MANAGEMENT/PERFORMANCE AND FINANCIAL AUDIT OF THE ALTERNATIVE ENERGY RECOVERY RIDER OF DUKE ENERGY OHIO, INC. COVERING THE PERIOD JANUARY 1, 2016 THROUGH DECEMBER 31, 2016

Case No.15-1854-EL-RDR

May 2, 2017

Prepared for:
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1 EXECUTIVE SUMMARY

Ohio revised code ("R.C.") 4928.64 through 4928.645 define a renewable portfolio standard ("RPS") which requires electric distribution utilities and electric service companies to acquire specific minimum percentages of electricity from renewable energy resources annually. The renewable energy requirements, which include specific solar requirements, were implemented through annual compliance obligations beginning in 2009.

Rider AER-R Background

Duke Energy Ohio, Inc. ("DEO" or "Company") is a public utility as defined in R.C. 4905.02 and, as such, is subject to the jurisdiction of the Public Utilities Commission of Ohio ("PUCO" or "Commission"). Through an Opinion and Order dated November 22, 2011, the PUCO approved a stipulation and recommendation in Case No. 11-3549-EL-SSO et al, whereby an Alternative Energy Recovery Rider ("Rider AER-R" or "AER-R") was established for DEO, which authorized DEO to recover costs associated with RPS compliance. The Commission's Opinion and Order in that prior proceeding set forth the following regulatory framework:

> Duke will implement Rider AER-R, as proposed in its application, to recover the costs incurred in complying with the requirements of Section 4928.64, et seq., Revised Code. Rider AER-R shall not expire upon the termination of the ESP on May 31, 2015, but instead shall continue in order to enable recovery of all reasonable and prudently incurred costs for the acquisition of renewable energy credits (RECs), including brokerage fees, REC tracking participation expenses, gains and losses realized from the sale of RECs, and carrying costs at the long-term cost of debt, as approved in Duke's most recent distribution rate case. Rider AER-R shall remain avoidable for customers taking generation service from a CRES provider. Rider AER-R will be filed quarterly and will include true-up provisions, with annual audits conducted by Staff, or an independent auditor at the discretion of the Commission, in a manner similar to that employed with respect to Duke's current Rider PTC-FPP.

Rider AER-R commenced in January 2012. The Company makes quarterly filings with the Commission no later than March 1, June 1, September 1 and December 1 of each year, with the proposed rates becoming effective one month later (i.e., April 1, July 1, October 1 and January 1), unless otherwise ordered by the Commission.

On April 2, 2015, the Commission approved DEO's application to establish a standard service offer in the form of Electricity Security Plan ("ESP") in Case No. 14-0841-EL-SSO, et al, for the period beginning June 1, 2015 through May 31, 2018. DEO's application described Rider AER-R with other riders continuing with no modifications.[1]

Audit Approach

The PUCO solicited proposals to conduct both management/performance and financial audits of the Rider AER-R audits for the years 2014, 2015 and 2016. To achieve these goals, the PUCO defined two audits. The first audit ("Audit 1") was to cover Rider AER-R for the period January 1, 2014 through December 31, 2015. The second audit ("Audit 2") is to cover Rider AER-R for calendar year 2016.

Following a competitive solicitation, Larkin & Associates PLLC ("Larkin") was selected by the PUCO to perform the desired management/performance and financial[2] audits of Rider AER-R. DEO's Annual Alternative Energy Portfolio Status reports ("Ohio renewable compliance filings) for 2014 and 2015 were filed on April 15, 2015 and April 15, 2016, respectively. Larkin issued its report covering the 2014-2015 review period ("Audit 1") on May 16, 2016.

This report covers the "Audit 2" period, January 1, 2016 through December 31, 2016. DEO's response to LARKIN2-DR-01-044 indicates that its Ohio renewable compliance filing for 2016 will be filed by April 15, 2017.

Our review of DEO's Rider AER-R has followed the guidance provided for this work in Attachments 1 and 2 of RFP No. RA15-DEOAER1. Our report also addresses other specific items from previous audits that were identified by the PUCO or Staff. We used a combination of document review, interrogatories, site visit, and interviews. Larkin conducted interviews at the Company's offices in Cincinnati, Ohio on March 13, 2017 with individuals with the position titles listed in Exhibit 1-1, and by telephone conference on March 14, 2017 and March 28, 2017. DEO regulatory staff and PUCO Staff also attended and participated in the interviews.

Exhibit 1-1. Interviews Conducted

Title	Department
Rates & Regulatory Strategy Mgr.	OH/KY Rate Recovery & Analysis
Business Development Mgr. II	Renewable Compliance & Origination
Lead Wholesale Renewable Analyst	DER Reporting & Compliance
Product & Services Manager	Direct Offer Programs
Wholesale Renewable Mgr IV	Strategy, Policy Advocacy
Senior Emission Trader	Emissions Trading/Gas, Oil & Power
Lead Load Forecasting Analyst	Load Forecasting & Fundamental
Lead Accounting Analyst	Midwest & FL Revenue Analysis

[1] Case No. 14-0841-EL-SSO, Direct Testimony of James E. Ziolowski, Attachment JEZ-4, page 2.
[2] This part of the review has in prior reports been referred to as the "Financial Audit", a term which could be misleading because the work does not involve an audit of financial statements, but rather is an engagement involving verification of DEO's Rider AER-R filings that we conducted in accordance with the guidance set forth in Attachment 2 from RFP No. RA15-DEOAER1.

Status of the Company's Implementation of Recommendations from the 2012, 2013, and 2014/2015 Audits

Rider AER-R was approved per the Commission's Opinion and Order dated November 22, 2011 in Case No. 11-3549-EL-SSO. Recovery through Rider AER-R commenced with the first billing cycle in 2012. Management and financial audits of DEO's Rider AER-R were conducted in Case Nos. 12-802-EL-RDR and 12-3111-EL-RDR for the 2012 and 2013 review periods, respectively.[3] In addition, Larkin conducted the management and financial audit of DEO's Rider AER-R for the 2014 and 2015 review periods in Case No. 15-1854-EL-RDR.

On December 21, 2016, the Commission issued its Finding and Order, which discussed (1) the recommendations of the 2012 and 2013 Rider AER review periods, and (2) the 2014 and 2015 review periods. As it relates to the previous auditor's recommendations for the 2012 and 2013 review periods, which were discussed in Larkin's report for the 2014-2015 review period that was filed on May 16, 2016, Section 4, paragraph 11 of the Commission's Finding and Order states:

> Upon review, the Commission adopts the findings outlined in the audit report regarding the previous audits. In doing so, we find Duke should continue to consider the recommendations adopted in the previous Commission orders from the 2012 and 2013 audits on an ongoing basis and should continue to document its rationale.

For the 2014 and 2015 review periods, the Commission's Finding and Order states that while Larkin's recommendation that DEO conduct biennial internal audits of Rider AER may be duplicative and therefore not necessary, the Commission found that Larkin's remaining recommendations should be adopted in their entirety. The listing below summarizes (1) key findings and reports on the status, (2) describes whether and how the Company implemented each recommendation, and (3) Larkin's conclusion with regard to the Company's assertions.

<u>Management/Performance Audit Recommendations</u>

1. Larkin had recommended that the Company should continue to keep responsibility for program management and REC purchasing for (1) Ohio RPS compliance, and (2) the GoGreen Pricing Program separated to avoid the potential for cross-subsidization and/or double counting of RECs between the two programs.

   Status: In response to LARKIN2-DR-01-047(a), DEO stated:

   > The GoGreen Pricing Program does not interact with the Alternative Energy Portfolio Standard ("AEPS") mandate. Program management responsibility for the two programs is overseen by two different individuals in two different departments within Duke. In addition, the Company purchases RECs for the GoGreen Pricing Program separately from RECs that are used for the compliance with the AEPS. Purchases for the GoGreen program are retired by the counterparty in GATS on behalf of GoGreen participants and

[3] The 2012 and 2013 Management and Financial audits of Rider AER-R were conducted by Baker Tilly Virchow Krause, LLP.

documentation proving such is sent to representatives of Duke. This way the REC transaction does not utilize Duke Energy GATS accounts, thereby eliminating the possibility for double-counting of RECs and cross-subsidization.

Larkin conclusion: As discussed later in this report, Larkin reviewed the PJM-GATS tracking system reports associated with Ohio compliance and the GoGreen Power program. Based on the information reviewed in these tracking system reports as well as our interview with DEO's Product and Services Manager, Larkin concludes that DEO is in compliance with this recommendation. We note that the same Senior Emissions Trader communicates with and purchases RECs for both the Ohio renewables compliance program personnel and the GoGreen Power program manager. Separation is maintained by making REC purchases for these programs on different days as well as having the counterparty retire the RECs used in the GoGreen Power program.

2. Larkin had made the recommendation that the Company prepare its Renewable Energy Credit Position Summary reports ("REC summary reports") every month to ensure that it has adequate non-solar and solar RECs in inventory to be in compliance with Ohio renewables requirements.

   Status: In response to LARKIN2-DR-01-47(b), DEO stated that it prepared Renewable Energy Credit Position Summary reports for every month during 2016.

