[85] *Id.* at P 58.
[86] *Id.* at P 59.

SEEM instead, which would lead to a spiraling effect that reduces transmission revenues and makes other regional generation more competitive as well.[87]

The SEEM structure provides several levels to prevent transactions from taking place that would otherwise be consistent with market rules, primarily through the unfettered ability to toggle off certain counterparties known to have lower cost resources. This could also be used as part of a coordinated strategy among large generation-owning SEEM Members.[88] Given the 3 counterparty requirement for trades to go through, it would only take three of the five largest generation owning entities to not offer their generation that would likely block trades with lower cost parties.[89] In the long run, merchant generation or renewable developers already in the market could be financially squeezed and forced to sell their assets to the large Member IOUs and such signals would be a powerful deterrent to competitive new entry.[90]

Nothing currently required by SEEM or other monitoring would provide a paper trail of such strategies.

Additionally, a consequence of this unique ability to toggle off other Participants permits one market Participant to foreclose the possibility of transactions with specific counterparties is that it can lead to undue discrimination. Although the bilateral market also allows parties to choose with whom they wish to contract, one must ask whether the structure of SEEM and the breadth of the geographic market better enables this type of unfettered discrimination. There are also incentives to deny certain participants access to zero-cost transmission in SEEM as a way of

[87] *Id.* at P 60; "The $0 transmission rate sub-hourly trading could eventually cannibalize some hourly trading yielding a reduction in non-firm transmission revenues." SEEM Proposal, Attach. E-1: Benefits Analysis by Guidehouse Inc. and CRA International at 11 ("Guidehouse/CRA Report").
[88] Sotkiewicz Aff. at 60.
[89] *Id.* at P 63.
[90] *Id.* at P 64.

forcing them to pay for higher-priced firm transmission in the traditional bilateral market that rises to the level of cross-market manipulation.[91]

Finally, while the three-counterparty rule might prevent some types of collusion, as suggested by Dr. Pope,[92] it also creates larger barriers to completing an economically beneficial match than currently exist in a bilateral market where two parties can find each other and complete a mutually beneficial transaction without the need for other eligible bids. When combined with the three-counterparty rule, unfettered discrimination is particularly problematic in light of the geographic dominance of the five largest Members who own both transmission and generation.[93] All operate their respective BAAs and are geographically spread out across the SEEM map.[94] This provides opportunities to block potentially beneficial matches that would cross more than one BAA and transmission provider, since the number of "eligible counterparties" would easily be less than three and easy to imagine the ability to unduly discriminate against specific parties in a way that is totally undetectable under the current construct, which only aggregates numbers of bids, offers, sales, and Participants. This lack of transparency is further compounded by the lack of an independent market monitor with the authority and independence to investigate for such market power abuses.[95]

iv. Applicants' cost-benefit analysis is insufficient to justify the SEEM Proposal.

Applicants rely on an analysis by Guidehouse Inc. and CRA International to assert that SEEM will provide annual benefits of to $40 million in the base case scenario and $100 million

[91] *Id.* at PP 68–73.
[92] SEEM Proposal, Attach. D at PP 83–85.
[93] Sotkiewicz Aff. at PP 76–77.
[94] *Id.*
[95] *Id.* at 78–79, 83.

in a carbon constrained scenario.[96] However there are serious concerns regarding the validity of the modeling used and the Guidehouse/CRA Report provides no details regarding key assumptions necessary to verify their assessment.[97]

As an initial matter, the Guidehouse/CRA Report uses a modeling tool that does not have the ability to model dispatch on the 15-minute intervals that will be used in SEEM, despite the existence of several other modeling options that do.[98] Whatever simulations were done to model for 15-minute intervals were done in-house and absent any explanation and supporting documentation, one cannot assess the strength of the modeling or the reasonability of the results.[99]

Additionally, the analysis provides no detailed outputs regarding key elements, including: (1) estimated bilateral trading prices; (2) changes in generation dispatch by utility and fuel type; (3) production cost savings accruing to each of the modeled market participants; (4) potential trades that were available but unable to be executed due to transmission constraints; (5) the amount of curtailed renewable resources before and after the implementation of SEEM; or (6) changes in emissions from the impact of a changing amount of solar power across the SEEM region, despite being cited as the main purpose for SEEM.[100] The lack of this kind of detail makes it difficult to assess or verify the reasonableness of the results.[101]

The failure to fully account for transmission system constraints is a fatal flaw that renders the entire benefits analysis and estimates meaningless and despite the relatively low reported

[96] Guidehouse/CRA Report at 9 and n.13.
[97] Sotkiewicz Aff. at P 94.
[98] *Id.* at P 100.
[99] *Id.*
[100] *Id.* at P 94.
[101] *Id.* at P 111.

costs to set up and run SEEM, Applicants have not actually established that the benefits of SEEM will actually exceed its costs.[102]

b. The governance structure in the SEEM Proposal creates opportunities for specific applicants to control and manipulate the market.

The governance structure in the SEEM Proposal presents two major structural concerns that consolidate powers to the monopoly utilities who are Members: (1) the voting mechanism gives Duke, Southern Company, and TVA the ability to functionally control certain decisions by the Member Board, and (2) the Membership Board excludes classes of Participants from being engaged in governance. These structural issues create opportunities for Applicants to control and manipulate SEEM in a discriminatory manner.

i. The SEEM voting mechanism allows certain Applicants to exercise market power.

The proposed governance structure of SEEM creates market power for three Applicants: Southern Company, Duke, and Tennessee Valley Authority ("TVA"). The governance allows for any two of these three Applicants to block future modifications to market rules or market structures—structures and rules that will need to evolve to provide a more beneficial market with meaningful market participation. The SEEM Proposal sets up a voting system where each Member receives one vote for a popular vote, and a number of votes proportional to load size for the Net Energy for Load ("NEL") Vote.[103] Significant actions require more than 50% of the popular vote and more than 67% of the NEL Vote (and comprising at least three Members) in

[102] *Id.* at P 110.
[103] SEEM Proposal at 21–22; SEEM Agreement at Articles 4, 4.1.5.

order to pass.[104] Other actions require more than 50% of the popular vote and more than 50% of the NEL Vote (and comprising at least three Members) in order to pass.[105]

Under the proposed voting system, a small number of Applicants can block general and significant matters through the NEL Vote with minimal coordination. Based on data provided in Table 1 below, any two of the three largest Applicants—Southern Company (28%), Duke (23%), and TVA (29%)—can block any proposed general or major action by preventing either a majority or supermajority required for the NEL Vote.[106] These Applicants maintain their ability to block NEL votes even as SEEM adds the Members anticipated in the filing.[107] Under the voting rules, the Applicants can still exercise significant control by unilaterally blocking actions and there is little to protect from them effectively acting as a voting block.

Table 1: Estimated Net Energy Load Votes[108]

Members	2018 EIA sales (MWh)	Total of initial Members	Total including potential Members
Southern Company	151,048,974	28%	25%
AECI	20,217,641	4%	3%
Dalton	1,722,943	0%	0%
DESC	22,657,235	4%	4%
Duke	125,860,523	23%	21%

[104] SEEM Proposal at 21–22; SEEM Agreement at Articles 4, 4.1.5.
[105] SEEM Proposal at 21–22; SEEM Agreement at Articles 4, 4.1.5.
[106] Southern Company and Duke have a combined 51% of the NEL votes of all initial SEEM members; Southern Company and TVA have a combined 57% of the NEL votes; and Duke and TVA have a combined 52% of the NEL votes.
[107] Southern Company and Duke have a combined 46% of the NEL votes of all initial and potential SEEM members; Southern Company and TVA have a combined 51% of the NEL votes; and Duke and TVA have a combined 47% of the NEL votes.
[108] To estimate the Net Energy Load vote for each member the total retail sales for each utility was calculated from the EIA's 2018 Retail Sales for all sectors: Tbl. 10, https://www.eia.gov/electricity/sales_revenue_price/. Where members are wholesale providers to distribution utilities, such as in the case of TVA, the retail sales from each distribution customer were summed to get the total for that SEEM member. The NEL vote was estimated to be that member's 2018 retail sales as a percentage of the total 2018 retail sales of all SEEM members.

LG&E/KU	31,188,583	6%	5%
NCMPA	4,089,959	1%	1%
PowerSouth	8,224,272	2%	1%
NCEMC	18,548,364	3%	3%
TVA	157,237,029	29%	26%
Potential Members:			
GSOC/ Oglethorpe	38,500,638		6%
MEAG	8,985,333		2%
Santee Cooper	8,458,687		1%

ii. The governance structure denies independent power producers the ability to meaningful engage in decision making

The SEEM Proposal places all governance authority in the hands of Members via the Membership Board, Operating Committee, and the Agent.[109] The SEEM Proposal lacks any governance role for Participants who are not Members. Although the SEEM Proposal allows for the addition of new Members,[110] the requirements for membership close off that availability to certain classes of Participants. The SEEM Proposal requires that a Member "must be: (i) a Load Serving Entity located in the Territory; (ii) an association, Cooperative or Governmental Utility that is a Load Serving Entity located in the Territory; or (iii) an association, Cooperative or Governmental Utility created for the purpose of providing service that includes Energy to a Cooperative or governmental Load Serving Entity (or the Load Serving Entities being served by an association, Cooperative or Governmental Utility) located in the Territory."[111] This definition excludes independent power producers and other participants from becoming Members and having access to SEEM governance.

[109] *See* SEEM Proposal at 15–16, 21–22; SEEM Agreement at Article 4.
[110] SEEM Agreement at Article 3.2.3.
[111] *Id.* at Article 3.2.1.

The SEEM Proposal justifies tying Membership to load-serving responsibility by stating it "ensur[es] that the entities with decision-making authority over the design, goals, and objectives of the Southeast EEM will share a common purpose of achieving benefits for customers."[112] The SEEM Proposal then goes on to state "[the Members] will pay for the Southeast EEM; and in return, they will have voting rights."[113] Neither of these explanations justifies completely excluding entire classes of Participants from having any participation in governance; although the current qualifications for being a Member make an entity an important participant in governance, the absence of these qualifications do not make an entity's input invaluable. There are various designs that would have opened governance to a wider range of Participants while still achieving the SEEM Proposals stated benefits of ensuring common purpose and giving Applicants providing start-up funds with an important role in governance.[114] Instead, the SEEM Proposal completely excludes classes of Participants—*e.g.* independent power producers and large-scale commercial or industrial customers—which opens up the potential for Applicants to exercise market power over these Participants through SEEM.

The use of the algorithm in the SEEM Proposal creates ambiguity in how bidding practices will develop in SEEM. Those bidding practices will have a direct impact on potential Participants in the region. The inability for classes of Participants such as independent power producers to substantively engage in shaping SEEM to address issues that arise in bidding practices creates market power issues. Participants' ability to participate in the stakeholder

[112] SEEM Proposal, Attach. B at 13.
[113] *Id.*
[114] Jennifer Chen, *Evaluating Options for Enhancing Wholesale Competition and Implications for the Southeastern United States*, NICHOLAS INSTITUTE FOR ENVIRONMENTAL POLICY SOLUTIONS, DUKE UNIVERSITY (Mar. 2020), https://nicholasinstitute.duke.edu/publications/evaluating-options-enhancing-wholesale-competition-and-implications-southeastern; Jennifer Chen & Michael Bardee, *How Voluntary Electricity Trading Can Help Efficiency in the Southeast*, R STREET (Aug. 2020), https://www.rstreet.org/wp-content/uploads/2020/08/No.-201-Energy-Trade-in-the-Southeast.pdf.

engagement processes is not enough to mitigate this market power. All Participants do not necessarily need to be able to become Members, but governance cannot be completely inaccessible to entire classes of Participants. The clear absence of stakeholder governance in the SEEM Proposal makes it unduly discriminatory.

c. The SEEM Proposal lacks the core principles of market monitoring, market mitigation, transparency, and independence that are needed to protect against market power abuse

Throughout its regulation and evaluation of organized markets, the Commission has identified market monitoring, mitigation, transparency, and independence as core principles of good market design that mitigate market power. The Commission has recognized the value of integrating these tools for structurally building in market power mitigation into organized market designs to ensure the market is just, reasonable, and not unduly discriminatory. The SEEM Proposal fails to integrate these core principles.

i. The SEEM Proposal lacks adequate market monitoring

Market monitoring plans are a common tool that the Commission has required in order to ensure that an organized markets are just, reasonable, and not unduly discriminatory.

The Commission requires sufficient market monitoring procedures when reviewing organized markets on an individual basis. In the WEIM filing, CAISO recognized the Commission's implicit requirement for market monitoring and proposed the use of its existing Department of Market Monitoring, and the Commission found that the department's "extensive experience in monitoring an imbalance market in the West" made it an appropriate measure that helped ensure that the filing was not unduly discriminatory.[115] As other entities joined the WEIM, the Commission was careful to note in each case that the joining entity would be subject

[115] *Cal. Indep. System Operator Corp.*, 147 FERC ¶ 61,231, 62,393–4 (June 19, 2014) ("CAISO June 2014 Order").

to market monitoring under CAISO's existing tariff.[116] In the filing for Southern Company's power auction, the Commission required the market monitor to verify the calculations and utilities' inputs used in the auction, confirm that transmission service is not unreasonably withheld, file market reports to the Commission, and report complaints and serious concerns to the Commission.[117] In a subsequent filing, the Commission directed Southern Company to make specific clarifications to the auction rules to reflect the Commission's requirements.[118] Similarly, in the SPP energy imbalance market filing, the Commission extensively and critically reviewed SPP's market monitoring and mitigation, finding that "[u]ntil these inadequacies are remedied, we cannot find SPP's proposal to be just and reasonable" and rejected the filing.[119]

Additionally, market monitoring is considered a minimum function of Section 205 tariffs, as are general market monitoring plan requirements;[120] and the Commission views mitigation provisions with an eye towards "making them as non-discretionary as possible."[121] Additionally, the Commission requires organized markets to assess their impact on other markets in the region.[122]

The SEEM Proposal fails to include any market monitoring. Instead, the Applicants assert "[w]ithout any new opportunities for the exercise of market power and with strong safeguards regarding potential market manipulation, there is no need for a market monitoring

[116] *E.g.*, *PacificCorp*, 147 FERC ¶ 61,227, 62,337–39 (2014) ("PacifiCorp June 2014 Order"); *Cal. Indep. System Operation Corp.*, 166 FERC ¶ 61,098, 61,426 (Feb. 8, 2019).
[117] *S. Co. Servs., Inc.*, 125 FERC ¶ 61,316, 62,552 (Dec. 18, 2008) ("Southern Company December 2008 Order").
[118] *S. Co. Servs., Inc.*, 129 FERC ¶ 61,253, 62,430 (Dec. 17, 2009) ("Southern Company December 2009 Order").
[119] SPP September 2005 Order, at 62343, 62347–49.
[120] "The monitoring plan must be designed to ensure that there is objective information about the markets that the RTO operates or administers and a vehicle to propose appropriate action regarding any opportunities for efficiency improvement, market design flaws, or market power identified by that information. The monitoring plan also must evaluate the behavior of market participants, including transmission owners, if any, in the region to determine whether their behavior adversely affects the ability of the RTO to provide reliable, efficient and nondiscriminatory transmission service." Order No. 2000, at 463.
[121] Order No. 719, at P 379.
[122] Order No. 2000, at 463.

function."[123] The SEEM Proposal includes an Auditor to monitor SEEM functioning, but the Applicants specifically state "it will not monitor Participant behavior."[124] Additionally, the market would not be uniformly monitored under any of the Applicants' existing market and mitigation procedures as it was in WEIM. As discussed above, the SEEM Proposal does create new and unchecked opportunities to exercise market power despite the Applicants' contention otherwise. The SEEM Proposal's abdication of any responsibility to monitor SEEM for instances of market abuse is unjust, unreasonable, and unduly discriminatory. Compared to the Commission's consistent requirement and careful review of market monitoring procedures, the SEEM Proposal falls well below the threshold in which the Commission has rejected filings.

ii. The SEEM Proposal lacks adequate market analysis and mitigation

The Commission has regularly required market power analyses when considering proposed organized markets to help the Commission determine whether the filing is just, reasonable, and not unduly discriminatory. Because rates that are formed when sellers have the incentive and ability to exercise unmitigated market power are inherently unjust and unreasonable, the Commission requires every seller to demonstrate that it does not have unmitigated market power or has mitigated market power if the seller seeks to transact under market-based rates.[125]

In the WEIM filing, CAISO failed to provide that information and the Commission required CAISO to make additional informational filings about the presence of structural market power.[126] Similarly, the SEEM Proposal fails to include a market power analysis which severely

[123] SEEM Proposal, at 17.
[124] *Id.*
[125] Order No. 888 at 21,554.
[126] CAISO June 2014 Order at 62,410.

limits the Commission's ability to evaluate potential market power issues and what market mitigation measures are necessary to address them.

Instead of providing market analysis, the Applicants assert that "there is no [] ability of the Members to exercise market power."[127] The Applicants attempt to distinguish the SEEM from the requirements to provide market power analysis and a notice of change in status seen in the WEIM by focusing on the voluntary nature of SEEM.[128] Yet, the Commission required updated evaluation of market power based on the inherent potential for market power issues to arise in *any* new geographic market.[129] The Applicants misrepresent that the Commission required market power analysis in response to perceived market power issues with the WEIM—which the Applicants claim is absent from SEEM because it is voluntary.[130] In fact, the opposite is true. The Commission relies on all new entrants to the WEIM to provide a market power study prior to joining the WEIM to demonstrate that the entrant does not have market power authority.[131] The Commission presumes market power issues exist and uses market power reports to identify the specifics of those issues. As discussed above, the SEEM Proposal presents many market power concerns. The Applicants are required to file a market power analysis to detail those issues. The current reliance on a blanket dismissal of any potential for market power issues makes the filing unjust, unreasonable, and potentially unduly discriminatory.

Similarly, the Commission requires mitigation plans and procedures tailored to address specific market power concerns for any market filing. In the WEIM filing, the Commission highlighted the fact that participants would be subject to CAISO's existing mitigation

[127] SEEM Proposal at 39, n.149.
[128] *Id*.
[129] PacifiCorp June 2014 Order at 62,338–39; *Nevada Power Co.*, 155 FERC ¶ 61,186, *6 (2016).
[130] *See* SEEM Proposal at 39, n.149. It is worth noting that this distinction that the Applicants draw is undermined by the fact that participation in the WEIM is also voluntary. *See Nevada Power Co.*, 155 FERC ¶ 61,186, *2–*3.
[131] *Nevada Power Co.*, 155 FERC ¶ 61,186, *6–*7.

protocols.[132] Similarly, in accepting the Southern Company power auction filing, the Commission explicitly noted specific provisions that sufficiently mitigated issues particular to the proposed auction.[133] In the SPP Imbalance Market filing, the Commission rejected the original filing, in part, for failing to provide required mitigation measures, stating "it is not clear that the tariff addresses the ability of generators that are owned or operated by the same entity to exercise market power in concert."[134] In order to implement the imbalance market, SPP made a subsequent filing with a comprehensive mitigation plan specifically addressing the concerns raised by the Commission.[135] To meet the standard set by Section 205 of the FPA, a filing needs to actively identify and mitigate specific market issues to a degree that the Commission finds sufficient.

The SEEM Proposal fails to include market mitigating procedures or measures. The SEEM Proposal envisions that market mitigation only exists on an individual utility basis through its market-based rate tariff.[136] The Applicants argue that these existing measures are sufficient to address market power concerns with SEEM.[137] The argument relies on the Applicants' underlying and mistaken assumption that SEEM will not create market power and only have "inherently pro-competitive" effects.[138] To the contrary, the SEEM Proposal creates multiple opportunities for Members to exercise market authority that is unavailable under the existing bilateral structure, as discussed above.[139] The Applicants fail to fully analyze or provide

[132] *E.g.*, PacifiCorp June 2014 Order at 62,337–39.
[133] Southern Company December 2008 Order at 62,551.
[134] SPP September 2005 Order at 62,350.
[135] *Sw. Power Pool, Inc.*, 114 FERC ¶ 61,289, 61,999–62,007 (Mar. 20, 2006) ("SPP March 2006 Order") ("We find that SPP's proposed mitigation and monitoring plans, *as modified*, are adequate mitigation measures to ensure just and reasonable rates in the imbalance market.") (emphasis added).
[136] SEEM Proposal at 7.
[137] *Id.* at 39.
[138] *Id.* at 38.
[139] *See* discussion *supra* Section II.B.3.

mitigation procedures or measures for any of the identified or potential market power issues. The unmitigated market power issues in the SEEM Proposal make it unjust, unreasonable, and unduly discriminatory.

iii. The SEEM Proposal fails to include elements of transparency.

In Order No. 888, the Commission explicitly noted that making transmission system information publicly available—including information on system operation, condition, available capacity and constraints, and all contracts or other service arrangements of the ISO—was a fundamental principle for an ISO as an organized market.[140] Similarly, Order No. 2000, required RTOs to serve as the administrator for data reporting to OASIS for the purpose of making it publicly available.[141] Transparency is a critical element of protecting against market power in organized markets. The Commission clearly draws this relation in its statement "the potential for undue discrimination increases in a competitive environment unless the market can be made structurally efficient and transparent with respect to information . . . ."[142]

The SEEM Proposal claims to address transparency by "publish[ing] robust public information" about the administration of the market.[143] Despite this assertion, Article 10 of the rules themselves provides that "[t]he decision and obligation to report quantities, prices, or other data regarding Energy Exchange transactions . . . will be the responsibility of each Seller and Buyer. Neither the Southeast EEM Administrator, nor the Southeast EEM Agent nor the Members shall be responsible for reporting Energy Exchange transactions made by other entities through the Southeast EEM System."[144] Instead, the SEEM Administrator is only responsible for

[140] Order No. 888 at 21,596–7.
[141] Order No. 2000 at 426.
[142] *Id.* at 37.
[143] SEEM Proposal at 30.
[144] SEEM Agreement at Article 10.1.1.

publicly providing a list of Members and Participants, notices, a description of territory, and reports "that would include data aggregated by the Southeast EEM System."[145] Under these rules, the identity of all Participants is kept confidential from third parties—with exceptions as required by law and the agreement.[146] Ultimately, what the SEEM Proposal intends to publish does almost nothing to increase public access to information about energy transactions in the Southeast beyond what is already available through utilities' individual reporting.

