



AEP Ohio Competitive Bidding Process March 2017 Auction

Bidder Webcast Wednesday, February 15, 2017

Benjamin Chee, NERA **Chantale LaCasse**, NERA



Disclaimer

Any statements herein describing or referring to documents and agreements are summaries only, and are *qualified in their entirety* by reference to such governing documents

- These governing documents include:
 - PUCO decisions in Case No. 13-2385-EL-SSO related to AEP Ohio's third Electric Security Plan ("ESP III")
 - Bidding Rules for the Auctions Under the Competitive Bidding Process of Ohio Power Company ("CBP Rules")
 - Master Standard Service Offer ("SSO") Supply Agreement
 - Rules and Protocols for Participation by Associated Bidders
 - Part 1 Application
 - Part 2 Application

Please see the CBP website for complete documentation http://www.aepohiocbp.com/



CBP Website is Central Source of Information

www.AEPOhioCBP.com

| Home | Register for an Application Account | | |
|------------------------------------|--|--|--|
| Search | Please complete the Expression of Interest to request an account for the application portion of the website. Application materials for AEP Ohio's CBP are submitted online | | |
| Background | | | |
| Information | through the application portion of this website. | | |
| Data Room | Company *: | | |
| Calendar | Primary Contact First Name *: | | |
| Contact Us | Primary Contact Last Name *: | | |
| Register | Primary Contact Phone *: | | |
| Ask a Question | Primary Contact Mobile : | | |
| RSVP for an Information Session | Primary Contact Email *: | | |
| Contact the Auction Manager | Secondary Contact First Name : | | |
| Register for an Application | Secondary Contact Last Name : | | |
| Account | Secondary Contact Phone : | | |
| | Secondary Contact Mobile : | | |
| PIPP RFP | Secondary Contact Email : | | |
| | Type the text Privacy & Terms Privacy & Terms | | |
| | Submit | | |

Contact Us / Register

Sign up for email alerts

Contact Us / Ask A Question

- Allows bidders to ask questions
- All Q&As posted as FAQs

Get account for Application website

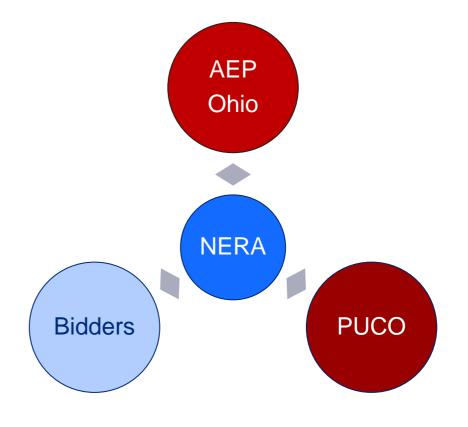
 Username and password for access to forms

This presentation as well as questions and answers will be posted to the CBP website



NERA's Role as Auction Manager

| Role | Description | |
|----------------|--|--|
| Communication | To be the main point of contact with bidders | |
| CBP Rules | To ensure the CBP Rules, as approved by the PUCO, are followed | |
| Qualifications | To ensure bidder qualifications are evaluated equitably and fairly | |
| Auction | To administer the Auction | |
| Results | To present results to PUCO | |





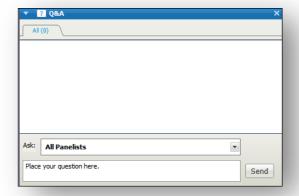
Agenda

- 1. Overview of this Auction
- 2. Product Design and Contract
- 3. Application Process
- 4. Bidding in the Auction
- 5. CBP Website



Ask a Question during the Webcast

- Questions will be taken in writing through the WebEx interface:
 - Locate the "Q&A" on the right hand side of your screen
 - Select "All Panelists" in the "Ask" box
 - Type in your question including the relevant slide number
 - Click "Send" to submit your question
- We will respond to questions as we go along as practicable and we will also pause to provide responses:
 - After Part 2 on "Product Design and Contract"
 - At the end of the presentation





Part 1 Overview

© NERA Economic Consulting



Upcoming Auction is on March 28, 2017

- This is the final of a series of six full requirements auctions under Case No. 13-2385-EL-SSO
- A petition for ESP III extension is currently before PUCO under Case No. 16-1852-EL-SSO





Results of Last Auction Held November 7, 2016

| Registered Bidders | 12 | |
|-------------------------|---------------------|--|
| Rounds in the Auction | 13 | |
| Range of Starting Price | \$70/MWh - \$90/MWh | |
| Delivery Period Start | June 1, 2017 | |

| Product | Tranche Target | Clearing Price (\$/MWh) |
|----------|----------------|-------------------------|
| 12-month | 17 | 49.78 |

PUCO accepted results on November 9, 2016.



