

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of the)	
Application of Ohio Power Company for)	
Authority to Establish a Standard Service)	Case No. 23-23-EL-SSO
Offer Pursuant to §4928.13, Ohio Rev. Code,)	
in the Form of an Electric Security Plan)	

In the Matter of the Application of Ohio)	
Power Company for Approval of Certain)	Case No. 23-24-EL-AAM
Accounting Authority)	

Direct Testimony of
Muralikrishna Indukuri
In Opposition to the Stipulation and Recommendation

Portfolio Manager
Constellation Energy Generation, LLC

On Behalf of Intervenors
Constellation Energy Generation, LLC
and
Constellation NewEnergy, Inc.

Dated: September 20, 2023

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1 **I. INTRODUCTION**

2 **A. Identification of Witness**

3 **Q. Please state your name and your business address.**

4 **A.** My name is Muralikrishna Indukuri, and my business address is Constellation Energy
5 Generation, LLC (“CEG”), 1310 Point Street, 8th floor, Baltimore, MD 20231.

6
7 **Q. Please describe your position and job responsibilities with CEG.**

8 **A.** I am a Portfolio Manager for CEG. In this role, I am responsible for Constellation’s
9 participation in competitive utility default service (also referred here as the standard service
10 offer or “SSO”) auctions in PJM and ISO-NE, including competitive procurements in Ohio,
11 Pennsylvania, Delaware, New Jersey, Maryland, District of Columbia, Massachusetts, Rhode
12 Island, Connecticut, New Hampshire and Maine. In this role, I lead all the internal and
13 external processes associated with participating in default service procurements, namely: filing
14 the necessary applications and pre-bid collateral to qualify to bid in default service
15 procurements; obtaining necessary internal approvals; submitting final binding bids and/or
16 leading real-time participation in live auctions; and negotiating and executing Master SSO
17 Supply Agreements and Transaction Confirmations. Having participated in and served default
18 service load across multiple ISOs, states, procurement formats (sealed bid versus descending
19 clock) and product structures, I have a unique perspective of the risks associated with
20 participating in default service procurements and the advantages/disadvantages of the various
21 procurement/product structures from a customer, SSO supplier and market standpoint.

1 **Q. Please describe your educational and business experience.**

2 **A.** I am an Engineer by qualification with a Bachelor of Engineering from University College of
3 Engineering, Osmania University, Telangana, India and a Master of Science in Computer
4 Engineering and a Master of Science in Computer Science from Drexel University. I have
5 over 18 years of experience in the energy industry (both retail and wholesale) having held
6 various roles in pricing, trading, and risk management. Prior to my current role in Portfolio
7 Management, I was a Principal in Retail Pricing at CEG, where I was responsible for
8 optimizing and expanding the functionality of the Retail Pricing model to price structured
9 transactions and products to meet customer needs and better manage the energy risk for
10 customers. Prior to this role, I held various roles in Trading and Risk Management
11 organizations of NRG. As a member of the PJM desk specifically responsible for optimizing
12 NRG's Illinois fleet of ~5 gigawatts and by providing analytical support to NRG's PJM desk,
13 I developed a very good understanding of the supply/demand dynamics inherent to
14 deregulated power and gas markets in North America. As a member of NRG's risk team, I
15 worked on modeling the risk associated with acquisition of retail books with customers across
16 multiple states and ISOs. I also provided analytical support for the acquired retail business to
17 expand their retail footprint to states and utilities that they were not in and, in doing so,
18 acquired a good understanding of default service procurements and the interplay between the
19 procurements and retail products. Prior to NRG, I held various roles in the Risk Management
20 Division of Constellation NewEnergy, Inc. ("CNE"). While working in the risk management
21 roles at CNE and in retail pricing, I had the opportunity to interact with large industrial and
22 commercial customers and have a good understanding of the product structures that they look
23 for to manage their energy risks. I also developed a good understanding of the risks inherent

1 in serving full requirements fixed-price products and other structured products as well as the
2 risk appetite of various customer classes.

3
4 **Q. On whose behalf are you testifying?**

5 **A.** I am testifying on behalf of CEG and CNE.

6
7 **Q. Please provide some background on the Constellation companies on whose behalf you**
8 **are testifying in the instant proceeding.**

9 **A.** Constellation Energy Corporation is the parent company of CEG and its wholly-owned
10 subsidiary CNE.

11
12 CEG is the nation's largest producer of clean, carbon-free energy. With an annual output that
13 is nearly 90 percent carbon-free, our hydro, wind and solar facilities paired with the nation's
14 largest nuclear fleet have the generating capacity to power the equivalent of 15 million homes.
15 CEG provides wholesale power and risk management services to wholesale customers
16 (distribution utilities, cooperatives, municipalities, power marketers, utilities and other large
17 load-serving entities) throughout the United States, in both regulated and competitive energy
18 markets. CEG is active in the PJM Interconnection, L.L.C. ("PJM") and Midwest Independent
19 System Operator ("MISO") wholesale power markets. CEG is an active participant in the
20 default service procurements across all utilities and states in PJM and, since market
21 restructuring in Ohio occurred, has sold power to utilities for wholesale delivery as well as
22 serving the needs of wholesale customers. In Ohio, CEG has participated in the default service
23 auction process since its inception, some of which was through its predecessor entities (CEG
24 was formerly known as Exelon Generation Company, LLC and, before a corporate parent's

1 merger with Exelon Corporation, it was Constellation Energy Commodities Group, Inc.).
2 CEG has routinely been a winning SSO bidder in Ohio.

3
4 CNE provides electricity and energy-related services to retail customers in Ohio as well as in
5 15 other states and the District of Columbia, serving over 2 million residential, public sector,
6 and business customers. CNE holds a certificate as a competitive retail electric service
7 (“CRES”) supplier from the Public Utilities Commission of Ohio (“PUCO” or “the
8 Commission”) to engage in the competitive sale of electric service to retail customers in Ohio
9 (specifically, PUCO Certificate No. 00-03E, which has been consistently renewed in PUCO
10 Case No. 00-1717-EL-CRS). CNE currently provides service to retail electric customers in
11 Ohio. For more than 20 years, CNE has been an active participant in the Ohio markets,
12 including active participation in the competitive market in the service territory of Ohio Power
13 Company (“AEP Ohio”).

14
15 CEG and CNE are collectively referred to in this testimony as “Constellation.”
16

17 **B. Purpose of Testimony**

18 **Q. What is the purpose of your Direct Testimony?**

19 **A.** My Direct Testimony addresses the proposal to continue procuring energy for its SSO
20 customers using a descending clock auction, conducted on a slice-of-system basis as agreed
21 upon in the Stipulation and Recommendation (Stipulation”). I will address the proposed
22 competitive bidding process (“CBP”) for SSO customers as agreed upon in the Stipulation,
23 which essentially maintains the status quo for the term of AEP Ohio’s fifth electric security
24 plan (“ESP 5”). My Direct Testimony also presents improvements and other PJM states’ best

1 practices to the utility's CBP for the ESP 5. These proposed improvements correspond with
2 the stated goals of the Commission of reducing SSO prices by attracting participants in the
3 AEP Ohio SSO auctions.
4

5 **Q. Does AEP Ohio have a CBP in place today?**

6 **A.** Yes, AEP Ohio has an auction-based CBP. CEG has participated in those SSO auctions, and
7 has first-hand knowledge of how they have proceeded and their results. The format is a
8 descending-price clock auction format. All bidders bid on a slice-of-system basis called
9 tranches and winning SSO suppliers enter into standardized Master SSO Supply Agreements.
10

11 **Q. Have you reviewed the Application in this proceeding?**

12 **A.** Yes, I have reviewed the Application and certain testimony that I found relevant to my Direct
13 Testimony.
14

15 **Q. Please describe AEP Ohio's Application.**

16 **A.** In the instant proceeding, AEP Ohio filed an Application with the Commission seeking
17 approval, as part of its ESP 5, of a CBP to procure electric power and energy for the provision
18 of SSO electric generation service to eligible AEP Ohio retail electric customers who do not
19 choose to purchase electric generation service from a CRES supplier or through aggregations
20 beginning June 1, 2024.¹ The Application proposed to continue the existing descending-price
21 clock SSO auction format, with all bidders bidding on a slice-of-system basis. The Application
22 proposed to include a Government Aggregation Standby Rider, purportedly to offset risk to
23 suppliers of standing by to serve that load. The Application proposed to use a combination of

¹ Application at 7-8; AEP Ohio Witness McCulty Direct, p. 3-4.

1 12-month, 24-month, and 36-month products, and an auction schedule that would
2 automatically adjust to include only products for which the results of PJM's Base Residual
3 Auction ("BRA") for capacity were known or expected to be known prior to the SSO Auction.²
4

5 **Q. Have you reviewed the Stipulation that was filed on September 6, 2023, in this**
6 **proceeding?**

7 **A.** Yes, I have. My focus was on Stipulation Section III.B., Standard Service Offer and
8 Competitive Bidding Process, which addresses the proposed CBP for SSO procurement for
9 the term of the ESP 5 unless modified by the Commission. The Stipulating Parties:

- 10 • agreed that the CBP would be modified to include a true-up to account for a proxy capacity
11 price, if needed; and
- 12 • recommended that all intervenor proposals for SSO/CBP modifications in this case be
13 dismissed without prejudice but may be considered in other SSO-related proceedings.
14

15 **Q. Is Constellation a signatory to the Stipulation?**

16 **A.** No, although Constellation actively participated in the settlement discussions that led to the
17 Stipulation. Constellation is now presenting to the Commission its recommendations to
18 reduce risk inherent in the current and the stipulated auction construct as described below,
19 and to bring lower prices to Ohio SSO customers given the absence of meaningful changes to
20 the SSO/CBP issues in any respect – (for example, including a provision as was present in the
21 stipulation in the recent AES Ohio ESP case³ permitting testimony on those recommendations
22 and a decision without being considered a modification to the stipulation).

² AEP Ohio Witness McCulty Direct, p. 9.

³ See Case Nos. 22-900-EL-SSO *et al.*, Stipulation at 4 (filed April 10, 2023).

1 **Q. Please summarize Constellation’s position regarding AEP Ohio’s stipulated auction**
2 **proposal.**

3 **A.** Constellation supports continuing the descending clock auction format, with the use of a
4 proxy capacity price when needed, for the setting of SSO rates for AEP Ohio’s retail
5 customers. However, the auction construct and Master SSO Supply Agreement terms and
6 conditions currently are not in the best interests of customers. Through my testimony,
7 Constellation will address the following:

- 8 • Certain features of the Ohio competitive electric market and the procurement process
9 increase risks to SSO suppliers, and by extension to customers served under the SSO;
- 10 • AEP Ohio (and Ohio in general) should adopt a competitive procurement methodology
11 tailored to meet the needs of consumers in the Ohio electric market; and
- 12 • Constellation’s proposed changes to the AEP Ohio CBP and the Master SSO Supply
13 Agreement to implement a contractual mitigation mechanism and to conduct auctions by
14 customer class that will help mitigate risks.

15 Each of these items will be discussed in detail below. The Commission has acknowledged and
16 warned customers regarding recent significant increases in the SSO rates of up to 88%.⁴ In
17 signing a Stipulation that not only ignores the risks inherent in the current auction construct
18 and the impact on customers, but goes so far as to recommend that all non-signatory proposals
19 for SSO/CBP modifications be dismissed. All Signatory Parties, including Staff, have missed
20 a great opportunity to mitigate risks and evolve the SSO/CBP into a more transparent,
21 efficient, and equitable electric marketplace for all SSO customers.

⁴ “News Bureau: Rising energy prices in 2023”, Public Utilities Commission of Ohio, April 2023, available at <https://puco.ohio.gov/news/rising-energy-prices-2023>; see also “PUCO encourages consumers to explore energy choice options”, Public Utilities Commission of Ohio, May 4, 2023, available at <https://puco.ohio.gov/news/ptc-june-changes>.

1 **Q. Please discuss Constellation's commitment to Ohio and Ohio consumers.**

2 **A.** Constellation, like many other competitive SSO and CRES suppliers, has been here in Ohio
3 offering electric service to consumers since the opening of the market to competition. We
4 continue to do so today. Constellation remains ready, willing, and able to provide service to
5 Ohio consumers.

6
7 **C. Context of the Instant Proceeding**

8 **Q. Are you familiar with the competitive retail electric market in Ohio?**

9 **A.** Yes. Ohio has a very robust competitive power market with multiple options for customers
10 to choose their suppliers. Ohio currently has 160 active CRES suppliers. Having been a SSO
11 supplier and an active participant via the default service procurements and through my prior
12 experience of having worked in retail, I have a good understanding of risks associated with
13 serving the default service load and the retail load, and the interplay between them.

14
15 **Q. Please discuss the competitive retail electric market in Ohio.**

16 **A.** Ohio has a robust competitive power market as evidenced by the number of CRES suppliers
17 currently active in Ohio. Customers in Ohio have an array of CRES suppliers to choose from,
18 to fulfill their energy needs. Ohio also has robust government aggregation activity, thus
19 offering customers another avenue to choose their CRES supplier by participating in local
20 government aggregation programs that are supplied at competitive rates. Eligible customers
21 who do not choose to get their electric supply from CRES suppliers (including aggregations)
22 are served under the SSO rates. The SSO rate is set via a CBP, the results of which are
23 approved by the PUCO.

1 **Q. What does the Stipulation propose for AEP Ohio’s CBP?**

2 **A.** Unless modified by the Commission, the Stipulation proposes to continue the existing
3 procurement process with few meaningful revisions. The proposed CBP is briefly described
4 in the Application, but more thoroughly presented through a collection of documents – a
5 Master SSO Supply Agreement, auction schedule, part 1 and part 2 applications to qualify to
6 bid in the auctions, bidding rules, and communication protocols. These separate documents
7 were attached to AEP Ohio Witness McCulty’s testimony as Attachments MWM-2 through
8 MWM-11 which along with the testimony of AEP Ohio Witness Mayhan on AEP Ohio’s now
9 proposed-to-be-withdrawn Standby Rider, I refer to as the “proposed CBP.”

10
11 The Stipulation recommends one further revision to the proposed CBP: to institute a capacity
12 proxy price if needed when an auction is conducted without the results of the PJM BRA for
13 that supply term(s) being known.

14
15 There may also be minor language changes, for clarification purposes, included in the
16 documents.

17
18 As stated earlier, the Signatory Parties recommended that all intervenor proposals for
19 SSO/CBP modifications in this case – not just their own -- be dismissed without prejudice
20 but may be considered in other undetermined SSO-related proceedings.

1 **Q. Will the proposal in Section III.B. of the Stipulation– the proposed CBP– appreciably**
2 **change AEP Ohio’s CBP in place today?**

3 **A.** No, unless further modified by the Commission, AEP Ohio’s proposed CBP would largely be
4 the same CBP as today’s CBP for another four years, the recommended term of the ESP 5.

6 **Q. Will the proposal in Section III.B. of the Stipulation – the proposed CBP –**
7 **meaningfully affect the attractiveness or competitiveness of AEP Ohio’s CBP?**

8 **A.** No, unless further modified by the Commission, AEP Ohio’s proposed CBP would largely be
9 the same CBP as today’s CBP for another four years, the recommended term of the ESP V.
10 As a result, the Stipulation has essentially proposed the status quo, with the same unnecessary
11 risks for SSO suppliers, the risk premium for which are ultimately borne by SSO customers.

13 **Q. What advice do you have for the Commission as it considers the stipulated CBP in the**
14 **instant proceeding?**

15 **A.** The instant proceeding provides the Commission with a unique opportunity to modify the
16 AEP Ohio SSO auction format to reflect the evolution that has occurred in the electric
17 markets generally in recent years and in Ohio’s competitive electric markets specifically.
18 Making the recommended changes set forth in this testimony will result in a more transparent,
19 efficient, and equitable electric marketplace in AEP Ohio’s service territory.

21 **Q. Has the Commission expressed an interest in changes for AEP Ohio’s CBP?**

22 **A.** Yes. The Commission has invited comments in several dockets, based on its stated concerns
23 regarding SSO pricing. However, none of those dockets address the auction construct issues,
24 which poses the single greatest risk to suppliers, and therefore the greatest impact on SSO

1 rates. In an Entry issued on January 3, 2023, in Case Nos. 17-2391-EL-UNC *et al.*, the
2 Commission asked for comments on the effectiveness of two modifications to the Ohio
3 electric distribution utilities' CBPs, including AEP Ohio's CBP, in order to investigate whether
4 those modifications would help significantly reduce prices resulting from SSO auctions. Those
5 proposed modifications were including six-month products in the mix of products for each
6 auction and to revise credit requirements for companies seeking to bid at the auctions.

7
8 In an Entry issued on July 26, 2023, in Case Nos. 23-781-EL-UNC, the Commission found it
9 necessary to revisit possible modifications to the electric distribution utilities' CBPs, including
10 AEP Ohio's CBP, in order to mitigate uncertainty surrounding PJM's capacity market. The
11 Commission sought comments on a proposed capacity proxy price mechanism.

12
13 **Q. Do you recommend that the Commission adopt the CBP, including revisions, as**
14 **proposed by AEP Ohio in its Application and in the Stipulation without further**
15 **modifications?**

16 **A.** No, I do not. I support continuation of a CBP in AEP Ohio's service territory and AEP
17 Ohio's proposed continuation of certain elements of the CBP, such as conducting two
18 auctions in a year and procuring a combination of 12-, 24-, and 36-month products. I also
19 support the use of a capacity proxy price, when the results of the PJM BRA are unknown at
20 the time of the auction.

21
22 However, the Stipulation falls short of addressing the most serious issues that exist with the
23 CBP as structured today and, instead proposes to perpetuate the issues that impact risks to
24 SSO suppliers and impact rates for customers. I recommend that the Commission improve

1 the stipulated CBP so that it would be more attractive to potential bidders, reduce risks to
2 SSO suppliers, and reduce SSO prices, by adopting the proposals set forth further in my
3 testimony.

4
5 **II. RISKS EXISTING WITH SERVING THE DEFAULT SERVICE LOAD UNDER THE STIPULATED**
6 **CONSTRUCT**

7 **Q. Do SSO suppliers take on risks in serving the default service load?**

8 **A.** Yes.

9
10 **Q. What are the risks in serving the default service load, generally speaking?**

11 **A.** Acting as an SSO supplier necessarily means taking some risks. SSO suppliers are
12 sophisticated portfolio managers, and have tools to mitigate certain risks, such as buying
13 hedges in forward electricity markets. Put simply, the SSO supplier creates a forecast of the
14 expected load that it will be obligated to serve based in large measure on information provided
15 during the bidding process, and the SSO supplier then procures energy in the forward market
16 to meet that expected load consistent with the SSO supplier's hedging strategy. To the extent
17 that SSO suppliers are able to effectively manage those risks, SSO auction prices will be lower,
18 which benefits default service customers. In previous years, although there were movements
19 on and off the SSO, and there were changes in usage during different seasons, load was
20 sufficiently predictable such that SSO suppliers were willing to and capable of effectively
21 managing risks.

1 **Q. How did that change?**

2 **A.** Recently, there has been unprecedented volatility both in the wholesale electric and natural gas
3 commodity markets. There were multiple factors that caused the volatility in general, and in
4 Ohio specifically. Geopolitical events and the disruption in supply chains, among other things,
5 resulted in both high inflation and high energy prices. Higher energy prices and high price
6 volatility increased the risk (and hence the cost) for SSO suppliers serving full requirements
7 load. SSO suppliers faced further increased risks because of unprecedented customer
8 migration (movement) to default service. This occurs because during times in which there are
9 higher prices in the energy market, customers will explore and return to default service, if a
10 lower-priced option, after their agreement with their CRES supplier has ended or potentially
11 terminating their CRES agreement early.

12
13 Thus, the customer migration results in compounding the risk that SSO suppliers are exposed
14 to. To serve the additional load above what the SSO supplier had originally forecasted, the
15 SSO supplier must procure additional energy in the forward energy markets for the
16 unanticipated load at prices that were substantially higher than originally projected. The prices
17 paid to procure that power are more than the SSO supplier will be paid to serve that load
18 under its Master SSO Supply Agreement.

19
20 **Q. Shouldn't the risk of customer movements on or off the SSO be a concern of the SSO**
21 **supplier alone?**

22 **A.** While it certainly is a concern, those actual losses or the risk of losses, and the costs to procure
23 a greater supply of energy than what previously was believed to be necessary and procured,

1 become the future cost of doing business and are reflected in SSO prices. Consequently, it
2 affects and should concern customers and the Commission, as well.

3
4 **Q. Are there unique risks in Ohio, including in the AEP Ohio service territory?**

5 **A.** Yes. In addition to universal risks inherent in the default service, there are two elements of
6 the Ohio default service procurement process that impose elevated risks, which are reflected
7 in SSO prices. Those risks that are unique to Ohio are governmental aggregation, and the
8 procurement of default service on a slice-of-system basis. Although the robust governmental
9 aggregation activity provides additional benefits and choice to Ohio governmental entities as
10 well their residents and businesses, it also poses greater risk to auction participants because
11 significant load may either come onto the SSO, or leave the SSO, all at once. The structure
12 of default service procurements on a slice-of-system basis, including all classes of customers,
13 is another area in which risks for serving Ohio default service load including the AEP Ohio
14 service territory, are exacerbated for SSO suppliers. Specifically, the load shape for
15 commercial and industrial customers can vary significantly, adding additional risk to SSO
16 pricing when the SSO load is procured on a slice-of-system basis for all customers, rather than
17 by class.