On the contrary, the SEEM Proposal adds a layer of obfuscation to transactions in the Southeast. The proposed third-party Auditor reports its review and analysis of SEEM market data, concerns based on that data, and complaints to the Membership Board.[147] The SEEM Proposal does not provide for third-party access to that information. Critically, information about the operation of the exchange and the matching algorithm is not publicly available under the SEEM Proposal. The matching algorithm is one of the primary features of the SEEM Proposal by which SEEM sets rates. The algorithm is unique to SEEM and consequently, details about the operation of the algorithm and how it uses the data fed into it to make matches is only available to the public if provided by SEEM. The SEEM Proposal only provides for the publication of aggregated data, which raises serious questions about whether data about the algorithm's operation will be available. The availability of this data is important to ensuring substantive review of SEEM's operation for market power operations. The lack of transparency in the SEEM Proposal allows the Applicants to potentially conceal market power abuse under SEEM and supports a finding that it is unjust, unreasonable, and unduly discriminatory.

iv. The SEEM Proposal fails to include elements of independence.

[145] *Id.* at Article 10.1.3, 10.1.4.
[146] *Id.* at Article 10.1.2.
[147] *Id.* at 30–31.

The Commission's regulation of organized markets reflects the importance of independence of market governance from any individual market participant or any one class of participants.[148] The Commission explained the importance of including a fair representation of different types of uses of a system and that the "rules of governance, however, should prevent control, and appearance of control, of decision-making by any class of participants."[149] The Commission has described the principle of independence as "the bedrock" upon which organized markets must be built.[150] To that effect, the Commission identified independence from market participants as a required characteristic of an RTO, stating "[w]ithout such independence, it will be difficult for an RTO to act in a non-discriminatory manner."[151]

The SEEM Proposal does not do enough to ensure the independence of the governance. The governance structure lacks any independence from market participants. SEEM is governed by the Membership Board and run by the Operating Committee comprised of Members and an Agent who is a Member.[152] Members' ability and desire to be Participants in SEEM is a foundational principle of SEEM.[153] As discussed previously, the membership requirements exclude certain classes of Participants. Additionally, there are concerns about individual Members having disproportionate amounts of power under the voting system. These issues are exacerbated by the lack of independence in the governance structure and increase the potential for SEEM being used for discriminatory behavior.

In addition to market governance, the Commission has set clear expectations of independence for market monitors and market administrators. In evaluating the sufficiency of the

[148] Order No. 888 at 21,596.
[149] *Id*.
[150] Order No. 2000 at 152–54.
[151] *Id.* at 197.
[152] SEEM Proposal at 15.
[153] SEEM Agreement, at Preamble.

market monitor in the WEIM filing, the Commission explicitly noted "[t]he Commission previously has found that the [market monitor and governing board] satisfy the Commission's independence requirements," and no evidence suggested that the WEIM would jeopardize that independence.[154] In the Southern Company power auction filing, the Commission emphasized the independent auction monitor's obligation to report complaints and serious concerns—including tariff violations, violations of rules, and suspected market manipulation—to the Commission and required Southern Company to change the market rules to reflect that obligation.[155] The Southern Company filing also included a plan to move administrative functions away from Southern Company personnel and to an independent auction administrator. The Commission required Southern Company to submit a compliance filing better detailing the exact duties and responsibilities of the independent auction monitor and what extent Southern Company personnel would retain administrative authority over the market.[156] Independence is consistently considered and valued by the Commission as critical to ensuring that entities creating markets do not have the opportunity to exercise market authority over that market.

The SEEM Proposal does not do enough to ensure independence for market monitoring and administration. The SEEM Proposal includes a SEEM Administrator to implement, manage, and oversee operations of SEEM.[157] The SEEM Proposal defines the Administrator as an entity hired to operate the SEEM System "from day to day."[158] The SEEM Proposal also states that the Operating Committee "will handle all day-to-day activities" of SEEM.[159] Although certain reporting duties are assigned to the SEEM Administrator, there is no clear delineation of roles

[154] CAISO June 2014 Order at 62,393–4.
[155] Southern Company December 2009 Order at 62,430.
[156] *Id.* at 62,420.
[157] SEEM Proposal at 16–17.
[158] SEEM Agreement, at Article 1.
[159] SEEM Proposal, Attach. C, at 8.

and responsibilities between the SEEM Administrator and the Operating Committee. Even as a third-party, the Administrator needs greater insulation form the Members Board to be truly independent. As filed, the SEEM Administrator's roles and responsibilities are ambiguous, and therefore subject to the Member Board's discretion upon implementation. The Member Board's functional authority over the SEEM Administrator leaves opportunity for potential market abuse. Additional structural independence is needed to mitigate that opportunity.

As previously discussed, the Auditor is an "independent" third-party that is hired by and reports market data and Participant complaints directly to the Membership Board. The Auditor is not a market monitor, does not monitor individual Participants for market manipulation, and has no reporting requirements to the Commission or any other entity outside of SEEM.[160] The lack of a true market monitor is itself unjust, unreasonable, and unduly discriminatory. The complete lack of independence of the sole limited monitoring function that does exist, makes market power concerns associated with the lack of market monitoring all that more significant and concerning.

The SEEM Proposal fails to build independence into its structure in a way that supports the independent operation of SEEM and mitigation of potential market power. This failure is particularly concerning in the context of the Applicants insistence that there is no opportunity and therefore no need to attempt to monitor or mitigate market power. The Commission has placed value in independence as sound market design and the lack of it in this filing supports a finding that the filing is unjust, unreasonable, and unduly discriminatory.

[160] SEEM Market Rules, Section VI.D.

4. The SEEM Proposal is impermissibly vague.

In reviewing organized markets, the Commission has stated that "[w]here there is a need for additional information in order to understand [a] proposal or where [a utility] acknowledges that it has not yet filed parts of its imbalance market proposal, we require that [utility] make further filings."[161] Multiple components of the SEEM Proposal require additional information in order for it to be understood and evaluated. As discussed above, several details regarding the matching process and algorithm are not included in the SEEM Proposal.[162] As the primary function of SEEM, it is critical to understand these mechanisms in detail to evaluate its ability to determine just and reasonable rates. This lack of information is particularly egregious in light of the complete lack of any meaningful market power analysis as discussed above. Additionally, the Enabling Agreements between Participants is another critical component of how the market will function and a significant source for potential discriminatory behavior. And, as pointed out, SEEM's cost-benefit analysis is so lacking in essential information as to be largely meaningless.[163] As filed, the SEEM Proposal does not provide adequate information to evaluate it under Section 205 of the FPA. Absent this information, the SEEM Proposal must be rejected as potentially unjust, unreasonable, and unduly discriminatory.

E. THE COMMISSION SHOULD REJECT THE FILINGS AND GIVE GUIDANCE TO THE APPLICANTS REGARDING RESUBMISSION OF THEIR FILINGS

While the Public Interest Organizations request that the Commission reject the filings as not meeting all requirements to substantiate just and unreasonable filings under Section 205 of

[161] SPP March 2006 Order at 61,976.
[162] *See supra*, Section II.B.3.
[163] *Id.*, Section II.B.3.iv.

the FPA, we acknowledge that some aspects of the filing are reasonable and that, with changes, the proposal could be found to be just and reasonable.

The Commission has recognized its authority to iteratively develop organized markets through directing compliance filings based on its determination under section 205.[164] The Commission has regularly undergone an iterative process of modification to mitigate market power issues and ensure just, reasonable, and non-discriminatory rates.[165] Although the Commission is prohibited from "impos[ing] a new rate scheme" under *NRG Power Marketing*, the D.C. Circuit has upheld the Commission's authority to suggest modifications when rejecting filings under section 205.[166] As filed, the SEEM proposal is unjust, unreasonable, and unduly discriminatory. Yet, the Commission can nonetheless use this filing to support a forward step towards a more robust wholesale market in the Southeast by providing the Applicants guidance on how to address the SEEM Proposal's deficiencies. Developing organized markets is a complex process that generally requires multiple rounds of rejections, deficiency letters, and compliance filings. The Commission should view this filing as the first step in the iterative process for the SEEM.

The Public Interest Organizations therefore request that the Commission, in rejecting the filings, provide guidance on modifications that would convert the current proposal to one that

[164] *PacifiCorp*, 147 FERC ¶ 61,227, 62,317-18 (June 19, 2014) ("PacifiCorp June 2014 Order").
[165] "We recognize that the implementation of organized markets is to some extent an iterative process that requires modifications to tariff provisions after the transmission provider and market participants gain actual market experience." *See Sw. Power Pool, Inc.*, 114 FERC ¶ 61,289, 61, 976 (Mar. 20, 2006) ("SPP March 2006 Order"). *E.g.*, *Sw. Power Pool, Inc.*, 112 FERC ¶ 61,303, 62,341 (Sept. 19, 2005) (*"*SPP September 2005 Order") (rejecting SPP's tariff for inadequacies related to its market monitoring and mitigation plans addressed in subsequent compliance filings. *See* SPP March 2006 Order. at 61,994-62,006; *Sw. Power Pool, Inc.*, 116 FERC ¶ 61,053, 61,245-48 (2006)); *S. Co. Servs., Inc.*, 125 FERC ¶ 61,316, 62,551 (2008) ("If Southern Companies will implement the first condition when they launch the Proposed Auctions and they commit to implement the second condition within one year of the date of this order, then the Commission would be satisfied that the resulting auctions would be adequate to mitigate any potential market power that Southern Companies might have in the Southern Balancing Authority Area.").
[166] *NRG Power Marketing, LLC. V. FERC*, 862 F.3d 108, 114-16 (D.C. Cir. 2017).

has sufficient membership participant rights and serves to provide protections from market power abuses and thereby meets the Commission's just and reasonable standard. In particular, the PIOs respectfully request that the Commission provide the following guidance, consistent with the arguments supported above:

- As structured, the SEEM Proposal constitutes a loose power pool for which a pool-wide tariff and open pool membership are required;
- SEEM's governance should be broadened to include input from all market Participants and to remedy the voting power of the three largest Applicants in SEEM;
- Consistent with Commission action in other fledgling markets, a full market power analysis is required for the SEEM footprint;
- Additional safeguards, including an independent market monitor, a monitoring plan and, as necessary, a mitigation plan, are needed to protect against market power abuses;
- Elements of independence and transparency must be structurally integrated into the governance and administration of SEEM as additional market mitigation; and
- Greater transparency of data is required, consistent with data retention and release policies followed by RTOs.

III. THE SEEM PROPOSAL FAILS TO MEANINGFULLY ADDRESS THE SOUTHEAST'S EXORBITANT BILLS AND LOW UTILIZATION OF COST-EFFECTIVE RENEWABLE ENERGY

Applicants hold out their proposal as responding to two issues in the Southeast: high energy costs and low renewable penetration. Yet, the SEEM Agreement fails to meaningfully address either. In short, the SEEM Agreement fails by its own terms, and does not bring about the energy market reforms that the region desperately needs.

A. THE SOUTHEAST'S ELECTRIC POWER SECTOR IS CHARACTERIZED BY HIGH ELECTRICITY BILLS AND LOW RENEWABLE RESOURCE PENETRATION.

Residential customers in states in the SEEM footprint are burdened with some of the highest electricity bills in the nation. The chart below shows that in the eight primary states falling in the SEEM region, customers pay above the national average for their monthly bill. Based on this data, compiled by the U.S. Energy Information Administration ("EIA"), six of the nine most expensive states in the nation are within the region.[167]

State	Average Monthly Bill (Dollar and cents)	National Ranking for Monthly Bill
Alabama	150.45	3
South Carolina	144.73	4
Mississippi	135.87	5
Virginia	135.46	6
Tennessee	132.33	8
Georgia	131.84	9
North Carolina	123.25	15
Missouri	117.82	24
All SEEM	**133.97**	**9.2**
Nationwide	**115.49**	**-**

These numbers are especially troubling when put into their broader economic context. Residential customers in the region also have some of the lowest incomes in the nation and highest rates of poverty. The figures below show the stark situation facing many utility customers in the Southeast.

[167] U.S. EIA, *Table T5.a: 2019 Average Monthly Bill- Residential* (Oct. 6, 2020), https://www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf.

State	2018 Median Income[168]	Percentage Below 100% of Poverty Line[169]
Alabama	49,936	12.9
South Carolina	57,444	15.1
Mississippi	42,781	19.2
Virginia	77,151	8.8
Tennessee	56,060	13.1
Georgia	55,821	12.1
North Carolina	53,369	12.7
Missouri	61,726	9.4
SEEM Average	**56,786**	**12.9**
Nationwide Average	**63,179**	**10.5**

Together, these factors have made energy burdens, the portion of household income spent on home energy costs, in the South the highest in the nation.

The impact of electricity costs is most dire for Southerners on the low end of the economic spectrum. The Department of Energy found that many low-income households in the region face energy burdens of 10% or higher.[170] Further, four of the five states with the highest low-income energy burden in the country are located in the SEEM footprint: Mississippi, South Carolina, Alabama, and Georgia.[171] Similar findings were reported by the American Council for an Energy-Efficient Economy ("ACEEE"). In its recently released report on energy burdens around the nation,[172] ACEEE used census regions to identify areas with high household energy

[168] U.S. Census Bureau, *Table H-8: Median Household Income by State: 1984 to 2018*, https://www2.census.gov/programs-surveys/cps/tables/time-series/historical-income-households/h08.xls.
[169] U.S. Census Bureau, *POV46: Poverty Status by State: 2019*, https://www2.census.gov/programs-surveys/cps/tables/pov-46/2020/pov46_weight_10050_1.xlsx.
[170] U.S. Dep't of Energy, *Low-Income Household Energy Burden Varies Among States – Efficiency Can Help In All of Them* (Dec. 2018), https://www.energy.gov/sites/prod/files/2019/01/f58/WIP-Energy-Burden_final.pdf.
[171] *Id.*
[172] Ariel Drehobl et al., *How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burden across the U.S.*, American Council for an Energy-Efficient Economy (Sept. 10, 2020), https://www.aceee.org/sites/default/files/pdfs/u2006.pdf. ACEEE's energy burden analysis includes heating fuel when calculating home energy burdens, however, in the South electricity is the dominant heating fuel. U.S. Dep't of Energy, Office of Energy Efficiency & Renewable Energy, *Low-Income Household Energy Burden Varies Among States – Efficiency Can Help in All of Them* (Dec. 2018) https://www.energy.gov/sites/prod/files/2019/01/f58/WIP-Energy-Burden_final.pdf.

burdens. Two of those regions—East South Central and South Atlantic—would be particularly impacted by the SEEM Proposal. The report found 38% of households in the East South Central region were "highly burdened," spending more than 6% of their income on energy, the worst marks in the entire nation.[173] In the South Atlantic region, 26% of households were highly burdened, above the national average.[174] The South is also home to a troublingly high percentage of customers who are "severely burdened," meaning they spend over 10% of their income on their energy needs, with the report finding that 21% of households in the East South Central region and 14% of households in the South Atlantic region qualify for that designation.[175]

Customers in the South are not only struggling to afford their energy, the region has some of the lowest levels of renewable penetration in the entire country. This is despite having enormous potential for cost-effective renewable generation.[176] One assessment of the failure of Applicant utilities in the SEEM region to tap into low-cost renewable resources is provided in a

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[173] Drehobl et al., at 14, App. B.2.
[174] *Id.*
[175] *Id.* at App. B.2. The Southeast also fares poorly according to another key indicator of energy bill affordability—disconnections. In the Duke Energy Carolina and Duke Energy Progress territory in North Carolina, the percentage of residential customers being disconnected from service has steadily climbed over the last several years, indicating a grave electricity bill affordability challenge in the region. *See, e.g.*, Direct Testimony and Exhibits of John Howat, Docket No. E-2, Sub 1219 (N.C. Utils. Comm'n. Apr. 13, 2020), https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=41b3fcfe-db06-4678-a980-814858cec98f. Georgia Power has been issuing at least 325,000 residential disconnection notices per month since April 2020 out of a total of 2.2 million residential customers, suggesting that around 3 or 4 out of every 25 customers are facing energy insecurity. Georgia Power disconnected over 13,000 people per month since July 2020, peaking at 22,000 customers in August 2020. *See* PSC Monthly Bad Debt Report for January 2021, Docket No. 42516, at PDF page 4 (Ga. Pub. Serv. Comm'n Feb. 15, 2021), https://psc.ga.gov/search/facts-document/?documentId=184366. Alabama Power has been unable to collect over $10.8 million in residential electricity bills in 2019, representing 13% of the total expected revenue from residential power sales. *See* Jurisdictional Allocation Study for 2019, Docket Nos. 18117 and 18416, at PDF page 20 (Ala. Pub. Serv. Comm'n May 1, 2020), https://www.pscpublicaccess.alabama.gov/pscpublicaccess/PSC/PSCDocumentDetailsPage.aspx?DocumentId=1fb76afe-0b5a-4d3b-8401-599c21498444&Class=Filing. In Tennessee, phone calls for utility bill assistance are up 139% since the beginning of the pandemic, with the Tennessee Valley Authority continuing to disconnect families who are unable to pay. *See* Friends of the Earth, *Advocates Call on Biden to Stop Utility Disconnections Under TVA During Pandemic* (Mar. 10, 2021), https://foe.org/news/advocates-call-on-biden-to-stop-utility-disconnections-under-tva-during-pandemic/.
[176] Christopher T M Clark et al., *Technical Report: Economic & Clean Energy Benefits of Establishing a Competitive Wholesale Electricity Market in the Southeast United States*, Vibrant Clean Energy, LLC and Energy Innovation: Policy & Technology, LLC, at 87 (Aug. 2020), https://vibrantcleanenergy.com/wp-content/uploads/2020/08/SERTO_WISdomP_VCE-EI.pdf.

national study that created high-resolution maps of the entire country for the levelized cost of energy ("LCOE") for new wind and solar. The study compared this LCOE to the marginal cost of energy ("MCOE") at every existing coal-fired power plant in the country as of 2018 and projected for 2025.[177] Their 2018 analysis showed that almost 40% of the coal generation that had a higher MCOE than the LCOE of the potential locally-sited wind and solar was located in the eight SEEM states, approximately 37,500 MW. The authors then projected that of almost a quarter of the additional coal generation that would be more expensive to run than new local renewables in 2025 would be in the SEEM footprint, almost 12,000 MW.[178] Despite this and other analyses showing the enormous cost-effectiveness of renewables in the region, generation data from the U.S. EIA show that in 2019 solar and wind accounted for only 1.9% of power in the eight states that would be predominantly fall within the SEEM footprint.[179]

B. SEEM WOULD BARELY SCRATCH THE SURFACE ON HIGH BILLS OR LOW RENEWABLE PENETRATION IN THE SOUTHEAST.

Applicants hold their proposal out as having the primary goals of lowering costs to customers and optimizing renewable energy resources.[180] But their own analysis reveals that

[177] Eric Gimon et al., *The Coal Cost Crossover: Economic Viability of Existing Coal Compared to New Local Wind and Solar Resources*, Vibrant Clean Energy, LLC and Energy Innovation: Policy & Technology, LLC (Mar. 2019), https://energyinnovation.org/wp-content/uploads/2019/04/Coal-Cost-Crossover_Energy-Innovation_VCE_FINAL2.pdf. As the authors note, in the South the most viable new renewable resource is solar: "Another strong regional trend is in the Southeast, where almost all coal plants are substantially at risk to replacement by local solar in 2025 …. The trend is so strong that it is hard to imagine Southeastern utilities not relying heavily on solar and complementary load shifting resources to replace the coal and save customers money." *Id.*

[178] *Technical Report: Economic & Clean Energy Benefits of Establishing a Competitive Wholesale Electricity Market in the Southeast United States*, Vibrant Clean Energy and Energy Innovation (Aug. 2020) at 87.

[179] U.S. EIA, *Net Generation by State by Type of Producer by Energy Source (EIA-906, EIA-920, and EIA-923)* (Annual data: 1990–2019).

[180] Southern Co. Services, Inc. Southeast Energy Exchange Market Agreement, 4, 12, Dkt No. ER21-1111 (Feb. 12, 2021).

SEEM would not make meaningful progress on these problems – if it makes progress at all. If these truly are the goals of SEEM, then it is practically set up to fail.[181]

Even under a best-case scenario for the savings that SEEM could yield, the Proposal would do little to reduce the electricity bills that are a burden to many Southerners. Applicants project that under the optimal base case scenario SEEM would produce $40 million a year of savings across the entire region. That amount would tick up to $100 million a year by 2037 under a carbon constrained outlook. For the many reasons discussed above and in Section VII of the Sotkiewicz Affidavit, these projected savings are dubious and should not be relied on. But even taken at face value, placing them in context reveals how little SEEM would do to decrease bills. Under its best base case scenario, SEEM would provide approximately $1/year of benefit for residential customers.[182] The estimated $40 million and $100 million in benefits breaks down to only $0.0625/MWh and $0.15625/MWh respectively.[183]

SEEM's overly complicated and sharply constrained approach to altering the structure for wholesale market transactions means that it would do little to achieve its second purported goal: better integrating renewables. As discussed above and in the Sotkiewicz Affidavit, the design of SEEM undermines its ability to meaningfully expand the potential to tap into cost-effective renewable generation. The Guidehouse/CRA Report acknowledges this bottom-line effect, stating that the "hourly output of individual generating units in the Southeast EEM footprint is

[181] This is especially true compared to the potential cost savings and renewable benefits that could flow from more robust wholesale market structures. *See* Jennifer Chen and Michael Bardee, *How Voluntary Electricity Trading Can Help Efficiency in the Southeast*, R Street (Aug. 2020) https://www.rstreet.org/wp-content/uploads/2020/08/No.-201-Energy-Trade-in-the-Southeast.pdf (finding that net savings from the SEEM "appear to be small compared to the net benefits utilities have reaped through EIMs").

[182] This number represents $40 billion divided among SEEM utilities' ultimate customers, proportional to the utilities' revenue by customer class, based on EIA 2018 data as reported by utilities in form EIA-861. U.S. EIA, *Annual Electric Power Industry Report, Form EIA-861 detailed data files* (Release date: Oct. 6, 2020), https://www.eia.gov/electricity/data/eia861/.

[183] Sotkiewicz Aff. at P 93.

modified by plus/minus 1 to 2% on average through sub-hourly trading."[184] Even putting aside Dr. Sotkiewicz's explanation of why this number is unsubstantiated, if this 1-2% modification would swing entirely in favor of renewable energy resources, SEEM would still do relatively little to take advantage of low-cost renewable power potential in the region.