Product Description

| Product | Load-following, slice-of-system, full requirement Denominated in tranches | | |
|--------------------|--|--|--|
| Tranche | a percentage of the load of SSO customers | | |
| SSO Customers | those customers who take retail generation service from AEP Ohio, excluding PIPP customers | | |
| Delivery Point | Pnode ID 1269364670 | | |
| LSE Responsibility | is assumed by the SSO Supplier, including scheduling SSO Supply and making arrangements for delivery of SSO Supply | | |



Supply Will Be Divided into Tranches

Auction Date

Tuesday, Mar. 28

| Product Type | Delivery Period | Tranche Target | Load Cap | Tranche Size |
|-----------------|------------------------|-------------------|----------|--------------|
| 12-month | June 2017- May 2018 | 17 | 13 | 1% |



Auction Format is a Clock Auction

- Multiple tranches of a single term
- Multiple rounds
 - Each round, suppliers state how many tranches they want to supply at the going price announced by the Auction Manager
 - From one round to the next, auction continues and price ticks down if there is excess supply
- No sealed bid round: bidders provide exit prices as they withdraw tranches throughout the auction
- Auction establishes a single clearing price



Announcement: Minimum and Maximum Starting Prices, MW-Measure

— The minimum and maximum starting prices are:

| Max | \$95/MWh |
|-----|----------|
| Min | \$70/MWh |

- The PLC (MW) is based on the five highest coincident peaks experienced by PJM in 2016 for SSO customers (i.e., non-shopping only)
- The MW-measure is provided for references purposes only

| PLC (MW) | 2,530 | |
|-------------|-------|--|
| MW-measure* | 25.30 | |

 The MW-measure is the weighted average of: (1) MW-measure applicable to the first three auctions that include PIPP load; and (2) MW-measure in the last three auctions that provide supply for SSO customers only



Announcement: Seasonal Factors

Suppliers are paid the auction clearing price for each MWh of supply during the delivery term



ANNOUNCEMENT: Seasonal Factors Summer (June to September): 1.00 Non-Summer (October to May): 1.00



Key Events

| M | Т | W | Th | F |
|------|--------------------|------------------------|-----------------------|-------|
| Feb. | P1 Window | | | |
| 20 | Opens 21 | 22 | 23 | 24 |
| | | Mar. | | P1 |
| 27 | 28 | 1 | 2 | 3 Due |
| 6 | 7 | P1 Notification | P2 Window Opens | 10 |
| | | | P2 Due | |
| 13 | 14 | 15 | 16 | 17 |
| 20 | P2 Notification | Trial Auction 22 | 23 | 24 |
| 27 | Auction Starts | 29 | 30 | 31 |

By February 21: Bidders can access account for application website

Announcements:

February 15: Tranche targets, tranche size, MW-measure, and range of starting price

March 10: Update to seasonal factors and MW-measure

March 23: Round 1 price for Registered Bidders



Application Process is Online

Part 1 Application (Feb. 21 – Mar. 3)

- Provide contact and company information
- Upload Inserts
- Upload required supporting documents

Part 2 Application (Mar. 9 – Mar. 16)

- Provide information and indicative offer
- Upload Inserts
- Provide hardcopy of pre-bid letter of credit or wire cash (New! pre-bid letter of credit form has been updated)

No hardcopy of application forms required!



Post-Auction: PUCO Approval and Power Flow

- Auction results are contingent on final PUCO approval
- Auction Manager submits a confidential report on auction results to PUCO on the day the auction closes
- PUCO will issue a decision within two days of auction close
 - If PUCO does not act within this window, auction results are deemed accepted
- PUCO may publicly release the auction clearing price and the names of the winning bidders from the auction
- Master SSO Supply Agreement fully executed and winning bidders fulfill creditworthiness requirements within three days of the Commission's acceptance of results



Part 2 Product Design and Contract

© NERA Economic Consulting



Full Requirements

- SSO Suppliers:
 - Will assume all responsibilities of an LSE
 - Are responsible for providing full requirements service to SSO customers of AEP Ohio, excluding PIPP customers, and to bear all costs that are associated with this responsibility
- Full requirements service and the LSE obligations of SSO
 Suppliers are defined in the Master SSO Supply Agreement

Attachment F of the Master SSO Supply Agreement: Sample PJM Invoice



Supplier Obligations

Suppliers provide

 energy, capacity, ancillary services, certain transmission services, as well as any other service as may be required by PJM

AEP Ohio provides

- Firm Transmission Service from the Delivery Point
- other FERC-approved nonmarket-based charges
- renewable resource requirement



What are SSO Customers?