18
19 **Q. How have the risks associated with governmental aggregation in Ohio increased,**
20 **including in the AEP Ohio service territory?**

21 **A.** Although the categories of risk themselves have not changed, how they are valued has changed
22 dramatically, based on recent experience. SSO suppliers had not previously experienced either
23 the general market volatility to the levels seen recently, or the related behavior with customers
24 moving back to the SSO from aggregations and CRES suppliers. More recently, significant

1 shifts have occurred in aggregations. The risk also exists if a local governmental entity or the
2 CRES supplier serving the aggregation does not renew the supply agreement, which
3 automatically returns customers to the SSO unless a new CRES supplier is selected. Ohio
4 residential customers served through aggregations went from a high of approximately 73% to
5 a low of 53% in a single calendar year - 2022. This unprecedented drop is a direct result of
6 aggregators choosing to not continue with their CRES supplier contracts because the default
7 service price was much lower than market prices.

8
9 **Q. How have the risks associated with large commercial and industrial customers**
10 **increased?**

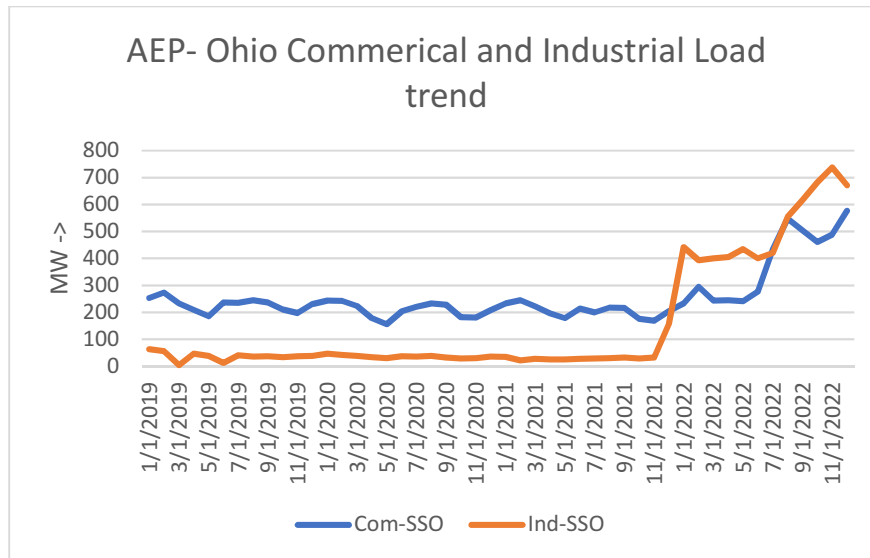
11 **A.** Customers have moved back to the SSO in numbers and load (MWh) not previously
12 experienced, particularly in the large commercial and industrial segments. Based on the timing
13 of previous SSO procurements and the circumstances that existed at the time of those
14 procurements, the SSO price was significantly below the prevailing market price. That price
15 difference can be particularly acute for large commercial and industrial customers, who have
16 diverse load characteristics and a wide degree of variability from one customer to the next.

17
18 **Q. What was the magnitude of the change in the commercial and industrial load on**
19 **default service in the AEP Ohio service territory in 2022?**

20 **A.** At its peak in 2022, the commercial load in AEP Ohio's service territory on the SSO was more
21 than 250% higher than the average SSO commercial load over the past three years (2019-
22 2021), while the industrial load in AEP Ohio's service territory was more than 1900% higher
23 than the average industrial SSO load over the same period. Figure 1 below illustrates the

significant changes (in megawatts) by the commercial and industrial load in AEP Ohio's service territory over the four-year period.

FIGURE 1⁵



Q. How does the reversion of large commercial and industrial customers back to the SSO affect the risk in serving the SSO load?

A. SSO suppliers had to serve a significantly higher and unpredictable load than SSO suppliers forecasted. SSO suppliers that purchased hedges in the forward markets based on the expected load would have been unhedged for the additional unanticipated commercial and industrial load, just as with changes in governmental aggregation load. Consequently, they would have to procure additional energy for the unanticipated load at a time when market prices were high.

⁵ See [Microsoft Power BI \(powerbigov.us\)](https://app.powerbigov.us/view?r=eyJrIjojZTliZDEzNGEtZjIhYi00YWVzLTljZjktMGZmNDg4OWE4ZDFkIiwidCI6IjUwZjhmY2M0LTk0ZDgtNGYwNy04NGViLTM2ZWQ1N2M3YzhhMjI9) containing AEP Ohio data on the Commission's Electric Choice Activity web page at <https://app.powerbigov.us/view?r=eyJrIjojZTliZDEzNGEtZjIhYi00YWVzLTljZjktMGZmNDg4OWE4ZDFkIiwidCI6IjUwZjhmY2M0LTk0ZDgtNGYwNy04NGViLTM2ZWQ1N2M3YzhhMjI9> (accessed September 20, 2023).

1 **Q. Is it just changes in the overall amount of load that is risky?**

2 **A.** No. It is not only changes to the total volume of load that creates risk, but unpredictable
3 variation in usage during the day or month or season, which I will refer to as “load shape”,
4 creates additional risk. For instance, residential customers typically have a pattern of usage
5 that is extremely weather-sensitive, with usage rising and falling in a predictable way, based on
6 temperature. Commercial customers that operate retail businesses have a different load shape
7 based on their business hours and type of business. Large commercial and industrial
8 customers, such as manufacturing facilities, have a load shape that is significantly different
9 from one customer to the next, and is also distinct from both residential customers and other
10 types of commercial customers. In fact, large commercial and industrial customers have a
11 load shape that is unique to the individual large commercial or industrial customer, and
12 forecasting these loads in a slice-of-system auction process is nearly impossible since there are
13 multiple drivers that affect their load.

14
15 **Q. What does lumping all different types of customers under a slice-of-system approach**
16 **do to the risk for SSO suppliers?**

17 **A.** Serving SSO customers on a slice-of-system basis, as opposed to by customer class, increases
18 risks dramatically because an SSO supplier does not have any reasonable assurance as to what
19 the overall load volume will be, or what the shape of the load will be since it could be any and
20 every customer in the utility service territory. Estimating that information, instead of actually
21 knowing it, creates inefficiencies, risk, and additional cost – all of which can be mitigated.

1 **Q. Have those risks affected customers?**

2 **A.** Yes, in several ways. First, in recent SSO auctions, including the AEP Ohio auctions, there
3 have been fewer bidders, which means that some SSO suppliers that had been active
4 participants in previous Ohio SSO auctions simply stayed away. In the 2020 and 2021 AEP
5 Ohio SSO auctions, there were 14 or 15 registered bidders in each auction, whereas in the
6 2022 Fall AEP Ohio SSO auction, there were only seven registered bidders. The number of
7 registered bidders did not significantly improve in the Spring 2023 AEP Ohio SSO auction.
8 Additionally, the AEP Ohio auctions held in Fall 2022 and in Spring 2023 resulted in
9 significantly higher Auction Clearing Prices (“ACPs”) than the results of auctions held in the
10 immediately preceding years. Figure 2 below illustrates the differences.⁶

12 **FIGURE 2**

Auction Date	Term	Total Bidders	ACPs in (\$/MWH)
March 24, 2020	06/01/2020-05/31/2021 06/01/2020-05/31/2022	14	36.74 40.00
November 2, 2020	6/01/21-5/31/22	15	46.71
March 9, 2021	06/01/2021-05/31/2022	15	46.35
November 2, 2021	06/01/2022-05/31/2023	14	55.14
March 8, 2022	06/01/2022-05/31/2023	11	69.27
November 1, 2022	06/01/2023-05/31/2024	7	119.98
March 7, 2023	06/01/2023-05/31/2024	8	88.55

13
14 **Q. How do AEP Ohio’s default service auction results compare to procurements in other**
15 **states?**

16 **A.** The high volatility and high commodity price environment were in effect when other utilities
17 in PJM conducted their default service auctions in Fall 2022 and Winter 2022-2023. Yet other

⁶ See the [AEP Ohio CBP](https://www.aepohiocbp.com/index.cfm?s=background&p=previousResults) web page at <https://www.aepohiocbp.com/index.cfm?s=background&p=previousResults> (accessed September 20, 2023).

1 states had greater bidder participation and lower ACPs, even considering procurement of
2 additional products. For example, in addition to procuring energy, Pennsylvania bids include
3 transmission and renewable energy credits (“RECs”), which were not a part of the AEP Ohio
4 default service auction products.

5
6 Although there were increases in the ACPs in other PJM default service auctions, the increase
7 in the AEP Ohio ACPs during auctions conducted near the same time was substantially higher,
8 as can be seen and as discussed further below and in Figure 3. This indicates that the risks are
9 higher in Ohio than in these other states. The procurement structure(s) and/or contractual
10 mitigation provisions in Pennsylvania, Maryland, and New Jersey were a significant factor in
11 drawing more bidder interest and in lower premiums in their respective default service
12 procurements.

13
14 **III. THE RISKS REFLECTED IN AUCTION CLEARING PRICES CAN BE MITIGATED**

15 **A. Implement Contractual Mitigation Measures**

16
17 **Q. Does Constellation have a recommendation to mitigate the migration risks, including
18 but not limited to government aggregations, that are reflected in the SSO price?**

19 **A.** Yes. The risk of a government aggregator returning customers to the SSO before the end of
20 the aggregation term, and all other migration risk, is borne by wholesale suppliers that are
21 winning bidders in the SSO procurement process. Constellation, as a wholesale supplier that
22 has been a participant and winning bidder in Ohio default service auctions since their
23 inception, is in the best position to understand all of the risks associated with serving default
24 service and what mitigates those risks. Unlike AEP Ohio’s now proposed-to-be-withdrawn
25 Standby Rider, which does not mitigate supplier risks and imposes new risks, Constellation

1 recommends that the Commission adopt a mechanism that will mitigate risks and benefits all
2 default service customers.

3
4 Specifically, Constellation recommends that AEP Ohio implement contractual provisions in
5 the Master SSO Supply Agreement similar to what is used in Maryland. These contractual
6 provisions limit the exposure to the SSO supplier to a specific load increase and a specific load
7 decrease from a set baseline load level, which I will refer to as an upper mitigation threshold
8 and lower mitigation threshold, respectively. I recommend an upper mitigation threshold of
9 five percent and a lower mitigation threshold of three percent. These percentages allow for
10 natural changes in load volume, while eliminating the need for SSO suppliers to include the
11 risk of dramatic changes in load volume in their bids. Although there is no magic number, the
12 higher the mitigation threshold percentage, the greater the risk that SSO suppliers will face,
13 which will be incorporated into bids. The mitigation threshold could either be expressed as a
14 percentage based on peak load contribution (“PLC”) values, or if the tranches are all the same
15 size, the mitigation threshold could be converted from a percentage to a flat megawatt amount
16 based on PLC values, as is the case in Maryland.

17
18 **Q. Please explain how the upper mitigation threshold would work.**

19 **A.** Winning bidders’ obligation would be set based on the PLC for the amount of load served at
20 the time of the auction using PLC values for the representative customer class, based on
21 Constellation’s recommended modification to conduct auctions by customer class. SSO
22 suppliers would be obligated to serve 100% of their fractional load in the designated class so
23 long as the aggregate of the daily PLC values for the representative customer class does not
24 exceed 105% of the aggregate as of the time of auction. If the aggregate daily PLC values

1 exceed 105%, then the supplier's fractional load exceeding the 105% PLC threshold would be
2 procured at market prices.

3
4 **Q. What would happen if customers returned to the SSO in sufficient quantity that the**
5 **upper mitigation threshold is exceeded?**

6 **A.** The SSO suppliers would serve that load, as well, but rather than serving the load at the SSO
7 bid price, the SSO supplier would settle with the utility for the fractional portion of its load
8 exceeding the PLC threshold at the locational marginal price. The cost to serve the load above
9 the mitigation threshold would be calculated along with the initial SSO price, and result in a
10 new, blended SSO price that would be published and applicable to all customers in that
11 particular class taking default service. If subsequently customers moved off of the SSO and
12 the aggregate of the customer PLCs being served was below the upper mitigation threshold,
13 the initial SSO price would be restored.

14
15 **Q. What benefit would the upper mitigation threshold have for customers?**

16 **A.** Based on the results of last year's auctions, SSO suppliers have seen that they could realistically
17 be obligated to serve 200% of the load taking SSO service at the time of the auction. In order
18 to mitigate their risk, SSO suppliers would have to procure energy for the term of the Master
19 SSO Supply Agreement at that volume, the costs of which would be reflected in their bid. Yet
20 if the load did not materially increase from the date of the auction, customers would have paid
21 for a risk that did not materialize. The upper mitigation threshold eliminates the risk of a
22 material increase in load from the date of the auction. It will result in lower ACPs that reflect
23 the costs to serve SSO customers, and further operates to manage risk on a contingent-event
24 basis instead of assessing a risk premium to all customer classes, all the time for all load served.

1 **Q. Please expand how the lower mitigation threshold would work.**

2 **A.** Similar to the upper mitigation threshold, we would establish a lower mitigation threshold,
3 which works in tandem with the upper mitigation threshold. Let's look at the lower mitigation
4 threshold of 3%. Coupled with the previously described 5% upper mitigation threshold, an
5 SSO supplier would be obligated to provide default service at the ACP within an 8% band –
6 5% above, 3% below. That band percentage would be established and maintained.

7
8 Assume that the aggregated PLCs for customers taking service under the SSO drops by more
9 than 3% from the aggregated PLCs for customers taking service under the SSO on the date
10 of the auction, say to 5% below the aggregated PLCs for customers taking service under the
11 SSO on the date of the auction. To maintain the band of 8% with 5% above and 3% below,
12 the upper mitigation threshold would be reduced by 2%. The lower mitigation threshold
13 allows an SSO supplier to eliminate high-priced hedges for that extra 2% above the new 8%
14 threshold, which may never be needed. Keep in mind that if the aggregated PLCs for
15 customers taking service under SSO is dropping, it is likely because the current market price
16 is lower than the SSO price, meaning that SSO suppliers bought energy at a price higher than
17 they can sell it back to the market, and actually lost money on the sale. However, being able
18 to plan for a specific amount of load to be hedged with the mitigation threshold will lower
19 volumetric load risk for SSO suppliers, thereby lowering the risk calculus that is reflected in
20 their bids and the ACP.

21
22 **Q. How would you respond to criticism that it shifts risk to customers?**

23 **A.** The primary difference with our contractual mitigation proposal as compared with both the
24 status quo and AEP Ohio's proposed-to-be-withdrawn Standby Rider is that under our

proposal, customers do not pay for migration risks beyond that which is reasonably forecasted. Rather, customers only pay for the actual service being provided within those limits, and only pay for service above the contractual mitigation threshold if the band is actually exceeded.

B. Conduct Default Service Auctions by Customer Class

Q. Based on experiences from other states' competitive default service auctions, in addition to general migration risks, are there ways to mitigate the risks associated with serving vastly different quantities of commercial and industrial load?

A. Yes. Based on my experience in participating in default service auctions around the country and on data from recent auctions in various utility territories in the region served by PJM Interconnection LLC that procure full requirements supply for their default service customers, I recommend that AEP Ohio's default service auctions be improved to remove the slice-of-system methodology and instead procure by customer class. I recognize that there is not a single "small commercial" customer class, for instance. When I refer to "customer class," I mean grouping customers that have similar characteristics, *i.e.*, served at similar voltages from those customers served at different voltages or simply based on residential versus commercial. In AEP Ohio's service territory, natural breakpoints would be: Residential (all residential customers or customers under residential revenue class at Secondary Voltage), Commercial (all small commercial and commercial revenue classes at secondary voltage) and Large Commercial and Industrial (all industrial and commercial revenue class customers at transmission and primary voltage) since these classes would result in customers with similar load characteristics being grouped together for auction purposes.

1 If there is any concern regarding competitiveness of the auctions with three customer classes
2 – which Constellation would not envision to be the case if adopting its recommendations
3 together, based on its experiences in other jurisdictions – conducting the auction to procure
4 supply for two separate classes would also mitigate risks compared to the current slice-of-
5 system construct. The classes could be all residential customers as one class and the rest of
6 the customers as the other. Alternatively, all residential and small commercial customers could
7 be a class and the rest of the non-residential customers could be the other class.

8
9 **Q. AEP Ohio conducts procurements using a slice-of-system approach, and that**
10 **methodology is currently used by other Ohio utilities. Why should the Commission**
11 **change it now?**

12 **A.** The fact that it has always been done that way is not a good reason to retain the status quo.
13 The commodity markets in 2022 subjected Ohio SSO procurements to a stress test with the
14 procurements failing the stress test (by resulting in high prices and low participation) and
15 resulting in the Commission’s desire to implement changes for lower SSO prices. Over a
16 decade ago, the Commission adopted a methodology that was practical, based on information
17 that was known at the time. The wholesale and retail electric markets have evolved in Ohio
18 and elsewhere (specifically, there has been a significant increase in the government aggregation
19 activity in Ohio) since the Commission took on the task of establishing competitive
20 procurements. We can learn from the experience in different states and recognize that, as the
21 world is a different place, the Ohio SSO auction construct should change along with the times
22 by adopting well-established best practices.

1 **Q. How do other PJM states structure their default service procurements?**

2 **A.** All Pennsylvania (PECO, PPL, METED, PENELEC, PENNPWR, WEST PENN PWR and
3 Duquesne) and Maryland utilities procure supply for default service load by class. New Jersey
4 procures supply for residential and small commercial customers together, with large
5 commercial and industrial customer supply being procured separately. No other jurisdiction
6 in PJM conducts a default service procurement that includes large commercial and industrial
7 customers with residential customers as a slice of the system.

9 **Q. How would procuring by customer class benefit AEP Ohio customers?**

10 **A.** This improvement for the auction format would benefit AEP Ohio customers in two
11 significant ways. First, it would provide SSO bidders with greater knowledge and therefore
12 predictability regarding the load they would be obligated to serve, as to the potential volume
13 and the load shape. With that knowledge and predictability comes decreased risk, which is
14 translated to lower auction clearing prices. As can be seen from Figure 3 below, segmenting
15 customer classes results in lower auction clearing prices. What is important to note, in addition
16 to the ACP, is the difference in the products being procured. In Ohio, default service auctions
17 are full requirements products for all classes. In order to make an apples-to-apples
18 comparison, Pennsylvania ACPs would need to net out the transmission and REC prices from
19 the ACP using FERC-approved transmission rates as published by PJM, and the REC
20 obligation by state from <https://www.dsireusa.org/> and REC Market prices from public
21 sources (i.e., Megawatt Daily). Doing so would further lower the auction prices in those
22 jurisdictions. As Figure 3 below shows, ACPs are higher in Ohio than other states, even
23 though Ohio's auctions procure fewer components as part of the auction product.

FIGURE 3

September-December 2022 PJM Auctions						
Auction Date	State	Utility	Term	Product	ACP in \$/MWh	Notes on Product
Sep-22 Oct-22 Nov-22 Nov-22	Ohio	Duke Energy	06/1/2023-05/31/2024	Slice of System	\$ 115.75	Fixed price full requirements product that includes energy, capacity and ancillaries
		First Energy Ohio			\$ 122.30	
		AEP			\$ 119.98	
		Dayton Power and Light/AES			\$ 113.42	
Sep-22	Pennsylvania	Duquesne	12/01/2022-11/30/2023	Residential	\$ 109.31	Fixed price full requirements product that includes energy, capacity ancillaries and REC's
			12/01/2022-11/30/2024		\$ 98.71	
			12/01/2022-11/30/2023	Small C&I	\$ 113.26	
			12/01/2022-11/30/2024		\$ 100.09	
Nov-22		Met-Ed	06/01/2023-05/31/2024	Residential	12/01/2022-02/28/2023	\$ 182.00
						\$ 100.59
						\$ 94.66
						\$ 100.88
		Penelec	06/01/2023-05/31/2024	Small Commercial		\$ 89.31
						\$ 107.37
						\$ 107.98
						\$ 113.33
West Penn Power		06/01/2023-05/31/2024	Small Commercial		\$ 97.75	
					\$ 106.47	
					\$ 129.93	
					\$ 102.82	
Oct-22		PPL Electric Utilities	12/01/2022-11/30/2023	Residential	\$ 106.47	Fixed price full requirements product that includes energy, capacity, ancillaries and REC's
			12/01/2022-05/31/2023		\$ 129.93	
			12/01/2022-11/30/2023		\$ 102.82	
			12/01/2022-05/31/2023	Small Commercial	\$ 130.86	
Sep-22	PECO	12/01/2022-11/30/2023	Residential	\$ 100.22	Fixed price full requirements product that includes energy, capacity, ancillaries and REC's	
		12/01/2022-11/30/2024		\$ 93.71		
		12/01/2022-11/30/2023		\$ 95.37		
		12/01/2022-11/30/2024	Small Commercial	\$ 94.81		

Q. What is the second way in which procuring default service by class would benefit customers?

A. The second benefit of procuring SSO generation by customer class is a better and more accurate allocation of costs that simultaneously eliminates cross-subsidies among differing customer classes. Supporting the continuing evolution of the competitive electric market includes eliminating cross-subsidies and appropriately allocating costs. The Commission should resist any approach that results in cross-subsidies and should actively take steps to eliminate existing cross-subsidies. Forcing certain customers to subsidize others does not lower total service costs, but serves only to distort the evaluations customers must make in considering their choices of supply and products – ultimately leading to inefficiency and higher total costs of service. The opportunity in this proceeding is to eliminate, as much as possible, the problem of cross-subsidies.