If anything, SEEM has real potential to hinder the Southeast's burgeoning renewable industry. The SEEM Proposal potentially locks out independent power producers—often solar and wind generators—in at least two significant ways. First, the SEEM Market Rules require that a Participant "[o]wn or otherwise control a Source within the Territory and/or be contractually obligated to serve a Sink within the Territory." [185] It is not clear that independent power producers could meet this criteria. To become a Participant an entity must also enter into an Enabling Agreement—"a bilateral agreement for the purchase and sale of Energy"[186]—with at least three SEEM Participants.[187] However, SEEM Members and Participants are under no obligation to enter into Enabling Agreements with other entities. Even if an entity does meet all the requirements, the Participant Agreement only becomes effective when countersigned by the Southeast EEM Agent "at the discretion of the Operating Committee." [188] In other words, independent power producers may be locked out of SEEM's special transmission arrangements and competitively disadvantaged.

Further, SEEM's complex requirements would likely burden any smaller independent power producers permitted to participate. For example, as explained in Section VI of the Sotkiewicz Affidavit, Members and Participants may opt for a "fill or kill" offer or bid that says

[184] Guidehouse/CRA Report at vii.
[185] SEEM Market Rules, at Section III (Participation).
[186] SEEM Agreement, Article 1 (Definitions and Rules of Interpretation).
[187] SEEM Market Rules at Section III.
[188] *Id.* Section III(B)(3). As previously noted, the Operating Committee is made up entirely by transmission-owning SEEM Members. SEEM Agreement, Article 5 (Operating Committee).

the offer or bid must be taken completely or not at all.[189] One potential effect of this is that bids may be designed in such a way that excludes smaller generating facilities entirely or that puts a finger on the scale in favor of Participant's generation. In the Southeast, large load serving entities hold most of the generation, and given the regulatory paradigm, will also likely have the most excess generation to sell into the market. As a result, SEEM has the potential to protect uneconomic, unsustainable generation technologies such as coal at the cost of clean generation such as solar.

C. OTHER IN-REGION EFFORTS ARE UNDERWAY TO CONSIDER WHOLESALE MARKET REFORMS THAT ADDRESS CUSTOMER COSTS AND CAPITALIZE ON COST-EFFECTIVE RENEWABLE POWER.

In contrast to the SEEM Proposal, which fails to meet its stated goals, other efforts by state officials and a diversity of stakeholders are considering more robust reforms to the wholesale market to allow for greater competition that could yield economic benefits to all consumers and take advantage of costs-effective renewables. These efforts have come against a backdrop of expensive and controversial—and in some cases failed—energy projects that several of the Applicants themselves have undertaken. Among them are the abandoned V.C. Summer nuclear facility in South Carolina, undertaken by South Carolina Public Service Authority (Santee Cooper) and the predecessor to Dominion Energy South Carolina,[190] the abandoned

[189] Sotkiewicz Aff. at P 85.

[190] Peter Maloney, *Death of a nuke build: Summer abandonment leaves ratepayers holding the bag*, UTILITY DIVE (Aug. 4, 2017), https://www.utilitydive.com/news/death-of-a-nuke-build-summer-abandonment-leaves-ratepayers-holding-the-bag/448597/; Sammy Fretwell & Joseph Bustos, *South Carolina utility commission overhauled three years after nuclear project fiasco*, THE STATE (Sept. 23, 2020), https://www.thestate.com/news/local/environment/article245953960.html.

Kemper integrated gasification combined cycle ("IGCC") plant by Mississippi Power,[191] and the Vogtle Nuclear Plant expansion by Georgia Power.[192]

1. North Carolina

Pursuant to North Carolina's Clean Energy Plan developed under Governor Roy Cooper's Executive Order 80[193] on climate change, the Department of Environmental Quality convened a diverse group of stakeholders to study how utility business model reforms can better align utility incentives with the public interest. The stakeholders have worked diligently for over a year to evaluate a suite of reforms, including options to create a fair and more competitive wholesale market, such as RTOs, EIMs and competitive resource procurement.[194] Participants include elected officials, industrial consumers, consumer advocates, environmental groups, cities clean energy developers, and independent power producers. Implementing a well-designed and independent organized wholesale market in the state has been found to have the potential to promote affordability, decarbonization, and economic development. For example, research by the Brattle Group suggests that Duke Energy ratepayers in North Carolina could save hundreds of

[191] Robert Walton, *DOJ opens investigation into Kemper plant as Southern warns of possible 'material impact,'* UTILITY DIVE (May 2, 2019), https://www.utilitydive.com/news/doj-opens-investigation-into-kemper-plant-as-southern-warns-of-possible-ma/553936/. s

[192] Matt Kempner, *Georgia Vogtle nuclear report: more delays, $1B in extra costs, flaws*, THE ATLANTA JOURNAL-CONSTITUTION (June 8, 2020), https://www.ajc.com/news/local/georgia-vogtle-nuclear-report-more-delays-extra-costs-flaws/mBxlgXiDcf0SIaTFr0cZXL/. Link to testimony of independent construction monitor Donald N. Grace, P.E., https://psc.ga.gov/search/facts-document/?documentId=183339 (Nov. 24, 2020), p. 27 (highly unlikely that approved in-service dates of Nov. 2021 for Unit 3 and Nov. 2022 for Unit 4 will be achieved, and even if achieved, completing project will cost $1.5 billion to $2 billion more than current approved budget)s

[193] North Carolina Department of Environmental Quality, *Climate Change & Clean Energy: Plans & Progress*, https://deq.nc.gov/energy-climate/climate-change/nc-climate-change-interagency-council/climate-change-clean-energy.

[194] Josh Brooks et al., *North Carolina Energy Regulatory Process: In Fulfillment of the North Carolina Clean Energy Plan B-1 Recommendation*, Rocky Mountain Institute and Regulatory Assistance Project (Dec. 22, 2020), https://files.nc.gov/ncdeq/NERP%202020_Final%20Report%20and%20Products%20%281%29_0.pdf.

millions of dollars by joining an RTO.[195] Last year, the legislature introduced a market reform study bill to evaluate opportunities for the state.

2. South Carolina

After the failure of the $9 billion VC Summer nuclear project, the South Carolina legislature has focused heavily on market reform in the state as a means of ensuring that another such financial disaster does not occur. The South Carolina legislature is currently considering several bills that could sell or reform the state-owned utility Santee Cooper, a process that began in reaction to Santee Cooper's involvement in the failed V.C. Summer nuclear project.[196]

In September 2020, the General Assembly passed House Bill 4940, which creates a study committee to evaluate various electricity market reform options,[197] with little opposition; the Governor signed it into law later that month. The committee includes members of the General Assembly, with an advisory committee comprised of a range of interests, such as the state's Office of Regulatory Staff, investor-owned utilities, public power, municipal electric utilities, electric cooperatives, consumers, clean industry developers, and environmental groups.[198]

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[195] Judy Chang et al., *Potential Benefits of a Regional Wholesale Power Market to North Carolina's Electricity Customers*, The Brattle Group (Apr. 2019), https://brattlefiles.blob.core.windows.net/files/16092_nc_wholesale_power_market_whitepaper_april_2019_final.pdf.

[196] Several Santee Cooper-related bills are currently in front of the South Carolina legislature, including S. 464, and H. 3194, 124th Sess., Gen Assemb. (S.C. 2021).

[197] H4940, 123rd Sess., Gen. Assemb. (S.C. 2020), https://www.scstatehouse.gov/billsearch.php?billnumbers=4940&session=123&summary=B.

[198] *Id.* "(B) The study committee shall include a nonvoting advisory board. The advisory board is comprised of: (1) the Executive Director of the Office of Regulatory Staff, or her designee; (2) a representative of AARP South Carolina; (3) the South Carolina President of Duke Energy, or his designee; (4) the Chief Executive Officer of the South Carolina Public Service Authority, or his designee; (5) the President of Dominion Energy South Carolina, or his designee; (6) two representatives of residential consumers of electricity in South Carolina appointed by the Chairman of the Senate Judiciary Committee; (7) two representatives of commercial consumers of electricity in South Carolina appointed by the Chairman of the House of Representatives Labor, Commerce and Industry Committee; (8) two representatives of industrial consumers of electricity in South Carolina, one of the representatives must be appointed by the Chairman of the House of Representatives Labor, Commerce and Industry Committee, and one representative must be appointed by the Chairman of the Senate Judiciary Committee; (9) a representative of the Coastal Conservation League; (10) a member company of, and appointed by, the South Carolina Solar Business Alliance; (11) a member company of, and appointed by, the South Carolina Chamber of Commerce; (12) a representative of the South Carolina Electric Cooperatives; (13) a representative of Piedmont

3. Tennessee Valley Authority

The Tennessee Valley Authority ("TVA") is also facing significant reform pressure. Presidential budgets under the Obama Administration[199] and Trump Administration[200] have included proposals to sell TVA's transmission system, and TVA scandals have also led to the ouster of two board members.[201] Memphis Light Gas & Water ("MLGW") is TVA's largest customer—representing about 10% of TVA's load at approximately 3,5000 MWs. MLGW conducted an integrated resource plan that shows the city could save almost $100 million annually by joining MISO and building considerable quantities of renewable energy resources.[202] MISO conducted its own analysis showing significant benefits.[203] While the CEO of the Memphis utility recently advised suspending the process for joining MISO, he also noted a number of uncertainties that may spur the utility to revisit the issue in the near future.[204] Other local power companies ("LPC's") in TVA territory are also considering major reforms to the TVA system, including

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Municipal Power Agency; (14) a representative of the South Carolina Municipal Power Association; (15) a member company of, and appointed by, the South Carolina Manufacturers' Alliance; (16) a representative of a renewable power developer primarily engaged in the development of utility-scale solar projects appointed by the Chairman of the House of Representatives Labor, Commerce and Industry Committee; (17) a representative of a renewable power developer primarily engaged in the development of residential-rooftop solar projects appointed by the Chairman of the Senate Judiciary Committee; (18) a representative of Central Electric Cooperative; (19) the South Carolina President of Lockhart Power, or his designee; and (20) a representative of the farming or agricultural community appointed by the Chairman of the House of Representatives Labor, Commerce and Industry Committee."

[199] Philip Bump, *Goodbye, New Deal: Obama Proposes Selling the TVA*, The Atlantic (Apr. 11, 2013), https://www.theatlantic.com/politics/archive/2013/04/goodbye-new-deal-obama-proposes-selling-tva/316380/.

[200] Off. of Mgmt. & Budget, Exec. Off. of the President, Budget of the United States Government, Fiscal Year 2020 (2019), https://www.govinfo.gov/content/pkg/BUDGET-2020-BUD/pdf/BUDGET-2020-BUD.pdf.

[201] Michael D. Shear, *Trump Dismisses 2 T.V.A. Board Members After Outsourcing Disputes*, The New York Times, https://www.nytimes.com/2020/08/03/us/politics/trump-tennessee-valley-authority.html.

[202] Siemens, *Integrated Resource Plan Report: Memphis Light Gas & Water*, at App. A (July 2020), http://www.mlgw.com/images/content/files/pdf/MLGW-IRP-Final-Report_Siemens-PTI_R108-20.pdf.

[203] MISO, *MISO's Response to Memphis Light, Gas & Water's Membership Assessment Request* (July 17, 2020), http://www.mlgw.com/images/content/files/pdf/MLGW%20Membership%20Assessment%20Report%207-29-20_Redacted(1).pdf.

[204] Jeni Diprizio, *MLGW President recommends staying with TVA, suspending search for another power supplier, for now*, LOCAL MEMPHIS (Mar. 3, 2021), https://www.localmemphis.com/article/news/investigations/i-team/mlgw-president-recommends-staying-tva-suspending-search-another-power-supplier/522-0264a275-01f8-4345-8ee1-315ad947ac7b.

unbundled access to TVA transmission.[205] Rather than pursue systematic reforms like aggressive decarbonization, open transmission access, and local, democratic decision-making,[206] TVA has sought to eliminate pressure to change by locking its LPCs into perpetual contracts.[207]

4. Kentucky

Kentucky contains PJM, MISO and TVA, but Louisville Gas & Electric and Kentucky Utilities ("LGE&KU"), the largest utility in the state, has no affiliation with a larger organized market. In its latest integrated resource planning process, Kentucky Public Service Commission ("PSC") Staff requested that LGE&KU conduct a study regarding re-joining MISO or joining PJM.[208] This recommendation was made prior to the public discussions regarding SEEM. In September, the MISO Environmental Sector stakeholder group filed a request to MISO to run a study that would fulfill the Kentucky PSC Staff's request,[209] but MISO declined this recommendation.

5. Mississippi

Like South Carolina, Mississippi has also been under extreme pressure due to substantial financial failures around a large power project. The Kemper IGCC carbon capture sequestration

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[205] *See Complaint and Petition for Order Under Federal Power Act Sections 210 and 211A Against Tennessee Valley Authority*, Accession Number 20210111-5071 (Jan. 11, 2021) (petitioning for FERC to order TVA to provide unbundled transmission access to four local power companies seeking to terminate their all-requirements contracts with TVA).

[206] While privatizing TVA is among the major reform proposals, the undersigned do not endorse it.

[207] TVA has signed more than 140 of its 153 LPCs to perpetual contracts. One provision allows LPCs to procure three to five percent of their power locally. While TVA touts this as progress over past all-requirements contracts with no such opportunity for local generation, the effect is a permanent restriction of the rapidly growing market for distributed and renewable energy LPCs can procure. *See* Amended Complaint, *Protect Our Aquifer v. Tennessee Valley Authority*, Case No. 2:20-cv-02615-TLP-atc (W.D. Tenn. Nov. 5, 2020) (alleging that TVA's exclusive, perpetual contracts with distributors place "restrictive caps of three to five percent on the amount of power that local distributors can produce and procure locally from clean energy sources such as solar").

[208] *Order*, Case No. 2018-00348 (Ky. Pub. Serv. Comm'n Staff July 20, 2020), https://psc.ky.gov/pscscf/2018%20Cases/2018-00348//20200720_PSC_ORDER.pdf.

[209] Simon Mahan, *Southern Wind Energy Association - Sector: Environmental/Other Stakeholder Organizations (non-member sector)*, PSC: MTEP21 Scope Development (20200811) (Sept. 18, 2020), https://www.misoenergy.org/stakeholder-engagement/stakeholder-feedback/psc-mtep21-scope-development-20200811/.

project was initially designed to burn coal and sequester carbon emissions. After billions of dollars and years of delay, Mississippi Power and Southern Company decided to change its fuel source from coal to natural gas, without sequestering carbon emissions. That decision launched a Department of Justice investigation into possible misuse of federal funds to support the project.[210] A previous Department of Justice investigation into market manipulation by Entergy led to that company agreeing to join an RTO.[211]

6. Georgia

Unlike South Carolina, Georgia is pushing forward with the construction of the Vogtle Nuclear Reactors. As noted above, these facilities are billions of dollars over budget, and years behind schedule. The Georgia Public Service Commission also recently reviewed the Georgia Power Company's avoided cost under PURPA. In that docket, SEEM issues were raised by intervening parties as well as PSC Public Interest Advocacy Staff. On March 11, the Commission issued an order requiring Georgia Power Company to file a report identifying SEEM's impacts on avoided cost calculations within six months of the SEEM Proposal's approval by FERC.[212]

IV. REQUEST FOR DEFICIENCY LETTER

If the Commission does not reject the filing, the Public Interest Organizations request that the Commission direct the Applicants to provide additional information on their proposal pursuant to 18 C.F.R. § 375.307(a)(1)(v). The SEEM Proposal is plainly deficient because it does not provide potential market participants or the Commission with sufficient information

[210] Robert Walton, *DOJ opens investigation into Kemper plant as Southern warns of possible 'material impact'*, Utility Dive (May 2, 2019), https://www.utilitydive.com/news/doj-opens-investigation-into-kemper-plant-assouthern-warns-of-possible-ma/553936/.
[211] U.S. Dept. of Justice, *Justice Department Statement on Entergy Corp.'s Transmission System Commitments and Acquisition of KGen Power Corp.'s Plants in Arkansas and Mississippi* (Nov. 14, 2012), https://www.justice.gov/opa/pr/justice-department-statement-entergy-corp-s-transmission-system-commitmentsand-acquisition.
[212] *Order*, Attach. A at 1, Docket Nos. 4822, 16573, 19279 Attach. A, 1 (Ga. Pub. Serv. Comm'n Mar. 11, 2021).

regarding the impact the proposal would have on customer bills, renewable energy adoption, and transmission access for independent power producers; how the arrangement would comply with Commission regulations covering power pools; and how the proposal would guard against market manipulation or other undue discrimination. Therefore, as filed, the SEEM Proposal fails to provide adequate information for the Commission to substantively review the proposal under FPA Section 205.

The Public Interest Organizations request the Commission require the Applicants to provide the information indicated below:

1. Many of the details for how SEEM will actually function remain impermissibly ambiguous, and Applicants must:
    a. Explain how SEEM will ensure available contract path transmission across multiple balancing authorities.
    b. Provide greater detail for how the matching algorithm uses the various inputs to produce matches.
    c. Provide additional analysis demonstrating that the design is computationally feasible for addressing specific issues identified in the Sotkiewicz Affidavit, including the computational burden of examining large numbers of integer constraints, the potential for infeasible clock time computations, and the number of possible permutations that would need to be evaluated in order to maximize surplus.
2. The benefits analysis provided by Guidehouse/CRA is flawed and misrepresents the benefits available under SEEM. Applicants must provide subsequent benefits analysis

and updated benefits data that address the concerns outlined in the Sotkiewicz Affidavit in Section VII.

3. The Applicants chose to forgo a market power analysis for the SEEM Proposal, simply stating that "the Southeast EEM will not create market power."[213] In light of raised concerns, Applicants must:
    a. Provide additional support for the conclusion that all changes to the bilateral market are "inherently pro-competitive."[214]
    b. Explain any analysis the Applicants did to identify and consider potential market power issues before concluding that there were none.
    c. Provide a market power analysis considering the various market power concerns raised in this protest.
4. Transactions between Participants will be completed pursuant to Enabling Agreements between individual parties.[215] The SEEM Proposal allows parties to individually negotiate the terms and conditions of these Enabling Agreements on an individual basis.[216] The details of these Enabling Agreements are critical to fully understanding how SEEM will function.
    a. Provide the Enabling Agreements of all entities who will be Participants when the SEEM would go into effect.
    b. Explain how the SEEM Proposal ensures that SEEM Members and Participants do not selectively enter into Enabling Agreements in a discriminatory manner.

[213] SEEM Proposal at 38.
[214] *Id.*
[215] *Id.* at 14.
[216] SEEM Proposal, Attach. C at 19.

5. Pursuant to the obligations imposed on the SEEM Proposal as a power pool, the Applicants must provide additional information.
    a. FERC Order 888-A requires power pooling arrangements to allow open membership. Explain how the membership criteria in the SEEM Proposal complies with the Commission's power pool requirements.
    b. Explain how access to pooled transmission as contemplated by the SEEM Proposal is consistent with the Commission's non-discrimination requirements for power pools.

V. REQUEST FOR TECHNICAL CONFERENCE

In the event that the Commission does not reject the filing, the Public Interest Organizations respectfully request that the Commission convene an appropriate technical conference.

First, based on current deficiencies in the record and the lack of upfront and widespread stakeholder input, the Public Interest Organizations request that the Commission suspend the filings for the maximum five-month period, subject to the outcome of a technical conference on the SEEM Proposal.

This proceeding raises issues that cannot be resolved based on the record before the Commission and are more appropriately addressed in a technical conference. These issues include, but are not limited to, the impact that the SEEM Proposal would have on customer bills, renewable energy adoption, and transmission access for independent power producers; whether the SEEM Proposal would allow or encourage market manipulation or other undue discrimination; whether SEEM's pricing model will lead to economically efficient and just and

reasonable rates; whether SEEM's benefits exceed its costs; and how the SEEM Proposal would affect state-based efforts at greater wholesale market reform.[217]

Additional support for this request stems from the inadequate stakeholder process involved in this filing and the need for true stakeholder input when considering and integrating an appropriate range of public input into the SEEM design. As a policy matter, the Commission has encouraged stakeholder involvement throughout its competitive market reform efforts. In Order No. 719, the Commission required RTOs and ISOs to submit a compliance filing "demonstrating that it has in place, or will adopt, practices and procedures to ensure that its board of directors is responsive to customers and other stakeholders."[218] The Commission set the following review criteria for stakeholder involvement: (1) inclusiveness, (2) fairness in balancing diverse interests, (3) representation of minority positions, and (4) ongoing responsiveness.[219] The Commission emphasized it valued stakeholder in put both in creation and ongoing operations of the RTO and that stakeholder involvement ensures working towards the best solutions addressing regional needs.[220]

The Commission reflected its preference for stakeholder involvement in the context of individual market design processes as well. Ongoing stakeholder engagement was a key principle in CAISO's implementing agreement for the WEIM, and the Commission identified the stakeholder process as a key step in the market development process.[221] In the Southern Company auction filing, the Commission recognized the contributions of various organizations that participated in a technical conference to ideas incorporated into the filing.[222]

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[217] *See also* Chen & Bardee, *supra* note 112.
[218] Order No. 719, at P 477.
[219] *Id*.
[220] *Id.* at PP 479–80, 511–15.
[221] *Id.* at PP 479–81.
[222] Southern Company December 2009 Order, at 62,416.

Contrary to the Commission's policy, the Applicants developed the majority of the SEEM Proposal in the absence of meaningful stakeholder engagement. The Applicants developed the SEEM Proposal in private beginning in January 2020, produced a final outline of the SEEM structure for late May 2020[223] and received the final Guidehouse/CRA Report in July 2020.[224] The Applicants failed to engage in any public stakeholder processes throughout this period. The proposal only entered the public purview on July 17, 2020, after the SEEM Proposal was finished being developed.[225] After SEEM became public knowledge, some Applicants—particularly Southern Company and Duke—provided informational briefings to select organizations on an individualized and invite-only basis, including some of the PIOs. Additionally, the stakeholders included tended to be limited to organizations already engaged with these utilities in specific ways, and there was no outreach to potentially impacted communities or a wider range of stakeholders. The Applicants only engaged in a limited stakeholder process with a limited group of stakeholders after having already finalized their plans and commitments to the current SEEM design. A *post hoc* marketing campaign for insiders does not meet Commission requirements for an inclusive, fairly-balanced stakeholder process that is responsive to stakeholder concerns.