   Larkin conclusion: Larkin confirmed that DEO has complied with this recommendation. REC position reports were provided for each month of 2016 by DEO in its confidential response to LARKIN2-DR-01-23.

3. Larkin had made a recommendation that DEO should conduct an internal audit of Rider AER related costs, purchases and revenues during 2016and then biennially thereafter.

   Status: DEO disagreed with this recommendation and as noted above, the Commission concurred with DEO in its Finding and Order whereby the Commission stated that Larkin's recommendation may be duplicative and therefore not necessary. In its Opinion and Order, the Commission stated that DEO should continue to document its reviews of Rider AER-R such that Larkin's recommendation may be revisited in the future.

   Larkin conclusion: Pursuant to the Commission's ruling on this, DEO stated in response to LARKIN2-DR-01-45 that there have not been any internal audits related specifically to Rider AER. During the interviews, DEO stated that the processes of recording the costs, purchases and revenues associated with Rider AER-R in the financial records of the Company are reviewed as part of the DEO's normal testing pursuant to Section 404 of the Sarbanes-Oxley Act ("SOX"). Larkin noted that DEO's external auditor, Deloitte & Touche, issued an clean opinion as to the Company's financial reporting and internal controls. In addition, in the Company's 2016 Proxy Statement, the Audit Committee did not report any irregularities with regard to the Company's SOX testing.

Since no internal audit was required, there was no need for DEO to conduct one.

4. Larkin had recommended that the Company's Contracting Principles, Guidelines and Strategy document should include a description and illustrative calculation of the 3% cost cap in a manner that is consistent with the methodology adopted by the Commission in Case No. 11-5201-EL-RDR.

   Status: In its response to LARKIN2-DR-01-47(c), DEO stated that it has included a description and illustrative calculation of the 3% cost cap in its Contracting Principles, Guidelines and Strategy document.

   Larkin conclusion: Larkin reviewed the Company's Contracting Principles, Guidelines and Strategy document, which was provided in the confidential response to LARKIN2-DR-01-33 and confirmed that the description and calculation of the 3% cost cap was included and is consistent with the methodology adopted by the Commission in Case No. 11-5201-EL-RDR.

5. Larkin recommended that solar RECs purchased from Bruce S. Alt be reduced from ten to six, a recommendation with which DEO agreed. Specifically, during 2014, DEO had contracted to purchase [redacted] RECs from Bruce Alt under [redacted] and had included this amount in its REC inventory. However, DEO received only [redacted] of the [redacted] RECs. Accordingly, DEO had indicated that it would adjust the volume for [redacted] from [redacted] RECs to the [redacted] that were ultimately received.

   Status: In its response to LARKIN2-DR-01-47(d), DEO stated that the [redacted] solar RECs which the Company contracted to purchase from Bruce S. Alt were reduced to [redacted] solar RECs.

   Larkin conclusion: In the response to LARKIN2-DR-01-047, DEO provided a screenshot from its accounting system which confirms that DEO made this change in an entry booked on April 21, 2016.

<u>Financial Audit Recommendations</u>

1. Larkin recommended that the Company should be diligent when performing the accounting procedures that are outlined in two internal control documents reviewed in the 2014/2015 review period in order to ensure that errors involving the timely recognition of costs are minimized and/or eliminated on a going forward basis.

   Status: DEO agreed with this recommendation and in its response to LARKIN2-DR-01-48(a), the Company stated:

   > The Company has taken steps to increase its diligence when performing accounting procedures in order to ensure the errors involving timely recognition of costs are minimized and/or eliminated. The only cost not time recognized in the past was the GATS subscription fee. This year Midwest Revenue Accounting verified that the GATS fee for the 2017 Subscription

year, invoiced in November 2016, was paid in December 2016 and recorded to the correct accounting.

Larkin conclusion: The general ledger detail that was provided in response to LARKIN2-DR-01-008 indicates that the payment of a GATS subscription fee of $1,500 was incorrectly booked to Account 565000 and that a correcting entry was made in February 2016 to record the expense to Account 921400. However, this correcting entry was made prior to the issuance date of Larkin's recommendation in its report for the 2014-2015 review period. Larkin confirmed that although the correcting entry was made in February 2016, the $1,500 GATS fee was included in Rider AER-R in December 2015.

2. Larkin recommended that the Company should determine the projected weighted average cost of inventory ("WACI") in all of its quarterly Rider AER-R filings by using the WACI that is calculated on its REC inventory worksheets.[4]

   Status: In its response to LARKIN2-DR-01-48(b), DEO stated that it determined its projected WACI in all of its 2016 quarterly Rider AER-R filings by using the WACI calculated on its REC inventory worksheets since the current inventory balances met the quarterly obligations.

   Larkin conclusion: Upon reviewing the inventory worksheets which DEO provided in its confidential response to LARKIN2-DR-01-10, Larkin concludes that DEO used the WACI calculated on its REC inventory worksheets in all of its 2016 quarterly Rider AER-R filings.

3. Larkin recommended that DEO continue to account separately for the RECs purchased for (1) Ohio RPS compliance, and (2) the GoGreen Pricing Program to avoid the potential for cross-subsidization or double-counting of RECs between the two programs.

   Status: DEO agreed with this recommendation and in response to LARKIN2-DR-01-48(c), stated that it continues to account for the purchases of RECs separately for Ohio RPS compliance and the GoGreen Pricing Program.

   Larkin conclusion: As noted above and discussed later in this report, Larkin reviewed the PJM-GATS tracking system reports associated with Ohio compliance and the GoGreen Power program. Based on information reviewed in these tracking system reports and other information, DEO separately accounts for the Ohio compliance RECs and the GoGreen Power RECs, and is in compliance with this recommendation.

[4] In the third and fourth quarter 2014 quarterly Rider AER-R filings, DEO used $[redacted] for the non-solar, non-Ohio REC cost, which the Company stated was used because the WACI was $0 at the time of those filings.

Major Management Audit Findings

1) There were no changes made to Rider AER-R in 2016.
2) On May 19, 2016, Substitute House Bill 554 was introduced to the Ohio General Assembly to revise the requirements for renewable energy, energy efficiency, and peak demand reduction as well as altering funding allocations under the Home Energy Assistance Program. This house bill was vetoed by Governor Kasich on December 27, 2016.
3) On March 7, 2017, House Bill 114 was introduced to reform Ohio's energy efficiency, peak demand reduction and renewable energy mandates before the Ohio General Assembly. This proposed legislation is similar to Substitute House Bill 554, which was vetoed on December 27, 2016.
4) DEO provided its 2016 Annual Alternative Energy Portfolio Status Report and Ten Year Advanced Energy and Renewable Energy Benchmark Compliance Plan that was filed with the PUCO on April 11, 2017 in Case No. 17-345-EL-ACP. The Company's 2016 compliance report stated that DEO achieved compliance by meeting the 2016 benchmark for the Ohio Alternative Energy Portfolio Standard for both solar and non-solar renewables.
5) The Company does not obtain RECs through a renewable purchased power agreement, but rather DEO purchases RECs on the open market. Specifically, according to the Company's response to LARKIN2-DR-01-033, [redacted]
6) [redacted]
7) The Company holds and uses all purchased RECs strictly for Ohio compliance purposes. DEO does not plan to sell any RECs on the open market, as it does not want to risk selling existing RECs in inventory only to have to potentially re-purchase them at different, possibly higher prices in the future.
8) DEO prepares REC Position Summary reports ("position reports") on a monthly basis. DEO uses these reports to determine whether it has adequate solar and non-solar RECs inventory in order to be in compliance with Ohio renewable requirements. In the position reports, DEO evaluates its current REC inventories against its anticipated RPS requirements for 7 years. For example, DEO's position reports for 2016 compared its solar and non-solar REC inventories with anticipated RPS compliance requirements for years 2016 through 2022.
9) According to DEO's monthly position report dated December 31, 2016, [redacted]

10) [redacted]

11) [redacted]

12) DEO's REC purchases are limited to short-term purchases. There are no long-term contracts in place. Some of the RECs purchased by DEO are for renewable energy compliance for subsequent years.

13) DEO held meetings every couple of months during the second half of 2016 to discuss strategy as it relates to REC purchases going forward. Specifically, the subject of these meetings centered on monitoring the Ohio legislature with respect to renewables compliance, and asking those involved in these meetings what they were seeing in the market and whether anything had changed that would influence them to recommend purchasing RECs.

14) Throughout the course of the internal meetings, there was no one decision maker, but rather, decisions were made on a joint basis based on the collective opinions of the meeting participants.

15) With regard to documenting the internal meetings, DEO stated that other than emails that were sent out for the purpose of scheduling conference calls, there was no specific documentation memorializing these internal Company meetings. During the interviews, the Company stated that beginning in 2017, it starting logging the minutes of its internal meetings.

16) On March 7, 2017, HB 114 was introduced to reform Ohio's energy efficiency, peak demand reduction and renewable energy mandates before the Ohio General Assembly. This proposed legislation, which has provisions that are very similar to vetoed SHB 554, would eliminate the state of Ohio's renewable energy mandate. Concerning the potential impact of HB 114, DEO is taking a cautious approach to its REC purchases going forward due to the uncertainty of this legislation.