1 **Q. Please discuss the importance of the proper allocation of costs in relation to the**
2 **development of the competitive electric market.**

3 **A.** The proper allocation of costs to cost-causers can only improve the market, and customer
4 behavior. The failure to properly allocate costs inevitably leads to inaccurate pricing.
5 Inaccurate pricing leads to inefficient choices on the part of both consumers and those who
6 must make decisions about energy usage. To the extent that the actual cost to serve one class
7 of customers is attributed instead to another class of customers, then the prices of serving
8 those two classes, which may be quite different, will not be reflective of the actual cost to
9 serve.

10
11 **Q. If Constellation's proposal to conduct procurements by class were adopted, would you**
12 **expect that there would be pricing changes for customers?**

13 **A.** Yes, procurements by class would appropriately allocate the costs to serve customers to the
14 customers themselves, eliminating subsidies that currently exist.

15
16 **Q. Would this mean that customers would no longer have the same supply options?**

17 **A.** No, it does not. Customers would have the same supply options that they do today. The only
18 change is that their default service price would more accurately reflect the cost of the risks to
19 serve them. In addition, there would continue to be the other options that exist in well-
20 functioning competitive markets such as Ohio. Specifically, customers could contract with
21 CRES suppliers, if desired. There are numerous service options available from CRES
22 suppliers to meet customers' needs, resources, budget requirements, environmental or
23 sustainability initiatives, and price-hedging strategies. These products can also be individually
24 customized to meet business goals, risk appetite, and needs for all types of consumers.

1 Customers have the resources available and can obtain the supply option for their specific
2 energy needs.

3
4 **Q. Would this recommendation require extensive work or a large lead time?**

5 **A.** No. AEP Ohio's auction manager already has experience and the capability and systems to
6 execute default service auctions using customer-class-based procurements. *See Attachment A*
7 containing AEP Ohio's Responses to Constellation INT-02-026.

8
9 **Q. Have you identified what changes should be made to the Master SSO Supply**
10 **Agreement to incorporate your recommendations for establishing mitigation**
11 **thresholds and conducting auctions by customer class?**

12 **A.** Yes. In order to implement these recommendations, the Master SSO Supply Agreement (AEP
13 Ohio Witness McCulty's Direct Testimony Attachment MWM-2) could be modified as
14 reflected on Attachment B to my testimony. Corresponding changes would need to be
15 incorporated into the CBP bidding rules and other proposed documents.

16
17 **C. Absent Reform, Risks Will Continue and Be Reflected In SSO Prices**

18 **Q. If volatility in the natural gas market eases, won't that eliminate the risks you**
19 **described?**

20 **A.** No. Natural gas prices may fall and, given that is a component of the electric SSO bids, one
21 would expect that ACPs would be somewhat lower. However, the fact that SSO suppliers
22 have experienced or seen extreme fluctuations in natural gas prices means that SSO suppliers
23 will continue to incorporate such price volatility into their future bids. In addition, there is

significant risk associated with the movements in the amount of load that they would be obligated to serve as an SSO supplier.

IV. CONCLUSION AND SUMMARY OF RECOMMENDATIONS

Q. Please summarize your conclusions and recommendations regarding the proposed Stipulation.

A. The Commission has an opportunity to be a steadying force in the continued evolution of the competitive electric markets in AEP Ohio's service territory. In doing so, it should modify the Stipulation to include the recommended contractual mitigation threshold, which would decrease risks reflected in SSO bids, resulting in lower prices for all default service customers in all classes to which it is applied. Additionally, implementation of Constellation's recommendation to conduct competitive procurements by class will appropriately assign the costs of serving the different classes of customers under the SSO, mitigating the risks that come with a slice-of-system approach that includes combining large commercial and industrial customers along with the smallest commercial and residential customers.

Q. Does this conclude your Direct Testimony?

A. Yes.

CERTIFICATE OF SERVICE

The Public Utilities Commission of Ohio's e-filing system will electronically serve notice of the filing of this document on the parties referenced on the service list of the docket card who have electronically subscribed to the case. In addition, the undersigned certifies that a courtesy copy of the foregoing document is also being served (via electronic mail) on this 20th day of September 2023 upon all persons listed below:

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/s/ Michael J. Settineri
Michael J. Settineri

**OHIO POWER COMPANY'S RESPONSE TO
CONSTELLATION ENERGY GENERATION, LLC
AND
CONSTELLATION NEWENERGY, INC'S
DISCOVERY REQUEST
PUCO CASE 23-0023-EL-SSO
SECOND SET**

INTERROGATORY

Constellation-INT-02-026	Does AEP Ohio's auction manager (NERA) have experience with auctions that procure electricity based in part or in whole on customer class-based products (e.g., residential, commercial and industrial)?
--------------------------	--

RESPONSE

AEP Ohio objects to the form of the question as this request is vague, undefined, overbroad, and/or unduly burdensome. The Company further objects that the request seeks information that is not relevant or likely to lead to the discovery of admissible information. The Company objects because AEP Ohio does not possess this information. Without waiving these objections or any general objections the Company may have, the Company states as follows. Yes.

Prepared by:

Counsel
Michael W. McCulty

MASTER STANDARD SERVICE OFFER (“SSO”) SUPPLY AGREEMENT

BY AND BETWEEN

OHIO POWER COMPANY

AND

EACH SSO SUPPLIER SET FORTH ON ATTACHMENT A HERETO

_____, 20__

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MASTER SSO SUPPLY AGREEMENT

This Master SSO Supply Agreement (“Agreement”), dated as of _____, 20__

(“Effective Date”), is by and between Ohio Power Company, an Ohio corporation with offices at 1 Riverside Plaza, Columbus, Ohio (“AEP Ohio”) and each of the suppliers listed on Attachment A severally, but not jointly, (each an “SSO Supplier” and collectively “SSO Suppliers”). AEP Ohio and each SSO Supplier are hereinafter referred to individually as a “Party” or collectively as the “Parties”).

RECITALS

WHEREAS, AEP Ohio is an Ohio public utility that engages, inter alia, in providing Standard Service Offer supply within its service territory; and

WHEREAS, the PUCO found that it would serve the public interest for AEP Ohio to secure SSO Supply through a competitive bidding process; and

WHEREAS, each SSO Supplier was one of the winning bidders in a Solicitation for SSO Supply; and

WHEREAS, the PUCO has authorized AEP Ohio to contract with winning bidders for SSO Supply to serve SSO Load in accordance with the terms of this Agreement; and

WHEREAS, the PUCO subsequently ordered that “PIPP Customers” (as defined herein) be removed from taking service as an “SSO Customer” (as defined herein) under this Agreement, so modifications to this Agreement have been made to exclude the PIPP Customers consistent with the PUCO order; and

WHEREAS, AEP Ohio shall be responsible for the provision of any renewable energy resource requirement as set forth in Ohio Rev. Code Ann. Sections 4928.64 and 4928.65 and regulations promulgated in respect thereto; and

WHEREAS, each SSO Supplier will satisfy its Capacity obligations under the PJM Agreements associated with its respective SSO Supplier Responsibility Share in accordance with the PJM Agreements, including, without limitation, through participation in the base residual auction and incremental auctions administered by PJM; and

WHEREAS, AEP Ohio and the SSO Suppliers desire to enter into this Agreement setting forth their respective obligations concerning the provision of SSO Supply.

NOW, THEREFORE, for and in consideration of the mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties intending to be legally bound hereby agree as follows:

ARTICLE 1

DEFINITIONS

The following definitions and any terms defined in this Agreement shall apply hereunder.

“AEP Ohio Indemnified Party” has the meaning set forth in Section 10.1(a).

“AEP Ohio Load Zone” means that set of electrical locations, designated by PJM as Pnode ID number 1269364670, determined pursuant to the applicable PJM Tariff, rules, agreements and procedures, representing the aggregate area of consumption that includes AEP Ohio within PJM and used for the purposes of scheduling, reporting withdrawal volumes, and settling Energy transactions at aggregated load levels, to facilitate Energy market transactions.

“Affiliate” means, with respect to any Person, any other Person (other than an individual) that, directly or indirectly, through one or more intermediaries, controls, or is controlled by, or is under common control with, such Person. For this purpose, “control” means the direct or indirect ownership of fifty percent (50%) or more of the outstanding capital stock or other equity interests having ordinary voting power.

“Ancillary Services” has the meaning set forth in the PJM Agreements.

“Bankrupt” means with respect to any entity, that such entity (i) files a petition or otherwise commences or acquiesces in a proceeding under any bankruptcy, insolvency, reorganization or similar law, or has any such petition filed or commenced against it and such petition is not withdrawn or dismissed within thirty (30) days after such filing, (ii) makes an assignment or any general arrangement for the benefit of creditors, (iii) otherwise becomes bankrupt or insolvent (however evidenced), (iv) has a liquidator, administrator, receiver, trustee, conservator or similar official appointed with respect to it or any substantial portion of its property or assets, or (v) is unable to pay its debts as they fall due.

“Bankruptcy Code” means those laws of the United States of America related to bankruptcy, codified and enacted as Title 11 of the United States Code, entitled “Bankruptcy” and found at 11 U.S.C. § 101 et seq.

Base Load means the amount of SSO Load to be settled at the Price.

“Billing Period” means hour ending 0100 on the first day of a calendar month through hour ending 2400 on the last day of the applicable calendar month.

“Billing Statement” has the meaning set forth in Section 6.1(a).

“Business Day” means any day except a Saturday, Sunday or a day PJM declares to be a holiday, as posted on the PJM website. A Business Day shall open at 8:00 a.m. and close at 5:00 p.m. prevailing Eastern Time, unless otherwise agreed to by the Parties in writing.

“Capacity” means “Unforced Capacity” as set forth in the PJM Agreements, or any successor measurement of capacity obligation of an LSE as may be employed in PJM (whether set forth in the PJM Agreements or elsewhere).

“Charge” means any fee, charge, PJM charge, the Energy Share Adjustment if in favor of AEP Ohio, or any other amount that is billable by AEP Ohio to the SSO Supplier under this Agreement.

“Commercial/Industrial Customer” means a Customer taking service under one of AEP Ohio’s non-residential rates (Rate GS-1, Rate GS-2, Rate GS-3, Rate GS-4, Rate GS-TOD, GS1-TOD, GS-2-TOD, Rate COGEN/SPP, Rate EHG, Rate EHS, or Rate SS.)

“Costs” mean, with respect to the Non-Defaulting Party, all reasonable attorney’s fees, brokerage fees, commissions, PJM charges and other similar transaction costs and expenses reasonably incurred by such Party either in terminating any arrangement pursuant to which it has hedged its obligations or entering into new arrangements which replace this Agreement; and all reasonable attorney’s fees and expenses incurred by the Non-Defaulting Party in connection with the termination of this Agreement as between AEP Ohio and the applicable SSO Supplier.

“Credit Limit” means an amount of credit, based on the creditworthiness of an SSO Supplier or its Guarantor, if applicable, determined pursuant to Section 5.6, granted by AEP Ohio to such SSO Supplier to be applied towards the Total Exposure Amount for such SSO Supplier.

“CRES Supplier” means a Person that is duly certified by the PUCO to offer and to assume the contractual and legal responsibility to provide Standard Service Offer pursuant to retail open access programs approved by the PUCO to Customers who are not SSO Customers of AEP Ohio.

“Cross Default Amount” means an amount equal to five percent (5%) of a Defaulting Party’s or Defaulting Party’s Guarantor’s (as applicable) Tangible Net Worth.

“Customer” means any Person who receives distribution service from AEP Ohio in accordance with the Legal Authorities.

“Default Allocation Assessment” has the meaning set forth in the PJM Agreements.

“Default Damages” means direct damages, calculated in a commercially reasonable manner, that the Non-Defaulting Party incurs as a result of an Event of Default by the Defaulting Party. Default Damages may include: (i) the positive difference (if any) between the price of SSO Supply hereunder and the price at which AEP Ohio or the SSO Supplier is able to purchase or sell (as applicable) SSO Supply (or any components of SSO Supply it is able to purchase or sell) from or to third parties including other SSO Suppliers and PJM; (ii) Emergency Energy charges; (iii) additional transmission or congestion charges incurred to purchase or sell SSO Supply; and (iv) Costs.

“Defaulting Party” has the meaning set forth in Section 7.1.

“Delivery Period” means the Original Delivery Period, unless this Agreement is terminated earlier in accordance with the provisions hereof.

“Delivery Point” means the AEP Ohio Load Zone as defined within PJM.

“Early Termination” has the meaning set forth in Section 2.3.

“Early Termination Date” means, as between AEP Ohio and the applicable SSO Supplier, the date upon which an Early Termination becomes effective as specified in Section 7.2(b).

“Effective Date” has the meaning set forth in the preamble.

“Emergency” means (i) an abnormal system condition requiring manual or automatic action to maintain system frequency, or to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property; (ii) a condition that requires implementation of emergency operations procedures; or (iii) any other condition or situation that AEP Ohio, transmission owner(s) or PJM deems imminently likely to endanger life or property or to affect or impair AEP Ohio’s electrical system or the electrical system(s) of other Person(s) to which AEP Ohio’s electrical system is directly or indirectly connected (a “Connected Entity”). Such a condition or situation may include potential overloading of AEP Ohio’s subtransmission or distribution circuits, PJM minimum generation (“light load”) conditions, or unusual operating conditions on either AEP Ohio’s or a Connected Entity’s electrical system, or conditions such that AEP Ohio is unable to accept Energy from the SSO Supplier without jeopardizing AEP Ohio’s electrical system or a Connected Entity’s electrical system.

“Emergency Energy” has the meaning set forth in the PJM Agreements.

“Energy” means electric energy of the character commonly known as three-phase, sixty-hertz electric energy that is delivered at the nominal voltage of the Delivery Point, expressed in MWh.

“Energy Share Adjustment” means for any Billing Period, the monetary amount due to an SSO Supplier or AEP Ohio, as the case may be, in order to reconcile any difference between the Estimated Monthly Energy Share used for the purpose of calculating estimated payments made to such SSO Supplier for a given month and the Final Monthly Energy Share used for calculating the final payments due to the SSO Supplier for such month, as more fully described in Article 6.

“Estimated Monthly Energy Share” means a quantity of Energy expressed in MWh which, for any Billing Period, is the preliminary calculation of the SSO Supplier’s SSO Supplier Responsibility Share.

“Event of Default” has the meaning set forth in Section 7.1.

“Excess Collateral” has the meaning set forth in Section 5.7.

“FERC” means the Federal Energy Regulatory Commission or such succeeding organization.

“Final Monthly Energy Share” means a quantity of Energy expressed in MWh which, for any Billing Period, is the Estimated Monthly Energy Share adjusted for any billing or metering errors

found subsequent to the calculation of the Estimated Monthly Energy Share of which PJM is notified prior to the last date on which PJM issues a settlement statement for a previous operating day for the Billing Period.

“Firm Transmission Service” has the meaning ascribed to “Network Integration Transmission Service” under the PJM Agreements. In the event the PJM Agreements are modified such that “Network Integration Transmission Service” is no longer offered, Firm Transmission Service means the type of transmission service offered under the PJM Agreements that is accorded the highest level of priority for scheduling and curtailment purposes.

“Forward Market Prices” means forward market prices for a specific geographic Market Price Hub, as adjusted by AEP Ohio to reflect impact of load shape.

“Gains” means an amount equal to the present value of the economic benefit to the Non-Defaulting Party, if any, exclusive of Costs, resulting from an Early Termination.

“Governmental Authority” means any federal, state, local, municipal or other governmental entity, authority or agency, department, board, court, tribunal, regulatory commission, or other body, whether legislative, judicial or executive, together or individually, exercising or entitled to exercise any administrative, executive, judicial, legislative, policy, regulatory or taxing authority or power over a Party to this Agreement.

“Guarantor” means any Person having the authority and agreeing to guarantee an SSO Supplier’s financial obligations under this Agreement, provided that such party meets AEP Ohio’s creditworthiness requirements for SSO Suppliers.

“Guaranty” means the ICT Guaranty or the Total Exposure Amount Guaranty, as applicable.

“ICR Collateral” has the meaning set forth in Section 5.4(d).

“ICRT” has the meaning set forth in Section 5.3.

“ICT Guaranty” means a guaranty, in the form substantially set forth in Attachment D, provided by a Guarantor in favor of AEP Ohio guaranteeing an SSO Supplier’s financial obligations in connection with ICT.

Incremental Load means the amount of SSO Load to be settled at PJM Market Prices at the relevant Market Price Hub.

“Indemnification Losses” has the meaning set forth in Section 10.1(a).

“Indemnified Supplier” has the meaning set forth in Section 10.1(b).

“Independent Credit Requirement or ICR” means an amount per Tranche required as security under Section 5.3, to mitigate the risk to AEP Ohio of Energy price movements between the date of an Early Termination caused by an Event of Default by an SSO Supplier and the date the final calculation of Default Damages owing to AEP Ohio under Section 7.2(c) is made.

“Independent Credit Threshold or ICT” means an amount of credit, based on the creditworthiness of an SSO Supplier or its Guarantor, if applicable, determined pursuant to Section 5.4, granted by

AEP Ohio to such SSO Supplier to be applied towards the satisfaction of such SSO Supplier's Independent Credit Requirement.

"Interest Rate" means, for any date, the lesser of (a) the per annum rate of interest equal to the prime lending rate ("Prime Rate") as may be published from time to time in the Federal Reserve Statistical Release H.15; or (b) the maximum lawful interest rate.

"Kilowatt or kW" means a unit of measurement of useful power equivalent to 1,000 watts.

"Kilowatt-hour or kWh" means one kilowatt of electric power used over a period of one hour.

"Legal Authorities" means, generally, those federal and Ohio statutes and administrative rules and regulations that govern the electric utility industry in Ohio.

"Letter of Credit" means a standby irrevocable letter of credit in the form set forth in Attachment E, or in such other form as AEP Ohio deems acceptable in its sole discretion, and in each case conforming to all of the requirements specifically set forth in Section 5.9(b).

"LIBOR" means the rates published daily as the London Inter-Bank Offered Rates for U.S. dollar deposits. For discounting purposes, the rates will be converted into a series of monthly rates representing the equivalent forward LIBOR rate from the valuation date to the month of delivery.

"Lighting Customer" means a Customer taking service under AEP Ohio's lighting rates (Ohio Power Rate Zone: Rate AL or Rate SL; Columbus Southern Power Rate Zone: Rate AL or Rate SL).

"Load Serving Entity or LSE" has the meaning set forth in the applicable PJM Agreements.

"Losses" means an amount equal to the present value of the economic loss to the Non-Defaulting Party, if any, exclusive of Costs, resulting from an Early Termination.

"Margin" means, at any time, the amount by which the Total Exposure Amount exceeds the Credit Limit of the SSO Supplier or its Guarantor.

"Margin Call" has the meaning set forth in Section 5.6(e).

"Margin Collateral" has the meaning set forth in Section 5.6(e).

"Margin Interest Rate" means the Federal Funds Effective Rate, defined below, for the period of time the funds are on deposit. The Federal Funds Effective Rate is published daily on the Federal Reserve website at: <http://federalreserve.gov/releases/h15/update/>, or its successor.

"Mark-to-Market Exposure Amount" means an amount calculated daily for each SSO Supplier reflecting the exposure to AEP Ohio due to fluctuations in market prices for Energy as set forth in Section 5.5.

"Market Price Hub" means a liquid pricing point located within PJM's geographic footprint.

"Minimum Margin Threshold" means \$100,000.

“Minimum Rating” means a minimum senior unsecured debt rating (or, if unavailable, corporate or issuer rating) as defined in Section 5.4(a).

“MW” means megaWatt.

“MWh” means megaWatt hour.

“NERC” means the North American Electric Reliability Corporation or its successor.

“Non-Defaulting Party” means (i) where an SSO Supplier is the Defaulting Party, AEP Ohio; (ii) where AEP Ohio is the Defaulting Party with respect to an Event of Default, the SSO Supplier to which the applicable obligation was owed.

“Ohio Sales and Use Taxes” has the meaning set forth in Section 12.8.

“Original Delivery Period” has the meaning set forth in Attachment A.

“Other Energy Supply Agreement” has the meaning set forth in Section 7.3(c).

“Party” has the meaning set forth in the preamble to this Agreement, and includes such Party’s successors and permitted assigns.

“Performance Assurance” means collateral in the form of cash, letters of credit, or other security reasonably acceptable to the requesting party.

“Person” means an individual, partnership, joint venture, corporation, limited liability company, trust, association or unincorporated organization, any Governmental Authority, or any other entity.

“PIPP Customers” means Customers that take service under AEP Ohio’s percentage of income payment plan.

“PJM” means PJM Interconnection, L.L.C. or any successor organization thereto.

“PJM Agreements” means the PJM OATT, PJM Operating Agreement, PJM RAA and any other applicable PJM manuals or documents, or any successor, superseding or amended versions thereof that may take effect from time to time.

“PJM E-Account” means an account obtainable through PJM which provides access to web-based PJM scheduling, settlement, accounting, marketing and other informational and economic systems.

“PJM OATT or PJM Tariff” means the Open Access Transmission Tariff of PJM or the successor, superseding or amended versions of the Open Access Transmission Tariff that may take effect from time to time.