Timing the technical conference before ruling on the SEEM Proposal is critical to ensuring that the SEEM Proposal supports broad reform in the Southeast. The Commission has recognized the value in designing markets in a way that provides opportunity for ongoing market reform. In Order No. 2000, the Commission adopted the principle of "open architecture," stating

[223] Project BEST Email (Apr. 30, 2020).
[224] Guidehouse/CRA Report at 1.
[225] John Downey, *EXCLUSIVE: How Duke Energy could join other power giants to remake Southeast markets*, CHARLOTTE BUSINESS JOURNAL (July 17, 2020), https://www.bizjournals.com/charlotte/news/2020/07/17/duke-energy-partners-local-control-for-se-market.html.

that "[w]e will require that the RTO design have the ability to evolve over time."[226] The Commission recognized this principle in the Southern Company filing, by noting the market participant's desire for a broader auction process and Southern Company's assurance that the market would "enhance market options now without prejudicing further developments."[227] In the SPP EIM filing, the Commission stated:

> The importance of a well-designed market with explicit and understandable market rules cannot be overstated. The Commission has had to address flaws in market designs and market rules after markets have started. Given these experiences with other markets, the stakes are too high to allow implementation of a market design, such as SPP proposes, that is missing important elements and assurances regarding reliable and stable market operations.[228]

The Commission's ongoing policy to facilitate continuing market reform and improvement necessitates that markets are reviewed with an eye towards supporting—or at a minimum, not standing in the way of—future development. The technical conference is critical to providing the Commission full information and a holistic view in reviewing the SEEM Proposal.

Second, and regardless of the Commission's decisions on the SEEM proposal or whether to hold a technical conference centered on SEEM, the Public Interest Organizations recommend that the Commission establish a broader technical conference or joint regional meeting regarding market reform in the Southeast. This could be held in conjunction with or separate form a technical conference centered on the SEEM Proposal itself. As previously discussed, the SEEM Proposal comes amidst ongoing robust discussions regarding market reform in the region.[229] Convening a technical conference would ensure that the SEEM Proposal furthers the debate about greater competitive market reform in the Southeast and facilitates region-wide discussion

[226] Order No. 2000, at 502.
[227] Southern Company December 2008 Order, at 62,545–46.
[228] SPP March 2006 Order, at 61,976.
[229] *Supra* Section III.C.

and planning for broader competitive market reform, inclusive of a diverse array of stakeholders, and with clear opportunities for public input.

The Public Interest Organizations encourage the Commission to convene such a technical conference or joint regional meeting that would consider the following issues:

1. The potential benefits for the Southeast of utility participation in a reformed wholesale market that goes beyond the SEEM Proposal, such as a fair and well-designed, independently-operated regional transmission organization or energy imbalance market (RTO or EIM);

2. The costs and benefits of the Applicants' SEEM Proposal as compared to a robust and well-designed RTO or EIM;

3. Whether implementing the SEEM Proposal would impede or delay broader wholesale reforms; and

4. The ways in which the benefits of broader wholesale reforms can be realized in the region while preserving or enhancing state jurisdiction and prerogatives.

VI. CONCLUSION

As detailed in this Protest, the SEEM Proposal falls short of the legal standards for approval. It fails to comply with the Commission's regulatory requirements for power pools, will exacerbate the exercise of market power in the Southeast and will produce rates that are unjust, unreasonably, and unduly discriminatory. The SEEM Proposal also runs headlong into other state efforts towards comprehensive wholesale market reform.

For all these reasons, the Public Interest Organizations urge the Commission to reject the SEEM filings and issue guidance explaining how the filings can be revised to comply with Section 205 of the FPA. If the Commission does not reject the SEEM filings outright, it should convene a technical conference for the purpose of supplementing the record or direct the Applicants to provide additional critical information through a deficiency letter. Finally, and regardless of the Commission's decision on the SEEM Proposal, the Public Interest

Organizations encourage the Commission to convene a technical conference or joint regional meeting regarding market reform in the Southeast.

The Commission has an opportunity to exercise its authority to establish a foundation for wholesale market reform in the Southeast. This foundation, instead of being fashioned by the self-interest of the long-time monopoly utilities in the region, would enable the competitive procurement of clean energy and hold down costs for customers in a manner that reflects the views of the many public and private entities that have so much at stake in how the Southeast's electricity system evolves.

Dated: March 15, 2021.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that the foregoing has been served in accordance with 18 C.F.R. § 385.2010 upon each party designated on the official service lists in this proceedings listed above, by email.

Dated at Washington, D.C. this 15th day of March, 2021.

/s/ Danielle Fidler
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Exhibit A

to the

Motion to Intervene and Limited Protest and Comment of Public Interest Organizations

Affidavit of Paul M. Sotkiewicz

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Alabama Power Company	)	ER21-1111-000
Dominion Energy South Carolina, Inc.	)	ER21-1112-000
Louisville Gas and Electric Company	)	ER21-1114-000
Duke Energy Progress, LLC Duke Energy Carolinas, LLC	)	ER21-1115-000
Duke Energy Carolinas, LLC	)	ER21-1116-000
Duke Energy Progress, LLC	)	ER21-1117-000
Louisville Gas and Electric Company	)	ER21-1118-000
Georgia Power Company	)	ER21-1119-000
Kentucky Utilities Company	)	ER21-1120-000
Mississippi Power Company	)	ER21-1121-000
Alabama Power Company	)	ER21-1125-000
Dominion Energy South Carolina, Inc.	)	ER21-1128-000 (not consolidated)

AFFIDAVIT OF PAUL M. SOTKIEWICZ, PH.D.

I. INTRODUCTION AND QUALIFICATIONS

1. My name is Dr. Paul M. Sotkiewicz. I am the President and Founder of E-Cubed Policy Associates, LLC ("E-Cubed") and formerly served as the Chief Economist in the Market Service Division of PJM Interconnection, L.L.C. ("PJM"). I have been retained by the Natural Resource Defense Council ("NRDC") and Southern Environmental Law Center ("SELC") to submit this affidavit in support of the Public Interest Organizations' protest

regarding the Southeast Energy Exchange Market ("SEEM") Agreement filing[1] made in ER21-1111 on February 12, 2021 by Southern Company Services, Inc. ("Southern Company") on behalf of the Members of SEEM[2] and other potential SEEM Members.[3]

2. Prior to founding E-Cubed, I worked for PJM in Audubon, Pennsylvania from February 2008 to October 2016. In my time at PJM, I served as a Senior Economist until March 2010 and subsequently as the Chief Economist in the Market Service Division until June 2015. From July 2015 to October 2016, I worked as a contractor for PJM under the title of Senior Economic Policy Advisor. Prior to joining PJM, I served as the Director of Energy Studies at the Public Utility Research Center, University of Florida from August 2000 to February 2008 and I was an Economist at the Federal Energy Regulatory Commission ("FERC" or "the Commission") from September 1998 to August 2000. I have a B.A. in History and Economics from the University of Florida (1991), and an M.A. (1995) and Ph.D. (2003) in Economics from the University of Minnesota.

3. I have nearly 25 years of experience on matters at the intersection of utility regulatory policy, power system economics, and environmental economics. I advise private-sector, public-sector, and non-government organization clients on a range of economic issues

[1] Southeast Energy Exchange Market Agreement, Accession No. 20210212-5033 (Feb. 12, 2021) ("SEEM Proposal").
[2] As of February 12, 2021 "SEEM Members" includes Alabama Power, Georgia Power Company, and Mississippi Power Company (collectively, "Southern Companies"); Associated Electric Cooperative, Inc. ("AECI"); Dalton Utilities ("Dalton"); Dominion Energy South Carolina, Inc. ("Dominion SC"); Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP") with DEC and DEP collectively referred to as ("Duke"); Louisville Gas & Electric Company ("LG&E") and Kentucky Utilities Company ("KU") collectively, ("LG&E/KU"); North Carolina Municipal Power Agency Number 1 ("NCMPA Number 1"); Power South Energy Cooperative ("PowerSouth"); North Carolina Electric Membership Corporation ("NCEMC"); and Tennessee Valley Authority ("TVA"). SEEM Proposal, at 1, n. 1.
[3] Potential SEEM Members as cited in the filing are Georgia System Operations Corporation ("GSOC"); Georgia Transmission Corporation ("GTC"); Municipal Electric Authority of Georgia ("MEAG Power"); Oglethorpe Power Corporation (An Electric Membership Corporation) ("Oglethorpe"); and South Carolina Public Service Authority ("Santee Cooper"). SEEM Proposal at 1, n. 1.

related to electricity market design and performance, power generation economics, utility regulatory policy, and the economic impacts of state and federal environmental policies.

4. The entirety of my experience and work history can be found in my professional biography in Attachment A and my CV in Attachment B.

A. Specific Experience Related to the Formation of New Competitive Wholesale Power Markets and Market Design

5. As an economist at FERC from 1998–2000, I worked on market design issues and filings related to the newly formed ISO/RTO markets. I primarily concentrated on the New York ISO in ER97-1523 and subsequent dockets related to energy and ancillary service market design and various California ISO market dockets related to requested changes in ancillary service and real-time market design. Additionally, my experience at FERC touched upon the start-up of ISO-New England and PJM design changes after implementing locational marginal pricing ("LMP").
6. While at PJM, I worked in the design and implementation of the first version of the operating reserve demand curve construct to implement reserve shortage pricing under FERC Order No. 719, capacity market reforms related to Capacity Performance and the Minimum Offer Price Rule, and the incorporation of demand response into PJM's energy markets among other initiatives.
7. Since forming E-Cubed in 2016, I have directly advised system operators in the United States and Canada on market design and policy changes related to distributed energy resources and accounting for climate (New York Independent System Operator), the design of new capacity markets in the face of climate initiatives (the Alberta Electric System

Operator), and the consistency of energy market settlements that account for generation operation and a move to LMP (Ontario Independent Electric System Operator).

8. I have recently represented a rural electric cooperative (Intermountain Rural Electric Association) in a state proceeding in Colorado[4] regarding the formation of organized wholesale power markets and examining the efficacy of the Xcel Energy Joint Dispatch Agreement,[5] as well as the designs of the Western Energy Imbalance Market ("WEIM") operated by the California ISO and the recently approved Southwest Power Pool ("SPP") Imbalance Market. This work also included a summary of costs and benefits of participating in such markets.

II. EXECUTIVE SUMMARY: KEY CONCLUSIONS

9. I have been asked by Public Interest Organizations to provide an examination and analysis of the SEEM design with respect to the efficiency, possible advances, and complications as well as an evaluation of the proposed SEEM market design and the accompanying benefit-cost analysis ("BCA") provided by Guidehouse/CRA.[6] Having spent most of my career in the development and continuing evolution of wholesale power markets in North America and witnessing the benefits, innovation, and cost savings they have provided first-hand when they are well designed, I am pleased to see the Southeast finally making moves toward organized markets.

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[4] *Exhibit 2 to Intermountain Rural Electric Ass'n Notice of Filing Initial Comments,* Proceeding No. 19M-0495E (Colorado Pub. Utils. Comm'n Nov. 15, 2019) ("Sotkiewicz IREA Affidavit").
[5] *Order Accepting Joint Dispatch Agreement and Tariff Revisions*, 154 FERC ¶ 61,107 (2016). For a summary of the performance of the Joint Dispatch Agreement *see* Sotkiewicz IREA Affidavit at PP 32–36.
[6] SEEM Proposal, Attach. E-1, *Southeast EEM Benefits and Non-Centralized Costs*, Guidehouse Inc. and CRA International (Nov. 18, 2020) ("Guidehouse/CRA Report").

10. Unfortunately, the filed SEEM market design does not meet the minimum standards to improve efficiency or offer market design advances beyond bilateral trading arrangements in place today. The proposed SEEM market design employs an overly complex mixed integer programming algorithm that matches buyers and sellers to preserve bilateral transactions. This matching algorithm has not even been developed yet, and thus has not been shown to be computationally feasible given the limited time to run the algorithm and schedule transactions across multiple Balancing Authorities. In operation and concept, current ISO/RTO market security constrained economic dispatch ("SCED") algorithms and software are simpler and more complete than the filed SEEM market algorithm.

11. Furthermore, the SEEM market design introduces the ability for market participants to use settings to foreclose potentially economically efficient trades with counterparties that can be used to execute market power and market manipulation strategies that have not been examined. The stated reasons in the filing for this ability to avoid trading with specified counterparties by stating it is necessary to allow participants to (1) avoid counterparties that may not meet credit requirements or have credit agreements in place,[7] (2) foreclose transactions with parties with whom market-based rate ("MBR") transactions would not be permitted,[8] or (3) avoid trading with parties with whom trades may not be allowed by law.[9] In order to be matched in the algorithm, a market participant must have settings that allows it to match with at least three eligible unaffiliated counterparties. The ability to choose in advance in the market algorithm to foreclose transactions that are not based on legal

[7] SEEM Proposal, Attach. A, ("SEEM Agreement") at App. B ("SEEM Market Rules").
[8] *Id*.
[9] SEEM Agreement, Attach. B, *Joint Affidavit of Aaron Melda and Lonnie Bellar on Behalf of The Members of the Southeast Energy Exchange Market*, at PP 14–17. By law TVA cannot sell outside its territory or "fence" but can be a buyer from an entity outside its fence. TVA can only sell to Duke, LG&E/KU, and Southern Companies.

restrictions such as for TVA, and for which there is no actual restriction on a participant's ability to reject a potential trading partner, can be easily used for market manipulation purposes to further exploit franchise monopoly positions by foreclosing the ability for some loads to take advantage of zero-cost transmission and forcing those loads to pay for transmission to conduct transaction the current bilateral market framework. These possible paths for manipulation have not been evaluated or acknowledged by Dr. Susan Pope in her supporting affidavit for the SEEM filing.[10]

12. Finally, the accompanying BCA provided by Guidehouse/CRA fails to offer adequate support for the purported benefits of $40 million annually in the Integrated Resource Planning ("IRP") Baseline Outlook and $100 million in the Carbon Constrained Outlook.[11] The modeling analysis in the Guidehouse/CRA Report does not match up with the filed SEEM design and consequently does not support these purported benefits.[12] If anything, the BCA provides a maximum or upper bound on benefits as actual benefits will be lower due to participant constraints and the use of contract path transmission that does not match up with actual power flows leading to possible Transmission Loading Relief ("TLR") curtailing transactions. Another way of looking at the upper bound on benefits is that it amounts to $1.94/MWh for all energy transacted[13] and only $0.0625/MWh for all load served in the region covered by SEEM.[14]

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[10] SEEM Agreement, Attach. D, *Affidavit of Susan L. Pope, Ph.D. on Behalf of The Members of the Southeast Energy Exchange Market*. Dr. Pope only considers horizontal market power at PP 69–72 and at P 75. Two forms of market manipulation: 1) unfairly obtain zero-cost transmission of NFEETS to the detriment of other Participants; and 2) Manipulation of average hourly Exchange Prices published daily and monthly.

[11] Guidehouse/CRA Report at 4, 17 (table 4).

[12] *See infra* Section VII.

[13] Guidehouse/CRA Report at 17, n. 13.

[14] The $40 million in net benefit is divided by the 640 TWh of energy (640,000,000 MWh) to arrive at the $0.0625/MWh benefit.

13. The BCA provided is a "black box" where the full modeling framework has not been defined or articulated well and detailed simulation outputs are largely absent but for aggregate cost savings numbers. Finally, the upper bound estimates of benefits are not realistic given that the BCA does not actually implement the proposed SEEM design.

14. In short, while the SEEM market design offers $0/MWh transmission costs that eliminates rate pancaking across the broad SEEM region, these advantages are offset by the following: (1) the overly complex design and ability to implement trading restrictions; (2) the applicability to only transactions in 15-minute intervals; and (3) the new vehicles by which existing franchise monopolies can manipulate the SEEM design. Finally, the potential for SEEM to reduce transaction costs is small and likely not material as no showing has been made for such cost reductions.

III. OVERVIEW OF CURRENT BILATERAL TRADING MECHANISM

15. The current bilateral trading mechanism in the Southeast is one in which buyers and sellers of wholesale power each search for willing counterparties to make wholesale power trades. Once willing buyers and sellers have located each other, they can either choose short-term transactions that could be hourly, daily, weekly, or monthly or enter into multi-year long-term contracts.[15]

[15] These multi-year contracts may be one year or longer in duration.

A. Role of Transmission for Delivery of Energy

16. Once willing counterparties have found each other, they need to arrange delivery of the power from supply source to load sink by reserving transmission service. This can be in the form of Firm Point-to-Point ("PtP") or Non-firm PtP transmission service.

1. Non-firm PtP Transmission Service and Short-term Wholesale Power Transactions

17. For short-term deliveries, Non-firm PtP service may be sufficient to ensure delivery of the power from source to sink. Non-firm transmission service is lower cost and can be obtained when parties know there is available transmission capacity that is not being used by Firm transmission customers. The use of Non-firm PtP transmission service can lower the cost to conduct short-term transactions when parties are reasonably assured that such service is available.

18. Still, for short-term transactions, Non-firm PtP carries the risk that it could be curtailed for reliability reasons or to allow those parties with Firm PtP or Firm Network Integrated Transmission Service ("NITS") to use the system when needed since they have paid a premium to ensure they can flow transactions.

2. Firm PtP and Firm NITS Service and Long-Term Contracts for Wholesale Power

19. Long-term contracts are usually associated not only with energy, but also to ensure the delivery of capacity to load serving entities that require the energy and capacity to ensure their load can be reliably served at all times and under all conditions from source to sink.

Firm transmission service also has the highest priority and cannot be curtailed, and consequently is higher cost than Non-firm service.

20. For example, native load being served from the generation owned by the transmission owning utility, is paying for Firm NITS. The same may also be true of transmission dependent utilities ("TDU") such as municipal or cooperative utilities serving their own native load. It may also be the case that Firm PtP transmission service may be used to satisfy the long-term needs of TDU when the source and sink locations are clearly defined.

3. The Role of Transmission Rate Pancaking in Determining Bilateral Trade Outcomes

21. Of course, the purpose of bilateral trades, like any other form of market trading, is to create "win-win" situations for the load and supply counterparties. But if the counterparties must move power across multiple transmission system, the cost for transmission increases for each system and transmission charges must be additively incurred or "pancaked" on top of each other. Rate pancaking makes economically beneficial trades between counterparties located in different transmission utility areas or Balancing Authorities ("BA") more expensive and erodes the "gains from trade".

22. With rate pancaking, it is easier for parties to conduct trades within the same transmission owner area or BA than it is to search for willing counterparties to conduct economically beneficial trades that would require transmission service across multiple BAs and transmission owners. Transactions across multiple transmission owners and BAs are only economic when the cost of buying power is low enough to overcome the costs of pancaked transmission rates.

23. Furthermore, if such trades are made between counterparties, it is likely that these trades would be done using Non-firm service due to its lower cost. Yet, the use of Non-firm service also carries a greater risk of the transaction being curtailed due to reliability or transmission unavailability since the transaction involves more than one transmission owning utility and BA.

B. The Role of Information and Transaction Costs in Bilateral Trading

24. Searching for available and willing counterparties and available transmission service takes time and resources. However, almost every utility participating in bilateral trading in wholesale power has either their own in-house trading desk and expertise or such services can be outsourced, and thus the costs of search are relatively minimal given the prevalence of publicly available information. For example, Southern Company provides its expertise and information publicly.[16]

25. For example, with publication of daily fuel prices, especially for gas, and publicly available knowledge about what resources may be available and their relative costs of operation, those parties with surplus power to sell are relatively easy to locate for load looking to buy power in the short-term market.

26. All transmission providers must post information on available transmission on its Open Access Same-time Information System[17] so that parties know the availability and cost of transmission to complete bilateral transactions.

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[16] Southern Company, *Energy Trading*, http://146.126.90.209/about-us/our-business/generation/trading.cshtml (last visited Mar. 15, 2021).
[17] Open Access Technology International, https://www.oasis.oati.com/ (last visited Mar. 15, 2021).

27. Overall search costs are minimal. The only other remaining costs are those costs of submitting eTags to reflect scheduled transactions and those processes are already largely automated. In short, the current bilateral market search and transaction costs with today's specialization, access to information, computing power, and automation are already quite small. SEEM has little or no effect on these costs as it is limited to a small subset of bilateral transactions and otherwise ***does not provide measurable cost reductions***.

C. Gains from Trade in Bilateral Transactions

28. Willing counterparties will only complete a transaction when they both feel like they have benefitted from a trade. From the perspective of a buyer serving load, it is beneficial to complete a trade when the price paid (including that for transmission) is lower than the cost of either generating the power itself, or the cost of purchasing power from another counterparty.
29. From the perspective of the seller, it is economically beneficial if it receives a price that is higher than its cost to generate the power, providing the seller with a profit on the power it sells.
30. If all parties have good information about the costs of producing power and the willingness to pay for power, then the negotiated price will be somewhere between these two values based on the cost of available alternatives. A reasonable approximation for this would be to "split the savings" each party to the transaction would receive from completing the transaction.
31. A short example makes this point clear. Suppose a buyer of power can self-generate at a cost of $70/MWh from an old, inefficient resource and this cost is reasonably known to the seller. But it finds a counterparty whose costs for surplus power are well below that at

$30/MWh and for which there is good information to verify that cost. By completing the transaction, the entire system saves $40/MWh in costs.