17) DEO's compliance costs are limited to 3% of the cost of the non-renewable energy that is supplied to SSO customers, with a sales baseline matching that for the REC obligation. For 2016, the 3% cost cap totaled [redacted]. The total costs of RECs was [redacted] for 2016, which was well below the cost cap.

18) [redacted] The Company's procedures require that the Fuels and Systems Optimization team shall seek the guidance and approval of the Renewable Strategy and Compliance team prior to purchasing solar and non-solar RECs that are above the solar and non-solar thresholds. These procedures provide an additional safeguard that the RECs to be purchased for RPS compliance will be made at a reasonable cost.

19) The [redacted] per solar REC was set as a reasonable limit by the Company as an internal check. The statutory amount per solar REC was $300 for 2016 per the provisions of Senate Bill 310. As noted, DEO also monitored market prices of solar RECs during 2016.

20) According to DEO's Contracting Principles, Guidelines and Strategy, the non-solar ACP threshold was [redacted] for 2016. The Company's Alternative Energy Portfolio Status Report for 2016 reflected a non-solar ACP of $[redacted]. DEO stated that the [redacted] amount is for internal management purposes only and represents the non-solar threshold above which the Company's Fuels and System Optimization group shall seek guidance and approval from the Renewable Strategy and Compliance group prior to purchasing RECs. As for the $[redacted] amount the Company stated that the non-solar ACP is adjusted annually by the PUCO.[5]

21) The solar and non-solar ACPs noted in the prior two findings had no impact on Rider AER-R in 2016 because all of the Company's purchases of RECs in 2016 were at a cost that was less than the ACP.

22) The Company did not have any biomass fuel testing or biomass generation during 2016.

23) The Company did not have any biodiesel fuel testing or biodiesel generation during 2016.

24) The Company did not self-generate any renewable power during 2016 that produced RECs.

25) According to the supplemental response to LARKIN2-DR-02-008, the Company retired 120,469 non-solar RECs and 6,074 solar RECs in the PJM-GATS tracking system for 2016 Ohio renewables compliance. These amounts are also reflected in the Company's 2016 Annual Alternative Energy Portfolio Status Report that was filed on April 11, 2017.

26) Staff asked Larkin to review the interaction of the Company's RPS compliance program and its Green Pricing program, both of which involve the purchase of RECs, for regulatory issues such as potential double-counting of RECs and/or cross-subsidization between the two programs. On May 9, 2007, the Commission approved DEO's Green Pricing option, GoGreen Power, for a pilot program that began in July 2007 and was originally set to run through December 31, 2008. The pilot program was extended through 2011 per the Commission's Opinion and Order dated December 17, 2008 in Case Nos. 08-920-EL-SSO, et. al. Subsequent to the end of the pilot program, GoGreen Power was fully implemented by the Commission in its Opinion and Order dated November 22, 2011 in Case No. 11-3549-EL-SSO.

27) DEO's website www.duke-energy.com/ohio describes the GoGreen Power program as follows: "Purchase a minimum of two 100-kilowatt hour (kWh) blocks of green power for just $2 a month. Your 200+kWh commitment equates to about 20 percent of an average residential customer's electricity use and helps to avoid 4,800 pounds of carbon dioxide emissions each year."

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[5] Refer to Case No. 16-0714-EL-ACP.

28) Although GoGreen Power is not a Green-e certified product per the response to LARKIN2-DR-01-049, Larkin confirmed that DEO purchases the RECs for GoGreen from Green-e certified suppliers.

29) Generally, different groups of personnel at DEO are responsible for (1) the Ohio renewables compliance requirements, and (2) the GoGreen Power program. However, Duke Energy's Senior Emissions Trader is responsible for executing orders for REC purchases for both Ohio RPS compliance and for the GoGreen Power program.

30) The GoGreen Power program had sales totaling 6,582,700 kWh in 2016.

31) The GoGreen Power program related RECs are purchased on the open market by the Duke Energy senior emissions trader via from third party suppliers that are Green-e certified, via a broker transaction. For 2016, a GoGreen Power purchase of 18,000 wind RECs was made to cover Duke Energy GoGreen Power programs in Ohio, Kentucky and Indiana.

32) According to the PJM-GATS tracking system report which reflects the retired GoGreen Power RECs, 3 Degrees is the wholesale counterparty that retired RECs on behalf of DEO's GoGreen customers in 2016.

33) The Company's GoGreen Power program is a low volume program whereby one bulk purchase of RECs is made on behalf of the Company's GoGreen customers. The bulk purchase is tracked until the RECs are retired under the GoGreen program. Then additional blocks are purchased. DEO stated that REC purchases for the GoGreen Power program occur once a year on average. Purchases of RECs for the DEO GoGreen Power program are combined with GoGreen REC purchases for Kentucky and Indiana.

34) The tracking and retirement of GoGreen Power related RECs depends on the geographical location of the third party who supplied the GoGreen Power program RECs.

35) Per the response to LARKIN2-DR-01-050, the 2016 GoGreen Power related RECs were retired through the PJM-GATS tracking system. For 2014 and 2015, the GoGreen related RECs were retired in the M-RETS tracking system, which provided an additional separation feature between GoGreen Power and Ohio renewables compliance (i.e., through the use of a different tracking system).

36) Larkin confirmed by a review of the specific generating facilities and the REC certificate serial numbers of the RECs retired for the Ohio renewables compliance requirement and the GoGreen Power REC retirements in the PJM-GATS tracking system that there was no duplication of RECs between the two programs nor was there any transfer of RECs between the two programs.

37) As discussed in Chapter 3, Larkin concludes that the Company's purchase of RECs in 2016for RPS compliance was reasonable.

38) As discussed in Chapter 3, Larkin concludes that the Company's management and procurement of RECs for RPS compliance during 2016 has been reasonable.

Management Audit Recommendations

1. Larkin recommends that going forward, DEO maintain a written record which memorializes all departmental meetings and/or conference calls in which discussions are held and decisions are made pertaining to things such as Ohio legislation (current and/or proposed) and prevailing market conditions as it relates to the purchase of solar and non-solar RECs for Ohio renewable compliance.
2. Pursuant to the previous recommendation, Larkin recommends that the Company's Contracting Principles, Guidelines and Strategy document includes a passage which contains language to the effect of what is stated in management recommendation number one.
3. Larkin recommends that a written memo be maintained for REC purchases that briefly summarizes the reason for the purchase and the information available and considered at that time.

Financial Audit Findings

1) Larkin reviewed DEO's quarterly Rider AER-R filings, which covered the quarterly forecast periods, for calendar year 2016 as well as the first and second quarters of 2017.[6] Our review also included DEO's calculations of the reconciliation components that relate to its prior quarterly filings. Specifically, Larkin's review of DEO's reconciliation calculations included verification to actual recorded results for the months of January through December 2016.
2) Larkin traced the monthly 2016 Rider AER-R related revenues and expenses from the Rider AER-R reconciliation schedules to the general ledger detail that was imported from the Company's Peoplesoft accounting system. No exceptions were noted.
3) For 2016, DEO reported total REC expense of $1,615,622 and overall compliance administrative expenses of $35,526. The administrative expense consisted of tracking system participation expenses totaling $1,500, and audit fees totaling $34,026.
4) Larkin traced the audit fees to invoices provided by DEO. In addition, DEO provided a copy of its PJM GATS tracking system subscription fee related invoice in response to LARKIN2-DR-01-036.
5) The Company did not include any brokerage expense in Rider AER-R for 2016. In response to LARKIN2-DR-04-001, DEO stated that the brokerage fees associated with the 2016 solar REC purchases are not included in its accounting

[6] The forecasted rates for Rider AER-R for the first and second quarters of 2017 are beyond the scope of this audit. However, the first quarter 2017 Rider AER-R filing contains the reconciliation for the third quarter of 2016 and the second quarter 2017 Rider AER-R filing contains the reconciliation for the fourth quarter of 2016, which were reviewed because they relate to actual costs for 2016.

records until they are paid. The brokerage fees for 2016 REC purchases were not included in Rider AER-R in 2016 because they were not paid during 2016.

6) With regard to the 2016 PJM-GATS fee, upon reviewing the general ledger, Larkin noted that in February 2016, DEO recorded a correcting entry for $1,500 in Account 921400. The response to LARKIN2-DR-01-008 indicated that the payment of the PJM-GATS fee for 2016 was incorrectly recorded in Account 565000 and was reclassified to Account 921400 in February 2016. During the interviews conducted on March 13, 2017, DEO confirmed that while the correcting entry for the PJM-GATS fee was made in February 2016, the $1,500 was included in Rider AER-E in December 2015.

7) DEO provided a copy of the invoice related to the 2017 PJM-GATS fee that was paid in December 2016 and included in Rider AER-R in December 2016. In addition, DEO provided a copy of the journal entry associated with the recording of the 2017 PJM-GATS fee into Account 921400. Larkin confirmed that the $1,500 was reflected in the period over-recovery amount of $24,301 for 2016 as shown on Schedule B (2016 reconciliation) from DEO's second quarter 2017 quarterly Rider AER-R filing.