“PJM Operating Agreement” means the Amended and Restated Operating Agreement of PJM or the successor, superseding or amended versions of the Amended and Restated Operating Agreement that may take effect from time to time.

“PJM RAA” means the Reliability Assurance Agreement Among Load Serving Entities in the PJM Region or any successor, superseding or amended versions of the Reliability Assurance Agreement Among Load Serving Entities in the PJM Region that may take effect from time to time.

“Price” means, with respect to each SSO Supplier, the price in \$/MWh set forth in Attachment A, resulting from AEP Ohio’s Solicitation for the opportunity to provide SSO Supply. The Price is the basis for financial settlement of SSO Supply Base Load supplied by an SSO Supplier for SSO Customers under this Agreement.

“PUCO” means the Public Utilities Commission of Ohio, or any successor thereto.

“Residential Customer” means a Customer taking service under AEP Ohio’s residential rates (Ohio Power Rate Zone: Rate RS, Rate RS-ES, Rate RS-TOD or Rate RDMS; Columbus Southern Power Rate Zone: Rate R-R, Rate R-R-1, Rate RLM, Rate RS-ES, Rate RS-TOD, Rate RS-TOD2, Rate CPP or Rate RS-RTP).

“Seasonal Billing Factor” means a numerical factor, as set forth in Attachment B, one amount applicable during the summer months of June through September, and one amount applicable during the non-summer months of October through May, applied to the Price in accordance with the provisions of Article 6 and thereby used to adjust AEP Ohio’s payments to SSO Suppliers.

“Settlement Amount” means the net amount of the Losses or Gains, and Costs, expressed in U.S. Dollars, which the Non-Defaulting Party incurs as a result of Early Termination, calculated from the Early Termination Date through the end of the Original Delivery Period. For purposes of calculating the Settlement Amount, the quantity of Energy (and other components of SSO Supply) provided for under this Agreement for the period following the Early Termination Date through the remainder of the Original Delivery Period will be determined by the Non-Defaulting Party in a commercially reasonable manner reflecting estimated SSO Load for un-switched customers as of the Early Termination Date based on the then most recent load switching report filed by AEP Ohio with the PUCO as of the Early Termination Date. The calculation of Settlement Amount with respect to an Early Termination shall exclude Default Damages calculated pursuant to Section 7.3(a).

“Solicitation” means the auction by which the counterparty, quantity, pricing and other terms of this Agreement are established.

“Special Contract Customers” means Customers that take retail generation service from AEP Ohio under terms and conditions different than the otherwise applicable tariff.

“Specified Indebtedness” with respect to a Party means as of any date, without duplication, (i) all obligations of such Party for borrowed money, (ii) all indebtedness of such Party for the deferred purchase price of property or services purchased (excluding current accounts payable incurred in the ordinary course of business), (iii) all indebtedness created or arising under any conditional sale or other title retention agreement with respect to property acquired, (iv) all indebtedness under leases which shall have been or should be, in accordance with generally accepted accounting principles, recorded as capital leases in respect of which such Party is liable as lessee, (v) the face amount of all outstanding letters of credit issued for the account of such Party (other than letters

of credit relating to indebtedness included in indebtedness of such Party pursuant to another clause of this definition) and, without duplication, the unreimbursed amount of all drafts drawn thereunder, (vi) indebtedness secured by any lien on property or assets of such Party, whether or not assumed (but in any event not exceeding the fair market value of the property or asset), (vii) all direct guarantees of indebtedness referred to above of another Party, (viii) all amounts payable in connection with mandatory redemptions or repurchases of preferred stock or member interests or other preferred or priority equity interests and (ix) any obligations of such Party (in the nature of principal or interest) in respect of acceptances or similar obligations issued or created for the account of such Party.

“SSO Customers” means Residential Customers, Commercial/Industrial Customers, Lighting Customers, Special Contract Customers, and any other Customer taking retail generation service from AEP Ohio, but excluding PIPP Customers.

“SSO Load” means the full electricity requirements for SSO Service of SSO Customers.

“SSO Service” means Standard Service Offer service that is not provided by a CRES Supplier.

“SSO Supplier” has the meaning set forth in the preamble.

“SSO Supplier Responsibility Share” means, for each SSO Supplier, the fixed percentage share of the SSO Load for which the SSO Supplier is responsible as set forth in Attachment A.

“SSO Supply” means unbundled Energy, Capacity and Ancillary Services, including, to the extent not expressly assumed by AEP Ohio pursuant to Section 3.2, all transmission and distribution losses and congestion and imbalance costs associated with the provision of such services, as measured and reported to PJM, and such other services or products that an SSO Supplier may be required to provide, by PJM or other Governmental Authority, in order to meet the requirements of SSO Service.

“Standard Service Offer” means a market-based standard service offer provided by AEP Ohio under PUCO tariffs of all competitive retail electric services necessary to maintain essential electric service to Customers, including Energy, Capacity, Ancillary Services and Firm Transmission Service, including all transmission and distribution losses, congestion and imbalance costs associated with the provision of the foregoing services, other obligations or responsibilities currently imposed or that may be imposed by PJM, and such other services or products that are provided by a CRES Supplier to fulfill its obligations to serve customer load, as required by Section 4928.141 of the Ohio Revised Code.

“Tangible Net Worth” or “TNW” means total assets less intangible assets and total liabilities. Intangible assets include benefits such as goodwill, patents, copyrights and trademarks, each as would be reflected on a balance sheet prepared in accordance with generally accepted accounting principles.

“Taxes” have the meaning set forth in Section 12.8.

“Term” has the meaning set forth in Section 2.1.

“Termination Payment” has the meaning set forth in Section 7.3(c).

“Total Exposure Amount” means an amount calculated daily for each SSO Supplier reflecting the total credit exposure to AEP Ohio and consisting of the sum of: (i) the Mark-to-Market Exposure Amount arising under this Agreement; (ii) any amount(s) designated as the “mark-to-market exposure amount” (or similar designation) under any Other Energy Supply Agreement; and (iii) the amount designated as the “credit exposure” (or similar designation) under any Other Energy Supply Agreement; less (iv) amounts due to such SSO Supplier pursuant to Section 6.1; provided that in the event the amount calculated for any day is a negative number, it shall be deemed to be zero for such day.

“Total Exposure Amount Guaranty” means a guaranty, in substantially similar form as set forth in Attachment D, provided by a Guarantor in favor of AEP Ohio guaranteeing an SSO Supplier’s financial obligation with respect to its Total Exposure Amount.

“Tranche” means a fixed percentage share of the SSO Load as determined for the purposes of the Solicitation conducted to procure SSO Supply for the SSO Load.

ARTICLE 2

TERM AND TERMINATION

2.1 Term

The Term of this Agreement shall begin on the Effective Date and extend through and include the end of May 31, 20__ (“Term”) unless terminated earlier or extended pursuant to the terms of this Agreement; provided, however, that the provision of SSO Supply by SSO Suppliers will commence on the period set forth in the applicable Attachment A as the Original Delivery Period starting at 12:01 a.m. prevailing Eastern Time and ending though the date specified in Attachment A.

2.2 Mutual Termination

AEP Ohio and any SSO Supplier may terminate this Agreement at any time during the Term on such terms and under such conditions as they mutually agree.

2.3 Early Termination

This Agreement may be terminated by a Party prior to the end of the Term due to an occurrence of an Event of Default and the declaration of an Early Termination Date by the Non-Defaulting Party pursuant to Section 7.2 (an “Early Termination”).

2.4 Termination of SSO Plan

Notwithstanding anything in this Article 2 to the contrary, AEP Ohio may, in its sole discretion, terminate its ESP due to changes in any Ohio state law that, in any way, relates to or addresses generation supply or AEP Ohio's obligation as a provider of last resort for all retail electric service customers in its service territory. Upon termination of the ESP, AEP Ohio may terminate this Agreement with respect to any supply not yet delivered under this Agreement by providing written notice to SSO Supplier(s).

2.5 Effect of Termination

The applicable provisions of this Agreement shall continue in effect and survive the termination of this Agreement to the extent necessary to provide for final accounting, billing, billing adjustments, resolution of any billing disputes, realization of any collateral or other security, set-off, final payments, or payments pertaining to liability and indemnification obligations arising from acts or events that occurred in connection with this Agreement during the Term.

ARTICLE 3**GENERAL TERMS AND CONDITIONS****3.1 SSO Supplier's Obligations to Provide SSO Supply and Other Obligations**

Each SSO Supplier hereby agrees, severally, but not jointly, as follows:

(a) during the Delivery Period, such SSO Supplier shall sell, deliver and provide SSO Supply on a firm and continuing basis in order to meet its SSO Supplier Responsibility Share, in accordance with this Agreement and the PJM Agreements;

(b) (i) except with respect to Capacity, each SSO Supplier's obligation under Section 3.1(a) will result in physical delivery of SSO Supply and not financial settlement; (ii) the quantity of SSO Supply that such SSO Supplier must deliver will be determined by the requirements of the SSO Load, which may be different than the amount indicated in the Solicitation; and (iii) this Agreement does not provide for an option by such SSO Supplier with respect to the quantity of SSO Supply to be delivered;

(c) in connection with the provision of SSO Supply at the Delivery Point each SSO Supplier shall be responsible for, in proportion to its SSO Supplier Responsibility Share, all costs and expenses in Attachment F, PJM billing statement line items, identified as the responsibility of the SSO Supplier, and any other costs and expenses related to transmission and Ancillary Services, unless expressly indicated otherwise in this Agreement.

(d) during the Term, each SSO Supplier is responsible, at its sole cost and expense, for any changes in PJM products and pricing required for the delivery of its SSO Supplier Responsibility Share, including all other costs and expenses related to transmission and Ancillary Services in connection with the provision of SSO Supply in proportion to its SSO Supplier Responsibility Share, except for any changes to products or the pricing of such products that are the responsibility of AEP Ohio pursuant to Section 3.2;

(e) each SSO Supplier is responsible for all transmission and distribution losses and congestion and imbalance costs incurred to supply its SSO Supplier Responsibility Share;

(f) each SSO Supplier shall be at all times during the Delivery Period (i) a member in good standing of PJM and (ii) qualified by PJM as a “Market Buyer” and “Market Seller” pursuant to the PJM Agreements, and (iii) qualified as a PJM “Load Serving Entity”;

(g) each SSO Supplier shall be responsible, and be liable, to PJM for the performance of its LSE obligations associated with the provision of SSO Supply under this Agreement;

(h) each SSO Supplier shall have and maintain, throughout the Delivery Period, FERC authorization to make sales of Energy, Capacity, and Ancillary Services at market-based rates within PJM; and

(i) each SSO Supplier shall deliver SSO Supply to the Delivery Point under this Agreement free and clear of any and liens, security interests, claims and encumbrances or any interest therein or thereto by any Person.

(j) each SSO Supplier shall be solely responsible for any auction revenue rights applicable to the SSO Load that may be allocated to it. AEP Ohio shall have no obligation to such SSO Supplier for auction revenue rights or financial transmission revenue rights.

3.2 **AEP Ohio's Obligation to Take SSO Supply and other Obligations**

AEP Ohio hereby agrees as follows:

(a) during the Delivery Period, AEP Ohio shall purchase and accept SSO Supply provided by an SSO Supplier pursuant to Section 3.1 at the Delivery Point and shall make payment to the SSO Supplier based on the Price; and

(b) during the Delivery Period, AEP Ohio shall be a member in good standing of PJM; and

(c) during the Delivery Period, AEP Ohio shall be responsible for the provision of Firm Transmission Service from the Delivery Point; and

(d) AEP Ohio shall be responsible, at its sole costs and expense, for:

(i) all charges and credits in Attachment F, PJM billing statement line items, identified as the responsibility of AEP Ohio as the EDC (Electric Distribution Company);

(ii) other non-market-based costs, fees or charges imposed on or charged to AEP Ohio by FERC or a regional transmission organization, independent transmission operator, or similar organization approved by FERC; and

(iii) with regard to the foregoing, such services and schedules as they may be modified or superseded from time to time;

(e) AEP Ohio will be responsible for (i) metering, billing and delivery with respect to SSO Customers (and SSO Suppliers will have no responsibility with respect thereto) and (ii) distribution services (and SSO Suppliers will have no responsibility with respect thereto); and

(f) AEP Ohio will be responsible, at its sole cost and expense, for the provision of any renewable energy resource requirement as set forth in Ohio Rev. Code Ann. Sections 4928.64 and 4928.65 and regulations promulgated in respect thereto.

3.3 PJM E-Accounts

Each SSO Supplier and AEP Ohio shall work with PJM to establish any PJM E-Accounts necessary for such SSO Supplier to provide SSO Supply. Each SSO Supplier may manage its PJM E-Accounts in its sole discretion; provided such SSO Supplier acts in accordance with the standards set forth in the PJM Agreements.

3.4 Reliability Guidelines

Each Party agrees to adhere to the applicable operating policies, criteria and guidelines of the NERC, PJM, their successors, and any regional and sub-regional requirements.

3.5 Regulatory Authorizations

(a) AEP Ohio and each SSO Supplier shall obtain and maintain throughout the Delivery Period all regulatory authorizations necessary to perform their respective obligations under this Agreement.

(b) Each SSO Supplier shall cooperate in good faith with AEP Ohio in any regulatory compliance efforts as may be required to maintain the ongoing legitimacy and enforceability of the terms of this Agreement and to fulfill any regulatory reporting requirement associated with the provision of SSO Supply before the PUCO, FERC or any other Governmental Authority.

3.6 PJM Member Default Cost Allocation

In the event PJM imposes a Default Allocation Assessment upon AEP Ohio relating to a default during the Term, AEP Ohio may, in its sole discretion, invoice each SSO Supplier, based on its SSO Supplier Responsibility Share, for amounts determined, in AEP Ohio's sole discretion, to be properly payable by such SSO Supplier from the Default Allocation Assessment and each SSO Supplier shall pay such amounts within three (3) Business Days after receipt of such invoice, subject to the dispute resolution procedures set forth in Section 11.

3.7 Status of SSO Supplier

In order to meet AEP Ohio's service obligations under Legal Authorities, it is the intent of the Parties that each SSO Supplier shall be deemed a LSE for the duration of the Delivery Period pursuant to the PJM Agreements and Legal Authorities.

3.8 Sales for Resale

All SSO Supply provided by an SSO Supplier to AEP Ohio shall be sales for resale, with AEP Ohio reselling such SSO Supply to SSO Customers.

3.9 Declaration of Authority

As designated or otherwise required by AEP Ohio, AEP Ohio and each SSO Supplier shall execute a Declaration of Authority, a representative form of which is attached hereto as Attachment G.

ARTICLE 4

SCHEDULING, FORECASTING AND INFORMATION SHARING

4.1 Scheduling

(a) Each SSO Supplier shall schedule SSO Supply and make all necessary arrangements for the delivery of SSO Supply through the PJM Office of Interconnection pursuant to the PJM Agreements.

(b) AEP Ohio will provide to each SSO Supplier and to PJM all information required by PJM for the purpose of calculating each SSO Supplier's SSO Supply obligations, including the magnitude of each SSO Supplier's SSO Supply obligation, as required by the PJM Office of Interconnection.

4.2 Load Forecasting

AEP Ohio shall not be required to provide to any SSO Supplier any load forecasting services.

4.3 Base Load and Incremental Load

(a) The Base Load and the Incremental Load shall be determined as set forth below.

i. At the time of contract award, Buyer shall calculate the SSO Load for each procurement class, in megawatts, based on peak load contribution ("PLC") values using then-current SSO Load (Base MW Per Bid Block).

ii. On the first day of the Term, and every Business Day thereafter, Buyer shall calculate the SSO Load for each procurement class, in megawatts based on PLC values (MWs Per Bid Block). ATTACHMENT RJL-2 46

iii. The Base Load shall equal the sum of (a) the Base MW Per Bid Block and (b) the product of (i) the Base MW Per Bid Block and (ii) five (5) percent. iv. MWs Per Bid Block exceeding the Monthly Settlement Base Load, by procurement class, shall be Incremental Load.

(b) On any Business Day when there is Incremental Load, calculation of the financial settlement for Incremental Load shall be at Locational Marginal Prices at the relevant Market Price Hub.

(c) On any Business Day when the MW Per Bid Block is less than the Base MW Per Bid Block minus three (3) percent, a new Base MW Per Bid Block shall be established and shall equal the MWs Per Bid Block on that day. Such new Base MW Per Bid Block shall replace the prior Base MW Per Bid Block prospectively.

4.4 Disconnection and Curtailment by AEP Ohio

AEP Ohio shall have the right, without incurring any liability to any SSO Supplier, to disconnect (or otherwise curtail, interrupt or reduce deliveries from) the SSO Suppliers or to disconnect (or otherwise curtail, interrupt or reduce deliveries to) any Customer whenever AEP Ohio determines in its discretion acting in good faith that such a disconnection, curtailment, interruption or reduction is necessary to facilitate construction, installation, maintenance, repair, replacement or inspection of any of AEP Ohio's facilities; or due to any other reason affecting the safe and reliable operation of any of AEP Ohio's or a Customer's facilities, including Emergencies, forced outages or potential overloading of any of AEP Ohio's transmission or distribution circuits, potential damage to the Customer's facilities or any risk of injury to persons, or when AEP Ohio is directed by PJM. AEP Ohio shall not show any preference for any Affiliate in connection with any such disconnection, curtailment or reduction.

4.54 Loss of Service to SSO Customers

The Parties agree and acknowledge that service to SSO Customers may be lost due to storms, weather, accidents, breakage of equipment or other events beyond the reasonable control of AEP Ohio affecting the transmission and distribution facilities of AEP Ohio. No Party will have any liability to any other Party for the occurrence of such events. In no event will a loss of service to a Customer affect a Party's obligation to make any payments then due or becoming due with respect to performance rendered prior to such loss of service.

4.65 PJM Requirements

The Parties acknowledge and agree that, as members of PJM, each of them is bound by the PJM Agreements and any other operating instructions, policies and procedures set forth by PJM. Each SSO Supplier acknowledges and agrees that it will cooperate with AEP Ohio and PJM as the applicable balancing authority and reliability coordinator so that AEP Ohio will be in compliance with all PJM emergency operations procedures, which include procedures pertaining to minimum and maximum generation Emergencies, and measures requiring involuntary Customer participation, such as supply voltage reduction and full interruption of Customer load by either manual or automatic means.

4.76 Compliance with Governmental Directives

Each SSO Supplier acknowledges and agrees that AEP Ohio may need to act in response to directives by a Governmental Authority that may affect SSO Supply or SSO Load. Each SSO Supplier agrees to cooperate fully with AEP Ohio in order to comply with such directives.

ARTICLE 5

CREDIT AND PERFORMANCE SECURITY

5.1 Applicability

Each SSO Supplier agrees that it will meet the creditworthiness standards of this Article 5 at all times during the Term and will inform AEP Ohio immediately of any changes in its credit rating or financial condition. Without limiting the foregoing, each SSO Supplier shall, upon the written request of AEP Ohio, affirmatively demonstrate to AEP Ohio in a manner satisfactory to AEP Ohio its compliance with the creditworthiness standards set forth hereunder. AEP Ohio may establish less restrictive creditworthiness standards under this Article 5 in a non-discriminatory manner.

During the Term, each SSO Supplier or its Guarantor, if applicable, that has been granted an Independent Credit Threshold or a Credit Limit agrees to provide as soon as practicable (i) after the end of each fiscal year, complete annual audited financial statements (including footnotes), and (ii) after the end of each fiscal quarter, complete quarterly unaudited financial statements (including footnotes). If such financial statements are readily and timely available from the SSO Supplier's website or other public website such as www.sec.gov, then this requirement shall be deemed to be satisfied.

5.2 Creditworthiness Determination

AEP Ohio will determine the creditworthiness of an SSO Supplier or its Guarantor, if applicable, whether organized under the laws of the United States or organized under the laws of a foreign jurisdiction, based on its most recent senior unsecured debt rating (or, if unavailable, its corporate or issuer rating). AEP Ohio will have full discretion, without liability or recourse to such SSO Supplier or its Guarantor, if applicable, to evaluate the evidence of creditworthiness

submitted by such SSO Supplier or Guarantor. AEP Ohio may re-evaluate the creditworthiness of an SSO Supplier or Guarantor from time to time, including whenever it becomes aware of an adverse change in such SSO Supplier's or Guarantor's credit standing. In addition, the SSO Supplier may petition AEP Ohio to re-evaluate its creditworthiness whenever an event occurs that the SSO Supplier reasonably believes would improve the determination made by AEP Ohio of its or its Guarantor's creditworthiness. AEP Ohio's credit re-evaluation must be completed as soon as practicable, but in no event longer than thirty (30) days after receiving a fully documented request. AEP Ohio shall provide the rationale for its determination of the Credit Limit and any resulting security requirement and such determination shall be deemed final and conclusive. AEP Ohio shall perform its credit re-evaluation and associated security calculation in a non-discriminatory manner. Each SSO Supplier or its Guarantor shall provide unrestricted access to its audited financial statements; however, if audited financial statements are not available, AEP Ohio may specify other types of financial statements that will be accepted. If AEP Ohio determines in its sole discretion that it is unable to adequately assess an SSO Supplier's or Guarantor's creditworthiness or the credit rating of an SSO Supplier or its Guarantor is insufficient, such SSO Supplier shall be required to post ICR Collateral in accordance with Section 5.4(d) and Margin Collateral in accordance with Section 5.7.