32. The "split the savings" solution would result in the parties completing the transaction at $50/MWh with the buyer serving load taking $20/MWh of the $40/MWh savings and the seller providing power takes the other $20/MWh in savings as profits on the sale of power.[18]

IV. THE SEEM MARKET DESIGN IN COMPARISON TO THE EXISTING BILATERAL MARKET TRADING ARRANGEMENTS

33. The SEEM design is not meant to replace the entirety of the bilateral trading markets in the Southeast, nor is the SEEM design meant to emulate coordinated joint dispatch of resources to serve load. Instead, it is designed to be a residual bilateral market in which only very short-term trades (15-minute blocks over one hour) can be completed and is not designed to displace multi-hourly, daily, weekly, monthly, or long-term trading and contracts currently available. Moreover, it is only designed to match buyers and sellers when there is available non-firm, zero-cost transmission service (referred to as Non-Firm Energy

[18] While I am not opining on the use of "split the savings" pricing proposed in the SEEM filing given the intent to preserve the transactions as bilateral in nature, efficient pricing requires pricing at the marginal cost of delivering one more MW of energy at each location, or locational marginal pricing ("LMP"). All ISO/RTO markets in the United States price energy based on LMP. The WEIM prices energy based on location. The Xcel Joint Dispatch Agreement (*see* 154 FERC ¶ 61,107 (2016)) while not using locational pricing at least provides pricing at marginal cost assuming no congestion or marginal losses. *See also Regional Transmission Organizations*, Order No. 2000, 65 Fed. Reg. 810 (2000). For subsequent page references found in this document, please see https://www.ferc.gov/sites/default/files/2020-04/RM99-2A.pdf. *Id.* at 642–643, "Market designs that base prices on the averaging or socialization of costs, may distort consumption, production, and investment decisions and ultimately lead to economically inefficient outcomes. Where possible and cost effective, cost causality principles can be used to price services and eliminate averaging. For example, in some congestion management mechanisms, the cost of alleviating congestion is spread over all loads. This scheme could have some generators creating monetary benefits for other generators. In addition, it could lead to over-consumption of power by some loads and under-consumption by other loads. Moreover, such averaging mechanisms for congestion management do not send the correct price signals for the location of new generation, thus leading to problems with long-term implications." (footnotes omitted)

Exchange Transmission Service or "NFEETS" in the SEEM filing) and when other conditions are met as well.

34. When compared with the existing bilateral market framework in the Southeast, the SEEM design does not offer much improvement from the current bilateral markets in terms of reducing the risk of transaction curtailments, reducing matching and transactions costs, or price formation. In several ways, SEEM is worse than the status quo, and also leaves large potential cost savings unrealized as discussed below.

A. Any Participants Located in the SEEM Region Can Transact in SEEM, but Market Rules and Governance are Controlled Only by SEEM Members in Contrast to Traditional Bilateral Markets

35. Fundamentally, markets of any type are institutions in which there are either formal or informal rules. These rules are either developed through government regulation such as the rules regarding MBR authority and open access transmission at FERC, or they are owned, developed, and approved by those participants in the market such as in ISO/RTO markets, Energy Imbalance Markets ("EIM"), and other market agreements with some type of governance process that provides all market participants a voice[19] before being reviewed and/or modified by FERC.

36. The current bilateral market in the Southeast operates on terms and conditions that are governed by FERC regulations and the Commission-determined ability for parties to

[19] For example, in PJM all market participants must join PJM as members, and being a member provides voting rights. Moreover, voting for market rule changes is based on sector weighted voting across 5 sectors. *see* PJM Interconnection, L.L.C. *Amended and Restated Operating Agreement*, Sections 8 and 11 (July 14, 2011) https://www.pjm.com/directory/merged-tariffs/oa.pdf.

transact at MBR.[20] No one party or coalition of parties has control over the rules governing bilateral market transactions.

37. SEEM, as proposed is different in this regard. The rules as filed were developed by a coalition of Members who own most of the generation and the transmission in the region. Non-members, such as merchant generation owners and renewable developers that are not load serving entities ("LSE") in the SEEM region[21] and non-Member loads can participate in SEEM, but merchant generation and renewable developers have no say in how the rules may change or not.[22] Even among the Members, paraphrasing George Orwell in *Animal Farm*, some Members are more equal than other Members.[23] Given the information provided in the filing, Southern Companies and TV each possess 25 percent of the net load voting rights, and Duke possesses 21 percent of the net load voting rights.[24] In effect, there may be a member majority in favor of significant changes to the market rules, but two members with large loads can effectively block any changes to their benefit.[25]

38. In effect, SEEM, as filed, is a regression in the equality of opportunity and treatment that is in effect today. A small coalition of large, mostly vertically integrated franchise monopoly utilities hold most of the control and have the power to make the rules without regard to smaller Members or non-Member Participants in SEEM. Such an imbalance of power in governance can only lead to discriminatory outcomes favoring those making the

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[20] 18 CFR § 35.37.
[21] SEEM Agreement, Article 3, Section 3.2.1.
[22] *Id.*, Article 4, (sets out the governance structure and limits voting to members).
[23] *Id.*, Article 4, Section 4.1.5 (ii) (explains the weighting of voting power by net energy for load relative to the entire region. These weights can be determined from information provided in Attach. C, P 29 (table)); George Orwell, *Animal Farm: A Fairy Story,* Secker and Warburg, London, 1945.
[24] These can be computed from Attach. C, at P 29 (table values).
[25] SEEM Agreement, Article 4, Section 4.1.5(c) (that requires a simple majority of votes from Members and 67% of net load votes for Significant Matters. This means that there are many possible blocking coalitions to a change the majority of Members would favor).

rules and the potential for market power opportunities through market design as discussed below in Section V.

B. SEEM Does not Change the Risks that Transactions Using Non-firm Transmission Will Not be Curtailed

39. SEEM uses Non-firm Transmission at zero-cost to facilitate the 15-minute increment short-term trades through its algorithm. While zero-cost transmission eliminates some of the costs of undertaking short-term bilateral transactions across a wider footprint in the region, it does not eliminate the risks of transactions being curtailed due to reliability reasons or to make room for transactions with Firm transmission.

40. As the filing parties have noted, the new zero-cost transmission is the lowest priority transmission and can be interrupted for other Non-firm transmission requests. Additionally, even though the so-called rate pancaking is being eliminated for this small subset of transactions, any transaction being matched that requires transmission across multiple transmission providers or BAs is still likely to be curtailed as not all transmission providers will have available non-firm capacity on defined contract paths.

41. Furthermore, the footprint of SEEM has many transmission and operational "seams" with pre-existing ISO/RTO markets including PJM, MISO, and SPP. The contract path nature of transmission under SEEM does not match up with the physical flows of transactions being matched. Consequently, the likelihood of one of these RTOs at the seam, or another BA within SEEM asking for a TLR to curtail the transaction is likely to be greater than under the current bilateral market. The reason for this is that it is likely some transactions scheduled by the SEEM algorithm will almost assuredly move across a wider region and result in a larger prevalence of unscheduled loop flows. These likely outcomes coupled

with the fact NFEETS is the lowest priority transmission service, it is likely many SEEM transactions could be curtailed by TLRs, and thus not be completed as envisioned by the SEEM design.

42. In theory, while the prospect of eliminating some rate pancaking in the limited circumstance of these 15-minute transactions seems attractive, it does not change the risk that these transactions will be curtailed. In fact, the zero-cost NFEETS that are the basis of the SEEM design will be curtailed before any other transactions with Firm or Non-firm transmission service on the system.

C. The Reduction in Transaction and Search Costs under SEEM are Likely *De Minimis*

43. The current bilateral market participants already have voluminous information about the costs of supplying counterparties and the reservation prices (willingness to pay) of buying counterparties for short-term transactions. These participants have experienced and sophisticated trading operations in house or under contract. They understand what the potential gains from trade are in the context of potential bilateral transactions.

44. The only offering that SEEM provides is to shape transactions into 15-minute blocks and to match buyers and sellers in a way that is not any different than happens today other than being potentially faster. But again, any benefit is limited to 15-minute blocks and does not work for multi-hour, daily, weekly, or monthly requirements.

45. Finally, while arguments about reduced search and transactions costs have an intuitive allure, the proposal has not shown the reduction in such transactions and search costs SEEM would provide to market participants.

D. The SEEM Design Leaves Large Reductions in Overall Costs on the Table

46. As a practical matter, the SEEM design must take the unit commitment of resources on the system as given. These already committed resources may have higher running costs. Coal-fired resources, older gas or oil steam resources are likely candidates to be already committed given longer start up times. Additionally, less efficient gas resources may be committed and have ratable take requirements from the gas pipeline that would be costly to alter due to pipeline imbalance penalties.

47. The time period to "commit" once a transaction has been matched in the SEEM design is a mere five minutes, which is not sufficient time to schedule gas transportation and start up a gas-fired resource, let alone commit or de-commit a large steam unit which may be needed in subsequent 15-minute intervals if a transaction is curtailed.

48. That is, cost savings from moving the dispatch of resources up or down is small relative to the savings that could be achieved by avoiding starting up a large, expensive steam resource and instead starting up a lower cost resource or making room for a zero running cost wind or solar resource.

49. In contrast, with solar and wind forecasting models in place, multi-hour trades could occur that avoid the expense of committing and running large inefficient resources. These savings are unachievable under the SEEM design as proposed.

E. The SEEM Design Does Not Provide Any Advances in Energy Price Formation or Actionable Information to Market Participants

50. Bilateral transaction price formation already relies on parties knowing information about the costs and willingness to pay of other counterparties and likely results in prices being negotiated at something approximating the "split the savings" formula that is proposed for SEEM.

51. Given known information about other parties' costs and willingness to pay, the SEEM matching algorithm and pricing mechanism is consistent with truthful revelation of costs and willingness to pay. This already exists with information know today in the bilateral markets. The only difference is that the SEEM algorithm will match the lowest available offer price with the highest available willingness to pay (demand bid) which maximizes the gains from trade and splits those evenly between the contracting parties.

52. As a practical matter, the maximization of the surplus/gains from trade that could be gained from SEEM are easily eroded by the different constraints placed on matching bids and offers and the possibility of being unable to complete a transaction due to insufficient available transmission or transaction curtailment due to TLRs.

V. SEEM CREATES BARRIERS THAT DO NOT EXIST IN THE CURRENT BILATERAL MARKET STRUCTURE TO FACILTATE COLLUSIVE MARKET POWER OPPORTUNITIES

53. The SEEM design erects additional barriers to trading across the Southeast that do not exist under the current bilateral trading regime that can facilitate coordinated action by large market participants to exercise market power in ways that are not evaluated under the

typical MBR authority evaluations. Nor would such coordinated action show in any reporting provided by SEEM as it is currently filed, or in any Electric Quarterly Reports ("EQR") data. This is because successful exercise of market power as described below would result in *no* SEEM transactions taking place.

A. Market Power and Market Manipulation Can Come in Forms Other than Raising Prices above Competitive Levels

54. In granting MBR authority, the Commission examines the ability of a seller to raise prices above competitive levels through the traditional exercise of horizontal market power. With sufficient competition the ability for any one seller to raise prices uncompetitively is unlikely as other competitors will undercut that price, driving prices to their marginal or incremental cost. As has been noted, most Members have been granted MBR authority when selling outside of their own and their affiliates' Balancing Authority area or geographic markets to non-affiliated entities.

55. FERC also is on the watch for market manipulation designed to shape how market prices are reported through transactions that lack any real purpose or through obtaining services (such as the NFEETS proposed in this filing) for manipulative purposes, such as "wash trading."

56. Yet, SEEM exists in an environment that is quite different from ISO/RTO markets and the WEIM. The short-term and long-term incentives are quite different in the Southeast relative to ISO/RTO markets. In the ISO/RTO markets, profitability rests upon being cost-efficient operationally and in making investment decisions. That is, given operational efficiency, the lower the investment cost, the greater the profits that can be earned. In contrast in the SEEM region, the basis of the power industry is state regulated, the area is composed of

franchise monopoly models where returns are based almost entirely upon capital investments. This is the opposite incentive from ISO/RTO markets as the greater the capital investment, the greater are total returns.[26] Additionally, operational costs are simply pass through costs under cost-of-service regulation such that there are few incentives for minimizing operating costs. SEEM adds an overlay of an overly complex automated market on top of these incentives that run counter to cost minimizing incentives.

1. Underlying Incentives of Generation and Transmission Owning Participants

57. Given the franchise monopoly nature of the underlying structure, competition and the idea that there may be lower cost suppliers available erode potential profits from building additional generation. Investor-Owned Utilities ("IOUs") want the appearance of not having lower cost generation supply options available so they can show their respective state regulators, city commissions, customer-owners, or contracted load that their existing assets are "used and useful" and low cost. For IOUs, this also means showing state regulators that future supply needs can be met by more investment, upon which they receive a regulated rate of return, rather than buying supply on the open market.

58. Generation and transmission owning cooperatives, municipals, or federal power administrations (collectively referred to here as "public power") have incentives to protect their position. Since they are owned or serve the customer/owners, public power does not want any business decisions to reflect poorly upon them or become known, as customer/owners may rightfully request a change in strategy or management.

[26] Averch, Harvey and Johnson, Leland L., Behavior of the Firm Under Regulatory Constraint, *American Economic Review*, Vol. 52, No. 5, 1962, pp. 1052–1069

59. Transmission owning utilities have incentives to sell Firm PtP Transmission or even gain revenues from Non-firm PtP Transmission, in addition to charging the cost of Network Transmission Service to serve native load. The idea that there is transmission capacity that is unused could be a signal that transmission is overbuilt, and runs counter to the profit incentives of transmission owners.

60. Signaling that there is sufficient NFEETS available through SEEM could signal to those parties currently paying for Firm PtP and Non-firm PtP, and in some cases, paying pancaked transmission rates, to not renew Firm PtP and Non-firm PtP service since they can satisfy their needs through SEEM. This would lead to a spiraling effect that cannibalizes transmission revenues and makes other regional generation more competitive by avoiding the costs of pancaked transmission services.

61. Providing incentives to return or not renew Firm PtP and Non-firm PtP and making other regional generation more competitive relative to the status quo runs counter to the incentives for a franchise monopoly transmission and generation owner who wants to build more transmission to earn returns on investment, but needs load or competing generation to pay for it. Additionally, providing incentives for other generation resources to compete with one's own generation means fewer opportunities for rate base generation growth if power can be purchased at lower cost in the market.

2. Market Manipulation under SEEM Links to Protecting Franchise Monopoly Market Share and Profits Leading to Actions that Reduce the Number of Efficiency Enhancing Transactions

62. Under the SEEM design, there are many levers that can be used to prevent otherwise efficiency enhancing transactions from taking place that would be consistent with the

proposed market rules. One is the ability to toggle off certain counterparties that are known to have lower cost resources than one's own and do so under the guise of "credit policy"[27] or not having MBR in the home BA.[28] This not only prevents transactions with lower cost entities, but it can be used as part of coordinated strategy among large generation owning SEEM Members to prevent such trades.

63. With the requirement that at least three counterparties be available to be matched, it would only take three of the five largest generation owning entities (Southern Company, TVA, Duke, LG&E/KU, and Dom SC) to "toggle off" potential counterparties in a coordinated strategy to block any beneficial trades from happening with entities that are "net short"[29].

64. In the long run, if some participants such as merchant generation or merchant renewable developers already in the Southeast market are "toggled off," they could get financially squeezed and forced to sell their assets to the large incumbent Member IOUs if such an option is available. Meanwhile, potential new entrants would see a clear signal that their new entry is not wanted, and abuse of SEEM would serve as a powerful deterrent to competitive new entry.

65. Contrary to what the SEEM Members have stated in their filing, there would be no paper trail documenting the use of this strategy, as only aggregated offers and bids that did not get matched are reported, not non-executed trades.[30] Trades that may have been executed

[27] SEEM Market Rules, Section IV.A.1.b. iii.
[28] SEEM Proposal, Attach. C at P 40.
[29] An entity is net short if its load is greater than available generation for meeting load requirements during most hours of the year or even only summer or winter peaking periods.
[30] SEEM Market Rules, Section V.B.2 states that the total amount of non-firm energy offered and sold as well as bid and purchased for each Clock Hour of the prior day will be reported daily.

but for the participant restrictions will not show up in the EQR, nor will such information be reported out in daily, weekly, or monthly reports.

66. Why would the largest generation owning Members want to block such low-cost trades? One reason is that they already have contracts in place for most generation requirements and have locked these in with Firm PtP, and to execute a similar deal at lower costs for generation and $0/MWh transmission cost may cause the existing contract to not be renewed or renewed at lower costs when the contract expires. In the alternative, cost advantage information about potential competitors to supply energy could potentially come to light through SEEM, and thus the current supplier may want to keep such information as opaque as possible.

67. The rationale for keeping information regarding the cost advantages of competitors private is obvious. Large vertically integrated IOUs use their own integrated resource plan ("IRP") process to meet load requirements with limited external resources. Once a new generation asset is planned in an IRP, the IOU has an incentive to ensure that it does not get delayed or canceled because lower cost generation is available elsewhere as it would lose the returns on the capital investment they would expect from self-building generation. Moreover, IOU incentives to follow through on these investment commitments becomes more entrenched when such commitments are made in earnings calls with investors who then expect these investments to happen. A failure to follow through on such investment commitments would not be viewed favorably by investors and could have a negative effect on stock prices.

B. Market Participants Have the Ability to Refuse Trades with Certain Counterparties that Can Be Discriminatory and Lead to Market Abuses.

68. One of the unique aspects of the SEEM design that is not present in any other organized market is the unfettered ability for one market participant to foreclose the possibility of any transaction with certain counterparties. While all markets are voluntary in nature, the ability to discriminate between parties with whom transactions can be completed is not efficiency enhancing nor will it lead to maximizing the "gains from trade," and it can lead to potentially harmful market behavior.

69. One reason provided in the filing for precluding transactions with some parties was to account for being able to meet individual company creditworthiness requirements.[31] On its face, this seems reasonable, but one must consider whether those conditions also hold in the traditional bilateral market. If there is differential treatment of the same party between SEEM and traditional bilateral trading, this would appear to be discriminatory.

70. Another reason for participation constraints provided in the filing is to allow market Participants that do not have MBR authority in their own BAs the option of not conducting transactions with parties in their own BA to avoid violating their MBR requirements.[32] The SEEM filing seems to indicate this option will be chosen by some transmission and generation owning Participants/Members.[33] Effectively, market participants are being shut out of the SEEM market from a large volume of potentially beneficial trades even at cost-

[31] SEEM Market Rules, Section IV.A.1.b. iii and SEEM Proposal, Attach. C at 16.
[32] SEEM Proposal, Attach. C at 16.
[33] *Id.*

based rates, even though the SEEM design can accommodate such non-MBR transactions as Southern Company appears to be opting into.[34]

71. Load or generation parties who are "toggled off" from transactions by other parties in their BA will be forced to cross multiple transmission providers and BAs to benefit from any other transaction in SEEM and be at much higher risk for being curtailed as well as paying for one-half of pancaked transmission losses.[35] In addition, these parties will be at risk for imbalance charges imposed by their home BA when the transaction is curtailed.[36]

72. Moreover, they would be "forced" to go to the traditional bilateral markets to pay for transmission to conduct cost-based transactions they would otherwise have access to under zero-cost transmission with SEEM. This is undue discrimination from a market and economic perspective. Assume a load Participant is located in the BA of a SEEM Member that does not have MBR authority in its BA, but does when selling into other BAs, and thus that Member limits its SEEM transactions to those outside of its BA. The load can buy at cost-based energy rates from the SEEM Member, but only if it pays for transmission. The load cannot use the new zero-cost NFEETS to buy energy from within its BA. The load can choose to use the NFEETS service but only to buy energy from outside its BA. This constitutes undue discrimination among similarly situated transmission customers in an economic sense that erodes efficient market outcomes.

73. This scenario presents a clear case of a SEEM Member with both generation and transmission ownership that can use its ability to preclude transactions that would be cost-

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[34] *Id.* According to this discussion, Southern Companies will make an adjustment to the transaction price that would ensure load in their BA pays cost-based rates with more savings being shifted to the load buying power in SEEM.
[35] *E.g., see* SEEM Proposal, Attach. C at 15.
[36] SEEM Proposal at 29–30. *See also* SEEM Proposal, Attach. C at 19, that states, "submitted is committed."

based with the load Participant in their BA to sell at MBR into another BA since it would be more profitable, and also increase (or not erode) its transmission revenues by effectively forcing the load Participant to buy transmission service. In either case, it could be argued that such a strategy is cross-market manipulation. In the first case, it is market manipulation by foreclosing one BA "submarket" to take an opportunity in another "submarket." In the latter case, market manipulation occurs by foreclosing the local BA submarket to benefit transmission sales.

C. The Requirement for Three Eligible Counterparties to be Available to Facilitate a Match

74. Under the current system of bilateral trading, counterparties can find each other and complete a mutually beneficial transaction without the need for other "eligible counterparties" to be available as well before completing a transaction. This constraint adds another layer of complication and is a barrier to efficient matching.

75. For any demand bid to be matched, there must be three eligible counterparties with supply offers available for matching. Conversely, for a supply offer to be matched, there must be three eligible counterparties with demand bids available to facilitate the match in the SEEM algorithm.

76. In effect, it appears the "price for zero-cost transmission" is a much larger barrier to completing an economically beneficial match with this "three-counterparty rule." It is easy to envision an economically beneficial match being stopped for the lack of "eligible counterparties".

77. There are five large utilities that are transmission owners and also large generation owners, and all operate their respective BAs, but they are geographically and electrically spread out from the Atlantic coast to the Mississippi River, and from the Gulf coast to the Ohio River.

78. It is not difficult to imagine that many transactions that could be efficiency enhancing would cross more than one BA and transmission provider. If transmission is not available in one BA, or the number of "eligible counterparties" is less than three, then the transaction would not be matched.

79. It is also not difficult to imagine a situation where some parties choose to toggle on or off their ability to transact with a specific counterparty. It would be straightforward through tacit collusion to minimize the number of matched transactions for a counterparty to limit that counterparty's ability to participate in SEEM.

D. The Current SEEM Proposal Lacks a Dedicated Market Monitor and Reporting Requirements that Would Uncover Actions that Prevent Transactions for Manipulative Reasons

80. Filing parties for SEEM explicitly depend upon FERC Enforcement Staff to undertake the market monitoring function to ensure rules are followed and not being manipulated to alter market outcomes. In fact, SEEM filing parties stress that the reporting proposed under SEEM, and the fact that completed transaction would be reported in each market participant's EQR filings, misses the point.

81. The actions described above would not be reported in the EQR, since no transaction would be completed, even though the lack of a transaction itself could be evidence of a kind of market manipulation that would prevent one transaction, and yet force another transaction

to be undertaken. Relying on EQR filings is simply insufficient for examining behavior that prevents transactions.

