

157 FERC ¶ 61,019
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;
Cheryl A. LaFleur, and Colette D. Honorable.

Alabama Power Company	Docket Nos. ER10-2881-014
Southern Power Company	ER10-2882-014
Mississippi Power Company	ER10-2883-014
Georgia Power Company	ER10-2884-014
Gulf Power Company	ER10-2885-014
Oleander Power Project, Limited Partnership	ER10-2641-014
Southern Company - Florida LLC	ER10-2663-014
Southern Turner Cimarron I, LLC	ER10-2886-014
Spectrum Nevada Solar, LLC	ER13-1101-009
Campo Verde Solar, LLC	ER13-1541-008
Macho Springs Solar, LLC	ER14-787-002
	EL15-39-000

ORDER ON MOTION FOR CLARIFICATION

(Issued October 13, 2016)

1. On August 9, 2016, the Commission issued an order in this proceeding providing information regarding the methodology used to prepare data from the Commission's Electric Quarterly Reports (EQR) database for purposes of reviewing Southern Companies'¹ market-based rate sales and also providing Southern Companies an opportunity to respond to the information.²

¹ Southern Companies include Alabama Power Company, Southern Power Company, Mississippi Power Company, Georgia Power Company, Gulf Power Company, Oleander Power Project, Limited Partnership, Southern Company - Florida LLC, Southern Turner Cimarron I, LLC, Spectrum Nevada Solar, LLC, Campo Verde Solar, LLC, and Macho Springs Solar, LLC.

² *Alabama Power Co.*, 156 FERC ¶ 61,100 (2016) (August 9 Order).

2. On August 19, 2016, Southern Companies filed a motion for clarification and supplementation of the August 9 Order.³ Specifically, Southern Companies request that the Commission provide the EQR data and supporting workpapers that the Commission relied upon in this proceeding. Southern Companies rely on a consultant in support of their request and the motion includes an affidavit from the consultant describing the additional information Southern Companies ask the Commission to provide.⁴ They state that the steps outlined in Appendix A of the August 9 Order are not sufficient to understand the methodology or the results relied upon by the Commission in reaching its determination that Southern Companies' prices are consistently higher than those of their competitors. Southern Companies state that the only way to understand the results on which the Commission relied in its April 27, 2015 Order,⁵ and then opine on those results, is to examine the original input data, the programs and analytical tools used to process and analyze such data, and the results derived from those programs and analyses. Additionally, Southern Companies request that the Commission clarify that Southern Companies may respond to the EQR data, the supporting workpapers, and the associated explanation, and not just the methodology provided in the August 9 Order. Further, Southern Companies request that the Commission extend the responsive deadline set forth in the August 9 Order until after the Commission provides clarification and supplementation.⁶

3. In response to Southern Companies' motion, we provide additional information in this order and in Appendix A of this order. Appendix A of the August 9 Order provided a detailed summary of the Commission's methodology for preparing EQR data to conduct the Commission's review of Southern Companies' hourly market-based rate sales of energy products. Appendix A of this order provides the same detailed summary and also includes supplemental information in response to Southern Companies' motion. Appendix B of this order shows the supplemental information in redline.

³ On September 8, 2016, Southern Companies filed a request for rehearing of the August 9 Order. The request for rehearing will be addressed in a separate order.

⁴ See Southern Companies' Motion at 3; Morris Aff. ¶ 6.

⁵ *Alabama Power Co.*, 151 FERC ¶ 61,071 (2015) (April 27 Order).

⁶ The deadline for filing a response has been extended to 15 days after the Commission acts on the motion for clarification. See Notice of Extension of Time, Docket No. ER10-2881-014 (Sept. 2, 2016).

4. Southern Companies ask for more information on the specific steps in Appendix A. Southern Companies contend that Step 1 (Downloaded raw EQR data from the Commission's website) is incomplete. Southern Companies state that the raw EQR data is contained in two separate databases (e.g., quarterly transactions and contract) which need to be joined and that the Commission does not describe how it joined them to convert the databases to a usable format.⁷ In response, Step 1 of Appendix A is revised to describe the steps the Commission took to join the databases.

5. Southern Companies also state that without specifying how the two databases were converted from the Visual FoxPro software format to a more usable format, it is not possible to know what data the Commission relied upon.⁸ We interpret this comment to ask how the Commission converted the databases from the Visual FoxPro format to a more current software format. Therefore, we supplement the information provided in Step 1 of Appendix A to identify current software that can be used. Additionally, Southern Companies' motion asks whether the Commission downloaded the data as described from the Commission's website or used EQR data from a third-party vendor.⁹ In response, we clarify that the Commission did not use a third-party vendor.