5.3 Independent Credit Requirement

The Independent Credit Requirement ("ICR") per Tranche ("ICRT") that will be required of each SSO Supplier under this Agreement will initially be the sum of the amounts set forth on Attachment C-1 at the inception of the Original Delivery Period for each Tranche and will decline throughout the Term in accordance with the schedule set forth on Attachment C-1.

5.4 Independent Credit Threshold

Each SSO Supplier that qualifies under the following criteria will be granted an Independent Credit Threshold ("ICT").

(a) For an SSO Supplier or its Guarantor that has been organized under the laws of the United States, the following requirements must be satisfied in order for such SSO Supplier to be granted an ICT:

(i) the SSO Supplier or its Guarantor, as applicable, must (1) be rated by S&P Global Ratings (“S&P”), Moody’s Investors Service, Inc. (“Moody’s”) or Fitch, Inc. (“Fitch”), and (2) have a minimum senior unsecured debt rating (or, if unavailable, corporate or issuer rating) of at least “BB” from S&P, “Ba2” from Moody’s, or “BB” from Fitch (a “Minimum Rating”). If the SSO Supplier or its Guarantor is rated by only two rating agencies and the ratings are split, the lower rating will be used. If the SSO Supplier or its Guarantor is rated by three rating agencies and the ratings are split, the lower of the two highest ratings will be used; provided that, in the event that the two highest ratings are common, such common rating will be used. If the SSO Supplier and an Affiliate(s) are both winning bidders in the Solicitation for the provision of SSO Supply, then the SSO Supplier or its Guarantor, as applicable, and the Affiliate(s) will proportionally share the maximum level of the ICT using the highest rating as determined for the SSO Supplier or its Guarantor, as applicable, and the Affiliate(s). The maximum level of the ICT will be determined based on the following table:

Credit Rating of the SSO Supplier or its Guarantor			Maximum Independent Credit Threshold (calculated as the lesser of the percentage of TNW and the applicable Independent Credit Threshold Cap below)	
S&P	Moody’s	Fitch	Percentage of TNW	Independent Credit Threshold Cap
A- and above	A3 and above	A- and above	16%	Not applicable
BBB+	Baa1	BBB+	10%	Not applicable
BBB	Baa2	BBB	10%	Not applicable
BBB-	Baa3	BBB-	8%	Not applicable
BB+	Ba1	BB+	2%	\$3,000,000
BB	Ba2	BB	1%	\$1,500,000
BB- and below	Ba3 and below	BB- and below	0%	\$0

(ii) for SSO Suppliers having a Guarantor, the maximum level of the ICT that can be granted based on an ICT Guaranty will be determined in accordance with subsection (i) above, with reference to the credit rating of the Guarantor.

The ICT granted to the SSO Supplier will not exceed the amount of the ICT Guaranty. The ICT Guaranty tendered by the SSO Supplier to satisfy the ICT requirement arising under this Section 5.4 shall be a separate guaranty from the Total Exposure Amount Guaranty, if any, tendered by the SSO Supplier to satisfy any requirement for a Credit Limit to cover the Total Exposure Amount arising under Section 5.6; provided, however, that a single Guaranty may be provided if such Guaranty is for an unlimited amount.

(b) For an SSO Supplier or its Guarantor that has not been organized under the laws of the United States, the following requirements must be satisfied in order for such SSO Supplier to be granted an ICT:

(i) the SSO Supplier must supply such evidence of creditworthiness as to provide AEP Ohio with comparable assurances of creditworthiness as applicable above for SSO Suppliers that have been organized under the laws of the United States; or

(ii) the Guarantor of an SSO Supplier must supply such evidence of creditworthiness as to provide AEP Ohio with comparable assurances of creditworthiness as applicable above for Guarantors of SSO Suppliers that have been organized under the laws of the United States. AEP Ohio may reject such Guarantors that do not meet the creditworthiness requirements.

(c) All SSO Suppliers or Guarantors of SSO Suppliers that have not been organized under the laws of the United States must, in addition to all documentation required elsewhere in this Section 5.4, supply the following to AEP Ohio as a condition of being granted an ICT:

(i) for an SSO Supplier: (1) a legal opinion of counsel qualified to practice in the foreign jurisdiction in which the SSO Supplier is organized that (A) the SSO Supplier is duly incorporated and existing in such foreign jurisdiction; (B) this Agreement is the binding and enforceable obligation of the SSO Supplier in such foreign jurisdiction and does not violate any local law or the SSO Supplier's organizational or governing

documents; and (C) all authorizations, approvals, consents, licenses, exemptions or other requirements of governmental, judicial or public bodies in such foreign jurisdiction have been obtained, and all execution formalities have been duly completed, necessary for the enforcement and validity of this Agreement and the performance by the SSO Supplier of its obligations hereunder; and (2) the sworn certificate of the corporate secretary (or similar officer) of such SSO Supplier that the Person executing this Agreement on behalf of the SSO Supplier has the authority to execute this Agreement and that the governing board of such SSO Supplier has approved the execution of this Agreement. AEP Ohio will have full discretion, without liability or recourse to the SSO Supplier, to evaluate the sufficiency of the documents submitted by the SSO Supplier; or

(ii) for the Guarantor of an SSO Supplier: (1) a legal opinion of counsel qualified to practice in the foreign jurisdiction in which the Guarantor is organized that (A) the Guarantor is duly incorporated and existing in such foreign jurisdiction; (B) the ICT Guaranty is the binding and enforceable obligation of the Guarantor in such foreign jurisdiction and does not violate any local law or the Guarantor's organizational or governing documents; and (C) all authorizations, approvals, consents, licenses, exemptions or other requirements of governmental, judicial or public bodies in such foreign jurisdiction have been obtained, and all execution formalities have been duly completed, necessary for the enforcement and validity of the ICT Guaranty and the performance by the Guarantor of its obligations thereunder; and (2) the sworn certificate of the corporate secretary (or similar officer) of such Guarantor that the Person executing the ICT Guaranty on behalf of the Guarantor has the authority to execute the ICT Guaranty and that the governing board of such Guarantor has approved the execution of the ICT Guaranty. AEP Ohio will have full discretion, without liability or recourse to the Guarantor or the SSO Supplier, to evaluate the sufficiency of the documents submitted by such Guarantor.

(d) SSO Suppliers who do not qualify for an ICT or whose ICT plus the amount of any cash or Letter of Credit already posted in accordance with Section 5.9 to satisfy its aggregate ICR under this Agreement and any Other Energy Supply Agreement (the "ICR Collateral") does not meet its aggregate ICR under this Agreement and any Other Energy Supply Agreement, must post

ICR Collateral at the time of or prior to the Effective Date to the extent its aggregate ICR under this Agreement and any Other Energy Supply Agreement exceeds its ICT.

(e) Under no circumstances shall the ICT hereunder plus any other independent credit threshold granted to the SSO Supplier or its Guarantor under any Other Energy Supply Agreement exceed the maximum ICT hereunder.

5.5 Mark-to-Market Credit Exposure Methodology

To calculate the Mark-to-Market Exposure Amount for each SSO Supplier, the following mark-to-market credit exposure methodology will be used. A “market value” for each Tranche will be determined at the time the Solicitation is completed based on the then prevailing market prices, as described further in Attachment C-2. At the time the Solicitation is completed, the Mark-to-Market Exposure Amount for each SSO Supplier shall be set equal to zero. Subsequently, the differences between the prevailing market prices on a valuation date and the market prices in effect on the date the Solicitation is completed will be used to calculate the Mark-to-Market Exposure Amounts for each SSO Supplier, as described further in Attachment C-2. The total Mark-to-Market Exposure Amount will be equal to the sum of the Mark-to-Market Exposure Amounts for each Billing Period, or portion thereof, remaining during the Original Delivery Period. Forward Market Prices will be determined with reference to publicly available market price quotations obtained by AEP Ohio, as adjusted by AEP Ohio to more closely approximate the price impact of serving a slice-of-system product which reflects hourly variations due to customer usage patterns. Such adjustment is further described in Attachment C-2. However, if market price quotations are not publicly available, Forward Market Prices will be determined by AEP Ohio using any method which AEP Ohio deems appropriate and which reasonably reflects forward market pricing conditions in PJM. The Mark-to-Market Exposure Amount will also be adjusted on a monthly basis to reflect changes in expected SSO Load by means of a volume adjustment factor. The Mark-to-Market Exposure Amount will be stated on a present value basis by discounting using the then-prevailing LIBOR rate. The methodology for calculation of the Mark-to-Market Exposure Amount is illustrated in the example (using hypothetical numbers) in Attachment C-2.

5.6 Credit Limit

The following criteria constitute AEP Ohio's creditworthiness requirements for the SSO Suppliers to cover the Total Exposure Amount:

(a) For SSO Suppliers to be granted a Credit Limit without delivering a Total Exposure Amount Guaranty or other Performance Assurance acceptable to AEP Ohio, in the case of an SSO Supplier organized under the laws of the United States, the SSO Supplier must (1) be rated by S&P, Moody's or Fitch, and (2) have a minimum senior unsecured debt rating (or, if unavailable, corporate or issuer rating) equal to the Minimum Rating. If the SSO Supplier is rated by only two rating agencies and the ratings are split, the lower rating will be used. If the SSO Supplier is rated by three rating agencies and the ratings are split, the lower of the two highest ratings will be used; provided that, in the event that the two highest ratings are common, such common rating will be used. If the SSO Supplier and an Affiliate(s) are both winning bidders in the Solicitation for the provision of SSO Supply, then the SSO Supplier or its Guarantor, as applicable, and the Affiliate(s) will proportionally share the maximum level of the Credit Limit using the highest rating as determined for the SSO Supplier or its Guarantor, as applicable, and the Affiliate(s). The maximum level of the Credit Limit to cover the Total Exposure Amount will be determined based on the following table:

Credit Rating of the SSO Supplier or its Guarantor			Maximum Credit Limit (calculated as the lesser of the percentage of TNW and the applicable Credit Limit Cap below)	
S&P	Moody's	Fitch	Percentage of TNW	Credit Limit Cap
A- and above	A3 and above	A- and above	16%	\$75,000,000
BBB+	Baa1	BBB+	10%	\$50,000,000
BBB	Baa2	BBB	10%	\$40,000,000
BBB-	Baa3	BBB-	8%	\$30,000,000
BB+	Ba1	BB+	2%	\$10,000,000
BB	Ba2	BB	1%	\$5,000,000
BB- and below	Ba3 and below	BB- and below	0%	\$0

The SSO Supplier will be required to post cash or a Letter of Credit for the Margin due AEP Ohio as set forth in Section 5.7 of this Agreement.

(b) For SSO Suppliers delivering a Total Exposure Amount Guaranty, in the case of a Guarantor organized under the laws of the United States, the maximum level of the Credit Limit to cover the Total Exposure Amount that could be granted based on the Total Exposure Amount Guaranty will be determined in accordance with subsection (a) above, with reference to the credit rating of the Guarantor, except that the Credit Limit granted to the SSO Supplier will not exceed the amount of the Total Exposure Amount Guaranty.

(c) For an SSO Supplier or Guarantor, if applicable, that has not been organized under the laws of the United States, the following standards will apply:

(i) the SSO Supplier must supply such evidence of creditworthiness as to provide AEP Ohio with comparable assurances of creditworthiness as applicable above for SSO Suppliers that have been organized under the laws of the United States; or

(ii) if the SSO Supplier is providing a Total Exposure Amount Guaranty, the Guarantor of an SSO Supplier must supply such evidence of creditworthiness as to provide AEP Ohio with comparable assurances of creditworthiness as applicable above for Guarantors of SSO Suppliers that have been organized under the laws of the United States. AEP Ohio may reject such Guarantors that do not meet the creditworthiness requirements.

(d) All SSO Suppliers or Guarantors of SSO Suppliers, if applicable, that have not been organized under the laws of the United States must, in addition to all documentation required elsewhere in this Section 5.6, supply the following to AEP Ohio:

(i) For an SSO Supplier: (1) a legal opinion of counsel qualified to practice in the foreign jurisdiction in which the SSO Supplier is organized that (A) the SSO Supplier is duly incorporated and existing in such foreign jurisdiction; (B) this Agreement is the binding and enforceable obligation of the SSO Supplier in such foreign jurisdiction and does not violate any local law or the SSO Supplier's organizational or governing documents; and (C) all authorizations, approvals, consents, licenses, exemptions or other requirements of governmental, judicial or public bodies in such foreign jurisdiction have

been obtained, and all execution formalities have been duly completed, necessary for the enforcement and validity of this Agreement and the performance by the SSO Supplier of its obligations hereunder; and (2) the sworn certificate of the corporate secretary (or similar officer) of such SSO Supplier that the Person executing this Agreement on behalf of the SSO Supplier has the authority to execute this Agreement and that the governing board of such SSO Supplier has approved the execution of this Agreement. AEP Ohio will have full discretion, without liability or recourse to the SSO Supplier, to evaluate the sufficiency of the documents submitted by the SSO Supplier; or

(ii) For the Guarantor of an SSO Supplier: (1) a legal opinion of counsel qualified to practice in the foreign jurisdiction in which the Guarantor is organized that (A) the Guarantor is duly incorporated and existing in such foreign jurisdiction; (B) the Total Exposure Amount Guaranty is the binding and enforceable obligation of the Guarantor in such foreign jurisdiction and does not violate any local law or the Guarantor's organizational or governing documents; and (C) all authorizations, approvals, consents, licenses, exemptions or other requirements of governmental, judicial or public bodies in such foreign jurisdiction have been obtained, and all execution formalities have been duly completed, necessary for the enforcement and validity of the Total Exposure Amount Guaranty and the performance by the Guarantor of its obligations thereunder; and (2) the sworn certificate of the corporate secretary (or similar officer) of such Guarantor that the Person executing the Total Exposure Amount Guaranty on behalf of the Guarantor has the authority to execute the Total Exposure Amount Guaranty and that the governing board of such Guarantor has approved the execution of the Total Exposure Amount Guaranty. AEP Ohio will have full discretion, without liability or recourse to the Guarantor or the SSO Supplier, to evaluate the sufficiency of the documents submitted by such Guarantor.

(e) For an SSO Supplier with a Total Exposure Amount Guaranty, the SSO Supplier will be granted a Credit Limit up to the amount of the Total Exposure Amount Guaranty, but not exceeding the Credit Limit shown in the table above. The Total Exposure Amount Guaranty shall be provided to AEP Ohio on or prior to the Effective Date, but may be modified in any amended or substitute Total Exposure Amount Guaranty provided to AEP Ohio during the Term. The SSO Supplier, however, may not increase or substitute its Total Exposure Amount Guaranty for the

purpose of increasing its applicable Credit Limit during the time period after AEP Ohio has made a demand of the SSO Supplier to cover Margin (a “Margin Call”) but before the SSO Supplier has provided AEP Ohio with cash credited to a deposit account of AEP Ohio or a Letter of Credit in accordance with Section 5.9, in each case in an amount equal to or exceeding the Margin (the “Margin Collateral”). Notwithstanding anything herein to contrary, the SSO Supplier may increase the amount of its Total Exposure Amount Guaranty after satisfying a Margin Call. Upon AEP Ohio’s receipt of an amended or substitute Total Exposure Amount Guaranty increasing the amount of the Total Exposure Amount Guaranty, the SSO Supplier may request a return of Margin Collateral in accordance with Section 5.7. The SSO Suppliers will be required to post cash or a Letter of Credit for the Margin due AEP Ohio as set forth in Section 5.7 of this Agreement.

(f) Under no circumstances shall the Credit Limit hereunder plus any other credit limit granted to the SSO Supplier or its Guarantor under any Other Energy Supply Agreement exceed the Credit Limit hereunder.

5.7 Posting Margin Collateral and Return of Excess Collateral

If at any time and from time to time during the Delivery Period, Margin exists with respect to an SSO Supplier, then AEP Ohio on any Business Day may make a Margin Call of such SSO Supplier; provided however that AEP Ohio may not make a Margin Call unless the Margin exceeds the Minimum Margin Threshold. Upon receipt of a Margin Call, the applicable SSO Supplier shall provide to AEP Ohio Margin Collateral, which shall comprise of cash or a Letter of Credit. The Margin Collateral shall be in the amount equal to the Margin less the amount of any Margin Collateral already posted by the SSO Supplier in which AEP Ohio has a first priority, perfected security interest to secure the obligations of the SSO Supplier under this Agreement and any Other Energy Supply Agreement. For the avoidance of doubt, any ICR Collateral posted pursuant to Section 5.4 shall not constitute Margin Collateral.

If an SSO Supplier receives a Margin Call from AEP Ohio by 1:00 p.m. prevailing Eastern Time on a Business Day, then such SSO Supplier shall post Margin Collateral the following Business Day if posting cash and the second Business Day following the Margin Call if posting a Letter of Credit, unless in each case AEP Ohio agrees in writing to extend the period to provide

Margin Collateral. If the SSO Supplier receives a Margin Call after 1:00 p.m. prevailing Eastern Time on a Business Day, whether posting cash or a Letter of Credit, then the SSO Supplier must post Margin Collateral on the second Business Day following the Margin Call unless AEP Ohio agrees in writing to extend the period to provide Margin Collateral. AEP Ohio will not unreasonably deny a request for a one-day extension of such period.

Margin Collateral being held by AEP Ohio that is not needed to satisfy the Margin (“Excess Collateral”), will be returned to the SSO Supplier upon receipt of a written request from the SSO Supplier; provided, however, that the SSO Supplier may not request Excess Collateral until such Excess Collateral exceeds the Minimum Margin Threshold. If the SSO Supplier posted cash and notice is received by AEP Ohio by 1:00 p.m. prevailing Eastern Time on a Business Day, the Excess Collateral will be returned by the following Business Day and if the SSO Supplier posted cash and notice is received by AEP Ohio after 1:00 p.m. prevailing Eastern Time on a Business Day, the Excess Collateral will be returned by the second Business Day following the date of notice. If the SSO Supplier posted a Letter of Credit, the Excess Collateral shall be returned on the next Business Day following the Business Day on which the amendment to the Letter of Credit is received from the issuing bank, unless in each case the SSO Supplier agrees in writing to extend such period for returning the Excess Collateral. The SSO Supplier will not unreasonably deny a request for a one-day extension of the period for returning the Excess Collateral.

5.8 Grant of Security Interest; Remedies

To secure its obligations under this Agreement, the SSO Supplier hereby grants to AEP Ohio a present and continuing security interest in, and lien on (and right of setoff against), its right, title and interest, whether now owned or hereafter acquired or arising, in (i) all deposit accounts in the name of AEP Ohio or partially in the name of AEP Ohio or held for the benefit of AEP Ohio and all funds credited to any and all of the foregoing, (ii) all securities, instruments (including promissory notes), money (each of the foregoing terms as defined in the UCC), cash and other tangible property delivered to and held by AEP Ohio (or its agents or custodians) and (iii) all proceeds (as defined in the UCC) of any and all of the foregoing. The SSO Supplier agrees to take such action as reasonably required to create and perfect AEP Ohio’s first priority security interest in, and lien on (and right of setoff against), such collateral and any and all proceeds resulting

therefrom or from the liquidation thereof. Upon or at any time after the occurrence or deemed occurrence and during the continuation of an Event of Default where an SSO Supplier is the Defaulting Party or an Early Termination Date (whether or not such SSO Supplier was the Defaulting Party), AEP Ohio may do any one or more of the following in any order: (i) exercise any of the rights and remedies of AEP Ohio, including the right to set-off and liquidation, against any and all ICR Collateral, Margin Collateral or other collateral of such SSO Supplier in the possession of AEP Ohio, whether held in connection with this Agreement or any Other Energy Supply Agreement, including any such rights and remedies under law then in effect, free from any claim or right of any nature whatsoever of such SSO Supplier; and (ii) draw on any outstanding Letter of Credit provided by such SSO Supplier. AEP Ohio will apply the proceeds of the collateral realized upon the exercise of such rights or remedies to reduce such SSO Supplier's obligations under this Agreement and under any Other Energy Supply Agreement, and such SSO Supplier shall remain liable for any amounts owing to AEP Ohio after such application, subject to AEP Ohio's obligation to return any surplus proceeds remaining after all such obligations are satisfied in full.

All notices, demands or requests regarding credit requirements and credit-related security or deposit transfers shall be sent in accordance with Section 12.2.

5.9 Acceptable Forms of Security

At each SSO Supplier's option, the following are deemed to be acceptable for posting Margin Collateral or ICR Collateral, if required:

- (a) Cash credited to a deposit account of AEP Ohio; and
- (b) A Letter of Credit, which shall state that such Letter of Credit will renew automatically for successive one-year or shorter periods, until terminated upon at least ninety (90) days' prior written notice from the issuing financial institution. If AEP Ohio receives notice from the issuing financial institution that the Letter of Credit is being cancelled, the SSO Supplier will be required to provide a substitute Letter of Credit from an alternative bank satisfying the requirements in this Section 5.9. The receipt of the substitute Letter of Credit must be effective as of the cancellation date and delivered to AEP Ohio thirty (30) days before the cancellation date of

the original Letter of Credit. If the SSO Supplier fails to supply a substitute Letter of Credit as required, then AEP Ohio will have the right to draw on the existing Letter of Credit and to hold the amount as Margin Collateral or ICR Collateral, as applicable.

The Letter of Credit shall be issued by a U.S. commercial bank or by a U.S. branch of a foreign bank with total assets of at least \$5 billion having a general long-term senior unsecured debt rating of A- or higher as rated by S&P or A3 or higher as rated by Moody's and shall permit presentation at a bank located in the United States of America.