82. Moreover, the reporting provided by SEEM would not provide any data on the number of times a beneficial transaction did not occur for lack of counterparties.[37] SEEM proposes monthly reports that would report Energy Exchanges made but not executed. SEEM will not provide the reasons for a trade not being executed such as a TLR, participant constraint, or an "all-or-nothing" bid or offer.[38]

83. Publicly available daily information does not provide any data regarding the number of transactions that would have been matched, but for participant constraints, or transmission unavailability, or the reasons for lack of counterparties (transmission unavailable, toggling off the counterparty, or simply not enough participation). Only aggregated numbers of offers, bids, sales, and Participants are proposed to be reported.39 This is where an independent market monitor is needed to collect this data, report out what it can publicly, and serve as the eyes and ears of FERC staff to watch the market for any problems that may be present.

VI. SEEM MEMBERS HAVE FAILED TO SHOW THE DESIGN IS COMPUTATIONALLY FEASIBLE

84. SEEM filing parties describe their market algorithm as a mixed integer program for which no vendor has yet been chosen and for which no prototype has been shown.[40] Given the timing of the market, with bids and offers made fifteen minutes before the start of the next

[37] *See* SEEM Market Rules, Section V.
[38] *See id.* at Section V.A.7.
[39] *See id.* at Section V.B.
[40] SEEM Proposal, Attach. C at 11.

interval[41], matched parties being notified and eTags submitted ten minutes prior to the start of the interval[42] means that there are only five minutes in which to solve what is possibly a large and difficult mixed integer program.

85. The integer constraints include: (1) choices on counterparties with whom a party wishes to transact or not transact; (2) the ability to submit "all-or-nothing" or "fill or kill" block bids or offers that require either the whole bid or offer be accepted or otherwise be rejected; (3) the three-party counterparty rule that requires there must be at least three eligible, non-affiliated counterparties for which a Participant can exchange energy in SEEM in order to be matched; (4) an unknown set of potential contract paths that could be used to match bids and offers between sources and sink BAs.

86. One can think of integer constraints as being {0,1} decisions in which there is no available solution in between. For example, fill the entire offer, or reject it. Allow transactions with counterparty X, or not. Match an economically beneficial transaction over contract path 1 or contract path 2 or contract path 3.

87. The reason large numbers of integer constraints can be computationally burdensome from a solution time perspective is that as the number of these constraints increases along with the number of participants, the number of combinations that must be checked for the maximizing solution grows exponentially. For example, if there is only a single {0,1} integer constraint and 5 market participants,[43] the number of combinations that must be checked is 25. But if there are two {0,1} integer constraints with 5 participants, the number

[41] SEEM Market Rules, Section IV, B.2.c
[42] *Id.* at Section IV, B.2.d. The language in the market rules stands in contrast to Attachment C at 13, figure showing the submission of eTags 5 minute prior to the delivery interval.
[43] This value is 5 taken to the power of the number of possible states which is two: 0 or 1, or 5^2=25.

of combinations grows to 625. [44] This means in the last case the maximization problem must be solved 625 different times to find the maximizing solution for the market.

88. To maximize the gains from trade (surplus) with multiple integer constraints, and some not as easy as {0,1}, is not an easy linear programming optimization problem or a more tractable problem with only one integer constraint to consider. The Guidehouse/CRA SEEM benefit analysis proves this point very clearly in that it was a linear programming optimization problem that appears to be simulated over multiple draws of different levels of solar output.[45] In solving their model, Guidehouse/CRA could only do four separate years using a linear optimization problem.[46]

89. The SEEM filing parties have appeared to not have considered these issues or the potential for infeasible clock time computations of their model. It is not even clear how many possible permutations of matches would need to be examined to match buyers and sellers and maximize surplus subject to the various integer constraints enumerated above.

A. ISO/RTO Real-time Market Security Constrained Economic Dispatch ("SCED") Is a Simpler Computational Problem and Faster to Solve

1. ISO/RTO SCED may be large in the sense of encompassing a larger footprint or having more generators on the system, is a computationally simpler problem to solve. As a practical matter, SCED that is run every five minutes in ISO/RTO markets is not a mixed

[44] This value is 5 taken to the power of the number of possible states which is now four: {0,0}, {1,1}, {0,1}, or {1,0}, or 5^4=625

[45] Guidehouse/CRA Report at 13–14, including Figure 9 that presents frequency distributions. There is no mention of how many draws were taken from these solar distributions if any were done.

[46] *Id.* at 12.

integer program, but a large linear program that is computationally much easier to solve in a short clock time of about three minutes[47]. In this context, the clock time needed to solve the SEEM market given its greater computational complexity appears unrealistic given known SCED algorithms.

90. The reason for the short clock time to compute the next dispatch solution is that there are no integer constraints that require solving the problem multiple times based on a change in each of any included integer constraints. There is no need to start up or shut down units during the five-minute dispatch interval. There are no participation constraints. The transmission system is modeled as a set of linear constraints based on factors that tells how much generation will flow over each transmission constraint rather than checking over multiple potential contract paths.

91. To the extent that ISO/RTO system operators need to commit off-line resources such as combustion turbines, this is done outside of the SCED run in what can be called a "look-ahead" or intermediate term run that looks several five-minute intervals into the future to commit, de-commit, or shut down a resource, which are the only integer constraints to be considered. To place this in the context of the SEEM design, the last look-ahead run that would consider a commit, start-up, de-commit, or shut down decision occurs ten minutes before the SCED run for the dispatch interval.[48] Conservatively, this means that it requires more time to run the software and send notice to generators about 15 minutes prior to the

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[47] *See* Aaron Baizman and Phil D'Antonio, *Recap and Dispatch Methodology*, Slide 13 (Oct. 27, 2020), https://www.pjm.com/-/media/committees-groups/committees/mic/2020/20201027-five-minute/20201027-items-03-04-issue-status-update-and-long-term-solution-education.ashx. *See also* PJM Interconnection L.L.C., *Manual 11 Energy & Ancillary Services Market Operations*, *Revision 112*, at 51 (January 5, 2021), https://www.pjm.com/~/media/documents/manuals/m11.ashx ("PJM Manual 11").

[48] *See* PJM Manual 1 at 50. The figure shows what is known as IT SCED that runs up to ten minutes before the SCED run.

dispatch interval. Additionally, the number of integer constraints is likely fewer than those in the SEEM design.

VII. THE PURPORTED BENEFITS OF THE PROPOSED SEEM MARKET DESIGN LACK SUFFICIENT MODELING DETAIL AND RELEVANCE TO THE PROPOSED MARKET ALGORITHM

93. The work by Guidehouse/CRA lacks sufficient detail in how exactly the market dispatch was conducted to arrive at the value of the benefits from SEEM. In the IRP Baseline Outlook, the annual benefits are estimated to be $40 million or only $0.0625/MWh for all load in the SEEM footprint.[49] The annual benefits under the Carbon Constrained Outlook are estimated to be $100 million or $0.15625/MWh for all load in the SEEM region.[50]

94. The Guidehouse/CRA BCA provides no detailed outputs regarding (1) projected bilateral trading prices; (2) changes in dispatch of generators by utility and fuel type; (3) production cost savings accruing to each of the modeled market participants; (4) potential trades that were available but unable to be executed due to a lack of available transmission capability; (5) the amount of curtailed renewable resources before and the implementation of the SEEM market; or (6) changes in emissions across the SEEM region—particularly notable given that Guidehouse/CRA cited helping balance solar resources in the region as a main purpose of SEEM.

[49] Guidehouse/CRA Report at 17 and n.13. The $40 million in net benefit is divided by the 640 TWh of energy (640,000,000 MWh) to arrive at the $0.0625/MWh benefit.
[50] *Id*. The $100 million in net benefit is divided by the 640 TWh of energy (640,000,000 MWh) to arrive at the $0.15625/MWh benefit.

A. Lack of Sufficient Detail in Modeling the Baseline Cases Absent the SEEM Design

95. Guidehouse/CRA reports it uses PROMOD to simulate regional system operations on an hourly basis using security constrained unit commitment and economic dispatch of resources and includes bilateral trading in the simulations.[51] PROMOD is a widely used vendor-supplied production cost software package from Hitachi/ABB that allows the transmission system to be modeled with economic dispatch of generation resources on an hourly basis but does not have the ability to model dispatch on a sub-hourly basis.[52]

96. For both IRP Baseline and Carbon Constrained Outlooks, Guidehouse/CRA only provides a percentage generation mix for 2022 and 2037 but does not provide actual generation in total MWh or the actual installed capacity of each resource type in their report.[53] With respect to fuel costs there is no detail provided on delivered cost of coal as is provided for natural gas.[54]

97. And while it may be assumed that each BA dispatches its own resources to satisfy the load and reserve needs in isolation as part of the PROMOD simulations used to simulate system operation in the SEEM region, it is not explicitly stated and leaves to the imagination how exactly these PROMOD base cases were executed. Given that PROMOD can also be run to dispatch wider regions as a single area, such as ISO/RTOs or SEEM, an explicit statement would be helpful in evaluating the benefits.

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[51] *Id.* at 12–13.
[52] *Id.* at 12. *See also* https://www.hitachiabb-powergrids.com/offering/product-and-system/energy-portfolio-management/market-analysis/promod.
[53] *Id.* at 10-11, Figs. 5, 6.
[54] *Id.*, App. A at 24, Tbl. A.1 .

98. Furthermore, rather than include known bilateral transactions that can be observed from EQR data, Guidehouse/CRA instead simulated bilateral transactions *after* the initial PROMOD runs with security constrained unit commitment and economic dispatch,[55] which I assume to be each SEEM BA in isolation.[56] The simulated bilateral transactions are compared to actual bilateral transactions for reasonableness. But the report does not provide any evidence on whether the simulated bilateral trading compares "reasonably" to the known bilateral transactions currently taking place or what those differences might be.

99. The lack of modeling detail or outputs from the PROMOD simulations setting-up the base case to run and evaluate the SEEM simulations against is simply inadequate to evaluate the possible benefits from transitioning to implementing SEEM. These inputs include fuel costs for all resources, load forecasts and load profiles, available capacity, and detailed outputs are helpful in analyzing the reasonableness of the modeling results either through data analysis or attempting to replicate the results. No such detailed input or output data has been provided and thus the results cannot be verified for reasonableness.

B. The Modeling of SEEM Does Not Correspond to the Proposed Market Design and is Inadequate to Evaluate the Reasonableness of Benefits as Calculated

100. Guidehouse/CRA state they use production cost modeling and linear programming optimization to assess the benefits from SEEM, but that PROMOD is not capable of

[55] *Id.* at 12.
[56] *Id*. All that is stated is, "PROMOD simulates a security-constrained unit-commitment and dispatch for the entire Eastern Interconnect, including each BA within the Southeast EEM footprint." From this I cannot discern with certainty whether this was run for the entire Eastern Interconnection as a single area, or done by each BA.

modeling the 15-minute intervals.[57] But Guidehouse/CRA does not cite any simulation software packages that could model power system operation and dispatch at sub-hourly intervals. For example, software packages such as PROBE offered by PowerGEM[58] or PLEXOS provided by Energy Exemplar are able to model markets and operations down to five-minute intervals.[59] Absent any information or documentation, I must assume the Guidehouse/CRA simulations at 15-minute intervals were developed in-house, and it is difficult to assess the robustness of the modeling software to understand whether the results are reasonable.

101. Furthermore, the SEEM modeling done by Guidehouse/CRA accounts for the uncertainty in demand and solar power output in a way which accounts for the stated computational complications and clock times only allowing four years to be modeled (2022, 2027, 2032, and 2037)[60] as opposed to modeling SEEM over a longer continuous period.

102. However, the proposed SEEM design is not a linear program as modeled by Guidehouse/CRA, but is instead a mixed integer programming algorithm with various integer constraints such as "fill or kill" block bids/offers, the ability to foreclose trades with a subset of market participants, a three-counterparty requirement, and others as discussed above in Section VI.

103. Additionally, it is unclear how transmission was modeled by Guidehouse/CRA for the SEEM design. In Table 3, Key Study Assumptions, it is stated that under transmission

[57] *Id.* at 5, 12.
[58] https://www.power-gem.com/PROBE.html
[59] https://energyexemplar.com/all-applications/
[60] Guidehouse/CRA Report at 12.

representation, no transmission constraints were considered.[61] Yet under Table 3, Available Transmission Capability ("ATC"), it states that trades are limited to ATC values from 2019 which is a form of representing transmission constraints which would be consistent with the contract path methodology used by SEEM.[62] Under trading friction in Table 3, the assumption states "The Southeast EEM Model will execute any trade, regardless of margin, that has a global benefit to the Southeast EEM participants,"[63] which indicates there are no transmission constraints being considered.

104. Consequently, it is not possible to contextualize the reasonableness of the benefits calculations in the Guidehouse/CRA Report regarding transmission. At best, it appears the SEEM modeling does not account for potential transmission constraints based on actual power flows which means that some potential trades identified by the Guidehouse/CRA model may not actually happen due to being curtailed by TLRs issued by adjacent BAs (PJM, SPP, and MISO) based on loop flows. At worst, it could be interpreted that the model entirely ignored ATC and that not all economically beneficial trades would occur under the SEEM design as proposed.

105. Given these unknowns and limitations of the modelling of SEEM, the $40 million and $100 million annual benefits in the IRP Baseline and Carbon Constrained Outlooks respectively are at best an upper bound on benefits. These figures being upper bounds is further supported by the fact that the SEEM modeling was conducted under more computationally tractable assumptions than the filed SEEM design itself. The critical question is how low the benefits might be under various sensitivities and changes to

[61] *Id.* at 15.
[62] *Id.*
[63] *Id.*

assumptions such as toggling on or off participation with counterparties, the three-participant rule, more complex contract paths that cross multiple BAs, and "fill or kill" block bids and offers as described in Section VI above.

C. There are No Results Provided under Sensitivity Runs in the Benefits Analysis

106. Guidehouse/CRA states they have run various sensitivity analyses under different assumptions regarding the level of market participation, ATC, fuel prices, and renewable curtailment among others as alluded to in Table 3.[64] But the number of actual sensitivities conducted and their respective results are not provided in any meaningful way. Instead, they describe the individual impact of each assumption on results as generic "high, medium or low" impacts.[65] For example, market participation is cited as having a high impact on results, but no quantitative results are provided as to how much low market participation erodes the potential benefits.

D. Environmental Impacts and Costs of Older Resources Likely to Retire are Non-Transparent

107. For fuel pricing, Table 3 identifies a key assumption that lower gas prices result in lower benefits in SEEM. This is a surprising observation and points out a major problem with the benefit analysis in that there is no impact on any operating coal units that would almost certainly be ramped downward to make room for gas or solar resources. Another

[64] *Id.*.
[65] *Id.*

logical implication of this observation is that solar will be displacing lower emitting gas resources rather than higher emitting and higher cost coal resources.

108. Given that the analysis does not attempt to change the output of coal units in the model,[66] and the likelihood that coal resources are more expensive to run than combined cycle gas units, as evidenced by the retirement of coal units and new entry of combined cycle gas in the model, it appears the analysis is designed to take as given the operation of coal units as "self-scheduled," and not provide information that may show these resources are operating when they should not be. This phenomenon is seen in ISO/RTO markets when coal resources that are uneconomic operate as self-scheduled anyway.[67]

109. Furthermore, given that solar resource penetration is one of the main drivers for the benefits attributed to SEEM, there is no reporting on the impacts of changing the amount of allowed solar power curtailment on SEEM benefits. This seems to be a glaring omission in the benefit analysis.

E. Overall Conclusion Regarding the Benefits Analysis

110. Failure to fully account for transmission system constraints based on actual power flows along with the omission of key participation constraints, potentially complex contract paths, and "fill or kill" bids and offers embedded in the SEEM design is a fatal flaw that renders the entire benefits analysis and estimates meaningless. In this sense, despite the low reported costs of set up and ongoing participation, it is not clear whether benefits will actually exceed the costs.

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[66] *Id.* at 14.

[67] Joe Daniel, Sandra Sattler, Ashtin Massie, Mike Jacobs, *Used, But How Useful? How Electric Utilities Exploit Loopholes, Forcing Customers to Bail Out Uneconomic Coal-Fired Power Plants* (May 2020), https://www.ucsusa.org/sites/default/files/2020-05/Used%20but%20How%20Useful%20May%202020.pdf

111. Furthermore, the lack of transparency in data inputs, model outputs, and results of sensitivity scenarios in detail have not been provided, making it difficult to assess or verify the reasonableness of the results and further calling into question the validity of the analysis to in providing a meaningful estimate of benefits.

112. A robust and verifiable analysis should include the effects of power flows and the potential for loop flows and some transactions being curtailed by TLRs to model the actual SEEM design as close as possible. A good analysis would provide transparency on the data inputs and model outputs at granular levels that could be useful to affected consumers, state regulators, and other interested parties to assess the impacts of the SEEM design on costs and emissions outcomes and renewable resource curtailments. Finally, a thoughtful analysis would have used, where possible, available software packages known to the power industry with available documentation as the basis for modeling the benefits of SEEM. But unfortunately, none of these appear to be considered or undertaken for the SEEM benefit analysis.

VIII. SUMMARY AND CONCLUSIONS

113. The prospect of the Southeast moving toward more coordinated operation across BAs to facilitate the wider trading of power that improves system efficiency, lowers costs, and enhances reliability as the penetration of variable renewable generation increase is critical and necessary moving forward. Unfortunately, the SEEM design as submitted is simply not up to the task and raises more questions than it provides solutions to problems. If anything, SEEM would create a larger set of problems in its design that would facilitate opportunities to exercise market power and manipulation that are not available in the

current bilateral market without providing any substantial improvements over the current bilateral market paradigm.

114. In addition to the aforementioned market power deficiencies, the SEEM design proposes an algorithm that is not standard relative to current ISO/RTO market and dispatch software and is computationally more difficult to solve, and it has not been proven that the algorithm can be solved in the time necessary. Finally, the BCA provided in support of the SEEM filing is not well supported, non-transparent, and does not provide sufficient information or detail to assess the reasonableness of the results, nor is it run based on the proposed market design, but is rather based on more computationally tractable assumptions.

115. While the Commission should not give up on markets in the Southeast, regrettably this SEEM proposal should be rejected for all the reasons provided herein.

* *

This concludes my affidavit.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Southern Company Services, Inc.	)	
Southeast Energy Exchange Market	)	**Docket No. ER21-1111**
	)	
	)	

VERIFICATION OF PAUL M. SOTKIEWICZ, PH.D.

Pursuant to 28 U.S.C. § 1746, I, Paul M. Sotkiewicz, Ph.D., declare under penalty of perjury under the laws of the United States of America that the statements contained in the foregoing Affidavit of Paul M. Sotkiewicz, Ph.D. are true and correct to the best of my knowledge and belief.

Paul M. Sotkiewicz, Ph.D.

Executed on
this 15th day of March 2021

Attachment A

to the

Affidavit of Paul M. Sotkiewicz

Attachment B

to the

Affidavit of Paul M. Sotkiewicz

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Alabama Power Company	)	ER21-1111-000
Dominion Energy South Carolina, Inc.	)	ER21-1112-000
Louisville Gas and Electric Company	)	ER21-1114-000
Duke Energy Progress, LLC Duke Energy Carolinas, LLC	)	ER21-1115-000
Duke Energy Carolinas, LLC	)	ER21-1116-000
Duke Energy Progress, LLC	)	ER21-1117-000
Louisville Gas and Electric Company	)	ER21-1118-000
Georgia Power Company	)	ER21-1119-000
Kentucky Utilities Company	)	ER21-1120-000
Mississippi Power Company	)	ER21-1121-000
Alabama Power Company	)	ER21-1125-000
Dominion Energy South Carolina, Inc.	)	ER21-1128-000
	)	(not consolidated)

VERIFICATION OF PAUL M. SOTKIEWICZ, PH.D.

Pursuant to 28 U.S.C. § 1746, I, Paul M. Sotkiewicz, Ph.D., declare under penalty of perjury under the laws of the United States of America that the statements contained in

theforegoing Affidavit of Paul M. Sotkiewicz, Ph.D. are true and correct to the best of my knowledge and belief.

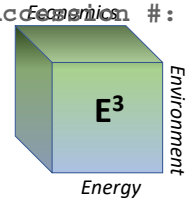
Paul M. Sotkiewicz, Ph.D.

Executed on
this 15th day of March 2021

Attachment A

to the

Affidavit of Paul M. Sotkiewicz



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Paul M. Sotkiewicz, Ph.D

President, E-Cubed Policy Associates, LLC

Paul M. Sotkiewicz, Ph.D. is the President and Founder of E-Cubed Policy Associates, LLC ("E-Cubed"), an energy and environmental economic consultancy based in Gainesville, Florida that started in 2016. Dr. Sotkiewicz brings 25 years of experience across parts of three decades at the intersection of utility regulatory policy, power system economics, and environmental economics to provide analysis and advice to private and public sector clients on a range of economic issues related to electricity market design and performance, power generation economics, market power mitigation, utility regulatory policy, distributed energy resources and the economic impacts of state and federal environmental policies on the power and gas industries. Recent clients include market and system operators such as the Alberta Electric System Operator and New York Independent System Operator; trade associations such as the Electric Power Supply Association, New England Power Generators Association, PJM Power Providers Group, and the American Petroleum Institute; merchant generation and transmission developers in North American power markets including JPower USA Ltd., Panda Power Funds, Vistra Energy, ENMAX, Rockland Capital and Kalina Distributed Power; and generation and transmission cooperatives including Intermountain Rural Electric Association and Buckeye Power. Dr. Sotkiewicz also supports law firms in litigation proceedings including rate case, need determinations, and market power/manipulation cases.

Prior to founding E-Cubed, Dr. Sotkiewicz worked for PJM Interconnection, LLC in the role of Chief Economist and as a Senior Economic Policy Advisor. At PJM, Dr. Sotkiewicz provided analysis and advice regarding all aspects of PJM's markets and supported regulatory filings and implementation of market design changes. At PJM Dr. Sotkiewicz led initiatives related to shortage pricing and real-time dispatch co-optimization of energy and reserves, integration of demand response in PJM's markets including price formation and compensation of demand resources. At PJM Dr. Sotkiewicz supported PJM's regulatory position with respect to the application of the Three Pivotal Supplier Test supplier market power, helped develop an opportunity cost calculator for run-limited resources used for market mitigation purposes, and administered implementation of the minimum offer price rule (MOPR) to curb buyer-side market power in the PJM capacity market. Paul also authored or co-authored a series of policy analyses and whitepapers on ranging from transmission cost allocation to gas-electric coordination to the effects of environmental rules on PJM's markets. While at PJM, Dr. Sotkiewicz was a frequent speaker at FERC Computation Technical Conferences related to advances in unit commitment models and computation methods that could be applied in ISO/RTO markets.