6. With respect to Step 2 (Applied Initial Filters), Southern Companies state that the Commission was not clear in how it limited the data to the study period (e.g., December 1, 2011 to November 30, 2012). Southern Companies acknowledge that the first step is to limit the data to the five calendar quarters from 4th Quarter 2011 to 4th Quarter 2012. However, Southern Companies represent that the Commission was not clear in how it removed data for the first two months of the 4th Quarter 2011 and the last month of the 4th Quarter 2012. Southern Companies further represent that the Commission did not identify which of the date-time fields in the transaction data it used to delineate the study period.¹⁰ Southern Companies also state that the Commission did not describe whether it used the contracts or transactions database in delineating the study period.¹¹ In response, we revise Step 2 of Appendix A to identify the exact field used to delineate the study period. Further, we clarify that the filters in Step 2 pertain to fields contained in the transactions database.

⁷ Morris Aff. ¶¶ 12-13.

⁸ *Id.* ¶ 15.

⁹ *Id.* ¶ 14.

¹⁰ *Id.* ¶ 16.

¹¹ *Id.* ¶ 17.

7. Southern Companies also state that Step 2 indicates that the Commission converted transactions reported in kilowatt hours (kWh) to megawatt hours (MWh) and also converted prices reported in cents/kWh to \$/MWh. Southern Companies state that the Commission did not list all of the units that were converted or the actual conversion rates.¹² In response, we note that most observations are already reported in \$/MWh. For those that need to be converted, we used standard conversion rates, such as 100 cents per dollar and 1,000 kW per MW. Furthermore, we note that Step 3 of Appendix A, as revised, also documents observations with rate units and transactions that were excluded and therefore did not need to be converted (e.g., flat rate transactions).

8. With regard to Step 3 (Filtered Out Data Not Usable in this Analysis), Southern Companies state that to understand the Commission's methodology, it is necessary to know how the Commission selected from the Contract Products file the product records that were used in its analysis.¹³ We note that while some contracts have multiple associated products, this issue did not arise with respect to any of the transactions in the Southern balancing authority area for the study period because none of them were associated with contracts with multiple associated products.

9. Southern Companies state that Step 4 (Evaluated Price Outliers) is straightforward to implement and therefore we have not supplemented this portion of Appendix A.

10. With regard to Step 5 (Adjusted Time Zones), Southern Companies state that Appendix A does not reveal how the various time designations were converted to a single time zone (e.g., Eastern Standard Time).¹⁴ We clarify that standard time conversions were used and that we accounted for whether the transaction occurred during Daylight Savings Time or Standard Time.

11. With regard to Step 6 (Filtered for Only Hourly Products), Southern Companies state that it is not clear from Appendix A how the Commission identified hourly transactions. They state that the Term Name field can be used to limit data to short-term transactions and that the Increment Name field can be used to limit the data to hourly transactions.¹⁵ We clarify that we did not use the Term Name and Increment Name fields and we have revised Step 6 of Appendix A to provide additional information regarding how the data was filtered to reflect hourly products.

¹² *Id.* ¶ 18.

¹³ *Id.* ¶ 19.

¹⁴ *Id.* ¶ 21.

¹⁵ *Id.* ¶ 23.

12. In response to Southern Companies' concern that the methodology does not reveal the steps to implement the hourly volume-weighted average price analysis, we add additional information to Appendix A in Step 7.¹⁶ For example, in response to Southern Companies' inquiry about whether the Commission used the Seller Name field or the Respondent Number field, we clarify that we used the Seller Name field. We also identify in Step 7 of Appendix A the names of the individual Southern Companies that reported relevant transactions and that we used in our analysis. We also add information to this portion of the Appendix in response to Southern Companies' statement that one missing task is needed to convert transaction records for multiple hours to hourly data. In addition, we also explain in Step 7 that we removed from the calculation of volume-weighted average prices relevant sales from Southern Companies to "Flint Electric Membership Corporation" because these prices are significantly higher than all other Southern Companies' sales prices in the study period and would have influenced Southern Companies' volume-weighted average prices upwards.