- SSO customers take retail generation service from AEP Ohio
 - SSO customers have NOT switched to a Competitive Retail Electric Service ("CRES") Supplier

Includes

- Residential Customers
- Commercial / Industrial Customers
- Lighting Customers
- Special Contract Customers
 - Excludes PIPP customers



Credit Requirements under the Master SSO Supply Agreement

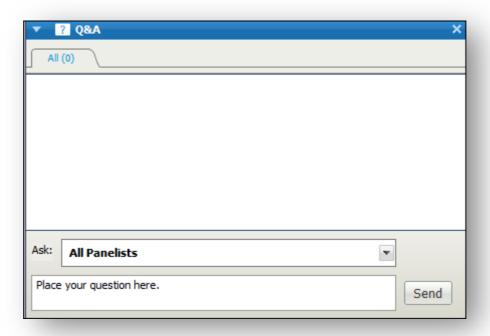
Two Credit Requirements and Two Unsecured Credit Lines:

- Independent Credit Requirement (ICR) and the Independent Credit Threshold (ICT)
 - Amount required per tranche; declines throughout the term of the Master SSO Supply Agreement
- Mark-to-Market (MTM) and Credit Limit
 - Differences between the prevailing market prices on a valuation date and the market prices in effect on the date the auction is completed
- Credit Limit and Independent Credit Threshold will depend upon a credit evaluation
- Form of Guaranty and Form of Performance Assurance Letter of Credit provided as attachments to the Master SSO Supply Agreement



Questions?

 To submit questions to the presenters, please locate the "Q&A" on the right hand side of your screen, and select "All Panelists" in the "Send to" box; type in your question and click "Send" to submit your question





Part 3 | Application Process

© NERA Economic Consulting



Register for your Online Application Account Only for NEW bidders

www.AEPOhioCBP.com

| Home | Register for an Application Account | | |
|-----------------------------|--|--|--|
| Search | Please complete the Expression of Interest to request an account for the application | | |
| Background | portion of the website. Application materials for AEP Ohio's CBP are submitted online through the application portion of this website. | | |
| Information | | | |
| Data Room | Company *: | | |
| Calendar | Primary Contact First Name *: | | |
| Contact Us | Primary Contact Last Name *: | | |
| Register | Primary Contact Phone *: | | |
| Ask a Question | Primary Contact Mobile : | | |
| RSVP for an Information | Primary Contact Email *: | | |
| Contact the Auction Manager | Secondary Contact First Name : | | |
| Register for an Application | Secondary Contact Last Name : | | |
| Account | Secondary Contact Phone : | | |
| | Secondary Contact Mobile : | | |
| PIPP RFP | Secondary Contact Email : | | |

Returning bidders will receive reminder of login credentials by email from the Auction Manager

Contact Us / Register for an Application Account

Alternatively, email AEP-CBP@nera.com with:

- Company name
- full name of contact
- phone and alternate number
- email address



Application Process Features and Reminders

- Application process for returning bidders is streamlined
 - Reminder of login credentials will be sent to returning bidders
 - Part 1 Form pre-populated with previously submitted contact information and PJM information
 - All bidders (including returning bidders) must provide financial information and make certifications
- Inserts. Bidders download, prepare, sign, and upload their own "Inserts" with their applications