8) DEO included audit fees totaling $34,026 in Rider AER-R costs for 2016. The audit fees in question were those billed by Larkin pursuant to its review of Rider AER-R for 2014 and 2015. Larkin's authorized budget for the 2014/2015 review was $27,000. In that prior review, Larkin exceeded its budget by approximately $7,026, but only billed up to the $27,000 contract amount. However, upon reviewing DEO's quarterly Excel workbooks, Larkin noted that DEO included audit fees totaling $34,026 in June 2016. This amount included Larkin's authorized budget of $27,000 plus the $7,026 which exceeded the budget. The $7,026 was beyond the amount paid and should therefore be removed from includable Rider AER-R costs.

9) The Company calculated 2016 Rider AER-R related carrying costs by taking the average of the beginning and ending combined monthly solar and non-solar REC inventory balances and multiplying the result by 1/12 of the cost of debt of 5.32%, which had been approved by the Commission in Case No. 12-1682-EL-AIR, et. al. There are no carrying costs calculated on the over/under collection amounts that resulted from the Company's reconciliation adjustments.

10) For 2016, DEO calculated Rider AER-R carrying costs totaling $255,013, using the cost of debt of 5.32%. Larkin recalculated DEO's Rider AER-R carrying charges for 2016. No exceptions were noted.

11) The Company maintains the following two REC inventories, at weighted average cost:

    1. Non-Solar RECs
    2. Solar RECs

12) Only REC purchase costs are included in the REC inventory. The Company did not use renewable purchased power agreements to meet its 2016 RPS requirements, and instead used unbundled REC purchases to fulfill its obligation.

13) The Company does not self-generate any RECs for Ohio RPS compliance.

14) The Company reports the retirement of its RECs for Ohio RPS compliance through the PJM-GATS tracking system.

15) For accounting purposes, RECs are consumed monthly and the cost is included in Rider AER-R. RECs consumed for Ohio compliance are retired in PJM-GATS for the annual compliance filing in April of the following year, e.g., RECs consumed for 2016 RPS compliance are retired in PJM-GATS in April 2017, which corresponds with the annual RPS compliance filings.

16) Larkin obtained and reviewed the invoices related to the Company's purchase of RECs from third party suppliers during 2016, which we traced back to DEO's REC inventory workpapers. Upon reviewing these invoices, Larkin was initially only able to trace the larger solar REC purchases to the invoices provided. The Company provided clarifying information regarding the remaining solar REC purchases in its response to LARKIN2-DR-03-001(d).

17) The Company contracted to purchase [redacted] solar RECs during 2016. Of this amount, there were five transactions in which DEO paid [redacted] per REC for a total of [redacted] RECs that it contracted to purchase from [redacted] In response to LARKIN2-DR-03-001(a), DEO stated that the cost solar RECs were related to [redacted]

18) Larkin noted the trade date for each [redacted] cost solar REC transaction occurred during 2016, but the "Start" and "End" dates for these transactions were either 2012, 2013 or 2015. DEO stated that the 2012, 2013 and 2015 "Start" and "End" dates were copied from previous transactions and need to be updated in the system to coincide with the dates the RECs were actually received into PJM-GATS. DEO stated it will make these changes.

19) The summary of 2016 third party REC purchases initially provided by DEO included [redacted] solar RECs that DEO obtained from [redacted] in its REC inventory. However, in its response to LARKIN2-DR-03-001, the Company stated that Transaction ID 3411165, which was for [redacted] solar RECs, is duplicative of Transaction ID 3411168 and that it will make the correction to remove the double-counted solar RECs from its inventory system.

20) With regard to Transaction ID 3379566, DEO stated that it never received RECs from [redacted] and that DEO will investigate to determine whether this transaction, which was for [redacted] solar RECs at a cost of [redacted] per REC, should be deleted from the inventory system.

21) Larkin obtained copies of the Company's PJM-GATS 2016 tracking system reports in the supplemental response to LARKIN2-DR-02-008. Larkin tied the RECs retired for Ohio compliance to the Company's Annual Alternative Energy Portfolio Status Reports for 2016.

22) Larkin obtained a final reconciliation between the Company's per books REC inventory and the PJM-GATS REC inventory related to the 2016 annual compliance filing. No variances were noted.

23) There were no changes to the GoGreen Power Program during 2016.

24) During 2016, 18,000 RECs were purchased on behalf of Duke Energy for the GoGreen Power program for Ohio, Kentucky and Indiana. During the interviews conducted on March 13, 2017, the Company stated that of the 18,000 RECs, 7,500 were purchased on behalf of DEO while the remaining 10,500 RECs were purchased on behalf of Duke Energy GoGreen Power customers in Indiana and Kentucky.

25) The PJM-GATS tracking system report provided in the response to LARKIN2-DR-04-002 indicates that the account is owned by 3Degrees, the wholesale counterparty who retired the 18,000 GoGreen Power RECs on behalf of Duke Energy's GoGreen customers. As noted above, 7,500 of the 18,000 GoGreen Power RECs were retired on behalf of DEO.

26) DEO provided a copy of an invoice from 3 Degrees which reflects the purchase by Duke Energy of the 18,000 wind RECs that were used for the Duke Energy GoGreen Power programs in Ohio, Kentucky and Indiana.

27) The tracking and retirement of the GoGreen Power RECs through a tracking system depends on the location of the third-party suppliers from which DEO purchases its GoGreen Power RECs. The response to LARKIN2-DR-01-050, confirmed by Larkin's review, indicates that the 2016 GoGreen RECs were retired through the PJM-GATS tracking system.

28) Larkin obtained and reviewed a Company generated Excel workpaper which tracks the GoGreen Power related RECs that were retired in 2016 on a monthly aggregated basis. According to this workpaper, DEO retired 6,583 GoGreen Power related RECs in 2016.

29) The GoGreen Power RECs and the RECs retired for Ohio RPS requirements were retired through the PJM-GATS tracking system for 2016. Larkin compared the facility locations and certificate serial numbers of the GoGreen Power RECs that were retired to those RECs retired for Ohio compliance purposes to confirm that no double counting of RECs occurred in 2016 between the two programs. This comparison confirmed that distinct specific RECs with different serial numbers were used, i.e., there was no double-counting.

30) A Duke Energy senior emissions trader executes the orders for GoGreen Power REC purchases and that such RECs are purchased on the open market by a separate broker who then sell the RECs to DEO. The same senior emissions trader communicates with and executes trades for the DEO Ohio renewables compliance program.

31) The third party suppliers that provide the RECs on behalf of DEO for GoGreen are Green-e certified.

32) Prices for RECs for Ohio wind and solar compliance declined during 2016. In view of the lower REC prices and the fact that DEO maintains an inventory of RECs for Ohio renewables compliance extending into subsequent years, an inquiry was made concerning whether there was any impairment recorded for the REC inventory.

33) During 2016, DEO did not record any impairment on its REC inventory. According to the response to LARKIN-DR-03-004 from the 2014/2015 review, which asked whether the Company actually performed an impairment test on its REC inventory in either 2014 or 2015, DEO stated that it purchases RECs solely to meet the renewable requirements

contained in R.C. 4928.64, and as such, the RECs were prudently incurred to meet those requirements. Specifically, DEO cited Section 4.18.1 of its Commodity Contract Accounting Manual where it states in part: Duke Energy shall review its RECs recorded as finite-lived intangible assets for recoverability and/or impairment under the guidance contained in ASC Topics 350 and 360 whenever events or changes in circumstances indicate that the carrying amount of the recognized RECs may not be recoverable. If carrying amounts recognized on the balance sheet for RECs are not deemed to be recoverable, the Company shall record an impairment charge pursuant to the guidance contained in ASC Topics 350 and 360 in the event that the carrying amounts recognized on the balance sheet for RECs exceed the fair values of those RECs. The Company had stated during the 2014/2015 review that a triggering event or changes had not occurred which would indicate the carrying amounts of the RECs may not be recoverable and therefore, no impairment testing was performed. DEO stated during the telephone interview on March 14, 2017 that this applied to 2016 as well as noted above in the management audit section. Larkin has concluded that the RECs purchased in 2016 for RPS compliance were prudently incurred to meet those requirements for Ohio compliance RECs other than the general market declines. There was no triggering event that occurred that would indicate that the carrying amounts of those RECs may not be recoverable. Larkin agrees with DEO's conclusion that a decline in market prices for RECs held for Ohio compliance is not a triggering event for recording an impairment loss.

34) In its Rider AER-R quarterly filings, the Company determines the projected Weighted Average Cost of Inventory ("WACI") by taking the value of its non-solar and solar REC inventory balances from three months prior and then divides those values by the quantities. For example, the projected WACI in the second quarter 2016 Rider AER-R filing (April-June) was calculated using the non-solar and solar REC inventory balances from January 2016. Larkin tested these calculations for the 2016 review period. No exceptions were noted.

35) The Company provided a final reconciliation between the per books REC inventory and the PJM-GATS REC inventory that related to the 2016 annual compliance filings. The reconciliation between the Company's per books REC inventory and the PJM-GATS REC inventory netted no differences. Larkin tied the per books REC inventory amounts to the inventory worksheets provided in LARKIN2-DR-01-010.