13. We believe that with the additional information provided in Appendix A, Southern Companies have sufficient information to understand and replicate the Commission's methodology used to prepare the EQR data to conduct the analysis. Therefore, we do not believe that it is necessary to provide our internal workpapers. We are not providing the raw EQR data because it is publicly available on the Commission's website.

14. With respect to their request that the Commission provide the results, and their statement that no metric or quantified result has been given, we take this opportunity to provide further information. Specifically, when comparing the volume-weighted average price of energy sold by Southern Companies to those of competitors within the same hour, Southern Companies' prices were above their competitors' volume-weighted average price about 75 percent of the time and at least 10 percent above their competitors' volume-weighted average price over 50 percent of the time.¹⁷

15. In response to Southern Companies' request that the Commission clarify that Southern Companies may respond to more than just the methodology provided in the August 9 Order, we clarify that Southern Companies may respond to the information

¹⁶ *Id.* ¶ 25.

¹⁷ The additional information that we provide in this order, including in Appendix A, furthers the opportunity for meaningful comment and review. *See Air Products & Chemicals, Inc. v. FERC*, 650 F.2d 687, 697 (5th Cir. 1981) (holding that an agency should either disclose the contents of what it relied upon or, in the case of publicly-available information, specify what is involved in sufficient detail to allow for meaningful adversarial comment and judicial review).

provided in this order, including the EQR results and explanation. Southern Companies' response is due within 15 days of the date of this order.

The Commission orders:

(A) The Commission hereby provides additional information in response to Southern Companies' motion for clarification, as discussed in the body of this order.

(B) Southern Companies' response is due within 15 days of the date of this order, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

Appendix A

Methodology for Preparing EQR Data

A detailed summary of the Commission's sequential methodology for preparing EQR data to conduct the review of Southern Companies' hourly market-based rate sales of energy products referenced in the April 27 Order is provided below.

- Step 1. Downloaded raw EQR data from the Commission's website:
<http://www.ferc.gov/docs-filing/eqr.asp>¹⁸
 - Select the "Download Database" option from the "Q2 2013 and Earlier Data Reports". The data prior to Q3 2013 is provided in Visual FoxPro format, which can be read by a database application such as Microsoft Access.
 - Join the following tables, within the database, by respondent ID, report year, report quarter and contract ID.
 - `eqr_transactions_yyyymm_AL`: Transaction data for respondents whose name begins with A through L for year, "yyyy", and quarter, "mm".
 - `eqr_transactions_yyyymm_MZ`: Transaction data for respondents whose name begins with M through Z for year, "yyyy", and quarter, "mm".
 - `eqr_contracts`: Provides seller information for each contract.
 - `eqr_contract_products_AL`: Provides "Product Type Name" by contract for respondents whose name begins with A through L. Select respondent ID, report year, report quarter, contract ID, and Product Type Name, and collapse to distinct combinations.¹⁹
 - `eqr_contract_products_MZ`: Provides "Product Type Name" by contract for respondents whose name begins with M through Z. Select respondent ID, report year, report quarter, contract ID, and Product Type Name, and collapse to distinct combinations.

¹⁸ Definitions of the EQR-related terms used in this Appendix can be found in version 1.1 of the EQR Data Dictionary, which was effective during the (December 1, 2011 through November 30, 2012) study period. *See* Data Dictionary issued in *Revised Public Utility Filing Requirements*, Order No. 2001-I, 125 FERC ¶ 61,103 (2008).

¹⁹ When contracts have multiple associated products ("Product Type Name") in the `eqr_contract_products` table, linking a "Product Type Name" to specific transactions in the "`eqr_transactions_yyyymm`" tables may require additional steps to prevent errors. However, no transactions in the Southern balancing authority area for the study period were associated with contracts that had multiple associated products.