If at any time the bank or other financial institution from which an SSO Supplier has obtained a Letter of Credit fails to meet the foregoing conditions, the SSO Supplier will immediately notify AEP Ohio and, within one (1) Business Day of the failure of the financial institution to meet the required conditions, obtain a suitable Letter of Credit from another bank or other financial institution that meets those standards, unless such period is extended in writing by AEP Ohio. For avoidance of doubt, SSO Supplier may elect to substitute a cash deposit for the Letter of Credit within the time frame specified herein.

Notwithstanding anything in this Agreement to the contrary, AEP Ohio may exercise any rights or claims to any collateral posted, delivered or pledged to them under this Agreement, before, after, concurrently with, or to the exclusion of, any other collateral posted, delivered or pledged prior to applying any cash collateral against, or making a drawing under any letter of credit in respect of, any liabilities of the SSO Supplier hereunder or its Guarantor under the Guaranty to AEP Ohio or any of them.

5.10 Reporting; Maintenance of Creditworthiness

(a) Each SSO Supplier must promptly notify AEP Ohio of any change in its or its Guarantor's credit rating or financial condition. The SSO Supplier or Guarantor must also furnish evidence of an acceptable credit rating or financial condition upon the request of AEP Ohio.

(b) If the lowest credit rating (whether corporate or issuer rating or unsecured senior debt rating) used to determine the SSO Supplier's ICT or its Credit Limit adversely changes, AEP Ohio will require ICR Collateral or Margin Collateral from such SSO Supplier in accordance with

Sections 5.4, 5.6 and 5.7. The additional security must be in a form acceptable to AEP Ohio, as specified in Section 5.9.

5.11 Interest on Cash Held by AEP Ohio

AEP Ohio will pay simple interest calculated at the lower of the Margin Interest Rate or 6% per annum on all cash held by AEP Ohio pursuant to this Agreement. If applicable, after each Billing Period the SSO Supplier will prepare a statement of interest amounts due from AEP Ohio. The statement will be sent to AEP Ohio within three (3) Business Days after the end of the Billing Period via overnight mail or other expeditious means. AEP Ohio will make interest payments on the first Business Day after the fifth (5th) day of each calendar month.

5.12 No Endorsement of SSO Supplier

AEP Ohio's determination of an SSO Supplier's creditworthiness pursuant to the process set forth in this Article 5 will not be deemed to constitute an express or implied warranty or guarantee of any kind with respect to the financial or operational qualifications of such SSO Supplier. AEP Ohio will treat all SSO Suppliers in a non-discriminatory manner and shall provide no preference to any SSO Supplier.

ARTICLE 6

BILLING, PAYMENT AND NETTING

6.1 Invoice Statement

Subject to Section 6.2, AEP Ohio and each SSO Supplier shall pay all amounts due to each other hereunder in accordance with the following provisions:

(a) For each Billing Period, AEP Ohio will prepare and provide an invoice to each SSO Supplier, which will show (i) amounts due to the SSO Supplier equal to the Price multiplied by the applicable Seasonal Billing Factor multiplied by the Estimated Monthly Energy Share, multiplied by the quotient of the Base Load and the sum of the Base Load and Incremental Load, (ii) the costs of procuring the portion of the SSO Supplier's SSO Supplier Responsibility Share for any Incremental Load, (iii) the Energy Share Adjustment from any prior Billing Period that have not been invoiced, if any, and (iv) ~~all~~ all Charges due to AEP Ohio incurred during the Billing Period (the "Billing Statement").

(b) AEP Ohio will determine the total amount payable by one Party to the other Party by netting the aggregate amounts due and owing to one Party against the aggregate amounts due and owing to the other Party, with the Party, if any, owing the greater aggregate amount paying the other Party the difference between the amounts owed. For any amounts due and owing AEP Ohio, AEP Ohio will specify in each Billing Statement how the amounts will be allocated among the SSO Suppliers. In the case of the Energy Share Adjustment, the allocation will be based on the respective SSO Loads of AEP Ohio.

(c) The Billing Statement will be sent to each SSO Supplier within six (6) Business Days after the end of the Billing Period.

(d) AEP Ohio or the SSO Supplier, as the case may be, will make payment on or before the twentieth (20th) day of each calendar month. If such day falls on a Saturday, Sunday or any other day which is a legal holiday or a day on which banking institutions are closed, payment will be due the following Business Day. All such payments shall be made by electronic transfer to an account designated in writing by each respective Party.

(e) All payments shall be subject to adjustment for any arithmetic errors, computation errors, or other errors, provided that the errors become known within one (1) year of the earlier of (i) the end of the Term or (ii) the Early Termination Date.

(f) Overdue payments shall accrue interest at the Interest Rate from, and including, the due date, but excluding date of payment.

(g) If a good faith dispute arises between AEP Ohio and the SSO Supplier regarding a Billing Statement, the disputing Party shall be obligated to pay only the undisputed portion of the Billing Statement, if any, no later than the due date and shall present the dispute in writing and submit supporting documentation to the non-disputing Party within one hundred twenty (120) calendar days from the date of the Billing Statement in dispute. Billing Statement disputes must be addressed promptly, and in accordance with the dispute resolution procedures set forth in Article 11. Upon resolution of a Billing Statement dispute, any payments made to either Party will include interest at the Interest Rate on the payment payable from the date that notice of a Billing Statement dispute was received by the non-disputing Party.

(h) Notwithstanding anything to the contrary contained in this Section 6.1, the determination of the allocation among SSO Suppliers of amounts due and owing to AEP Ohio, as set forth in a Billing Statement, will be final and binding, absent manifest error.

6.2 PJM Billing: Third Party Billing

(a) AEP Ohio and each SSO Supplier shall direct PJM to invoice AEP Ohio and such SSO Supplier for PJM charges and credits relating to such SSO Supplier's and AEP Ohio's rights and obligations under this Agreement. If PJM is unable to invoice charges or credits in accordance with the foregoing sentence, AEP Ohio shall rectify such PJM invoice discrepancy in the Billing Statement sent pursuant to Section 6.1.

(b) The Parties agree that the PJM invoice may change from time to time. Allocation of any charges that are reflected in a PJM invoice that are not included on or are inconsistent with Attachment F will be determined pursuant to Sections 3.1(c), 3.1(d), 3.1(e), 3.2(d) and 12.6.

(c) AEP Ohio shall have no responsibility for billing between an SSO Supplier and any other third party. AEP Ohio shall be solely responsible for billing SSO Customers for SSO Supply.

ARTICLE 7

BREACH AND DEFAULT

7.1 Events of Default

An "Event of Default" shall mean with respect to a Party (the "Defaulting Party") the occurrence of any of the following:

(a) the failure of the Defaulting Party to make, when due, any payment required pursuant to this Agreement (including under Section 6.2) if such failure is not remedied within two (2) Business Days after receipt of written notice of non-payment, and provided the payment is not the subject of a good faith dispute as described in Section 6.1;

(b) any representation or warranty made by the Defaulting Party herein is false or misleading in any material respect when made;

(c) the failure of the Defaulting Party to perform any material obligation set forth in this Agreement (other than events that are otherwise specifically covered in this Article 7 as a separate Event of Default) if such failure is not remedied within two (2) Business Days after written notice;

(d) the Defaulting Party becomes Bankrupt;

(e) with respect to an SSO Supplier, the failure of the Defaulting Party to provide Margin Collateral, or with respect to AEP Ohio, the failure of the Defaulting Party to return Excess Collateral, in each case pursuant to Section 5.7;

(f) failure of the Defaulting Party to comply with its obligations pursuant to Article 5 (except to the extent constituting a separate Event of Default under Section 7.1(e)) if such failure is not remedied within three (3) Business Days after receipt of written notice of such failure;

(g) the failure of the Defaulting Party to comply with the requirements of Sections 3.1(f), 3.1(g), 3.1(h) and 3.5, as applicable, if such failure is not remedied within three (3) Business Days of such failure;

(h) PJM has declared the Defaulting Party to be in default of any provision of any PJM Agreement, which default prevents the Defaulting Party's performance hereunder, if such failure is not remedied within three (3) Business Days after written notice;

(i) PJM holds AEP Ohio responsible for the provision of all or any portion of SSO Supply to meet the Defaulting Party's SSO Supplier Responsibility Share under this Agreement;

(j) the occurrence and continuation of: (i) a default, event of default or other similar condition or event in respect of the Defaulting Party or its Guarantor, if applicable, under one or more agreements or instruments, individually or collectively, relating to Specified Indebtedness in an aggregate amount of not less than the applicable Cross Default Amount, which results in such Specified Indebtedness becoming immediately due and payable; (ii) a default by the Defaulting Party or its Guarantor, if applicable, in making on the due date therefor one or more payments in respect of any obligation under contract or at law, individually or collectively, in an aggregate amount of not less than the applicable Cross Default Amount; or (iii) a default, event of default or

other similar condition or event by the Defaulting Party under any Other Energy Supply Agreement or by its Guarantor under any guaranty with respect to any Other Energy Supply Agreement; and

(k) with respect to a Defaulting Party's Guarantor, if any, (i) any representation or warranty made by such Guarantor in connection with this Agreement or any related Guaranty is intentionally or unintentionally false or misleading in any material respect when made or when deemed made or repeated; (ii) the failure of such Guarantor to make any payment required or to perform any other material covenant or obligation in any Guaranty made in connection with this Agreement and such failure is not remedied within three (3) Business Days after written notice; (iii) the failure of such Guarantor's Guaranty to be in full force and effect (other than in accordance with its terms) prior to the satisfaction of all obligations of the Defaulting Party under this Agreement without the written consent of AEP Ohio; (iv) such Guarantor repudiates, disaffirms, disclaims, or rejects, in whole or in part, or challenges the validity of the Guaranty; or (v) such Guarantor becomes Bankrupt.

7.2 Remedies Upon an Event of Default

If an Event of Default shall have occurred and be continuing, the Non-Defaulting Party shall have the right to:

(a) immediately suspend performance upon written notice to the Defaulting Party; provided, however, that if an SSO Supplier is the Non-Defaulting Party, such SSO Supplier may only suspend performance if the default of the Defaulting Party constitutes an Event of Default under Sections 7.1(a) or (d);

(b) declare an Early Termination and designate by written notice an Early Termination Date which shall be no earlier than the day such designation notice is effective and no later than twenty (20) calendar days after such notice is effective; provided, however, that if an SSO Supplier is the Non-Defaulting Party, such SSO Supplier may only declare an Early Termination if the default of the Defaulting Party constitutes an Event of Default under Section 7.1(a) or (d);

(c) calculate and receive from the Defaulting Party payment for any Default Damages which the Non-Defaulting Party incurs as of the date of the event giving rise to the Event of

Default, until the earlier of: (i) the Early Termination Date (if applicable); (ii) the date the Event of Default has been cured by the Defaulting Party; or (iii) the date the Non-Defaulting Party waives such Event of Default;

(d) withhold any payments due to the Defaulting Party under this Agreement as a set-off against any Default Damages, or Termination Payment, as applicable, the Defaulting Party is entitled to receive;

(e) draw down, liquidate, set-off against, or demand payment under, any Guaranty, ICR Collateral and Margin Collateral; and

(f) exercise any other remedies at law or in equity.

7.3 Default Damages; Settlement Amount; Termination Payment

(a) **Default Damages.** Subject to Section 7.3(e), the Defaulting Party shall pay Default Damages on or before three (3) Business Days after receipt of an invoice therefor. The invoice shall include a written statement explaining in reasonable detail the calculation of such amount. Neither Party will be liable for Default Damages if this Agreement is terminated by a Governmental Authority.

(b) **Settlement Amount.** If the Non-Defaulting Party has declared an Early Termination Date pursuant to Section 7.2(b), the Non-Defaulting Party shall have the right to (i) accelerate all amounts owing between the Defaulting Party and the Non-Defaulting Party and to liquidate and terminate the undertakings set forth in this Agreement as between the Defaulting Party and the Non-Defaulting Party; and (ii) withhold any payments due to the Defaulting Party under this Agreement pending payment of the Termination Payment. The Non-Defaulting Party will calculate, in a commercially reasonable manner, the Settlement Amount with respect to the Defaulting Party's obligations under the Agreement and shall net the Settlement Amount in the manner provided for in Section 7.3(c).

(c) **Termination Payment.** The Non-Defaulting Party will calculate a single payment (the "Termination Payment") by netting out (i) the sum of the Settlement Amount under this Agreement payable to the Defaulting Party, plus (a) similar settlement amounts payable to the

Defaulting Party under any other agreements between AEP Ohio and the applicable SSO Supplier for the provision of SSO Supply, Energy supply or other similar service (each, an “Other Energy Supply Agreement”) being terminated due to the event giving rise to the Event of Default plus, (b) at the option of the Non-Defaulting Party, any Performance Assurance then available to the Non-Defaulting Party under this Agreement or Other Energy Supply Agreements and actually received, liquidated and retained by the Non-Defaulting Party, plus (c) any or all other amounts due to the Defaulting Party under this Agreement and, at the option of the Non-Defaulting Party, Other Energy Supply Agreements, and (ii) the sum of the Settlement Amount under this Agreement payable to the Non-Defaulting Party, plus (a) similar settlement amounts payable to the Non-Defaulting Party under any Other Energy Supply Agreement being terminated due to the event giving rise to the Event of Default plus, (b) at the option of the Non-Defaulting Party, any Performance Assurance then available to the Defaulting Party under this Agreement or Other Energy Supply Agreements and actually received, liquidated and retained by the Defaulting Party, plus (c) any or all other amounts due to the Non-Defaulting Party under this Agreement and, at the option of the Non-Defaulting Party, Other Energy Supply Agreements.

The Termination Payment will be due to or due from the Non-Defaulting Party as appropriate; provided, however, that if an SSO Supplier is the Defaulting Party and the Termination Payment is due to such SSO Supplier, AEP Ohio will be entitled to retain a reasonable portion of the Termination Payment, which may be equal to the entire amount of the Termination Payment, as a security for additional amounts that may be determined to be due and owing by such SSO Supplier as Default Damages; and further provided that any previously attached security interest of AEP Ohio in such retained amounts will continue. If the Termination Payment has been retained by AEP Ohio as security for additional amounts that may be determined to be due and owing by the SSO Supplier, and if, upon making a final determination of Default Damages and payment therefor, the Termination Payment, or any portion thereof, is to be made to the SSO Supplier, AEP Ohio will pay interest at the Interest Rate on the Termination Payment amount being made to the SSO Supplier for the period of such retention.

(d) **Notice of Termination Payment.** As soon as practicable after calculation of the Termination Payment, notice must be given by the Non-Defaulting Party to the Defaulting Party of the amount of the Termination Payment and whether the Termination Payment is due to or due

from the Non-Defaulting Party. The notice shall include a written statement explaining in reasonable detail the calculation of such amount. Subject to Section 7.3(e), the Termination Payment must be made by the Party that owes it within three (3) Business Days after such notice is received by the Defaulting Party.

(e) **Disputes With Respect to Default Damages or Termination Payment.** If the Defaulting Party disputes the Non-Defaulting Party's calculation of the Default Damages or Termination Payment, in whole or in part, the Defaulting Party must, within three (3) Business Days of receipt of the Non-Defaulting Party's calculation of the Default Damages or Termination Payment, provide to the Non-Defaulting Party a detailed written explanation of the basis for such dispute. Any dispute under this Section 7.3(e) shall be subject to the dispute resolution procedures in Article 11; provided, however, that if the Default Damages or Termination Payment is due from the Defaulting Party, the Defaulting Party must first provide Performance Assurance to the Non-Defaulting Party in an amount equal to the Default Damages or Termination Payment, as the case may be.

7.4 Setoff of Payment Obligations of the Non-Defaulting Party

Any payment obligations of the Non-Defaulting Party to the Defaulting Party pursuant to this Agreement or any Other Energy Supply Agreement will be set off: (i) first, to satisfy any payment obligations of the Defaulting Party to the Non-Defaulting Party pursuant to this Agreement or any Other Energy Supply Agreement that are unsecured and not subject to any Guaranty; (ii) second, to satisfy any payment obligations under this Agreement or any Other Energy Supply Agreement that are unsecured, but which are guaranteed by a Guaranty; and (iii) third, to satisfy any remaining payment obligations of the Defaulting Party to the Non-Defaulting Party pursuant to this Agreement or any Other Energy Supply Agreement.

7.5 Preservation of Rights of Non-Defaulting Party

The rights of the Non-Defaulting Party under this Agreement, including Sections 7.2, 7.3 and 7.4, will be supplemental to, and not in lieu of, any right of recoupment, lien, or set-off afforded by applicable law, and all such rights are expressly preserved for the benefit of the Non-Defaulting Party.

ARTICLE 8

REPRESENTATIONS AND WARRANTIES

8.1 AEP Ohio's Representations and Warranties

AEP Ohio hereby represents and warrants to the SSO Suppliers as follows:

(a) it is an electric utility corporation duly organized, validly existing and in good standing under the laws of the State of Ohio;

(b) it has all requisite power and authority necessary for it to enter into and to legally perform its obligations under this Agreement and any other documentation relating to this Agreement;

(c) the execution, delivery and performance of this Agreement and any other documentation relating to this Agreement are within its powers, have been duly authorized by all necessary action and do not violate any of the terms and conditions in its governing documents, any contracts to which it is a party or any law, rule, regulation, order or similar provision of any Governmental Authority;

(d) this Agreement and each other document executed and delivered in accordance with this Agreement constitute its legally valid and binding obligation enforceable against it in accordance with its terms;

(e) there is not pending or, to its knowledge, threatened against it or any of its Affiliates any legal proceedings, including before a Governmental Authority, that could materially adversely affect its ability to perform its obligations under this Agreement or any other document relating to this Agreement;

(f) no Event of Default with respect to it has occurred and is continuing and no such event or circumstance would occur as a result of its entering into or performing its obligations under this Agreement or any other document relating to this Agreement;

(g) it is acting for its own account, has made its own independent decision to enter into this Agreement, is not relying upon the advice or recommendations of any other party in so doing,

and is capable of assessing the merits of and understanding and understands and accepts, the terms, conditions and risks of this Agreement;

(h) at the commencement of the Original Delivery Period, it has obtained all authorizations from any Governmental Authority necessary for it to perform its obligations under this Agreement; and it is not in violation of any law, rules, regulations, ordinances or judgments of any Governmental Authority which could reasonably be expected to adversely affect its ability to perform its obligations under this Agreement.

8.2 SSO Supplier's Representations and Warranties

Each SSO Supplier hereby represents and warrants to AEP Ohio as follows:

(a) it is duly organized, validly existing and in good standing under the laws of the jurisdiction of its formation and, if organized outside the State of Ohio, is qualified to conduct its business and is in good standing in Ohio;

(b) it has all regulatory authorizations and all requisite power and authority necessary for it to legally perform its obligations under this Agreement and any other documentation relating to this Agreement;

(c) the execution, delivery and performance of this Agreement and any other documentation relating to this Agreement are within its powers, have been duly authorized by all necessary action and do not violate any of the terms and conditions in its governing documents, any contracts to which it is a party or any law, rule, regulation, order or similar provision of any Governmental Authority;

(d) this Agreement and each other document executed and delivered in accordance with this Agreement constitutes its legally valid and binding obligation enforceable against it in accordance with its terms;

(e) it is a "forward contract merchant" within the meaning of the United States Bankruptcy Code;

(f) there is not pending or, to its knowledge, threatened against it or any of its Affiliates any legal proceedings, including before a Governmental Authority, that could materially adversely affect its ability to perform its obligations under this Agreement or any other document relating to this Agreement;

(g) no Event of Default with respect to it has occurred and is continuing and no such event or circumstance would occur as a result of its entering into or performing its obligations under this Agreement or any other document relating to this Agreement;

(h) it is acting for its own account, has made its own independent decision to enter into this Agreement, is not relying upon the advice or recommendations of AEP Ohio in so doing, and is capable of assessing the merits of and understanding and understands and accepts, the terms, conditions and risks of this Agreement;

(i) at the commencement of the Original Delivery Period, it (i) has obtained all authorizations from any Governmental Authority necessary for it to perform its obligations under this Agreement; (ii) is a member in good standing with PJM; (iii) is qualified by PJM as a “Market Buyer” and “Market Seller” pursuant to the PJM Agreements; (iv) is qualified as a PJM “Load Serving Entity;” and (v) has duly obtained all FERC authorization necessary or desirable to make sales of Energy, Capacity, and Ancillary Services at market-based rates within PJM; and

(j) it is not in violation of any law, rules, regulations, ordinances or judgments of any Governmental Authority which could reasonably be expected to adversely affect its ability to perform its obligations under this Agreement.

ARTICLE 9

RISK OF LOSS; LIMITATION OF LIABILITY

9.1 Risk of Loss

Title and risk of loss with respect to the SSO Supply shall pass from each SSO Supplier to AEP Ohio when the SSO Supply is delivered to the Delivery Point. As between the Parties, each SSO Supplier shall be deemed to be in exclusive control and possession of the SSO Supply prior to and at the Delivery Point, and AEP Ohio shall be deemed to be in exclusive control and

possession of the SSO Supply from the Delivery Point. Each SSO Supplier warrants that it will deliver the SSO Supply to AEP Ohio at the Delivery Point free and clear of all liens, claims and encumbrances arising or attaching prior to the Delivery Point.