36) DEO has historically accounted for its portfolio of emissions allowances as intangible assets, and concludes that it is appropriate to account for RECs in a similar manner. Larkin concurs with DEO's conclusion.

Financial Audit Recommendations

1. As it relates to the audit fees charged to Rider AER-R for the 2016 review period, Larkin recommends that the $34,026 that DEO included in Rider AER-R in June 2016 be reduced by $7,026 to reflect the $27,000 amount that Larkin billed and was paid for that review.

2. Larkin recommends that the six solar RECs from the [redacted] associated with Transaction ID 3411165 that were double-counted be removed from the Company's solar REC inventory. DEO has indicated it will make this correction.
3. In the event the Company's investigation into Transaction ID 3379566 reveals that it will not be receiving the [redacted] solar RECs associated with this transaction, Larkin recommends that the [redacted] solar RECs, with a cost of [redacted] each, be removed from DEO's solar REC inventory.
4. With regard to the [redacted] cost solar REC transactions, Larkin recommends that the Company update its system so that the "Start" and "End" dates related to these transactions coincide with the dates the RECs were actually received into PJM-GATS. DEO has indicated it will make these changes.

Audit Review

A draft of the audit report was provided to the Company for review. The auditors appreciated the Company's efforts and every factual issue raised by the Company was addressed. The Company in its comments noted that it did not verify every number in the report and reserved its rights regarding any future process with respect to the report. If additional issues concerning the report that have not been identified to date are subsequently raised by the Company, the auditors reserve the opportunity to respond.

Audit Outline

The outline of the remainder of this audit report is as follows:

- Section 2 Duke Energy Ohio Background
- Section 3 Management/Performance Audit of Rider AER-R
- Section 4 Financial Audit of Rider AER-R
- Section 5 Limited Review of RECs purchased for the Company's GoGreen Power Program[7]

[7] Staff requested Larkin to investigate regulatory issues, such as the potential for double-counting or cross-subsidization between the GoGreen Program and the RPS compliance program.

2 DUKE ENERGY OHIO BACKGROUND

Overview

Duke Energy, which is headquartered in Charlotte, North Carolina, is one of the largest electric power holding companies in the United States, supplying and delivering energy to approximately 7.4 million customers in the United States. The Company has approximately 52,700 megawatts of electric generating capacity in the Carolinas, Midwest, and Florida as well as natural gas distribution services serving more than 1.5 million customers in Ohio, Kentucky, Tennessee, and the Carolinas. In addition, Duke Energy's commercial and international businesses own and operate diverse power generation assets in North America and Latin America, which includes a portfolio of renewable energy assets.

Duke Energy's regulated utilities own approximately 52,700 megawatts of capacity to serve approximately 7.4 million customers in North Carolina, South Carolina, Florida, Indiana, Kentucky, and Ohio. Duke Energy's international operations are located in the Central and South American countries of Argentina, Brazil, Chile, Ecuador, El Salvador, Guatemala, and Peru. In Latin America, the Company's assets include approximately 4,900 gross megawatts of hydroelectric and thermal generating capacity. On February 18, 2016, Duke Energy announced it had initiated a process to divest its International Energy business segment with the exception of its investment in National Methanol Company, in which International Energy holds a 25% interest.

Duke Energy Renewables develops wind and solar energy solutions for customers throughout the United States. The Company's wind and solar farms, which are located in 12 states, account for more than 2,000 megawatts of emission-free electricity.

DEO is an electric distribution utility ("EDU") as defined by R.C. 4928.01(A)(6) and a public utility as defined in R.C. 4905.02, and is subject to the jurisdiction of the PUCO.

On December 17, 2008, the Commission approved DEO's Electric Security Plan Standard Service Offer ("ESP-SSO") which replaced the Market-Based Standard Service Offer , which was in effect from January 1, 2005 through December 31, 2008. The ESP-SSO was DEO's plan for the supply and pricing of electric generation service for the referenced three-year period, including the recovery of costs for fuel used to generate electricity, electricity purchased wholesale, emission allowances and federally mandated carbon taxes.

On January 1, 2012, the Standard Service Offer - Electric Security Plan ("SSO-ESP") was implemented and was in effect through May 31, 2015. The SSO-ESP assessed customer rates based upon fully competitive auctions and provided DEO with a non-bypassable stability charge from 2012 through 2014. The non-bypassable stability charge required DEO to transfer its generation assets at net book value to an affiliate or subsidiary by December 31, 2014.

On April 2, 2015, the Commission approved DEO's application to establish a standard service offer in the form of an Electricity Security Plan ("ESP") in Case No. 14-0841-EL-SSO, et al, for the period beginning June 1, 2015 through May 31, 2018.

3 MANAGEMENT/PERFORMANCE AUDIT OF RIDER AER-R

Alternative Energy Portfolio Requirements

S.B. 221 included an Alternative Energy Portfolio Standard (R.C. 4928.64-65) which required 25 percent of all kilowatt hours of electricity sold by electric distribution utilities and electric services companies to retail electric consumers under their standard service offers to be obtained from "alternative energy sources" by 2025. Alternative energy sources were defined as "advanced energy resources" and "renewable energy resources" that satisfy the applicable placed in-service requirement. The final Commission rules implementing the Alternative Energy Portfolio Standard were issued December 10, 2009. At least half of the alternative energy requirement must be satisfied from "renewable energy sources" which must include solar.

The requirements were modified by S.B. 310 which was passed in May 2014 by the Ohio General Assembly. Pursuant to S.B. 310's passage, several provisions of the Ohio Revised Code, including those referenced above, were amended.[8] S.B. 310 does the following[9]:

- Freezes, for 2015 and 2016, the renewable and solar energy benchmarks (required of electric distribution utilities ("EDUs") and electric services companies ("ESCs") at the 2014 level required under prior law, and requires the annual escalations to the benchmarks to resume in 2017 starting at the 2015 levels of prior law;
- Eliminates the option that EDUs and ESCs provide, by 2025, up to 12.5% of the former 25% alternative energy requirement from advanced energy;
- Extends the benchmark period by which EDUs and ESCs must provide 12.5% of their electricity supply from renewable energy resources by two years to 2027;
- Eliminates the requirement that at least one-half of the renewable energy resources implemented to meet the benchmarks must be met through facilities located in Ohio.
- Permits the renewable energy resources implemented to meet the benchmarks to be met either through facilities in Ohio or with resources shown to be deliverable into Ohio;

[8] Prior to the passage of S.B. 310, the Ohio compliance requirement was referred to as Alternative Energy Portfolio Standard ("AEPS"). However, subsequent to the passage of S.B. 310, the Ohio compliance requirement was changed to the Renewable Portfolio Standard ("RPS").

[9] The bullet points listed are from the S.B. 310 Bill Analysis for renewable energy and advanced energy requirements.

- Freezes the solar energy compliance payment at $300 for 2014, 2015, and 2016 and resumes, in 2017, the gradual reduction of the payment amounts to a minimum of $50 in 2026 and thereafter;
- Requires that recovery from customers of ongoing costs that are associated with EDUs' contracts to procure renewable energy resources, entered into before April 1, 2014, continue on a bypassable basis until the prudently incurred costs are fully recovered;
- States that renewable energy resources do not need to be converted to electricity in order to be eligible to receive RECs;
- Requires that rules of the PUCO specify that for RECs, one megawatt hour of energy derived from biologically derived methane gas equals 3,412,142 British Thermal Units;
- Repeals the Alternative Energy Advisory Committee and its duty under prior law to study the alternative energy resources requirements and to submit a semiannual report to the PUCO;
- Permits EDUs and ESCs to use a baseline of the compliance-year's sales to measure compliance with the renewable energy benchmarks, rather than the most recent three-year average of sales; and
- Requires EDUs and ESCs that switch back to the three-year baseline to use that baseline for at least three consecutive years before again using the compliance year baseline.
- Permits the PUCO to adjust the compliance-year baseline to adjust for new economic growth in the EDU's and ESC's territory or service area.

The percentages required by year are provided in Exhibit 3-1 below.

Exhibit 3-1. Renewable Energy Benchmark Requirements as Amended

Year	Renewable Energy	Minimum Solar
2009	0.25%	0.00%
2010	0.50%	0.01%
2011	1.00%	0.03%
2012	1.50%	0.06%
2013	2.00%	0.09%
2014	2.50%	0.12%
2015	2.50%	0.12%
2016	2.50%	0.12%
2017	3.50%	0.15%
2018	4.50%	0.18%
2019	5.50%	0.22%
2020	6.50%	0.26%
2021	7.50%	0.30%
2022	8.50%	0.34%
2023	9.50%	0.38%
2024	10.50%	0.42%
2025	11.50%	0.46%
2026	12.50%	0.50%

To ensure compliance with the alternative energy standards, utilities are required to file an annual report which details their performance. If the utility has failed to meet its requirements in any year and such under-compliance is deemed to have been avoidable, the utility will be assessed a monetary penalty referred to as the “alternative compliance payment” (“ACP”). The non-solar ACP was initially set at $45 per MWh and is adjusted annually by the PUCO according to changes in the Consumer Price Index. The solar ACP was initially set at $450 per MWh and is reduced by $50 every two years until it hits $50 per MWh in 2024.[10] ACPs are deposited into the Ohio Advanced Energy Fund which provides funding for renewable and energy efficient projects within the state.