- The Commission's website provides a database schematic showing how the tables relate to one another at <http://www.ferc.gov/docs-filing/eqr/q2-2013/data/database/eqr-schematic.pdf>
 - Step 2. Applied Initial Filters: Sorted and selected relevant EQR data by time period, location, product name, and standardized reported units:
 - Time Period: "Filing Quarters" Q4 2011 through Q4 2012 were selected using the fields, "Report Year" (report_yr) and "Report Quarter" (report_prd). Observations were limited to the relevant study period (December 1, 2011 through November 30, 2012) using the fields "Transaction Begin Date" (tr_begin_date) and "Transaction End Date" (tr_end_date) after adjusting for time zone in Step 5.
 - Locations: The study area was identified by choosing transactions with a "Point of Delivery Balancing Authority" (tr_delv_cntrl_area) listed as "SOCO" or a "Point of Delivery Balancing Authority" (tr_delv_cntrl_area) listed as "HUB" with the corresponding "Point of Delivery Specific Location" (tr_delv_spec_loc) listed as "SOCO (into)."
 - Products: "Energy" and "Booked Out Power" were chosen from the field "Transaction Product Name" (tr_prod_name).
 - Standardized Units: "Transaction Quantity" (tr_quantity) and "Transaction Price" (tr_price) information was converted from reported units (e.g., kWh and cents/kWh) to MWh and \$/MWh units using standard conversions (e.g., 100 cents = \$1; 1,000 kWh = 1 MWh).
 - Step 3. Filtered Out Data Not Usable in this Analysis: Removed unusable data from further analysis according to the following instructions:
 - Removed data from further analysis if any of the following were true:
 - "Product Type Name" (p_prod_type_name) was "Cost Based."
 - "Product Type Name" (p_prod_type_name) was "Transmission."
 - "Transaction Quantity" (tr_quantity) was less than 0.²⁰
 - The reported "Units" (tr_units) value for the "Energy" or "Booked Out Power" products could not be reliably converted into "\$/MWh" (e.g., "Units" = "Flat Rate").²¹

²⁰ These transactions constituted 1.45 percent of the total hourly MWh analyzed.

²¹ These transactions constituted 0.23 percent of the total hourly MWh analyzed.

- Step 4. Evaluated Price Outliers: Removed prices (tr_price) which were above or equal to \$1,000/MWh²² or below or equal to \$-30/MWh.²³
- Step 5. Adjusted Time Zones: All transactions in the Southern (SOCO) BAA were converted to the same time zone to make accurate hourly comparisons. Specifically, “Transaction Begin Date” (tr_begin_date) and “Transaction End Date” (tr_end_date) were first converted to Coordinated Universal Time (UTC) and then converted to Eastern Standard Time. The conversion relies on the reported “Transaction Time Zone” (tr_timezone).
- Step 6. Filtered For Only Hourly Products: To remove longer-term transactions and examine hourly products only, first filtered out any transaction spanning one day or longer and then filtered out frequently repeated prices within a day or quarter. The fields “Term Name” (tr_term_name), and “Increment Name” (tr_inc_name) were not used.
 - Created a new variable, Hour Length, calculated by subtracting the “Transaction Begin Date” (tr_begin_date) from the “Transaction End Date” (tr_end_date).
 - Removed transactions if Hour Length indicated the transaction was an on-peak daily (i.e., 15 or 16 hours long) or a non-hourly product (i.e., longer than 23 hours).
 - Removed transactions if repeated prices indicated they were transacted under a long-term contract or could otherwise be characterized as non-hourly.
 - Removed transactions if “Filing Quarter” (report_yr, report_prd), “Seller Company Name” (c_seller_name), “Customer Company Name” (c_buyer_name), “Contract Unique ID” (contract_id), “Class Name” (tr_class_name), “Point of Delivery Specific Location” (tr_delv_spec_loc) and “Price” (tr_price) repeated more than 120 hours within a quarter.
 - Removed transactions when the “Filing Quarter” (report_yr, report_prd), “Seller Company Name” (c_seller_name), “Customer Company Name” (tr_buyer_name), “Contract Unique ID” (contract_id), “Class Name” (tr_class_name), “Point of Delivery Specific Location” (tr_delv_spec_loc), and “Price” (tr_price) repeated more than seven hours within a day.

²² These transactions constituted 0.01 percent of the total hourly MWh analyzed.

²³ These transactions constituted 0.03 percent of the total hourly MWh analyzed.

Step 7. Hourly Volume-Weighted Average Price Analysis

Compared Southern Companies' hourly volume-weighted average prices (VWAPs) to non-Southern Company sellers' VWAPs for sales of comparable products (i.e., "Energy" and "Booked Out Power") in the same hour in the Southern BAA, using the EQR data as filtered above, during hours within the study period. Southern Companies were grouped by name (c_seller_name), and include the following Southern Companies that reported relevant transactions: Alabama Power Company, Georgia Power Company, Gulf Power Company, Mississippi Power Company, Southern Company Services, Inc., and Southern Power Company. All other sellers were grouped as "non-Southern Company."