9.2 Limitation of Liability

EXCEPT TO THE EXTENT EXPRESSLY SET FORTH IN THIS AGREEMENT, INCLUDING ARTICLE 10, AS BETWEEN AEP OHIO AND EACH SSO SUPPLIER, EACH PARTY'S LIABILITY SHALL BE LIMITED TO DIRECT ACTUAL DAMAGES INCURRED AS A RESULT OF A PARTY'S FAILURE TO COMPLY WITH THIS AGREEMENT. SUCH DIRECT ACTUAL DAMAGES SHALL BE THE SOLE AND EXCLUSIVE REMEDY AND ALL OTHER REMEDIES OR DAMAGES AT LAW OR IN EQUITY ARE WAIVED. NO PARTY SHALL BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES, LOST PROFITS OR OTHER BUSINESS INTERRUPTION DAMAGES, ARISING OUT OF SUCH PARTY'S FAILURE TO COMPLY WITH ITS OBLIGATIONS UNDER THIS AGREEMENT.

NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THIS AGREEMENT, NOTHING HEREIN SHALL IMPOSE ANY OBLIGATION OR LIABILITY FROM ONE SSO SUPPLIER TO ANY OTHER SSO SUPPLIER, EXCEPT AS PROVIDED IN ARTICLE 10.

ARTICLE 10

INDEMNIFICATION

10.1 Indemnification

(a) Each SSO Supplier shall defend, save harmless and indemnify AEP Ohio and its Affiliates, shareholders, managers, directors, officers, employees and agents (collectively, the "AEP Ohio Indemnified Party") against and from any and all of the following incurred by the AEP Ohio Indemnified Party solely as a result of a third party claim (including PJM and each other SSO Supplier) against the AEP Ohio Indemnified Party: loss, liability, damage, claim, cost, charge, demand or expense (including reasonable attorneys' fees) (collectively "Indemnification Losses") for injury or death to persons and damage to property including a Party's employees or any third party to the extent (i) caused by any act or omission (or alleged act or omission) of the SSO

Suppliers or their respective Affiliates, managers, directors, officers, employees and agents and (ii) such Indemnification Losses arise out of or are in any manner connected with the performance of this Agreement by the SSO Suppliers or for which the SSO Supplier assumed liability under the terms of this Agreement, except to the extent that a court of competent jurisdiction determines that the Indemnification Losses were caused wholly or in part by the gross negligence or willful misconduct of AEP Ohio. AEP Ohio may, at its own expense, retain counsel and participate in the defense of any such suit or action.

(b) AEP Ohio and each SSO Supplier shall defend, save harmless and indemnify each other SSO Supplier and its Affiliates, shareholders, managers, directors, officers, employees and agents (the “Indemnified Supplier”) against and from any and all of the following incurred by the Indemnified Supplier solely as a result of a third party claim (including another SSO Supplier) against the Indemnified Supplier: Indemnification Losses for injury or death to persons and damage to property including a Party’s employees or any third party to the extent (i) caused by any act or omission (or alleged act or omission) of AEP Ohio or such SSO Supplier or their respective Affiliates, managers, directors, officers, employees and agents, and (ii) such Indemnification Losses arise out of or are in any manner connected with the performance of this Agreement by AEP Ohio or such SSO Supplier or for which the SSO Supplier assumed liability under the terms of this Agreement, except to the extent that a court of competent jurisdiction determines that the Indemnification Losses were caused wholly or in part by the gross negligence or willful misconduct of the Indemnified Supplier. The Indemnified Supplier may, at its own expense, retain counsel and participate in the defense of any such suit or action.

(c) Any Party that receives notice of any claim, action, or proceeding for which it may seek indemnification under this Section shall promptly notify the indemnitor in writing; provided, however, that the failure to so notify the indemnitor shall not relieve the indemnitor of liability hereunder except to the extent that the defense of such claim, action, or proceeding is prejudiced by the failure to give the notice. The indemnitee shall cooperate fully with the indemnitor in connection with any such litigation or proceeding the defense of which the indemnitor has assumed. No indemnitee may consent to entry of any judgment or enter into any settlement of any claim, action, or proceeding that would give rise to any liability of the indemnitor hereunder without the indemnitor's prior written consent, which consent may not be unreasonably withheld

or delayed. If the indemnitor assumes the defense of the claim, action, or proceeding, no compromise or settlement of such claim, action, or proceeding may be effected by the indemnitor without the indemnitee's consent unless (i) there is no finding or admission of any violation of law or the rights of any Person and no effect on any other claims, actions, or proceedings that may be made against the indemnitee and (ii) the sole relief provided is monetary damages and such damages and the associated costs of suit and attorneys' fees are paid in full by the indemnitor.

ARTICLE 11

DISPUTE RESOLUTION

11.1 Informal Dispute Resolution

If a dispute arises between the Parties relating to this Agreement, a Party shall give the other Party written notice of a dispute which has not been resolved in the normal course of business. Such notice shall include: (a) a statement of that Party's position and a summary of arguments supporting such position, and (b) the name and title of the executive who will be representing that Party and of any other person who will accompany the executive. Within five (5) days after delivery of the notice, the receiving Party shall respond with (a) a statement of that Party's position and a summary of arguments supporting such position, and (b) the name and title of the executive who will represent that Party and of any other person who will accompany the executive. Within ten (10) days after delivery of the initial notice, the executives of both Parties shall meet at a mutually acceptable time and place, and thereafter as often as they reasonably deem necessary, to attempt to resolve the dispute. If, within twenty (20) days after such meeting, the Parties have not succeeded in negotiating a resolution of the dispute, then either Party may pursue any remedies available at law or in equity as set forth below.

11.2 Binding Arbitration

After the requirements of Section 11.1 have been satisfied, all disputes between the Parties, except where this Agreement requires otherwise, shall be submitted to an Ohio State court of competent jurisdiction or to a federal court of competent jurisdiction situated in the State of Ohio, which courts shall have exclusive jurisdiction to settle disputes arising under or related to this Agreement.

11.3 Recourse to Agencies or Courts of Competent Jurisdiction

Notwithstanding Section 11.2, nothing in this Agreement shall restrict the rights of a Party to file a complaint with the FERC under relevant provisions of the Federal Power Act or with the PUCO under relevant provisions of the Legal Authorities. The Parties' agreement under this Section 11.3 is without prejudice to any Party's right to contest jurisdiction of the FERC or PUCO to which a complaint is brought.

ARTICLE 12**MISCELLANEOUS PROVISIONS****12.1 Assignment**

(a) AEP Ohio may not assign this Agreement or its rights or obligation hereunder without the prior written consent of the applicable SSO Suppliers, which consent may not be unreasonably withheld, conditioned or delayed; provided, however, AEP Ohio may, without the consent of the SSO Suppliers (i) transfer, sell, pledge, encumber or assign this Agreement or the accounts, revenues, or proceeds hereof in connection with any financing or other financial arrangements; (ii) transfer or assign this Agreement to any Person having a Minimum Rating; and (iii) transfer or assign this Agreement to any Person succeeding to all or substantially all of the assets of AEP Ohio. Under (a)(ii) and (a)(iii) above, AEP Ohio shall be relieved of its obligations upon the assignment and assumption of the assignee, except for those obligations which have arisen prior to the date of assignment.

(b) An SSO Supplier may not assign this Agreement or any rights or obligation hereunder without the prior written consent of AEP Ohio, which consent may not be unreasonably withheld, conditioned or delayed; provided, however, an SSO Supplier may, without the consent of AEP Ohio (i) transfer, sell, pledge, encumber or assign this Agreement or the accounts, revenues, or proceeds hereof in connection with any financing or other financial arrangements; (ii) transfer or assign this Agreement to any Person having a Minimum Rating; and (iii) transfer or assign this Agreement to any Person succeeding to all or substantially all of the assets of such SSO Supplier. Under (b)(ii) and (b)(iii) above, the assigning SSO Supplier shall be relieved of its obligations upon (x) the assignment and assumption of this Agreement by the

assignee and (y) the assignee's satisfaction of the credit requirements set forth in Article 5, except for those obligations which have arisen prior to the date of assignment.

12.2 Notices

All notices, requests, statements or payments shall be made as specified below. Notices required to be in writing shall be delivered by letter, facsimile or other documentary form. Notice by regular mail shall be deemed to have been received by the earlier of actual receipt or three (3) Business Days after it has been sent. Notice by facsimile or hand delivery shall be deemed to have been received by the close of the Business Day on which it was transmitted or hand delivered (unless transmitted or hand delivered after close of normal business hours, in which case it shall be deemed to have been received at the close of the next Business Day). Notice by overnight mail or courier shall be deemed to have been received by the earlier of actual receipt or two (2) Business Days after it has been sent. A Party may change its addresses by providing notice of the same in accordance with this Section 12.2.

To AEP Ohio:

NOTICES & CORRESPONDENCE:

AEP Ohio
700 Morrison Road
Gahanna, OH 43230
Attn: Contract Administration Manager

Contract Administration Manager Contact:

Email:

Phone:

Fax:

INVOICES:

Attention:

Email:

Fax Number:

Phone Number:

CREDIT:

Attention:

Mail Code:

Email:

Fax Number:

Phone Number:

PAYMENTS:

Institution:

Account No.:

ABA No:

SCHEDULING:

Attention:

Email:

Fax Number:

Phone Number:

To SSO Supplier:

Each SSO Supplier's notification information is set forth on Attachment A.

12.3 General

This Agreement constitutes the entire agreement between the Parties relating to the subject matter contemplated by this Agreement and supersedes all prior communications and proposals (oral or written). This Agreement shall be considered for all purposes as prepared through the joint efforts of the Parties and shall not be construed against one Party or the other as a result of the preparation, substitution, submission or other event of negotiation, drafting or execution hereof. This Agreement shall not impart any rights enforceable by any third party (other than a permitted successor or assignee bound to this Agreement). No waiver by a Party of any default by the other Party shall be construed as a waiver of any other default. Any provision declared or

rendered unlawful by any applicable Governmental Authority or deemed unlawful because of a statutory change will not otherwise affect the remaining lawful obligations that arise under this Agreement. The headings used herein are for convenience and reference purposes only.

12.4 Governing Law

To the extent not subject to the jurisdiction of FERC, this Agreement and the rights and duties of the Parties hereunder shall be governed by and construed, enforced and performed in accordance with the laws of the State of Ohio, without regard to principles of conflicts of law.

12.5 Standard of Review

Except as provided in Section 12.6, this Agreement shall not be amended, modified, terminated, discharged or supplanted nor any provision hereof waived, unless mutually agreed in writing by the Parties. Except as provided in 12.6, the rates, terms and conditions contained in this Agreement are not subject to change under Sections 205 and 206 of the Federal Power Act, absent the written agreement of the Parties to change any provisions. Other than as expressly permitted in this Agreement, the standard of review for any changes proposed by a Party, a non-party, or the FERC, acting *sua sponte*, shall be the “public interest” application of the “just and reasonable” standard of review set forth in *United Gas Pipe Line Co. v. Mobile Gas Service Corp.*, 350 U.S. 332 (1956) and *Federal Power Commission v. Sierra Pacific Power Co.*, 350 U.S. 348 (1956) (the “*Mobile-Sierra*” doctrine), as clarified by *Morgan Stanley Capital Group, Inc. v. Public Util. Dist. No. 1 of Snohomish*.

12.6 PJM Agreement Modifications

(a) If the PJM Agreements are amended or modified so that any term, schedule or section reference herein to such agreement is changed, such term, schedule or section reference herein shall be deemed automatically (and without any further action by the Parties) to refer to the new term, schedule or section of the PJM Agreements.

(b) If the applicable provisions of the PJM Agreements referenced herein, or any other PJM rules relating to the implementation of this Agreement, are changed materially from those in

effect on the Effective Date, the Parties shall cooperate to make the conforming changes to this Agreement.

12.7 Confidentiality

(a) The Parties shall hold in confidence any information disclosed by one Party to the other Party in connection with negotiation of or performance under this Agreement unless (i) required, pursuant to any applicable court order, administrative order, statute, regulation or other official order by any government or any agency or department thereof, to disclose; (ii) such information is already in the possession of the receiving party at the time of disclosure, as evidenced by the receiving party's written documentation; (iii) such information becomes subsequently available to the receiving party on a non-confidential basis from a source not known or reasonably suspected by the receiving party to be bound by a confidentiality agreement or secrecy obligation owed to the disclosing party; and (iv) such information is or becomes generally available to the public other than as a result of a breach of this Agreement.

(b) In the event of disclosure pursuant to 12.7(a)(i), AEP Ohio will attempt to notify the SSO Supplier in advance of such disclosure. However, neither AEP Ohio nor its employees, lenders, counsel, accountants, advisors or agents, will be responsible to the SSO Suppliers for any such disclosure and AEP Ohio reserves the right to communicate publicly to third parties any and all information and data submitted as part of this Agreement or Solicitation in any proceedings before FERC, the PUCO and any other regulatory body and the courts, without the prior consent of, or notice to the SSO Suppliers, if AEP Ohio deems such disclosure necessary.

(c) A Party may disclose information and documents provided in connection with this Agreement to its employees, lenders, counsel, accountants, advisors, or utility regulators who have a need to know such information and have agreed to keep such terms confidential.

(d) The Parties shall be entitled to all remedies available at law or in equity to enforce, or seek relief in connection with, this confidentiality obligation.

12.8 Taxes

All present and future federal, state, municipal and other taxes imposed by any taxing authority by reason of the provision of SSO Supply by an SSO Supplier under this Agreement (collectively, the “Taxes”) will be the liability of the SSO Supplier, except for Ohio sales and use taxes imposed under Ohio Rev. Code Ann. Tit. 57, Chapters 5739, 5740 and 5741 (the “Ohio Sales and Use Taxes”), if any, which will be AEP Ohio’s responsibility. AEP Ohio shall provide the SSO Supplier with a valid Ohio Sales and Use Tax resale exemption certificate or direct pay permit, and an SSO Supplier shall not collect any Ohio Sales and Use Taxes from AEP Ohio nor remit any Ohio Sales and Use Taxes directly to the applicable taxing authority. AEP Ohio will defend and indemnify the SSO Supplier for any Ohio Sales and Use Taxes that the SSO Supplier may be required to remit directly to the applicable taxing authority and will pay to the SSO Supplier all such tax amounts upon demand. Each SSO Supplier shall pay all Taxes (other than Ohio Sales and Use Taxes) to the applicable taxing authority to the extent required or permitted by law. Should AEP Ohio be required to remit any Taxes directly to any applicable taxing authority (other than Ohio Sales and Use Taxes), the SSO Supplier will defend and indemnify AEP Ohio and will pay AEP Ohio all such Tax amounts upon demand.

Each Party shall provide to the other Party all information, data and exemption certificates as such other Party may from time to time reasonably request and otherwise fully cooperate with such other Party in connection with the reporting of (i) any Taxes payable by an SSO Supplier; (ii) any Tax audit; or (iii) any assessment, refund claim or proceeding relating to Taxes. Each Party shall cooperate with the other Party and take any action reasonably requested, which does not cause the Party to incur any material cost or inconvenience, in order to minimize any Taxes payable.

12.9 Record Retention

Each Party will retain for a period of two (2) years following the expiration of the Term necessary records so as to permit the Parties to confirm the accuracy of any statement, charge or computation made pursuant to this Agreement; provided that, if a Party provides notice within two (2) years of the expiration of the Term that it disputes the validity of any payments or quantity of

Energy delivered, the Parties agree that they will retain all records related to such dispute until the dispute is resolved pursuant to Article 11.

Each SSO Supplier will have the right, upon reasonable notice, to inspect (at the sole cost and expense of such SSO Supplier) the books and records retained by AEP Ohio only insofar as they relate to payments due and owing, or owed and paid, to such SSO Supplier. Such inspection must take place during regular business hours. AEP Ohio will have the right, upon reasonable notice, to inspect (at the sole cost and expense of AEP Ohio) the books and records retained by such SSO Supplier only insofar as they relate to Energy delivered by such SSO Supplier. Such inspection must take place during regular business hours.

12.10 Rules as to Usage

Except as otherwise expressly provided herein, the following rules shall apply to the usage of terms in this Agreement:

(a) The terms defined above have the meanings set forth above for all purposes, and such meanings are equally applicable to both the singular and plural forms of the terms defined.

(b) “Include,” “includes” and “including” shall be deemed to be followed by “without limitation” whether or not they are in fact followed by such words or words of like import.

(c) Any law defined or referred to above means such law as from time to time amended, modified or supplemented, including by succession of comparable successor law.

(d) “Hereof,” “herein,” “hereunder” and comparable terms refer, unless otherwise expressly indicated, to the entire agreement or instrument in which such terms are used and not to any particular article, section or other subdivision thereof or attachment thereto. References in an instrument to “Article,” “Section,” or another subdivision or to an attachment are, unless the context otherwise requires, to the relevant article, section, subsection or subdivision of or an attachment to such agreement or instrument. If such reference in this Agreement to “Article,” “Section,” or other subdivision does not specify an agreement or document, such reference refers to an article, section or other subdivision of this Agreement. All references to exhibits or schedules

in any agreement or instrument that is governed by this Agreement are to exhibits or schedules attached to such instrument or agreement.

(e) All titles and headings used herein are for convenience and references purposes only, and shall not be applicable in construing or interpreting obligations under this Agreement.

(f) The word “or” will have the inclusive meaning represented by the phrase “and/or.”

(g) “Shall” and “will” have equal force and effect.

12.11 Counterparts

This Agreement may be executed in counterparts, each of which will be considered an original, but all of which will constitute one instrument. Any counterpart may be delivered by facsimile transmission or by electronic communication in portable document format (.pdf) or tagged image format (.tif), and the Parties agree that their electronically transmitted signatures shall have the same effect as manually transmitted signatures.

[Signatures appear on next pages]

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the date first set forth above.

OHIO POWER COMPANY

By_____

Name: _____

Title: _____

[SSO SUPPLIER SIGNATURES APPEAR ON SUCCEEDING PAGES]

[SSO SUPPLIER]

By: _____

Name: _____

Title:

ATTACHMENTS

- A SSO Supplier Responsibility Share
- B Seasonal Billing Factor
- C Credit Examples
 - C-1 Independent Credit Requirement Per Tranche
 - C-2 Example Mark-To-Market Exposure Amount Calculation
- D Form of Guaranty
- E Form of SSO Supplier Letter of Credit
- F Sample PJM Invoice
- G Representative Form of PJM Declaration of Authority

ATTACHMENT A

SSO SUPPLIER RESPONSIBILITY SHARE

SSO Supplier	Price (\$MWh)	SSO Supplier	No. of Tranches
		Responsibility Share	
		Percentage (%)	
	_____/MWh	_____ %	_____

Original Delivery Period: _____, 20__ at 12:01 a.m. prevailing Eastern Time through _____, 20__.

Fixed percentage per Tranche: _____%

Address for Notice:

1. In the case of all notices except those required under Article 5:

Name:

Address:

Telephone:

Facsimile:

E-mail:

Copy to:

Name:

Address:

Telephone:

Facsimile:

E-mail:

2. Article 5 Notices:

Name:

Address:

Telephone:

Facsimile:

E-mail:

[SSO SUPPLIER]

By: _____

Name:

Title:

ATTACHMENT B
SEASONAL BILLING FACTOR

The Seasonal Billing Factors are as follows:

June 1 through September 30 _____

October 1 through December 31 and
January 1 through May 31 _____

ATTACHMENT C-1

INDEPENDENT CREDIT REQUIREMENT PER TRANCHE

Month of Delivery Period	12-Month Procurement (\$/tranche)	24-Month Procurement (\$/tranche)	36-Month Procurement (\$/tranche)
Inception through Month 1	400,000	800,000	1,200,000
Month 2	400,000	800,000	1,200,000
Month 3	400,000	800,000	1,200,000
Month 4	300,000	700,000	1,100,000
Month 5	300,000	700,000	1,100,000
Month 6	300,000	700,000	1,100,000
Month 7	200,000	600,000	1,000,000
Month 8	200,000	600,000	1,000,000
Month 9	200,000	600,000	1,000,000
Month 10	100,000	500,000	900,000
Month 11	100,000	500,000	900,000
Month 12	100,000	500,000	900,000
Month 13		400,000	800,000
Month 14		400,000	800,000
Month 15		400,000	800,000
Month 16		300,000	700,000
Month 17		300,000	700,000
Month 18		300,000	700,000
Month 19		200,000	600,000
Month 20		200,000	600,000
Month 21		200,000	600,000
Month 22		100,000	500,000
Month 23		100,000	500,000
Month 24		100,000	500,000
Month 25			400,000
Month 26			400,000
Month 27			400,000
Month 28			300,000
Month 29			300,000
Month 30			300,000
Month 31			200,000
Month 32			200,000
Month 33			200,000
Month 34			100,000
Month 35			100,000
Month 36			100,000

ATTACHMENT C-2

EXAMPLE MARK-TO-MARKET EXPOSURE AMOUNT CALCULATION

The following is an illustration of the methodology AEP Ohio will use to determine the Mark-to-Market Exposure Amounts for each SSO Supplier.

On the closing day of the Solicitation, the following parameters will be determined by AEP Ohio:

1. The expected On-Peak SSO Load per Tranche;
2. The expected Off-Peak SSO Load per Tranche;
3. Prevailing On-Peak Forward Market Prices for each month during the Original Delivery Period;
4. Prevailing Off-Peak Forward Market Prices for each month during the Original Delivery Period;
5. On-Peak Price Adjustment Factors; and
6. Off-Peak Price Adjustment Factors.