 Acceptable modifications of credit documents will be posted on the CBP website



List of Inserts and to whom they apply

| # | Insert | Applies to |
|------|--|--|
| P1-1 | Representative Designation Insert (retained for returning bidders) | REQUIRED of all Bidders |
| P1-2 | Representative Responsibilities Insert (retained for returning bidders) REQUIRED of all Bidde | |
| P1-3 | Designation of Nominees Insert | OPTIONAL |
| P1-4 | Legal Representative Insert (retained for returning bidders) | REQUIRED of all Bidders |
| P1-5 | PJM Requirements Insert | Special Circumstances: Bidders that are not PJM LSEs |
| P1-6 | Certifications Insert | REQUIRED of all Bidders |
| P1-7 | Foreign Applicant Certification Insert | Special Circumstances: Bidders that are Foreign Applicants |
| P1-8 | Foreign Guarantor Certification Insert | Special Circumstances: Bidders with Foreign Guarantors |
| P1-9 | Bidding Agreement Insert | Special Circumstances: Bidders in Bidding Agreements |

© NERA Economic Consulting



Up-Front Requirements for Part 1 Are Simple

1. Applicant's Contact Information

- Representative: Represents the Applicant in the auction
- Legal Representative in Ohio: Agrees to accept service of process
- Nominees (optional): to be included in electronic communications from the Auction Manager to the bidder along with Representative

2. PJM requirements

- Qualified as a "Market Buyer" and "Market Seller"
- Qualified as a "Load Serving Entity"

Notifications sent to Representative and Nominees by email



Certifications, Financial Information, and Documents

Certifications

- Agree to terms of Master SSO Supply Agreement
- Agree to CBP Rules
- Keep information related to the auction confidential

4. Financial Information

- Annual and quarterly financial statements
- Credit ratings
- Additional information for foreign applicants or guarantor
- Submit via upload to application website

5. Request for modifications to pre-bid credit instruments (optional)

- Submit redline via upload to application website
- Any modification accepted for one bidder will be made available to all bidders on an optional basis

New and Returning Bidders
Provide This Information and Documents



Part 2 Application: To Be Registered as a Bidder

- 1. Submit an indicative offer
- 2. Submit pre-bid security
- 3. Make certifications including compliance with Rules related to Associations and Handling of Confidential Information
- 4. Provide additional certifications

Requirements for new and returning bidders are the same In the Part 2 Application



Indicative Offer

- Submit an indicative offer the maximum number of tranches that the bidder is willing to bid
 - At the minimum starting price and at the maximum starting price



- The indicative offer at the maximum starting price determines:
 - The maximum number of tranches that the bidder can bid in the auction (the initial eligibility)
 - The amount of pre-bid security required with the Part 2 Application



Bidders are Subject to Load Caps

- A bidder cannot bid or win more than 80% of the tranches available at the start of the auction
- Credit-based tranche caps are determined by credit ratings and is an overall cap in effect across all auctions under the CBP

| Credit I | | | | |
|--------------|---|--|--|--|
| S&P | Credit Based Tranche Cap | | | |
| BB and above | BB and above Ba2 and above BB and above | | | |
| BB- | BB- Ba3 BB- | | | |
| Below BB- | 5 | | | |
| | 5 | | | |



Additional Part 2 Requirements

2. Submit pre-bid security

- Each Qualified Bidder must submit a letter of credit or cash in an amount of \$500,000 per tranche of its indicative offer at the maximum starting price
- No additional pre-bid security is required

3. Certify compliance with Associations and Confidential Information Rules (see Article X of CBP Rules)

- Certify that applicant is not "associated with" another Qualified Bidder to promote competitiveness of the auction
- Keep information related to the auction confidential

4. Provide Additional Certifications

- Agree that bids in auction will be a binding obligation
- Agree not to assign rights as Registered Bidder



List of Inserts and to whom they apply

| # | Insert | Applies to |
|------|---------------------------|---|
| P2-1 | Cash Certification Insert | Special Circumstances: Bidders that submit cash as pre-bid security |
| P2-2 | Certifications Insert | REQUIRED of all Bidders |

© NERA Economic Consulting



Part 4 Bidding in the Auction

© NERA Economic Consulting



Rounds Have Three Phases

Bidding Phase

- Suppliers state how many tranches they want to supply at going price in round
- Auction Manager informs Registered Bidders of Round 1 price three days before auction

Calculating Phase

 Auction Manager tabulates the results of that round's bidding phase and calculates the price for the next round

Reporting Phase

- Information provided to bidders:
 - Excess supply range; and
 - Going price for next round





Bid in Round 1

- A bid in round 1 is a number of tranches that the bidder is willing to supply at the round 1 price
- Bidder cannot bid more than its initial eligibility
 determined by the indicative offer at the maximum
 starting price
- Bidder will not be able to increase the number of tranches bid throughout the auction