Utilities can obtain relief from certain requirements and avoid paying the ACP if it demonstrates that compliance with the portfolio standard is “reasonably expected” to increase generating costs by three percent or more. In addition, a utility can obtain relief through the force majeure provisions which state that the PUCO has the ability to waive compliance if the utility can demonstrate that sufficient renewable energy products were not reasonably available in the market place.

Substitute House Bill 554

On May 19, 2016, legislation was introduced to the Ohio General Assembly to revise the requirements for renewable energy, energy efficiency, and peak demand reduction.

[10] As noted above, with the passage of S.B. 310, the solar ACP was frozen at $300 for 2014, 2015, and 2016. Starting in 2017, the reduction of the solar ACP is to resume with the gradual reduction in payment amounts leveling off at $50 in 2026 and thereafter.

On December 27, 2016, Ohio Governor John Kasich vetoed SHB 554 in its entirety. As discussed below, the uncertainty surrounding whether SHB 554 would be factored into the Company's decision making with respect to its REC purchases during 2016.

Management Audit

Scope and Objectives

To accomplish the review of DEO's 2016 Rider AER-R, the audit RFP guidelines provide that the management audit shall include the following items:

1) A review of the Company's RPS compliance planning activities during the audit period, including the schedule and process for evaluating compliance options;
2) A review of the REC and S-REC transactions entered into by the Company during the audit period, with an assessment as to the reasonableness of the transactions;
3) An assessment of the applicable REC and S-REC markets during the audit period; and
4) A review of any other specific items as identified by the Commission or Staff.

Each of these items is discussed in the sections below.

1) A Review of the Company's RPS Compliance Planning Activities during the Audit Period, Including the Schedule and Process for Evaluating Compliance Options

The response to LARKIN2-DR-01-005 stated that DEO does not purchase RECs under a purchase power agreement. During the interviews that were conducted at the Company's offices on March 13, 2017, the Company stated that it purchases RECs on the open market. In its confidential response to LARKIN2-DR-01-033, the Company stated that its procurement strategy was established by the Renewable Strategy and Compliance ("RSC") team, in conjunction with the Company's Fuel and Systems Optimization ("FSO") team. Specifically, DEO stated that its procurement strategy is generally embodied in the following guidelines and principles:

<u>Overview</u>

1) DEO procures all energy and capacity for serving generation customers via an auction process and does not engage in power purchases outside of the auction process. [redacted]
2) The FSO team engages the market and purchases RECs under the direction of the RSC team.

<u>Market Engagement and Procurement Principles</u>

1) DEO seeks to comply with the AEPS while minimizing cost and risk borne by customers' unfettered ability to switch among different competitive energy service providers. [redacted]
2) [redacted]
3) [redacted]
4) [redacted]
5) [redacted]

[redacted]

Exhibit 3-2. DEO's Approved Risk Limits

[redacted]

[redacted]

According to the response to LARKIN2-DR-01-022, [redacted]

[redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted]

[redacted]

---

[11] During the interviews, DEO stated that the [redacted] is set as a reasonable limit as an internal check versus the statutory amount of $300 per the provisions of S.B. 310.

DEO stated in response to LARKIN2-DR-01-033 that FSO shall seek RSC guidance and approval prior to purchasing non-solar RECs or solar RECs that are priced above the prices that are derived from the calculations illustrated above. As it relates to the review period in the current proceeding, the [redacted] non-solar and [redacted] solar thresholds had no impact on Rider AER-R in 2016.

Audit Period Compliance -

According to the Company's Annual Compliance Plan Status Reports for 2016, DEO achieved compliance by meeting the 2016 benchmarks for the Ohio RPS.

<u>Annual Alternative Energy Portfolio Status - 2016</u>

DEO provided its confidential Annual Alternative Energy Portfolio Status Report for 2016 that was filed with the PUCO on April 11, 2017 in Case No. 17-345-EL-ACP in its supplemental response to LARKIN2-DR-01-044. The Company's 2016 compliance report stated that DEO achieved compliance by meeting the 2016 benchmark for the Ohio Renewable Portfolio Standard for both solar and non-solar renewables.

R.C. 4928.643(B) specifies that the baseline for a utility's compliance with the alternative energy resource requirements may be based upon either (1) the average of the total kilowatt hours the Company sold in the preceding three years, or (2) the total kilowatt hours sold to the applicable consumers in the applicable compliance year. DEO chose to base its compliance on the total kilowatt hours sold in the 2016 compliance year. Specifically, the Company's Renewable Energy requirement was calculated by applying the renewable energy standard multiplied by DEO's 2016 retail sales sold under its standard service offer.

To comply with this requirement, companies must surrender RECs from qualified resources (Note: 1 REC = 1 MWh) equal to the renewable obligation. Given that RECs have a five-year lifetime following their acquisition, surplus unused credits can be carried over and consumed in a following year.

The Company's 2016 renewable requirement and compliance is summarized in the following exhibit:[12]

[12] From Appendix B of DEO's 2016 Alternative Energy Portfolio Status Report filed on April 11, 2017 in Case No. 17-345-EL-ACP.

Exhibit 3-3. 2016 Renewables Compliance Summary

Line	(A) Description	(B) MWh Sales
1	Baseline (2016 Sales)	5,061,733
2	2016 Statutory Compliance Obligation	
3	Non-Solar Renewable Benchmark	2.38%
4	Solar Renewable Benchmark	0.12%
5	2016 Compliance Obligation	
6	Non-Solar RECs Needed for Compliance	120,469
7	Solar RECs Needed for Compliance	6,074
8	2016 Performance (Per GATS Data)	
9	Acquired Non-Solar RECs	120,469
10	Acquired Solar RECs	6,074
	2016 Alternative Compliance Payments	
11	Non-Solar, per REC (Case No. 16-0714-EL-ACP)	$ 49.75
12	Solar, per S-REC - per 4928.64(C)(2)(a)	$ 300.00
	2016 Payments, if applicable	
13	Non-Solar Total	$ -
14	Solar Total	$ -

As shown in the above Exhibit, DEO asserts that it met each of the 2016 alternative energy compliance obligations with 120,469 non-solar RECs and 6,074 solar RECs.[13] DEO calculated its 2016 non-solar and solar compliance obligations by multiplying its compliance year megawatt-hours of 5,061,733 by the non-solar and solar compliance obligation benchmarks of 2.38% and 0.12% , respectively. DEO indicates that it satisfied its 2016 renewable energy requirements through REC purchase transactions that were short-term in nature. However, the Company stated in its compliance report that it plans to employ any and all reasonable methods to assure ongoing compliance and that such tactics may be adjusted as necessary. In addition, DEO believes that maintaining flexibility with regard to its compliance strategies is necessary to provide the greatest certainty of compliance and to assure that the most cost-effective methods are implemented for the benefit of customers.

In its supplemental response to LARKIN2-DR-02-008, DEO provided copies of the PJM-GATS tracking system reports, which provide the detail for the retirement of the solar and non-solar RECs associated with Ohio renewable compliance for 2016. The PJM-GATS report for 2016 (Confidential Attachment 1) provides a breakout of the non-solar and solar RECs, including certificate serial numbers, which ties out to the 120,469 non-solar RECs and 6,074 solar RECs

[13] Commission Staff will review the Company's RPS compliance filing and file a report in Case No. 17-0345-EL-ACP

needed for DEO's 2016 compliance obligation as reported in the Company's annual alternative portfolio status report that was filed on April 11, 2017. No exceptions were noted.

In accordance with Ohio Administrative Code Section (“O.A.C.”) 4901:1-40-03(C), whereby the Commission requires electric utilities and electric service companies to file a plan for compliance with future advanced and renewable energy benchmarks, the Company also submitted its Ten Year Baseline and Benchmark Forecast as Appendix A in its 2016 Annual Alternative Energy Portfolio Status Report. DEO's renewable energy and solar benchmarks for the next ten years are summarized in the exhibit below:

Exhibit 3-4. DEO's Forecasted 10-Year Retail Sales and Renewables Requirements from 2016 Annual Alternative Energy Portfolio Status Report

	DEO's Sendout MWh	SSO Sales Forecast Default Load (Includes Losses)	Renewable Energy Baseline Forecast	Non-Solar Requirement	Non-Solar Requirement	Solar Requirement	Solar Requirement
Year	MWh			%	MWh	%	MWh
2016	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]							

O.A.C. 4901:1-40-03(C) also requires that DEO include a discussion of any perceived impediments to achieving compliance with required benchmarks as well as suggestions for addressing any such impediments. In its 2016 annual compliance filing, DEO stated the following as it relates to impediments:

> Any impediments to achieving compliance in the near term are currently modest because the REC markets are well-supplied. Over the longer term, the bigger concern is with the uncertainty of future obligations, given the Company's continually-shifting load obligation (which, in turn, maintains the Company's bias towards short-term REC purchase contracts).