For purposes of the Mark-to-Market Exposure Amount calculation, “On-Peak” means the hours between 7:00 a.m. and 11:00 p.m. prevailing Eastern Time on Monday through Friday, excluding NERC holidays. “Off-Peak” means any hours that are not considered On-Peak.

The SSO Load for each month will be calculated by multiplying (i) the number of customers then being provided generation service by AEP Ohio (the “Un-Switched Customers”) by (ii) the historical monthly average usage per customer derived from data including only the Un-Switched Customers served by AEP Ohio over a recent three-year period (“Historical Actual Usage”). The SSO Load will be calculated separately for each major rate class and then summed to determine the total SSO Load. The total SSO Load will then be separated into On-Peak and Off-Peak components (consistent with the definitions cited above), still on a monthly basis, based on the Historical Actual Usage for all customer classes combined. The SSO Load per Tranche (On-Peak and Off-Peak) will be equal to the fixed percentage, as set forth in Attachment A, of the total

SSO Load calculated for each component. The fixed percentage per Tranche may vary by auction and therefore, the SSO Load per Tranche will be calculated for each component based upon the fixed percentage per Tranche as set forth in Attachment A of the respective SSO Agreement.

To the extent that quoted Forward Market Prices are not available on a monthly basis, monthly Forward Market Prices will be determined by AEP Ohio with reference to available market price data. Notwithstanding the foregoing, if AEP Ohio is unable to obtain publicly available market price data for Forward Market Prices, Forward Market Prices will be determined by AEP Ohio using any method which AEP Ohio deems appropriate and which reasonably reflects forward market pricing conditions in PJM.

A set of monthly On-Peak Price Adjustment Factors and Off-Peak Price Adjustment Factors will be developed using historical PJM day-ahead hourly prices applied to hourly usage derived from Historical Actual Usage on the AEP Ohio system, which factors will be applied to On-Peak Forward Market Prices and Off-Peak Forward Market Prices respectively to yield Adjusted On-Peak Forward Market Prices and Adjusted Off-Peak Forward Market Prices. These Adjusted Forward Market Prices will be used for the purpose of computing the Mark-to-Market Exposure Amounts. The purpose of the Price Adjustment Factors is to restate the quoted Forward Market Prices, which are based on fixed block volumes of MWhs, to more closely approximate the price impact of serving a slice-of-system product which reflects hourly variations due to customer usage patterns. The Price Adjustment Factors are anticipated to be recalculated as of each future auction date and applied to all then existing Master SSO Supply Agreements.

The Adjusted Forward Market Prices prevailing on the closing day of the Solicitation are used to establish a “market value” for each month during the Original Delivery Period. Table 1 contains hypothetical initial Adjusted On-Peak and Off-Peak Forward Market Prices for a 24-month Original Delivery Period from June 2013 through May 2015. Table 1 shows the hypothetical “market value” of a Tranche, which will be established on the day the Solicitation is completed using the Adjusted Forward Market Prices determined as shown in Table 2.

For each calculation of the Mark-to-Market Exposure Amount, AEP Ohio will determine the Adjusted Forward Market Prices for each month during the Original Delivery Period. Table 3 shows the calculation of an updated “market value” using hypothetical Adjusted Forward Market Prices for each month during the Original Delivery Period assumed to be in effect immediately prior to the Delivery Period for the 24-month Original Delivery Period. The initial market value as of the Solicitation completion date is then subtracted from the updated market value to derive a change in market value. The Mark-to-Market Exposure Amount is then calculated on an un-discounted basis by multiplying this change in market value by Volume Adjustment Factors calculated for changes in On-Peak and Off-Peak per tranche loads. The final Mark-to-Market Exposure Amount is determined by stating the values on a present value basis as of the determination date by discounting the calculated values at the then prevailing LIBOR rate (not shown).

The On-Peak and Off-Peak Volume Adjustment Factors will be determined by recalculating the SSO Load per Tranche reflecting the then current number of Un-Switched Customers and Historical Actual Usage and calculating the On-Peak and Off-Peak ratios of the current SSO Load per Tranche to the initial SSO Load per Tranche. The value for Un-Switched Customers is anticipated to be updated on a monthly basis and the value of Historical Actual Usage is anticipated to be updated in conjunction with each successive auction of SSO Load, but not less than once each calendar year.

Table 1

Market Valuation on Solicitation Closing Date

[VALUES ARE FOR ILLUSTRATION ONLY]

	<u>Forward Market at Close of Solicitation (a)</u>		<u>Initial Tranche Volume (b)</u>		Mkt Value
	Adjusted On-Peak Market Price	Adjusted Off-Peak Market Price	On- Peak	Off- Peak	
	\$/MWh	\$/MWh	MWh	MWh	\$000
Jun-13	37.94	26.82	3,386	3,653	226
Jul-13	42.61	27.44	4,078	3,844	279
Aug-13	42.27	28.75	3,986	3,595	272
Sep-13	34.06	24.16	2,900	2,578	161
Oct-13	31.54	24.66	2,367	2,452	135
Nov-13	33.55	24.39	2,799	2,288	150
Dec-13	36.55	29.93	3,480	3,259	225
Jan-14	40.23	34.88	2,749	3,247	224
Feb-14	41.00	34.63	3,133	2,776	225
Mar-14	37.96	30.36	3,095	2,841	204
Apr-14	38.22	27.93	2,440	2,554	165
May-14	37.55	28.33	2,905	2,705	186
Jun-14	42.84	30.55	3,386	3,653	257
Jul-14	48.17	30.97	4,078	3,844	315
Aug-14	48.95	23.45	3,986	3,595	279
Sep-14	39.14	27.46	2,900	2,578	184
Oct-14	35.27	27.60	2,367	2,452	151
Nov-14	37.07	27.23	2,799	2,288	166
Dec-14	38.82	32.97	3,480	3,259	243
Jan-15	43.74	37.11	3,749	3,247	284
Feb-15	44.58	36.85	3,133	2,776	242
Mar-15	41.23	32.43	3,095	2,841	220
Apr-15	40.56	29.85	2,440	2,554	175
May-15	40.59	31.00	2,905	2,705	202

(a): Adjusted On-Peak and Off-Peak Forward Market Prices determined as shown on Table 2.

(b): Expected On-Peak and Off-Peak SSO Load per Tranche derived from Historical Actual Usage and number of Un-Switched Customer as described in Attachment C-2.

Table 2

Adjusted Market Price at Solicitation Closing Date

[VALUES ARE FOR ILLUSTRATION ONLY]

	<u>Forward Price at Close of</u> <u>Solicitation (a)</u>		<u>Price Adjustment Factor (b)</u>			
	On-Peak Market Price	Off-Peak Market Price	On- Peak	Off- Peak	Adjusted On-Peak Market Price	Adjusted Off-Peak Market Price
	\$/MWh	\$/MWh			\$/MWh	\$/MWh
Jun-13	36.00	24.40	1.054	1.097	37.94	26.82
Jul-13	41.80	26.80	1.019	1.024	42.61	27.44
Aug-13	40.80	26.80	1.037	1.073	42.27	28.75
Sep-13	33.90	24.10	1.006	1.002	34.06	24.16
Oct-13	32.10	23.90	0.983	1.032	31.54	24.66
Nov-13	33.40	24.90	1.004	0.980	33.55	24.39
Dec-13	36.30	29.50	1.008	1.015	36.55	29.93
Jan-14	40.10	33.50	1.002	1.041	40.23	34.88
Feb-14	40.20	33.50	1.021	1.034	41.00	34.63
Mar-14	37.70	30.10	1.006	1.009	37.96	30.36
Apr-14	37.60	28.40	1.017	0.982	38.22	27.93
May-14	37.60	27.10	0.999	1.046	37.55	28.33
Jun-14	40.60	27.80	1.054	1.097	42.84	30.55
Jul-14	47.30	30.20	1.019	1.024	48.17	30.97
Aug-14	47.20	21.90	1.036	1.073	48.95	23.45
Sep-14	38.90	27.40	1.006	1.002	39.14	27.46
Oct-14	35.90	26.70	0.983	1.032	35.27	27.60
Nov-14	36.90	27.80	1.004	0.980	37.07	27.23
Dec-14	38.50	32.50	1.008	1.015	38.82	32.97
Jan-15	43.70	35.60	1.002	1.041	43.74	37.11
Feb-15	43.70	35.60	1.021	1.034	44.58	36.85
Mar-15	41.00	32.10	1.006	1.009	41.23	32.43
Apr-15	39.90	30.40	1.017	0.982	40.56	29.85
May-15	40.60	29.60	0.999	1.046	40.59	31.00

(a): On-Peak and Off-Peak Forward Market Prices as determined by reference to available market price data at time of Solicitation Close Date.

(b) Price Adjustment Factors as determined by AEP Ohio as described in Attachment C-2.

Table 3
Market Valuation Immediately Prior to Start of Delivery Period

[VALUES ARE FOR ILLUSTRATION ONLY]

	<u>Forward Price (a)</u>		<u>Initial Tranche Volume (b)</u>		<u>Current Mkt</u>	<u>Original Mkt Value on Solicitation Closing Date (c)</u>	<u>Change in Mkt Value</u>	<u>Volume Adjustment Factor</u>		<u>Volume Adjustment Change in Mkt Value</u>
	<u>On- Peak Market Price</u>	<u>Off- Peak Market Price</u>	<u>On- Peak</u>	<u>Off- Peak</u>				<u>On- Peak</u>	<u>Off- Peak</u>	
	\$/MWh	\$/MWh	MWh	MWh	\$000	\$000	\$000			\$000
Jun-13	39.60	26.90	3,386	3,653	232	226	6	0.8810	0.8955	5
Jul-13	45.98	29.48	4,078	3,844	301	279	22	1.0025	1.0054	22
Aug-13	44.88	29.48	3,986	3,595	285	272	13	1.0022	1.0061	14
1Sep-13	37.24	26.51	2,900	2,578	176	161	15	1.0060	1.0088	15
Oct-13	35.31	26.29	2,367	2,452	148	135	13	1.0022	1.0039	13
Nov-13	36.74	27.39	2,799	2,288	166	150	16	1.0002	1.0019	16
Dec-13	39.88	32.45	3,480	3,259	245	225	20	1.0000	1.0013	20
Jan-14	49.90	45.44	2,749	3,247	285	264	21	0.9460	0.9415	58
Feb-14	44.17	36.85	3,133	2,776	241	225	16	0.9952	0.9873	16
Mar-14	41.53	33.11	3,095	2,841	223	204	19	0.9581	0.9865	19
Apr-14	41.36	31.30	2,440	2,554	181	165	16	0.9069	0.9120	15
May-14	41.36	29.81	2,905	2,705	201	186	15	0.9293	0.9289	14
Jun-14	44.72	30.64	3,386	3,653	263	257	6	0.8810	0.8955	5
Jul-14	51.98	33.28	4,078	3,844	340	315	25	1.0025	1.0054	25
Aug-14	51.98	33.28	3,986	3,595	327	312	15	1.0022	1.0061	48
Sep-14	42.79	30.14	2,900	2,578	202	184	18	1.0059	1.0088	17
Oct-14	39.49	29.43	2,367	2,452	166	151	15	1.0021	1.0039	14
Nov-14	40.59	30.58	2,799	2,288	184	166	18	1.0002	1.0019	18
Dec-14	42.35	35.75	3,480	3,259	264	243	21	1.0000	1.0014	22
Jan-15	48.02	39.22	3,749	3,247	307	284	23	0.9460	0.9416	22
Feb-15	48.02	39.22	3,133	2,776	259	242	17	0.9952	0.9873	17
Mar-15	45.10	35.37	3,095	2,841	240	220	20	0.9582	0.9865	19
Apr-15	43.89	33.44	2,440	2,554	192	175	17	0.9070	0.9120	15
May-15	44.72	32.62	2,905	2,705	218	202	16	0.9293	0.9289	15
Total Mark to Market Exposure per Tranche(before discounting)(d)										466

(a): Adjusted On-Peak and Off-Peak Forward Market Prices determined as described in Attachments C-2 as of the date immediately prior to start of Delivery Period.

(b) Expected ON-Peak and Off-Peak SSO Load per Tranche determined as of Solicitation Closing Date - see Table 1.

(c):Original Market Value at Solicitation Closing Date shown on Table 1.

(d) Actual values will be determined by calculating the present value of the Volume Adjusted Change in Market Value.

ATTACHMENT D
FORM OF GUARANTY

[ICT / TOTAL EXPOSURE AMOUNT] GUARANTY OF

_____ [Guarantor]
This Guaranty, dated as of _____, 20__, is made by _____, a _____

[corporation] (the “Guarantor”), for the benefit of Ohio Power Company, an Ohio corporation (“AEP Ohio”). Capitalized terms used herein but not defined herein shall have the meaning given such terms in the Agreement (as defined below).

WHEREAS, AEP Ohio has entered into or will be entering into certain Master SSO Supply Agreement[s] dated _____, 20__ (collectively, the “Agreement”) with _____, a _____ [corporation] (the “SSO Supplier”), which may involve the extension of credit by AEP Ohio. Guarantor hereby acknowledges that it will receive a direct or indirect benefit from the business transactions between the SSO Supplier and AEP Ohio and the making of this Guaranty.

NOW, THEREFORE, in consideration of, and as an inducement for, AEP Ohio entering into the Agreement, the Guarantor hereby covenants and agrees as follows:

1. **Guaranty.** The Guarantor hereby unconditionally and absolutely guarantees to AEP Ohio the prompt payment when due, subject to any applicable grace period and upon demand in writing from AEP Ohio, of any and all amounts payable by the SSO Supplier to AEP Ohio arising out of the Agreement in connection with SSO Supplier’s [ICR / Total Exposure Amount] (the “Obligations”). Notwithstanding the aggregate amount of the Obligations at any time or from time to time payable by the SSO Supplier to AEP Ohio, the liability of the Guarantor to AEP Ohio shall not exceed _____ U.S. Dollars (\$ _____).

2. **Nature of Guaranty.** The Guarantor hereby agrees that its obligations hereunder shall be unconditional irrespective of the impossibility or illegality of performance by the SSO Supplier under the Agreement; the absence of any action to enforce the Agreement; any waiver or consent by AEP Ohio concerning any provisions of the Agreement; the rendering of any judgment against the SSO Supplier or any action to enforce the same; any failure by AEP Ohio to take any steps necessary to preserve its rights to any security or collateral for the Obligations; the release of all or any portion of any collateral by AEP Ohio; or any failure by AEP Ohio to perfect or to keep perfected its security interest or lien in any portion of any collateral.

This Guaranty is one of payment and not of collection. This Guaranty shall remain in full force and effect or shall be reinstated (as the case may be) if at any time any payment guaranteed hereunder, in whole or in part, is rescinded or must otherwise be returned by AEP Ohio upon the insolvency, bankruptcy or reorganization of the SSO Supplier or otherwise, all as though such payment had not been made.

3. **Waivers.** Guarantor’s obligation hereunder with respect to the Obligations shall not be affected by the existence, validity, enforceability, perfection or extent of any collateral for such Obligations covered hereunder, or by any extension, or the acceptance of any sum or sums on account of SSO Supplier, or of any note or draft of SSO Supplier and/or any third party, or security from

SSO Supplier. AEP Ohio shall not be obligated to file any claim relating to the Obligations owing to it in the event that SSO Supplier becomes subject to bankruptcy, insolvency, reorganization, liquidation, dissolution, or similar proceedings affecting SSO Supplier (whether voluntary or involuntary), and the failure of AEP Ohio to so file shall not affect Guarantor's obligations hereunder.

4. **Effect of Amendments.** Guarantor agrees that AEP Ohio and SSO Supplier may modify or amend any or all of the Agreement and that AEP Ohio may, according to the Agreement, delay or extend the date on which any performance must be made under the Agreement, or release SSO Supplier from the obligation to so perform or waive any right thereunder, all without notice to or further assent by Guarantor, who shall remain bound by this Guaranty, notwithstanding any such act by AEP Ohio.

5. **Termination.** This Guaranty is intended to be and shall be construed to be a continuing, absolute and unconditional guaranty, and shall remain in full force and effect until all Obligations have been fully and finally performed, at which point it will expire. The Guarantor may terminate this Guaranty upon thirty (30) days prior written notice to AEP Ohio, which termination shall be effective only upon receipt by AEP Ohio of alternative means of security or credit support, as specified in the Agreement and in a form reasonably acceptable to AEP Ohio. Upon the effectiveness of any such expiration or termination, the Guarantor shall have no further liability under this Guaranty, except with respect to the Obligations existing prior to the time the expiration or termination is effective, which Obligations shall remain guaranteed pursuant to the terms of this Guaranty until finally and fully performed.

6. **Notices.** All notices and other communications about this Guaranty must be in writing, must be given by facsimile, hand delivery or overnight courier service and must be addressed or directed to the respective parties as follows:

If to AEP Ohio, to:

Facsimile No.: _____

Attn.: _____

If to the Guarantor, to:

Facsimile No.: _____

Attn.: _____

Notices are effective when actually received by the party to which they are given, as evidenced by facsimile transmission report, written acknowledgment or affidavit of hand delivery or courier receipt.

7. **Representations and Warranties.** The Guarantor represents and warrants to AEP Ohio as of the date hereof that:

a) The Guarantor is duly organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation and has full power and legal right to execute and deliver this Guaranty and to perform the provisions of this Guaranty on its part to be performed;

b) The execution, delivery and performance of this Guaranty by the Guarantor have been and remain duly authorized by all necessary corporate action and do not contravene any provision of its certificate of incorporation or by-laws or any law, regulation or contractual restriction binding on it or its assets;

c) All consents, authorizations, approvals, registrations and declarations required for the due execution, delivery and performance of this Guaranty have been obtained from or, as the case may be, filed with the relevant governmental authorities having jurisdiction and remain in full force and effect, and all conditions thereof have been duly complied with and no other action by, and no notice to or filing with, any governmental authority having jurisdiction is required for such execution, delivery or performance; and

d) This Guaranty constitutes the legal, valid and binding obligation of the Guarantor enforceable against it in accordance with its terms, except as enforcement hereof may be limited by applicable bankruptcy, insolvency, reorganization or other similar laws affecting the enforcement of creditors' rights or by general equity principles.

8. **Certification.** The Guarantor hereby certifies that it satisfies the Minimum Rating as defined in the Agreement.

9. **Setoffs and Counterclaims.** Without limiting the Guarantor's own defenses and rights hereunder, the Guarantor reserves to itself all rights, setoffs, counterclaims and other defenses to which the SSO Supplier is or may be entitled arising from or out of the Agreement, except for defenses arising out of bankruptcy, insolvency, dissolution or liquidation of the SSO Supplier.

10. **Subrogation.** The Guarantor will not exercise any rights that it may acquire by way of subrogation until all Obligations shall have been paid in full. Subject to the foregoing, upon payment of all such Obligations, the Guarantor shall be subrogated to the rights of AEP Ohio against the SSO Supplier, and AEP Ohio agrees to take at the Guarantor's expense such steps as the Guarantor may reasonably request to implement such subrogation.

11. **Expenses.** The Guarantor hereby agrees to pay on demand all reasonable out-of-pocket expenses (including the reasonable fees and expenses of AEP Ohio's counsel) in any way relating to the enforcement or protection of the rights of AEP Ohio hereunder; provided that the Guarantor shall not be liable for any expenses of AEP Ohio if no payment under this Guaranty is due.

12. **Assignment.** This Guaranty shall be binding upon the Guarantor and upon its permitted successors and assigns, and shall inure to the benefit of AEP Ohio and its permitted successors and assigns and shall apply to all successors and assigns of the SSO Supplier. The Guarantor may not assign this Guaranty nor delegate its duties or rights hereunder without the prior express written consent of AEP Ohio. AEP Ohio may assign this Guaranty in accordance with the terms of the Agreement.

13. **Amendments.** No term or provision of this Guaranty shall be amended, modified, altered, waived, or supplemented except in writing and signed by the parties hereto; provided, however, the Guarantor may increase the aggregate amount of the obligations in this Guaranty without a countersignature.

14. **Choice of Law and Venue.** The Guarantor and AEP Ohio hereby agree that this Guaranty shall be governed by and construed in accordance with the internal laws of the State of Ohio without giving effect to principles of conflicts of law.

15. **Waiver of Jury Trial.** The Guarantor and AEP Ohio, through acceptance of this Guaranty, waive all rights to trial by jury in any action, proceeding or counterclaim arising or relating to this Guaranty.

16. **Miscellaneous.** This Guaranty is the entire and only agreement between the Guarantor and AEP Ohio with respect to the guarantee of amounts payable by the SSO Supplier to AEP Ohio arising out of the Agreement in connection with SSO Supplier's [ICR / Total Exposure Amount]. All representations, warranties, agreements, or undertakings heretofore or contemporaneously made, which are not set forth herein, are superseded hereby.

IN WITNESS WHEREOF, the Guarantor has caused this Guaranty to be executed in its [corporate] name by its duly authorized representative as of the date first above written.

[GUARANTOR]

By: _____

Its: _____

**This foregoing document was electronically filed with the Public Utilities
Commission of Ohio Docketing Information System on**

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in

Case No(s). 23-0023-EL-SSO, 23-0024-EL-AAM

Summary: Testimony -- Direct Testimony of Muralikrishna Indukuri in Opposition to the Stipulation and Recommendation electronically filed by Mr. Michael J. Settineri on behalf of Constellation Energy Generation LLC and Constellation NewEnergy Inc..