As an economist at the United States Federal Energy Regulatory Commission (FERC) in the Office of Economic Policy and later, on the Chief Economic Advisor's staff at Dr. Sotkiewicz conducted research and provided analysis and advice on market design issues related to the ISO/RTO markets, in particular the California ISO and New York ISO, as they were being formed and implemented and worked on merger cases to analyze any potential for market power. As part of this work, Dr. Sotkiewicz has co-authored peer review articles related to unit commitment models and price formation to account for discrete decisions related to start-up, shut-down, and minimum run conditions.

Dr. Sotkiewicz is the author or co-author of multiple book chapters and publications related to wholesale market design and policy including price formation in unit commitment models, the integration of demand response and distributed energy resources in markets and operations environmental economic policy, distribution rate design, economic decisions for nuclear resource build decisions, and renewable resource integration. In addition to his tenures at PJM and FERC, Dr. Sotkiewicz served as the Director of Energy Studies at the Public Utility Research Center (PURC), University of Florida was an Instructor in the Department of Economics at the University of Minnesota where he earned the Walter Heller Award for Outstanding Teaching of Economic Principles four times.

Dr. Sotkiewicz holds a Bachelor of Arts in history and economics from the University of Florida (1991), a Master of Arts (1995) and Doctorate in Economics from the University of Minnesota (2003).

Attachment B

to the

Affidavit of Paul M. Sotkiewicz

PAUL M SOTKIEWICZ, Ph.D.

President and Founder, E-Cubed Policy Associates, LLC
5502 NW 81st Avenue, Gainesville, FL 32653
E-mail: drpaulg8r@gmail.com Phone: +1-352-244-8800 Mobile: +1-610-955-2411

EDUCATION

PhD, Economics, University of Minnesota, 2003
M.A., Economics, University of Minnesota, 1995
B.A. (High Honors), History/Economics, University of Florida, 1991

PROFESSIONAL AND ACADEMIC EXPERIENCE

2016- President and Founder, E-Cubed Policy Associates, LLC, Gainesville, FL

- Founded to provide expert advice, testimony, and policy research to private sector and government clients at the intersection of energy, environmental, and economic policy and regulation
- Supporting litigation defending market participants against accusations of market manipulation in PJM's markets
- Conducting analysis of recent past and future expected profitability of nuclear power plants under consideration for state subsidies to keep these facilities in commercial operation and providing reports and testimony in front of state legislative bodies.
- Provide capacity market design and expertise to the ENMAX Corp. in Calgary, AB with regard to the AESO capacity market proposal filed in late 2018
- Supported rate case litigation for a reactive power rate case for Panda Stonewall explaining the history behind markets and that the filed rate from Panda Stonewall was consistent with precedent and lost market opportunities
- Providing PJM expertise to JPower USA Ltd in its development of new combined cycle gas facilities in PJM and help move the project through the PJM interconnection processes as well as advising on existing facilities in the PJM and NYISO market
- Provided capacity market design expertise to the Alberta Electric System Operator in 2017 as they started their transition from an energy-only market to a combined energy and capacity market
- Supporting the Greek Electricity Market authoring, through ECCO International, a whitepaper on market power mitigation with a special look at buyer side market power mitigation in the energy market with the different indices that could be indicative of buyer market power.
- Authored a Meter Data Study for the NYISO encompassing a survey of metering requirements for demand resources and distributed energy resources in key ISO/RTO markets, the current use of demand response baseline methodologies and possible use of such baselines for distributed energy resources in the context of REV in New York.
- Work with clients in generation and merchant transmission development projects in different parts of PJM related to helping them through the interconnection process, understanding market rules, and regulatory policy and economic advice in the face of changing market rules.
- Supporting clients in docketed proceedings at FERC and at the Florida Public Service Commission providing expert testimony and analysis to be used in regulatory proceedings. These proceedings include need determinations, rate filings, RTO market design changes, and policy related proceedings.
- Supporting US government initiatives in exporting knowledge and experience regarding US electric power market development to the Chinese government as they undertake green energy initiatives and look to improve the overall efficiency of the power system.

2015-2016 Contractor, YOH Inc. and working under the title of Senior Economic Policy Advisor, PJM Interconnection, L.L.C., Audubon, PA

2010-2015 Chief Economist, Market Services Division, PJM Interconnection, L.L.C., Audubon, PA

2008-2010 Senior Economist, Market Services Division, PJM Interconnection, L.L.C., Audubon, PA

- Provide analysis and advice with respect to the PJM market design and market performance including demand response mechanisms, intermittent and renewable resource integration, market power mitigation strategies, capacity markets, ancillary service markets, and the potential effects of environmental policies on the PJM markets.
- Co-authored papers related to effects of the proposed Waxman-Markey climate change bill in 2009, the implementation of the Mercury and Air Toxics Standards (MATS) and Cross State Air Pollution Rule in 2011, and the potential effects of the EPA-proposed Clean Power Plan in 2015.
- Led the Stakeholder Process to implement reserve shortage pricing in PJM in 2009-2010 and provided expert testimony associated with FERC filings in 2010.
- Co-authored paper to explain various market and policy concepts for PJM and its stakeholders including a paper explaining generator costs and compensation in 2010, a paper on possible routes to take on transmission cost allocation in 2010, and a whitepaper on capacity market issues in 2012.
- Advised PJM executives on market power mitigation issues related to the Three Pivotal Supplier test and cost-based offers used for market power mitigation in the PJM Energy Market in 2008-2009
- Advised PJM executives and Board of Managers on demand response compensation prior to the issuance of FERC Order 745.
- Supported and advised the Capacity Market Operations staff and PJM executives on all matters related to the Reliability Pricing Model (RPM) capacity market including implementation of the Minimum Offer Pricing Rule in its various iterations, administered determinations and/or reasonableness of Market Seller Offer Caps during disputes between Capacity Market Sellers and the Independent Market Monitor.
- Provided advice to Capacity Market Operations staff and PJM executives on the RPM Triennial Parameter Review Process in 2011 and in 2014 including supporting legal staff in making filings, providing expert testimony, and providing expert advice during the 2011 and 2012 hearing and settlement process at FERC.
  Supported and provided advice to Capacity Market Operations staff and PJM executives on Capacity Performance through stakeholder presentations, regulatory filings, and working jointly with the IMM in developing many of the ideas and concepts taken from ISO New England's Pay for Performance design for us in PJM.
- Supported the Federal State Government Policy outreach through by providing subject matter expertise during one-on-one meetings with regulatory staff and Commissioners related to any issues of mutual interest and import between PJM and state commission, state environmental regulators, FERC staff, and EPA staff as needed.
- Co-authored and co-led PJM's responses to the Independent Market Monitor's (IMM's) *State of the Market Reports* as well as remaining in communication with the IMM on various matters of concern and interest related to PJM market performance and design.
- Led technical and non-technical external outreach efforts to promote PJM markets or explain PJM positions on policy or market design issues of current interest to industry stakeholders including academic audiences, and invited presentations at industry sponsored events.
- Provided support in gas/electric coordination discussions within PJM and the between the power and gas industries, as well as operations support during critical operating periods in January 2014 through calls and inquiries to PJM generators and pulling environmental permits to better understand generator operating limitations on back-up fuel.
- Provided periodic reports on market performance and the state of PJM's markets to the PJM Board of Managers Competitive Markets Committee including the relationship between PJM's markets and major fuel market, environmental policy, and macroeconomic trends.
- Acted in the role of an internal consultant and advisor to all PJM departments and divisions, as needed, to address any questions or concerns surround market performance, market design, and general economic or environmental policy questions.

- Supported development and issuance of the PJM Renewable Integration Study by outside vendors.

2000–2008 Director of Energy Studies, Public Utility Research Center and Lecturer, Department of Economics, University of Florida, Gainesville, FL

- Designed and delivered executive education and outreach programs in electric utility and regulatory policy and strategy for professionals in government, regulatory agencies, and industry primarily for developing countries.
- Responsible for electricity regulatory policy curriculum for the *PURC/World Bank International Training Program on Utility Regulation and Strategy* offered twice per year for 65 to 95 industry and regulatory professionals in each course.
- Acted as the electricity expert and liaison to the Florida electric utilities who were contributing members of PURC.
- Developed electricity related topics and obtained speakers for the PURC Annual Conferences held each February on matters related to environmental policy, wholesale market restructuring, so-called "hurricane hardening" of power systems after the 2004-2005 hurricane seasons, and other policy related matters of interest to the state of Florida.
- Served the PURC liaison to the consultants retained by PURC to evaluate the hardening of electricity infrastructure in the wake of the 2004 and 2005 hurricane seasons.
- Conducted original academic research related to electricity regulation and policy and published in peer reviewed academic and policy journals
- Developed customized regulatory training courses or sessions jointly prepared with other organizations for on-site delivery in Panama, Trinidad & Tobago, Brazil, Mexico, Peru, Bolivia, Argentina, Grenada, South Africa, Zambia, Namibia, and Cambodia
- Served as an advisor and subject matter expert on wholesale restructuring and market issue to Florida Governor Jeb Bush's *Energy 2020 Study Commission* 2000-2001.
- Taught classes as needed in the Economics Department on environmental economics, regulatory economics, and a large lecture class of managerial economics

1999–2000 Economist, Office of Markets, Tariffs, and Rates, United States Federal Energy Regulatory Commission, Washington, DC

1998–1999 Economist, Office of Economic Policy, United States Federal Energy Regulatory Commission

- Provided analysis and research related to filings made by ISO/RTO markets as they commenced operations as centralized wholesale power markets.
- Led the economic analysis and evaluation of the NYISO wholesale power market in its initial filings of its market design and subsequent filings after operations commenced.
- Led economic analysis and evaluation of multiple filings by the California ISO related to requested market design changes filed after starting operations in 1998.
- Supported analysis and evaluation of other ISO/RTO markets as needed.
- Supported and provided analysis on merger applications as needed.
- Conducted original research while on the staff of the Chief Economic Advisor in the Office of Markets, Tariffs, and Rates related to unit commitment models used in day-ahead electricity markets and pricing in the presence of lumpy decisions and operational characteristics (technically known as non-convexities).

1992–1998 Instructor, Department of Economics, Augsburg College, Minneapolis, MN

- Taught small classes of introductory microeconomics, labor economics, money and banking, and environmental economics

1992–1998 Instructor, Department of Economics, University of Minnesota, Minneapolis, MN

- Taught large lecture classes of primarily introductory microeconomics to classes of up to 600 students 3 times per year, managing a staff of teaching assistants and graders and developing curriculum and exams.
- Taught smaller classes of introductory microeconomics as well as environmental economics

PUBLICATIONS AND BOOK CHAPTERS

Erik Ela ; Farhad Billimoria ; Kenneth Ragsdale ; Sai Moorty ; Jon O'Sullivan ; Rob Gramlich ; Mark Rothleder ; Bruce Rew ; Matti Supponen ; Paul Sotkiewicz, "Future Electricity Markets: Designing for Massive Amounts of Zero-Cost Variable Renewable Resources," *IEEE Power and Energy Magazine,* Volume 17, Issue 6, November/December 2019, Page 58-66.

Covino, Susan, Andrew Levitt, and Paul Sotkiewicz, "The Fully Integrated Grid: Wholesale and Retail, Transmission and Distribution", in *Future of Utilities- Utilities of the Future: How Technological Innovations in Distributed Energy Resources Will Reshape the Electric Power Sector*, Fereidoon P. Sioshansi, editor, Chapter 22, pp.417-434, 2016.

M. Ahlstrom; E. Ela; J. Riesz; J. O'Sullivan; B. F. Hobbs; M. O'Malley; M. Milligan; P. Sotkiewicz; J. Caldwell, "The Evolution of the Market: Designing a Market for High Levels of Variable Generation", *IEEE Power and Energy Magazine*, Volume: 13, Issue: 6, 2015, Pages: 60 – 66.

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P. M. Sotkiewicz, "Value of Conventional Fossil Generation in PJM Considering Renewable Portfolio Standards: A Look into the Future", *Power and Energy Society General Meeting, 2012 IEEE*

R. F. Chu; P. F. McGlynn; P. M. Sotkiewicz, "Transmission Planning for Generation at Risk due to Environmental Regulations and Public Policy Initiatives" *Power and Energy Society General Meeting, 2012 IEEE*

P. M. Sotkiewicz; J. M. Vignolo, "The Value of Intermittent Wind DG under Nodal Prices and Amp-mile Tariffs", *Transmission and Distribution: Latin America Conference and Exposition (T&D-LA), 2012 Sixth IEEE/PES*

Helman, Udi, Harry Singh, and Paul Sotkiewicz, "RTOs, Regional Electricity Markets, and Climate Policy", in *Generating Electricity in Carbon Constrained World,* Fereidoon P. Sioshansi, editor, Chapter 19, pp.527-564, 2010.

J. C. Smith; S. Beuning; H. Durrwachter; E. Ela; D. Hawkins; B. Kirby; W. Lasher; J. Lowell; K. Porter; K. Schuyler; P. Sotkiewicz, "The Wind at Our Backs", *IEEE Power and Energy Magazine*, Volume: 8, Issue: 5, 2010 Pages: 63 - 71

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Holt, Lynne, Paul M. Sotkiewicz, and Sanford V. Berg. 2010. "Nuclear Power Expansion: Thinking About Uncertainty"

The Electricity Journal, 235:26-33.

Holt, Lynne, Sotkiewicz, Paul, and Berg, Sanford, "(When) To Build or Not to Build? The Role of Uncertainty in Nuclear Power Expansion." *Texas Journal of Oil, Gas, and Energy Law*, Volume 3, Number 2, 2008, pp. 174-217.

Sotkiewicz, Paul M. and Vignolo, J. Mario, "Towards a Cost Causation Based Tariff for Distribution Networks with DG." *IEEE Transaction on Power Systems,* Vol. 22, No. 3, August 2007, pp. 1051-1060.

Sotkiewicz, Paul and Vignolo, Jesus Mario. "Distributed Generation." The Encyclopedia of Energy Engineering and Technology, Vol. 1, pp 296-302. Ed. Barney Capehart. New York: CRC Press, Taylor and Francis Group, 2007.

Sotkiewicz, Paul. "Emissions Trading." The Encyclopedia of Energy Engineering and Technology, Vol. 1, pp. 430-437. Ed. Barney Capehart. New York: CRC Press, Taylor and Francis Group, 2007.

Vignolo, Jesus Mario and Sotkiewicz, Paul M., "Towards Efficient Tariffs for Distribution Networks with Distributed Generation", *Cogeneration and On-site Power Production*, November-December 2006, pp. 67-75.

Jamison, Mark A. and Sotkiewicz, Paul M., "Defining the New Policy Conflicts," *Public Utilities Fortnightly,* July 2006, pp. 36-40, 50.

Sotkiewicz, Paul M. and Vignolo, Jesus Mario "Nodal Pricing for Distribution Networks: Efficient Pricing for Efficiency Enhancing DG." *IEEE Transaction on Power Systems*, Vol. 21, No. 2, May 2006, pp. 639-652.

Sotkiewicz, Paul M. and Vignolo, Jesus Mario "Allocation of Fixed Costs in Distribution Networks with Distributed Generation," *IEEE Transaction on Power Systems*, Vol. 21, No. 2, May 2006, pp. 1013-1014.

Sotkiewicz, Paul M., and Lynne Holt, "Public Utility Commission Regulation and Cost Effectiveness of Title IV: Lessons for CAIR." *Electricity Journal* 18(8): 68-80, October 2005.

O'Neill, Richard P., Sotkiewicz, Paul M., Hobbs, Benjamin F., Rothkopf, Michael H., and Stewart, William R. Jr., "Efficient Market Clearing Prices in Markets with Non-Convexities." *European Journal of Operational Research*, Volume 164, Issue 1, 1 July 2005, Pages 269-285.

Sotkiewicz, Paul M., "The Impact of State-Level Public Utility Commission Regulation on the Market for Sulfur Dioxide Allowances, Compliance Costs, and the Distribution of Emissions" Ph.D. Dissertation, Department of Economics, University of Minnesota, January 2003.

O'Neill, Richard P., Helman, Udi, Sotkiewicz, Paul M., Rothkopf, Michael H., and Stewart, William R. Jr., "Regulatory Evolution, Market Design, and the Unit Commitment Problem" The Next Generation of Unit Commitment Models*,* B. Hobbs, M. Rothkopf, R. O'Neill, and H.P. Chao editors. 2001.

Sotkiewicz, Paul M. "Opening the Lines", Forum for Applied Research and Public Policy, Special Issue on the Role of Public Power in Utility Restructuring*,* Summer 2000, pp. 61-64.

SELECTED WORKING PAPERS AND UNPUBLISHED MANUSCRIPTS

Holt, Lynne, and Paul M. Sotkiewicz. "Understanding Fuel Diversity Trade-Offs and Risks: Making Decisions for the Future (pdf)" University of Florida, Department of Economics, PURC Working Paper, 2007.

O'Neill, Richard P., Sotkiewicz, Paul and Rothkopf, Michael. "Equilibrium Prices in Exchanges with Non-convex Bids." PURC Working Paper, January 2006, updated September 2007.

Sotkiewicz, Paul M. "Cross-Subsidies That Minimize Electricity Consumption Distortions" University of Florida, Department of Economics, PURC Working Paper, 2003.

CONSULTING AND ADVISING EXPERIENCE PRIOR TO JOINING PJM IN 2008

2007 Advisor to the Government of Vietnam regarding the design and experience of wholesale electricity markets as Government looked at the creation of US style ISOs to attract investment in generation assets for IPPs

2007 Independent Expert in the Matter of the Public Utilities Commission of Belize Initial Decision in the 2007 Annual Review Proceeding for Belize Electricity Limited

2006 Advisor to the Division of Air Resource Management, Florida Department of Environmental Protection (FDEP) Regarding Implementation the Clean Air Interstate Rule (CAIR)

HONORS AND AWARDS

2007 Fulbright Senior Specialist Grant in Economics with a specific request for expertise in electricity markets, electricity regulation, and distribution tariff design, Universidad de la República, Montevideo, Uruguay.

2007 Principal Investigator, PPIAF/World Bank Grant to conduct two on-site training courses on the regulation of the electric power sector and on independent power producers and power purchase agreements for the Electricity Authority of Cambodia. Grant award $59,900.

2006 "Efficient Market Clearing Prices in Markets with Non-Convexities" published in *European Journal of Operational Research* received New Jersey Policy Research Organization Bright Idea Research Award in Decision Sciences.

2003 Transportation and Public Utilities Group, Ph.D. Utilities Dissertation Award for "The Impact of State-Level Public Utility Commission Regulation on the Market for Sulfur Dioxide Allowances, Compliance Costs, and the Distribution of Emissions"

1992-97 Distinguished Instructor, Department of Economics, University of Minnesota

1995-96
1994-95 Walter Heller Award for Outstanding Teaching of Economic Principles, Department of Economics,
1993-94 University of Minnesota
1992-93

1991-92 Distinguished Teaching Assistant, Department of Economics, University of Minnesota

1991 Phi Beta Kappa, University of Florida

Referee and Review Experience

IEEE Transactions on Power Systems

Ecological Economics

Environmental Science and Technology

Determining the Economic Value of Coastal Preservation and Restoration on Critical Energy Infrastructure, prepared for The Economic and Market Impacts of Coastal Restoration: America's Wetland Economic Forum II, September 28, 2006 Washington, DC

National Research Council of the National Academy of Sciences report entitled "Changes in New Source Review Programs for Stationary Sources of Air Pollutants", February 2006

California Energy Commission (CEC) Energy Innovations Small Grant (EISG) Program

Energy Journal

Journal of Environmental Economics and Management

IEEE PES Letters

IASTED International Journal of Power and Energy Systems

The Next Generation of Unit Commitment Models B. Hobbs, M. Rothkopf, R. O'Neill, and H.P. Chao editors

2001.

Professional Affiliations

American Economic Association
International Association for Energy Economics
Association of Environmental and Resource Economists
IEEE Power and Energy Society

EXPERT TESTIMONY

***PJM Interconnection, L.L.C.* FERC Docket No. ER09-1063-004, Affidavit in Support of PJM's Compliance Filing with Order No. 719 and Order on Compliance Filing *PJM Interconnection, L.L.C.*, 129 FERC ¶ 61,250 (2009). June 18, 2010**
In support of its compliance filing to establish a mechanism that ensures appropriate pricing during periods of operating reserve shortages, as required by the Commission's Order No. 719, I provided the following: 1) A high-level overview of PJM's markets, planning, and operations, including a description of what is meant by an operating reserve shortage, and how such shortages arise; 2) An overview of PJM reserve requirements, current reserve market structure, and data on PJM's prices and operations at times when the grid it manages has experienced operating reserve shortages; 3) A showing why PJM's then current scarcity pricing not satisfy the Commission's Order No. 719 criteria for operating reserve shortage pricing mechanisms; 4) Description of the main elements of PJM's proposal to comply with Order No. 719's shortage pricing policy, and how PJM's proposal satisfies the six criteria for reserve shortage pricing set by Order No. 719.

***PJM Interconnection, L.L.C.* FERC Docket No. ER09-1063-004, Affidavit in Support of Answer to Comments and Motion for Leave to Answer to Protests, August 23, 2010.** The purpose of this affidavit is to provide the following regarding PJM's proposed shortage pricing mechanism: 1) The complementary relationship between capacity adequacy in the Reliability Pricing Model ("RPM") and shortage pricing; 2) Additional evidence showing why PJM' shortage pricing proposal leads to energy prices that reflect the cost and/or value of energy, allocates energy to those who value it most, enhance operational reliability, and leads to efficient market outcomes while the alternate proposal from the Independent Market Monitor (IMM) fails to achieve any of these goals; 3) An explanation of how the proposed mechanism is consistent with shortage pricing mechanisms in the New York Independent System Operator ("NYISO") and ISO New England ("ISO-NE") that the Commission has already approved as Order 719 compliant.