Possible Reduction of Tranche Target

- If there is insufficient supply to ensure competitive bidding, the Auction Manager has the discretion to reduce the tranche target
- The criteria that could lead to such a reduction will be determined prior to the auction, but will not be announced to bidders
- Once certain pre-specified criteria have been met, the discretion to reduce the tranche target will be eliminated



Sample Reports

Bidder sees:

- Range of excess supply
 - Range provided includes actual excess supply
- The next round price
- The result of the bidder's own bid

| Report: Round 1 | | | | |
|---------------------------|-------|--|--|--|
| Excess Supply | 51-55 | | | |
| Round 2 price (\$/MWh) | 67.75 | | | |

Bidder has no information about others' bids, identities or eligibilities



Information in Bidder User Manual

- Decrement is related to amount of excess supply left in the auction
 - Formula or table for determination of decrement provided to bidders
 - Auction Manager has discretion to override decrement
- Possible ranges of excess supply provided in Bidder User Manual
- Bidder User Manual provided to Registered Bidders



Bidding in Round 2 and Subsequent Rounds

In response to reduced prices, a bidder may:

- Leave bid unchanged
- Reduce the number of tranches the bidder is willing to supply by withdrawing tranches from the auction
- Bidder cannot bid more than its eligibility
 - In round 2, eligibility is the number of tranches bid in round 1
 - In round 3 and all subsequent rounds, eligibility in a round is the eligibility in the prior round less any tranches that were withdrawn from the auction



Withdrawing Tranches

 When reducing the number of tranches bid, a bidder must provide an exit price

| Price Round 1 (\$/MWh) | 70.00 |
|------------------------|-------|
| Bid Round 1 (tranches) | 3 |
| Price Round 2 (\$/MWh) | 65.75 |
| Bid Round 2 (tranches) | 2 |
| Exit Price | 67.37 |

- Exit price is a last and best offer
 - Above current going price
 - Below or equal to previous going price



How Does the Auction Continue and Close?

- Auction continues as long as there is excess supply:
 - When there are more tranches bid than there are available
- When the auction closes, a uniform price is determined that is the auction clearing price
- Two cases on how the auction clearing price is determined:
 - when the number of tranches bid is equal to the number of tranches available, the auction clearing price is the price of the final round
 - when there are fewer tranches bid than tranches available, the auction clearing price is lowest exit price at which all tranches available are filled



Auction Clearing Price Example

| Round | Price \$/MWh | Bidder A | Bidder B | Bidder C | #Bid | Target | #Bid – Target |
|-------|-----------------|-------------|-------------|-------------|------|--------|------------------|
| R11 | 39.42 | 7 | 8 | 4 | 19 | 17 | 2 |
| R12 | 38.68 | 5 | 7 | 2 | 14 | 17 | -3 |

| Tranches withdrawn | 2 | 1 | 2 | |
|-----------------------|-------|-------|-------|--|
| Exit Prices | 38.69 | 38.99 | 39.42 | |

| Retained Tranches | 2 | 1 | 0 |
|------------------------|---|---------|---|
| Auction Clearing Price | | \$38.99 | |

To fill the tranche target of 17 tranches:

- 1. take 14 tranches bid at going price
- 2. take 2 tranches at \$38.69
- 3. take 1 tranche at \$38.99

Auction clearing price is \$38.99/MWh, the lowest price at which all tranches available are filled



Basics of the Bidding Methods

- 1. Bidders submit bids online using the Auction Software. The Trial Auction (Wednesday, March 22, 2017) is the bidders' opportunity to practice
- 2. The backup bid procedure is by phone
- 3. The last bid submitted and verified by the bidder in the bidding phase and processed by the Auction Software is the bid that counts. A backup bid counts when entered and verified by the Technical Assistant in the bidding phase and processed by the Auction Software, not when it is called in
- 4. It is the bidder's responsibility to get a bid in on time. It is the bidder's responsibility to ascertain the system needed to minimize the chance that technical difficulties will impair its ability to bid in the auction
- 5. If providing a backup bid, it is the bidder's responsibility to provide a complete bid consistent with the CBP Rules



System Requirements are Minimal

| \bigcirc | | | | \frown |
|--------------|--------------|-----|--------|----------|
| C.t.C | \mathbf{n} | lar | \sim | |
| Olo | 111(| | | |
| \mathbf{C} | 41 15 | | _ | • |