2) A Review of the REC and S-REC Transactions Entered into by the Company during the Audit Period, with an Assessment as to the Reasonableness of the Transactions

RECs purchases are usable within a five-year period. Any RECs held by DEO at December 31, 2016 that were in excess of its 2016 Benchmarks will be applied to future year benchmarks. DEO uses the "First-In, First-Out" or FIFO method of accounting for its REC inventory whereby the Company applies its older RECs first for compliance purposes. DEO recovers the cost of its RECs throughout the year, but the RECs are not retired through PJM-GATS until the end of the compliance year.

DEO stated that it was not in a short position (i.e., needing to purchase additional RECs) in 2016 with respect to its solar and non-solar RECs.[14] In order to determine whether DEO had adequate non-solar and solar RECs to be compliance during 2016, Larkin requested that DEO provide the detail of its monthly positions for each month of 2016. In response to LARKIN2-DR-01-023, the Company provided its monthly position reports, which are titled "Duke Energy Ohio - Renewable Energy Credit Position Summary" ("position reports"). In the position reports, DEO evaluated its current REC inventories against anticipated RPS requirements for seven years. For example, DEO's position reports compared its solar and non-solar REC inventories and contracted REC purchases with anticipated RPS compliance requirements for years 2016 through 2022.

[redacted] The monthly position report dated December 31, 2016 supports the Company's assertion.

As it relates to REC purchases during the review period, the Company stated during the interviews that did not make any solar REC purchases until December 2016 due to uncertainty over whether SHB 554 would be adopted.[15] As noted previously, the Company [redacted]

In terms of the uncertainty surrounding the passage of the SHB 554 legislation, during the interviews DEO stated that it held meetings every couple of months during the second half of 2016 to discuss strategy as it relates to REC purchases going forward. Specifically, the subject of these meeting was legislative uncertainty with respect to renewables compliance, and asking those involved in these meetings what they were seeing in the market and whether anything had changed that would influence them to recommend purchasing RECs. DEO stated that throughout the course of these internal Company meetings, there was no one decision maker regarding the need to purchase RECs for compliance purposes, but rather, decisions were made on a joint basis based on the collective opinions of the meeting participants. Upon Larkin's inquiry, DEO stated that other than emails that were sent out for the purpose of scheduling conference calls, there was no specific documentation memorializing these internal Company meetings. During the interviews, the Company indicated that beginning in 2017, DEO has started logging the minutes of these meetings so there is now a record of the discussions held and the decisions reached pursuant to those discussions. Larkin agrees that a record of these meetings should be maintained and recommends that logging the minutes of these meetings should continue going forward.

As discussed above, on March 7, 2017, HB 114 was introduced to reform Ohio's energy efficiency, peak demand reduction and renewable energy mandates before the Ohio General

[14] See the responses to LARKIN2-DR-01-025 and LARKIN2-DR-01-026.
[15] As noted above, SHB 554 was vetoed by Governor Kasich on December 27, 2016.
[16] See the response to LARKIN2-DR-02-006.

Assembly. DEO stated that it is taking a similar approach to its REC purchases going forward due to the uncertainty introduced by HB 114.

Audit Period Purchases

During the interviews, DEO's Senior Emissions Trader stated that his communications related to REC purchases, price discovery and/or broker queries were in the form of emails and instant messaging between the Company and its brokers. Upon Larkin's request, copies of these emails and instant messages for the period November 2016 through February 2017 were provided in the responses to LARKIN2-DR-02-001 and LARKIN2-DR-02-002, respectively. Larkin reviewed this documentation and noted that it included the interaction between the Company and its brokers regarding the details of two solar REC purchases in late 2016 for [redacted] solar RECs at [redacted] on December 2, 2016 and an additional [redacted] solar RECs at [redacted] on December 5, 2016. Larkin reviewed the invoices associated with these two purchases as well as other solar REC purchases in 2016 (see additional discussion below). In addition this documentation included similar detail related to Duke Energy's purchase of [redacted] RECs ([redacted] of which were for DEO) for the GoGreen Power program as well as other REC purchases that DEO made in 2017 for Ohio compliance in 2018, 2019 and 2020. Larkin also reviewed brokerage pricing sheets that DEO used for the period November 2016 through February 2017 (see additional discussion below).

With regard to the Company's solar REC purchases in 2016, DEO provided an attachment in response to LARKIN2-DR-02-006, which listed the third party suppliers from which it purchased solar RECs during 2016[17] and which are summarized in Exhibit 3-5 below.

Exhibit 3-5. REC Purchases During 2016 Period

[redacted]

As shown in the exhibit above, the Company contracted to purchase [redacted] solar RECs during 2016. Of this amount, the Company's attachment indicated [redacted] transactions in which DEO paid [redacted] per REC for a total of [redacted] RECs that it contracted to purchase from [redacted] Larkin inquired about these transactions and in response to LARKIN2-DR-03-001(a), DEO stated that the [redacted] However, DEO stated

[17] The response to LARKIN2-DR-02-006(b) states that DEO did not make non-solar REC purchases during 2016.

that [redacted]

Larkin noted that the trade date for each [redacted] cost solar REC transaction occurred during 2016. However, the "Start" and "End" dates for each of these transactions indicated 2012 2013 or 2015. In its second supplemental response to LARKIN2-DR-03-001(b), DEO stated that the [redacted] cost RECs are recorded in its CXL system upon the RECs being received into its PJM-GATS account. In addition, the Company stated that the Start and End dates for these transactions were copied from previous CXL transactions and need to be updated in the system to coincide with the dates the RECs were actually received into PJM-GATS. DEO stated that the date changes will be made.

In order to verify these solar REC purchases, Larkin requested copies of the third party supplier invoices which relate to the REC purchases in the exhibit above. In response to Larkin's inquiry, the Company provided a Confidential Attachment in response to LARKIN2-DR-02-006(d), which contained several invoices and related support. However, upon reviewing these invoices, Larkin was initially only able to trace the larger solar REC purchases listed above to the invoices provided. Upon Larkin's follow-up inquiry, the Company provided clarifying information regarding the remaining solar REC purchases in its response to LARKIN2-DR-03-001(d). However, as it relates to Transaction ID 3379566 from the exhibit above, DEO stated the following:

> RECs never received for [redacted] so no invoice received. Duke will investigate and determine if transaction should be deleted.

In the event the Company's investigation into Transaction ID 3379566 reveals that it will not be receiving the [redacted] solar RECs associated with this transaction, Larkin recommends that the [redacted] solar RECs, with a cost of [redacted] each, be removed from DEO's solar REC inventory.

2) An Assessment of the Applicable S-REC Market during the Audit Period

DEO's solar REC purchases during the 2016 audit period are summarized in Exhibit 3-7. As noted previously, [redacted] As shown in the exhibit, [redacted] of the market prices compiled by Platts Megawatt Daily[18] for the same time periods.

[18] Platts Megawatt Daily provides the North American power market's leading source of daily news and price information including 34 daily on-peak indexes, 29 daily off-peak indexes, spark spreads, daily market commentary and generation unit outages.

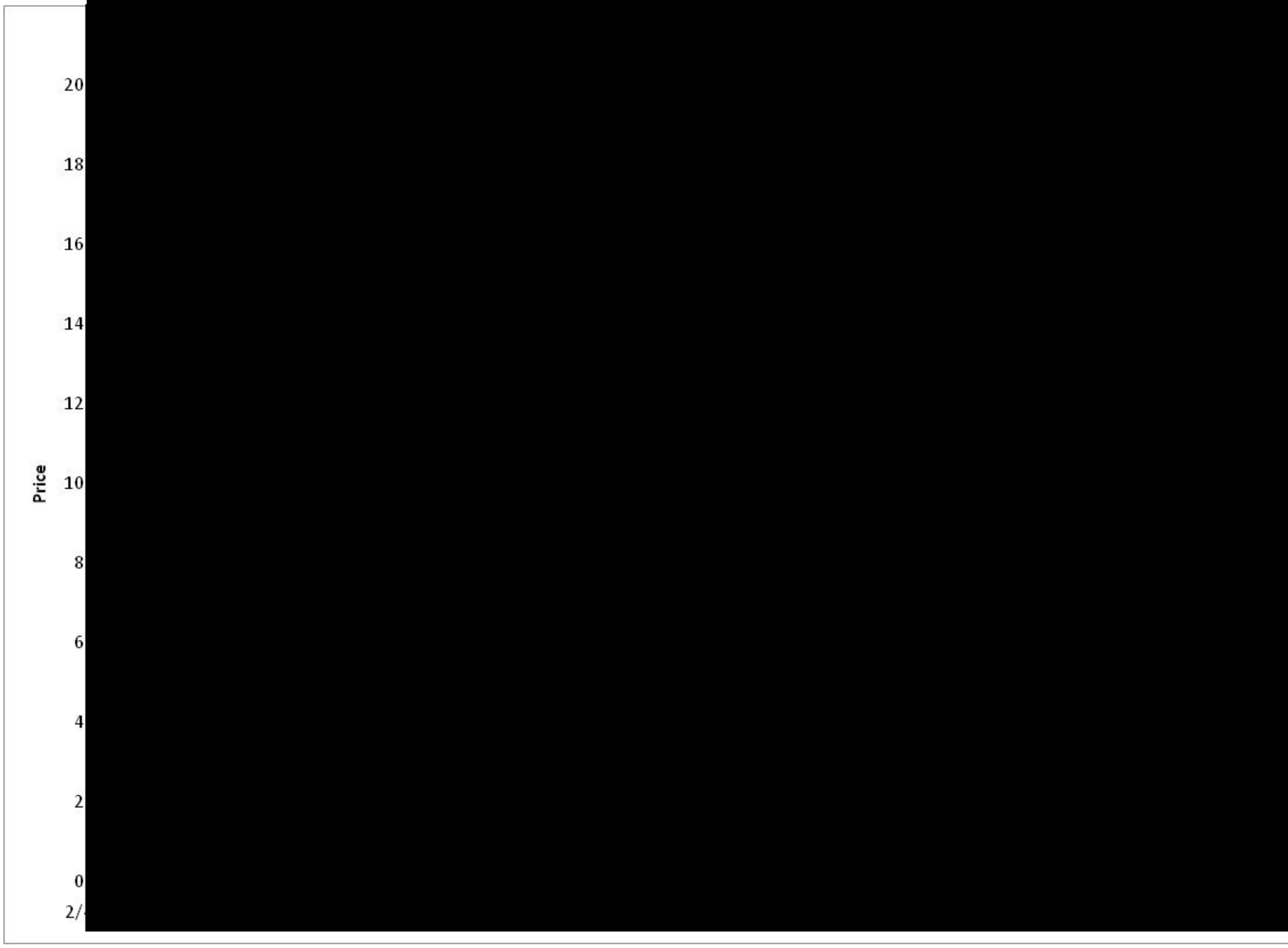
Exhibit 3-6. Comparison of DEO's solar REC Purchases During 2016 to Market Prices