***PJM Interconnection, L.L.C.* FERC Docket No. ER12-513, Affidavit in Support of Filing to Update its RPM Auction Parameters (aka Triennial Review) December 1, 2011.** This affidavit was submitted in support of three aspects of PJM's proposed changes related to PJM's capacity market, known as the Reliability Pricing Model ("RPM") including: 1) the continued use of a nominal levelized approach to calculating the estimated Cost of New Entry ("CONE") that is used in RPM's Variable Resource Requirement ("VRR") Curve; 2) retention of a combustion turbine ("CT") as the Reference Resource.

***PJM Interconnection, L.L.C.* FERC Docket No. ER-14-2490, Affidavit in Support of Filing to Update its RPM Auction Parameters (aka Quadrennial Review) September 25, 2014** This affidavit was submitted in support of five aspects of PJM's proposed changes related to PJM's capacity market, known as the Reliability Pricing Model ("RPM"): 1) adoption of The Brattle Group's ("Brattle") recommended VRR Curve shape right shifted by 1% of the Installed Reserve Margin ("IRM"); 2) continued use of a nominal levelized approach to calculating the estimated Cost of New Entry ("CONE") that is used in RPM's Variable Resource Requirement ("VRR") Curve; 3) retention of a combustion turbine ("CT") as the Reference Resource; 4) use of a composite of Bureau of Labor Statistics ("BLS") indices to adjust Gross CONE estimates in between periodic VRR parameter reviews; and 5) adoption of the labor estimates provided by the PJM Independent Market Monitor ("IMM") to determine Gross CONE values.

Grid Reliability and Resilience Pricing **FERC Docket No. RM18-1, Affidavit in Support of the Electric Power Supply Association (EPSA), October 23, 2017**. This affidavit provides evidence the Department of Energy Notice of Proposed Rulemaking ("NOPR" or "Proposal") released on September 28, 20171 and appearing in the Federal Register on October 2, 2017 does nothing to enhance reliability or "resiliency" of the bulk power system and will only succeed in distorting wholesale power markets while also raising costs. Consequently, my affidavit supports EPSA's contention the NOPR should be rejected outright by the Commission.

ISO New England Inc. and New England Power Pool Participants Committee**, FERC Docket No. ER18-620-000, Affidavit in Support of the Protest of the New England Power Generators Association, Inc. January 29, 2018.** In summary, my affidavit explains that the proposed updated DDBT from $5.50/kW-month to $4.30/kW-month: 1) Relies on a flawed and logically inconsistent methodology that differs from the DDBT methodology approved by the Commission three years ago; 2) Sets a dangerous precedent in ISO-NE taking a position on the direction of its Forward Capacity Market ("FCM") in terms of supply-demand balance and expected market prices that could anchor expectation of market participants. The anchoring of such expectations can change FCA bidding and operational behavior that could harm reliability; 3) The previous methodology approved by the Commission of using Static De-List Bids from oil steam and oil combustion turbine generators remains the appropriate methodology for determining the DDBT; and 4) The cost-based DDBT is likely higher than for FCAs 10-12 given that net going forward costs for oil steam and oil combustion turbine units has likely increased given their age, and other risks and opportunity costs that may be coming into play. My affidavit concludes that the current DDBT should be retained until such time as a new DDBT threshold and be determined using the current Commission-approved methodology following the discovery of the actual costs and risks faced by oil units.

Petition for Determination of Need for Seminole Combined Cycle Facility in Docket No. 20170266-EC and Joint Petition for Determination of Need for Shady Hills Generating Facility in Docket No. 20170267-EC, January 29, 2018. Testimony and Exhibits on Behalf of Quantum Pasco Power, LP, Michael Tulk, and Patrick Daly. My testimony supports the notion that there is no need for either combined cycle facility as Seminole Electric has consistently over-forecast its load growth since the "great recession" and that once correcting for these large errors, there is no need to build two new combined cycle facilities when there where other lower cost merchant generator facilities that offered their capacity to Seminole.

PJM Interconnection, L.L.C. **FERC Docket No. E18-34, Affidavit in Support of EPSA's Filing and Comments in PJM's Fast Start Pricing Proposal, March 14, 2018** My affidavit in this proceeding provides support for PJM's desire to allow resources with up to two-hour start up times to be considered "fast start" resources and to set price in accordance with the fast start pricing principles the Commission has enumerated in its Fast Start Pricing NOPR. I explain PJM's use of IT SCED and request to allow two-hour start time resources to set prices as fast start resources is entirely consistent with the ideas the Commission has enumerated with respect to fast start pricing.

PJM Interconnection, L.L.C. Capacity Repricing or in the Alternative MOPR-Ex Proposal: Tariff Revisions to Address Impacts of State Public Policies on the PJM Capacity Market**, FERC Docket No. ER18-1314-000, Affidavit is Support of Comments of American Petroleum Institute, JPower USA Development, Ltd., and Panda Power generation Infrastructure Fund, LLC May 7, 2018.** My affidavit provides evidence that 1) The PJM Capacity Repricing Proposal is not just and reasonable and is unduly discriminatory and results in an inefficient commitment of resources; 2) The alternative proposal from PJM, MOPR-Ex, is just and reasonable and results in the most efficient and cost-effective se of resource commitments; and 3) The current and previous iterations of the MOPR are not just and reasonable and are unduly discriminatory because they do not apply to existing resources and they only apply to gas-fired resources. Furthermore, my affidavit provides evidence that MOPR has always been viewed as a market power mitigation mechanism that was originally intended to thwart or mitigate the exercise of buyer-side market power. I show in this affidavit that MOPR, and in particular MOPR-Ex, still is a powerful market power mitigation tool that mitigates exercise of supplier market power that are facilitated by the current round of state subsidies to generation. Moreover, I show that Capacity Repricing helps facilitate the exercise of supplier market power through three different means.

***Grid Resilience in Regional Transmission Organizations and Independent System Operators,* FERC Docket No. AD18-7-000, Affidavit is Support of Comments of the American Petroleum Institute, May 9, 2018. T**his affidavit focuses of the comments submitted by PJM and: 1) Supports the idea that in the context bulk power system markets and operation resilience and reliability are indistinguishable and that markets and well-designed incentives are the best avenue to achieve a resilient and reliable bulk power system; 2) Explains why market mechanisms rather than suspension of market and command and control regimes are better at achieving resiliency/reliability even during emergency conditions and that PJM has not made a case for being given the authority to suspend markets; 3) That PJM has not made the case that price formation through integer relaxation is linked to resilience/reliability while other price formations that are crucial to reliability/resilience such as shortage pricing and fast start pricing are being considered concurrently; and 4) So-called "fuel security" is only a minimal contributor to resilience/reliability while transmission and distribution assets are the leading causes for shedding firm load and gas-fired units have been shown to not even being the leading category of generation outages. With respect to generator reliability/resilience, simply providing additional compensation (or minimize penalties) to generators in wholesale markets, without any ties to generator performance, does nothing to enhance reliability/resilience of generators to withstand or minimize the impact of adverse events on the bulk power system. Experience in PJM prior to, and following the discussion and implementation of capacity performance has shown this to be the case as generator performance has improved even in the face of lower energy market prices.

***New England Power Generators Association, Complainant v. ISO New England Inc., Respondent*. FERC Docket No. Docket No. EL18-154-000, Affidavit in Support of Complaint and Request for Expedited Consideration of the New England Power Generators Association, Inc. May 24, 2018** This affidavit in support of NEPGA's complaint shows the impact of treating Mystic Units 8 and 9 as a price taker on the ISO-NE markets as well as NEPGA's proposed alternative to accommodating the participation of the Mystic units. Discussions include: 1) treating Mystic and other resources retained for fuel security as price takers will do significant harm to the competitiveness of the FCM market and is inconsistent with the first principles of capacity markets articulated by the Commission; 2) the proposal to insert an above market cost resource into the FCM as a price taker does exactly the same harm as an exercise of buyer-side market power, which he Commission has found to be unjust, unreasonable, and unduly discriminatory; and 3) the proposed remedy offered by NEPGA does not distort the results of the Forward Capacity Auction, results in competitive pricing outcomes in FCA, does not displace otherwise economic resources, and provides better reliability outcomes for ISO-NE load than the current ISO-NE proposal.

***New England Power Generators Association, Complainant v. ISO New England Inc., Respondent*. FERC Docket No. Docket No. EL18-154-000, Affidavit in Support of the Motion for Leave and Answer of the New England Power Generators Association, Inc. June 19, 2018.** This affidavit in support of NEPGA's answer refutes the answer of ISO-NE and protesters and responds that nothing in ISO-NE's answer to the Complaint or the protests to the Complaint provides a basis for ignoring that treating the Mystic Units as price takers would suppress prices below competitive levels and inefficiently displace otherwise economic resources in a manner that is observationally equivalent to the harm done by an exercise of buyer-side market power.

***Panda Stonewall, LLC.* FERC Docket No. ER17-1821-002, Testimony is Support of Panda Stonewall, LLC Reactive Power Filing, July 2, 2018.** This testimony supports Panda Stonewall's reactive power rate case that has gone to hearing and in particular supports the inclusion of firm gas pipeline transportation, the use of proxy cost of capital values from the PJM CONE study, and supports the inclusion of other administrative and overhead costs consistent with fixed, going forward costs incurred by Panda Stonewall to remain in commercial operation. Furthermore, the testimony puts the costs of reactive power into the context of the wider PJM market and other opportunities for compensation and well as providing historical context around the Commission-approved AEP Methodology for reactive power rates.

***ISO New England Inc.* FERC Docket No. ER18-2364-000, Affidavit in Support of the Protest of the New England Power Generators Association, Inc. September 21, 2018.** This testimony supports NEPGAs protest that the proposed ISO-NE treatment of resources held for winter fuel security as price takers in the FCA makes no sense since winter fuel security is not associated with overall resource adequacy which is based on the summer peak. Moreover, the testimony shows clearly the artificial price suppression that would occur based on ISO-NE proposed treatment of resources held for winter fuel security in the FCA.

Calpine Corporation v. PJM Interconnection, L.L.C. Docket No, EL16-49; PJM Interconnection L.L.C. Docket No. ER18-1314-000, ER18-1314-001, EL18-178 **Affidavit in Support of the Electric Power Supply Association, October 2, 2018.** This testimony refutes the idea that the Commission proposed remedy a resource specific FRR Alternative equally removes both demand and supply from the market and therefore does no harm. Such a mechanism is the equivalent of an exercise of buyer side market power, artificially reduces price below competitive levels, inefficiently displaces lower cost, economic resources with higher cost resources, shifts cost and benefits between market participants, and reduces overall market efficiency. Additionally, PJM market simulations for scenarios from the 2020/2021 auction show the kind of damage that can be done to the market through the proposed remedy or equivalently buyer sider market power by showing prospective price decreases and generation displacement, and the level of subsidy that could be used to facilitate a successful exercise of buyer-side market power.

Panda Stonewall, LLC. **FERC Docket No. ER17-1821-002, Rebuttal Testimony is Support of Panda Stonewall, LLC Reactive Power Filing, October 12, 2018.** This rebuttal testimony supports Panda Stonewall's reactive power rate case responding to interveners and FERC staff and in particular supports the inclusion of firm gas pipeline transportation, the use of proxy cost of capital values from the PJM CONE study, and supports the inclusion of other administrative and overhead costs consistent with fixed, going forward costs incurred by Panda Stonewall to remain in commercial operation. Furthermore, the testimony puts the costs of reactive power into the context of the wider PJM market and other opportunities for compensation and well as providing historical context around the Commission-approved AEP Methodology for reactive power rates.

In the Matter of the Implementation of L. 2018, c. 16 Regarding the Establishment of a Zero Emission Certificate Program for Eligible Nuclear Power Plants, New Jersey Board of Public Utilities, **BPU Docket No. EO 18080899**, **Testimony in Support of PJM Power Providers, October 22, 2018.** This testimony responds to questions posed by the BPU in this docket and provides analysis showing that the nuclear units in New Jersey seeking ZECs are not in need of them to remain in commercial operation. The testimony shows that these resources, given know forward prices for energy and capacity prices are able to cover their going forward costs in the absence of subsidies in the form of ZECs and will remain in commercial operation in spite of warnings these resources will retire in the absence of ZEC payments.

Calpine Corporation v. PJM Interconnection, L.L.C. Docket No, EL16-49; PJM Interconnection L.L.C. Docket No. ER18-1314-000, ER18-1314-001, EL18-178 **Affidavit in Support of the Electric Power Supply Association, November 6, 2018.** This testimony responds to the Illinois Commerce Commission's protest that suggests the RPM Capacity Market be eliminated and replaced by an energy-only market construct because the capacity market is not a market at all. It also responds to the notion that markets should account directly for environmental policy and because they do not, the Illinois zero emission credit program for nuclear resources is justified. The testimony refutes these ideas by describing in detail that all markets have administrative rules and that markets can account for environmental policies when properly formulated to put a price on emissions rather than subsidizing resources out-of-market. Moreover, this testimony provides evidence of the need for the RPM Capacity Market to maintain resource adequacy as an energy only construct would not result in sufficient resources covering going forward costs in the energy market alone.

Alberta Utilities Commission, Consideration of ISO Rules to Implement and Operate the Capacity Market, Proceeding No. 23757, **Evidence in Support of ENMAX Corporation, February 28, 2019.** This evidence outlines the elements of the Alberta Electric System Operator (AESO) proposed capacity market framework that require changes to make align the capacity market with fair, efficient, and openly competitive market principles. The evidence addresses the resource adequacy model, capacity value of resources, penalties and bonuses, market power mitigation, Net CONE determination, and interactions with the energy market framework. The evidence also provides a high-level overview of the objectives of a capacity market and how it should interact with the energy and retail markets in Alberta.

In the Matter of the Implementation of L. 2018, c. 16 Regarding the Establishment of a Zero Emission Certificate Program for Eligible Nuclear Power Plants, New Jersey Board of Public Utilities, **BPU Docket No. EO 18080899**, **Response to Staff Questions on Accounting for Risk in Support of PJM Power Providers, March 8, 2019.** This is a response to BPU staff questions regarding market risk. This response discusses the mitigation of overall market risk based on changing conditions, optimal energy market offers and mitigation of energy market operational risk, and optimal

offers and risk mitigation in the capacity market that are available to all generation resources including nuclear resources.

***In the Matter of the Implementation of L. 2018, c. 16 Regarding the Establishment of a Zero Emission Certificate Program for Eligible Nuclear Power Plants, New Jersey Board of Public Utilities,* BPU Docket No. EO 18080899**, **Reply Testimony in Support of PJM Power Providers, March 19, 2019.** This reply testimony responds to PSEG comments regarding the need for ZECs for New Jersey's nuclear units. This reply testimony updates the economic analysis showing New Jersey nuclear units are currently profitable and expected to remain profitable in the future. Furthermore, this reply points out that PSEG did not dispute the costs used in the initial analysis or the idea that new entry of combined cycle gas generation can reduce emissions at zero cost at the margin given these resources will enter the market absent subsidies. The reply argues, contrary to what is stated by PSEG, that the threat to retire is not credible given the statements and evidence provided by PSEG in its Securities and Exchange Commission (SEC) filings. This reply also provides evidence that it would be infeasible for PSEG to buy out of its capacity commitments in Incremental Auctions (IAs) given the supply and demand conditions present in IAs to date.

***Alberta Utilities Commission, Consideration of ISO Rules to Implement and Operate the Capacity Market, Proceeding No. 23757,* Reply Evidence in Support of ENMAX Corporation, April 4, 2019.** This evidence replies to the comments of other interveners regarding various elements of the Alberta Electric System Operator (AESO) proposed capacity market framework. The reply evidence responds to intervener comments on elements of the Net CONE determination, capacity and energy market power mitigation, the capacity value of resources inconsistencies between the resource adequacy model and offered supply, and penalties and bonuses.

Colorado Public Utilities Commission in the Matter of the Commission's Implementation of §§ 40-2.3-101 and 102, C.R.S. The Colorado Transmission Coordination Act, PROCEEDING NO. 19M-0495E, in Support of the Intermountain Rural Electric Association, November 15, 2019. This evidence provides the Colorado Commission with an overview of the benefits of RTO markets for electric cooperatives.

***American Transmission Systems Incorporated, Docket No. ER20-1740* Affidavit is Support of Buckeye Power Inc. Counter the Capacity Market Benefits of ATSI Moving from MISO to PJM and Recovery of Transition Costs, May 29, 2020**. This affidavit provides empirical evidence and theoretical support that load connected to the ATSI transmission system paid more in capacity costs in PJM than they would have paid had ATSI stayed in MISO to counter ATSI's argument that ATSI connected load would have paid more for capacity had ATSI remained in MISO.

***Alberta Utilities Commission ("AUC") Distribution System Inquiry Proceeding 24116*, Response from Kalina to AUC Information Request Round 2, Jointly with Regulatory Law Chambers, Terradigm Energy, Inc, and Nican International Consulting, Ltd on Behalf of Kalina Distributed Power, June 17, 2020.** This response to information requests provides support for an optimal distribution tariff design that rewards resources that reduce the need for additional upgrades and reduce line losses and send price signals regarding the optimal location on the distribution system. This response also argues against tariff policies that would inefficiently charge such resources for costs they do not cause to either the distribution system or the transmission system and argues that efficient pricing is consistent with the competitive objectives of the Alberta energy market.

***Investigation into Resource Adequacy Alternative, New Jersey Board of Public Utilities,* BPU Docket No. EO 20030203**, **Prepared Comments in Support of PJM Power Providers, June 24, 2020.** These prepared comments address the benefits of Reliability Pricing Model (RPM) Participation for New Jersey customers and the additional costs of moving to a Fixed Resource Requirement (FRR) Plan as proposed by PSEG and Exelon in earlier comments. These comments note the extra costs could be over $700 million per year for New Jersey customers and would facilitate the exercise of market power by a small set of generation owners.

***American Transmission Systems Incorporated, Docket No. ER20-1740* Reply Affidavit is Support of Buckeye Power Inc. Counter the Capacity Market Benefits of ATSI Moving from MISO to PJM and Recovery of Transition Costs, June 25, 2020**. This reply affidavit supports the previously supplied empirical evidence and theoretical support that load connected to the ATSI transmission system paid more in capacity costs in PJM than they would have paid had ATSI

stayed in MISO to counter ATSI's argument that ATSI connected load would have paid more for capacity had ATSI remained in MISO. Additionally, the reply affidavit responds to ATSI critiques of the original affidavit and the ATSI responses to answers.

Alberta Utilities Commission ("AUC") Distribution System Inquiry Proceeding 24116, **Concluding Remarks of Kalina Distributed Power, Jointly with Regulatory Law Chambers, Terradigm Energy, Inc, and Nican International Consulting, Ltd on Behalf of Kalina Distributed Power, July 15, 2020.** These concluding remarks reiterates support for an optimal distribution tariff design that rewards resources that reduce the need for additional upgrades and reduce line losses and send price signals regarding the optimal location on the distribution system. These concluding remarks provide established economic theory to explain why the current policies that inefficiently charge such resources for costs they do not cause are not in the best interests of Alberta's energy market or Alberta energy customers.

Investigation into Resource Adequacy Alternative, New Jersey Board of Public Utilities, **BPU Docket No. EO 20030203**, **"Prospective Minimum Offer Price Rule Price Floors and Cost-Effectiveness of the PSEG/Exelon Fixed Resource Requirement Plan for New Jersey" in Support of PJM Power Providers, July 22, 2020.** This whitepaper responds to the PSEG and Exelon comments submitted on June 24, 2020 and responds to the report of the PSEG/Exelon Consultant assertions about the alleged cost savings of moving to a Fixed Resource Requirement (FRR) Plan as proposed by PSEG and Exelon in earlier comments. This paper also discusses the Minimum Offer Price Floor levels for various clean energy resources to show they would largely not be excluded from the RPM capacity market and would likely clear the market given historic capacity prices.

PJM Interconnection, L.L.C. FERC Docket No. EL19-58-003 "Forward Looking Energy and Ancillary Service Offset," **Affidavit in Support of Comments of the Electric Power Supply Association, September 2, 2020.** This affidavit supports and explains PJM's forward looking energy and ancillary service offset filing in the context of Commission approved methods that use the same framework as the energy and environmentally limited opportunity costs which uses forward looking fuel and power prices in much the same way as the PJM proposal. The Affidavit also calls for further analysis of the forward-looking methodology once there is some realizations of actual power and gas prices compared to the forward prices used in the methodology.

POLICY WHITEPAPERS and Reports

NYISO Meter Data Study-Final Report, December 8, 2017. Available at https://www.nyiso.com/documents/20142/1391862/NYISO-Meter-Data-Study-Report.pdf/db0de386-04b1-8818-3f77-194bc71a8c37. This report examines the meter data policies in the NYISO in comparison to similar polices in PJM, CAISO, and ISO-NE and the role of entities providing meter services for DER as may be required into the future. This report address and provides recommendations on 1) Baselines for DER as required and modification to existing baselines if needed; 2) Potential for the statistical sampling of a subset of DERs for establishing baselines and for market settlement in the energy, capacity and ancillary services markets; 3) Interactions of baselines and DER aggregation; and 4) Simultaneous participation in both retail and wholesale markets by DERs.

The Market and Financial Position of Nuclear Resources in Pennsylvania, April 5, 2019. Available at https://citizens-against-nuclear-bailouts.prezly.com/new-report-highlights-long-term-profit-projections-for-pennsylvania-nuclear-generators and https://cdn.uc.assets.prezly.com/210b1e76-c577-4ffb-9bb9-c60c1f4299b8/-/inline/no/
This paper shows that nuclear resources in Pennsylvania are profitable historically and going forward and are in no need of any kind of subsides to keep these resources in service.

The Market and Financial Position of Nuclear Resources in Ohio, May 13, 2019. Available at https://img1.wsimg.com/blobby/go/30b6d3a5-dffd-4a1b-9b4d-0bf3451282cd/downloads/OH%20Nuclear%20Analysis%2020190513-final.pdf?ver=1559092681975
This paper shows that nuclear resources in Ohio, Davis-Besse and Perry, are profitable historically and going forward and are in no need of any kind of subsides to keep these resources in service as had been proposed under House Bill 6.

Economic Benefits to Ohio Electricity Consumers from the Repeal of House Bill 6, September 16, 2020. This paper shows that the Repeal of HB 6 in Ohio would lead to lower electricity bills for Ohio consumers with saving coming from keeping energy effic8ieny and demand response programs, and the repeal of subsidies for legacy coal units and the Davis-Besse and Perry nuclear units.

Document Content(s)