- Expand transaction rows to the Hour Length, associating the total number of rows per transaction to the hours in a transaction.
- Remove sales from Southern Companies to "Flint Electric Membership Corporation." These are priced significantly higher than all other hourly sales and were considered outlier transactions.
- Calculated VWAPs of the transactions as equal to the sum of "Price" (tr_price) times "Quantity" (tr_quantity) divided by the sum of "Quantity" (tr_quantity) for each hour, or $\sum(\text{"Price"} * \text{"Quantity"}) / \sum(\text{"Quantity"})$ for each hour.
- Compared hourly VWAPs of Southern Company and non-Southern Company sellers for comparable products when both parties transacted in the same hour.

Appendix B

Methodology for Preparing EQR Data

A detailed summary of the Commission's sequential methodology for preparing EQR data to conduct the review of Southern Companies' hourly market-based rate sales of energy products referenced in the April 27 Order is provided below.

- Step 1. Downloaded raw EQR data from the Commission's website:
<http://www.ferc.gov/docs-filing/eqr.asp>²⁴
 - Select the "Download Database" option from the "Q2 2013 and Earlier Data Reports". The data prior to Q3 2013 is provided in Visual FoxPro format, which can be read by a database application such as Microsoft Access.
 - Join the following tables, within the database, by respondent ID, report year, report quarter and contract ID.
 - eqr_transactions_yyyymm_AL: Transaction data for respondents whose name begins with A through L for year, "yyyy", and quarter, "mm".
 - eqr_transactions_yyyymm_MZ: Transaction data for respondents whose name begins with M through Z for year, "yyyy", and quarter, "mm".
 - eqr_contracts: Provides seller information for each contract.
 - eqr_contract_products_AL: Provides "Product Type Name" by contract for respondents whose name begins with A through L. Select respondent ID, report year, report quarter, contract ID, and Product Type Name, and collapse to distinct combinations.²⁵
 - eqr_contract_products_MZ: Provides "Product Type Name" by contract for respondents whose name begins with M through Z.

²⁴ Definitions of the EQR-related terms used in this Appendix can be found in version 1.1 of the EQR Data Dictionary, which was effective during the (December 1, 2011 through November 30, 2012) study period. *See* Data Dictionary issued in *Revised Public Utility Filing Requirements*, Order No. 2001-I, 125 FERC ¶ 61,103 (2008).

²⁵ When contracts have multiple associated products ("Product Type Name") in the eqr_contract_products table, linking a "Product Type Name" to specific transactions in the "eqr_transactions_yyyymm" tables may require additional steps to prevent errors. However, no transactions in the Southern balancing authority area for the study period were associated with contracts that had multiple associated products.

Select respondent ID, report year, report quarter, contract ID, and Product Type Name, and collapse to distinct combinations.

- The Commission’s website provides a database schematic showing how the tables relate to one another at <http://www.ferc.gov/docs-filing/eqr/q2-2013/data/database/eqr-schematic.pdf>
 - Step 2. Applied Initial Filters: Sorted and selected relevant EQR data by time period, location, product name, and standardized reported units:
 - Time Period: “Filing Quarters” Q4 2011 through Q4 2012 were selected using the fields, “Report Year” (report_yr) and then observations “Report Quarter” (report_prd). Observations were limited to the relevant study period (December 1, 2011 through November 30, 2012) using the fields “Transaction Begin Date” (tr_begin_date) and “Transaction End Date” (tr_end_date) after adjusting for time zone in Step 5.
 - Locations: The study area was identified by choosing transactions with a “Point of Delivery Balancing Authority (~~PODBA~~)” (tr_delv_cntrl_area) listed as “SOCO” or a “Point of Delivery Balancing Authority (~~PODBA~~)” (tr_delv_cntrl_area) listed as “HUB” with the corresponding “Point of Delivery Specific Location (~~PODSL~~)” (tr_delv_spec_loc) listed as “SOCO (into).”
 - Products: “Energy” and “Booked Out Power” were chosen from the field “Transaction Product Name” (tr_prod_name).
 - Standardized Units: “Transaction Quantity” (tr_quantity) and “Transaction Price” (tr_price) information was converted from reported units (e.g., kWh and cents/kWh) to MWh and \$/MWh units using standard conversions (e.g., 100 cents = \$1; 1,000 kWh = 1 MWh).
 - Step 3. Filtered Out Data Not Usable in this Analysis: Removed unusable data from further analysis according to the following instructions:
 - Removed data from further analysis if any of the following were true:
 - “Product Type Name” (p_prod_type_name) was “Cost Based.”
 - “Product Type Name” (p_prod_type_name) was “Transmission.”
 - “Transaction Quantity” (tr_quantity) was less than 0.²⁶
 - The reported “~~Rate-Units~~” (tr_units) value for the “Energy” or “Booked Out Power” products could not be reliably converted into “\$/MWh” (e.g., “~~Rate-Units~~” = “Flat Rate”).²⁷

²⁶ These transactions constituted 1.45 percent of the total hourly MWh analyzed.