Windows 7 or later, or MacOS 10.7 or later

Internet Connection

Primary access through a company network Secondary Access through an alternative ISP

Supported Web Browser

Internet Explorer 9 or later, as well as the most recent versions of Mozilla Firefox, Apple Safari, or Google Chrome

Backup Systems

Consider having backup laptop and backup connection, Bidding teams in two geographical locations



Part 5 | CBP Website

© NERA Economic Consulting

Key Dates and Announcements

www.AEPOhioCBP.com



AEP OHIO* A unit of American Electric Power AEP Ohio Competitive Bi

NERA ECONOMIC CONSULTING

AEP Ohio Competitive Bidding Process for SSO Supply

Home

Search

Background

Information

Data Room

Calendar

Contact Us

PIPP RFP

Home

This Ohio Power Company ("AEP Ohio") website provides information to prospective suppliers that seek to provide full requirements service for AEP Ohio's Standard Service Offer ("SSO") customers through a Competitive Bidding Process ("CBP"). This site contains the official documents and announcements related to the CBP. NERA Economic Consulting ("NERA") serves as AEP Ohio's Auction Manager.

Important Dates:

- Wed 2/15/2017 Bidder Information Session
- Tue 2/21/2017 Part 1 Window Opens
- Fri 3/3/2017 Part 1 Closes

Recent Announcements:

02/06/2017 ANNOUNCEMENT:
 Webcast NEW>>

© NERA Economic Consulting



Information Tab

Document page includes:

- CBP Rules
- Master SSO Supply Agreement
- Qualification Information
- Credit Instruments
- Communications Protocols
- Associated Bidder Rules
- Glossary of key terms

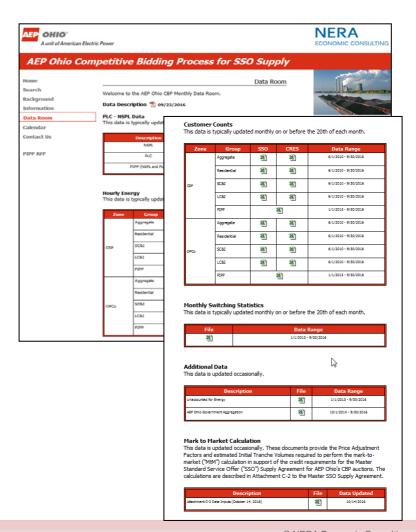




Data Room

AEP Ohio provides:

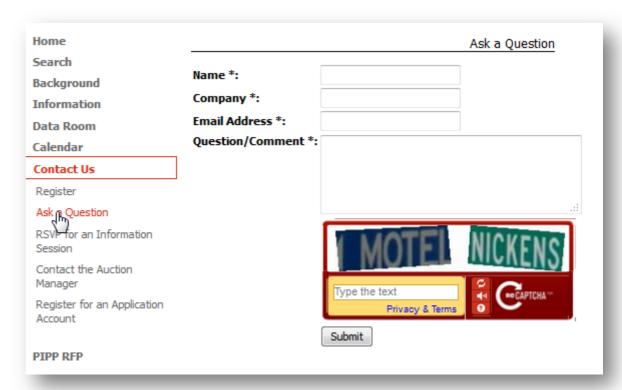
- Hourly energy
 - CSP Rate Zone and OPCo Rate Zone
 - SSO and CRES
 - Customer groups & aggregate
- Customer counts
 - CSP Rate Zone and OPCo Rate Zone
 - SSO and CRES
 - Customer groups & aggregate
- PLC and NSPL Data
- Monthly Switching Statistics
- Historical Unaccounted for Energy
- Updated on the 20th of each month





Ask a Question through the CBP Website

- Contact Us / Ask a Question
 - Bidder questions answered via email typically within 2 business days
 - Responses and questions are posted as FAQs on CBP website
- You may also contact us via email at AEP-CBP@nera.com





Contact the Auction Manager Team

NERA Economic Consulting
Auction Manager
For AEP's Ohio CBP
Contact us by email at AEP-CBP@nera.com

Address for delivery of pre-bid letter of credit

NERA – Auction Manager

AEP Ohio CBP

1835 Market Street, Suite 1205

Philadelphia, PA 19103



Questions?

 To submit questions to the presenters, please locate the "Q&A" on the right hand side of your screen, and select "All Panelists" in the "Send to" box; type in your question and click "Send" to submit your question