- Step 4. Evaluated Price Outliers: Removed prices (tr_price) which were above or equal to \$1,000/MWh²⁸ or below or equal to \$-30/MWh.²⁹
- Step 5. Adjusted Time Zones: All transactions in the Southern (SOCO) BAA were converted to the same time zone to make accurate hourly comparisons. Specifically, “Transaction Begin Date” (tr_begin_date) and “Transaction End Date” (tr_end_date) were first converted to Coordinated Universal Time Coordinated (UTC) and then converted to Eastern Standard Time. The conversion relies on the reported “Transaction Time Zone” (tr_timezone).
- Step 6. Filtered For Only Hourly Products: To remove longer-term transactions and examine hourly products only, first filtered out any transaction spanning one day or longer and then filtered out frequently repeated prices within a day or quarter. The fields “Term Name” (tr_term_name), and “Increment Name” (tr_inc_name) were not used.
 - Created a new variable, Hour Length, calculated by subtracting the “Transaction Begin Date” (tr_begin_date) from the “Transaction End Date” (tr_end_date).
 - Removed transactions if Hour Length indicated the transaction was an on-peak daily (i.e., 15 or 16 hours long) or a non-hourly product (i.e., longer than 23 hours).
 - Removed transactions if repeated prices indicated they were transacted under a long-term contract or could otherwise be characterized as non-hourly.
 - Removed transactions if “Filing Quarter” (report_yr, report_prd), “Seller Company Name” (c_seller_name), “Customer Company Name” (c_buyer_name), “Contract Unique ID” (contract_id), “Class Name” (tr_class_name), “Point of Delivery Specific Location” (tr_delv_spec_loc) and “Price” (tr_price) repeated more than 120 hours within a quarter.
 - Removed transactions when the “Filing Quarter” (report_yr, report_prd), “Seller Company Name” (c_seller_name), “Customer Company Name” (tr_buyer_name), “Contract Unique ID” (contract_id), “Class Name” (tr_class_name), “Point of Delivery

²⁷ These transactions constituted 0.23 percent of the total hourly MWh analyzed.

²⁸ These transactions constituted 0.01 percent of the total hourly MWh analyzed.

²⁹ These transactions constituted 0.03 percent of the total hourly MWh analyzed.

Specific Location” (tr_delv_spec_loc), and “Price” (tr_price) repeated more than seven hours within a day.

Step 7. Hourly Volume-Weighted Average Price Analysis

Compared Southern Companies’ hourly volume-weighted average prices (VWAPs) to non-Southern Company sellers’ ~~prices~~ VWAPs for sales of comparable products (i.e., “Energy” and “Booked Out Power”) in the same hour in the Southern BAA, using the EQR data as filtered above, during hours within the study period. Southern Companies were grouped by name (c_seller_name), and include the following Southern Companies that reported relevant transactions: Alabama Power Company, Georgia Power Company, Gulf Power Company, Mississippi Power Company, Southern Company Services, Inc., and Southern Power Company. All other sellers were grouped as “non-Southern Company.”

- Expand transaction rows to the Hour Length, associating the total number of rows per transaction to the hours in a transaction.
- Remove sales from Southern Companies to “Flint Electric Membership Corporation.” These are priced significantly higher than all other hourly sales and were considered outlier transactions.
- Calculated VWAPs of the transactions as equal to the sum of “Price” (tr_price) times “~~Transaction~~-Quantity” (tr_quantity) divided by the sum of “Quantity” (tr_quantity) for each hour, or $\sum(\text{“Price”} * \text{“~~Transaction~~ Quantity”}) / \sum(\text{“Quantity”})$ for each hour.
- Compared hourly VWAPs of Southern Company and non-Southern Company sellers for comparable products when both parties transacted in the same hour.