[redacted]

As shown in the exhibit above, DEO's solar REC purchases in [redacted]

During the interviews, the Company stated that the prices of RECs fell throughout 2016, which is borne out by the summary of solar REC prices indicated in the exhibit above. In addition, the chart shown below in Exhibit 3-7 reflects the downward trend in solar REC prices during 2016 based on the market prices reflected in the Platts Megawatts Daily publications that coincided with DEO's solar REC transactions during 2016.

Exhibit 3-7. Comparison of Solar REC Market Prices to DEO's 2016 Purchases



[redacted]

The chart in the exhibit above clearly shows that solar REC market prices declined throughout the course of 2016 and the prices paid by DEO were generally in line with those market price declines.

Although DEO did not make any non-solar REC purchases in 2016, the chart shown below in Exhibit 3-8 also reflects a downward trend in non-solar REC market prices throughout 2016 based on the market prices reflected in the Platts Megawatts Daily publications.

Exhibit 3-8. Summary of Non-Solar REC Market Prices During 2016

The Company's Senior Emissions Trader stated that he uses brokerage pricing sheets as a measure for comparing current REC prices on the open market to the prices DEO pays for its REC purchases. Larkin requested copies of the brokerage sheets for the period November 2016 through February 2017, which were provided in response to LARKIN2-DR-02-003. The brokerage pricing sheets provided are titled Spectometer US Environmental and were published by Marex Spectron.[19] Among other things, the pricing sheets include information related to solar and non-solar REC prices for Ohio compliance for 2016, 2017 and 2018.

Upon reviewing the Spectrometer pricing sheets, Larkin noted that the [redacted]

Exhibit 3-9. Comparison of Solar REC Market Prices to DEO's 2016 Purchases per Spectrometer Pricing Sheets

[redacted]

[redacted]

[redacted]

[19] Marex Sprectron is a leading commodities broker and provides access to and intelligence on energy, metals and agricultural markets.

Exhibit 3-10. Comparison of Spectrometer Solar REC Market Prices to DEO's December 2016 Purchases

[redacted]

Conclusion

Based on our discussions with Company personnel and reviewing the information provided pursuant to those discussions coupled with the uncertainty that DEO faced with respect to SHB 554 and HB 114, Larkin concludes that the Company's management and procurement of RECs for Ohio compliance during 2016 was reasonable. Consequently, Larkin concludes that DEO's purchases of solar RECs in 2016 for Ohio compliance were reasonable.

Internal Audits

As previously noted, Rider AER-R commenced in 2012. The Company stated in its response to LARKIN2-DR-01-045 that it has not conducted any internal audits related specifically to Rider AER-R. Pursuant to the 2014 and 2015 audit, Larkin had recommended that an internal audit of Rider AER-R be conducted in 2016 and biennially thereafter to review the Rider AER-R processes and calculations. DEO's response to Larkin's recommendation was that the Company did not believe that a biennial internal audit of Rider AER-R was necessary since it has been ordered by the Commission that Rider AER-R be audited annually by Staff, or an independent auditor. In addition, DEO stated that the processes related to the recording of costs, purchases and revenues associated with Rider AER-R in DEO's financial records are part of the Company's normal SOX testing. As noted above, the Commission concurred with the Company in its Finding and Order dated December 21, 2016. Therefore, Larkin is not making a similar recommendation for the 2016 review period.

4 FINANCIAL AUDIT OF RIDER AER-R

Financial Audit

Scope and Objectives

To accomplish the review of DEO's 2016 Rider AER-R, the following aspects were included in the verification and testing:

1) Review the Company's AER-R quarterly filings during the audit period to verify the accuracy of the information and calculations;
2) A review of the individual components (including, but not limited to, transactions of RECs or S-RECs and costs of implementing associated RFPs) that may have been included within the Company's Rider AER-R information and calculations in order to verify that the costs were appropriately included;
3) A review to verify the accuracy of information and calculations related to any carrying charges included in the Company's quarterly Rider AER-R calculations;
4) Review the Company's status related to the 3% provision contained within R.C. 4928.64(C)(3); and
5) Compare the costs recovered through Rider AER-R during the review period to the costs incurred.
6) A review of any other specific items as identified by the Commission or its Staff.

Each of these items is discussed in the sections below.

Limited review of the components associated with DEO's GoGreen Power program that Larkin performed at the request of Staff is described in Chapter 5.

Minimum Review Requirements

Larkin referred to the objectives and procedures outlined in Attachment 2 of the RFP as guidance for the review requirements of this project. The Financial Audit Program Standards are intended to be used as a guide for the auditor in conformance with the specific requirements of the Rider AER-R and should not be used to the exclusion of the auditor's initiative, imagination, and thoroughness.

The information included here was used as guidance, in addition to appropriate discretion on the part of the auditor, in order to conduct the regulatory verification of DEO's renewables costs and REC inventory accounting in conformance with the specific requirements of the Company's

Rider AER-R that applied for the 2016 review period. Larkin reviewed and applied relevant criteria in review of the Company’s decisions and actions related to its RPS compliance activities.

The Alternative Energy Rider is intended to compensate DEO for compliance costs realized in meeting the renewable portfolio standards prescribed by R.C. 4928.64.

As part of its review of renewable energy resources, Larkin asked DEO a series of questions pertaining to its renewable energy purchases and RECs from an initial set of data requests LARKIN2-DR-01-01 through LARKIN2-DR-01-053 as well as one follow-up set of data requests.

Period for Review of Renewables Cost and Rider AER-R

The audit period for DEO’s renewables is the period January 1, 2016 through December 31, 2016. We reviewed the Company’s renewables costs for 2016. DEO's Rider AER-R was in effect for 2016.

1) A Review of the Company's Rider AER-R Quarterly Filings during the Audit Period to Verify the Accuracy of the Information and Calculations

Larkin’s review of DEO's quarterly AER filings covered the periods encompassing calendar year 2016.

Larkin noted that unlike some other Ohio utilities that have similar AER riders, DEO's quarterly filings are comprised of a cover letter and the tariff sheet which states the Rider AER-R rate and do not include details showing how the Rider AER-R rates were calculated. The following exhibit summarizes DEO's quarterly Rider AER-R filings covering both the forecast period as well as the actual renewables related costs and revenues (i.e., reconciliation) during the review period of January 1, 2016 through December 31, 2016.

Exhibit 4-1. Summary of DEO's Quarterly Filings for Rider AER-R During the 2016 Review Period

2016 Rider AER-R Rates per Quarterly Filings			
Filing Date	**Forecasted Period**	**Rider AER-R Charge per kWh**	**Reconciliation Period**
November 23, 2015	1st Quarter 2016	$ 0.000396	3rd Quarter 2015
February 26, 2016	2nd Quarter 2016	$ 0.000526	4th Quarter 2015
May 24, 2016	3rd Quarter 2016	$ 0.000293	1st Quarter 2016
August 3, 2016	4th Quarter 2016	$ 0.000506	2nd Quarter 2016
November 29, 2016	1st Quarter 2017	$ 0.000444	3rd Quarter 2016
February 23, 2017	2nd Quarter 2017	$ 0.000559	4th Quarter 2016

As discussed in detail below, the Company provided the workpapers which support the Rider AER-R rates that are reflected in DEO's quarterly filings.

1) A Review of the Individual Components (including, but not limited to, transactions of RECs or S-RECs and costs of implementing associated RFPs) that may have been Included within the Company's Rider AER-R Information and Calculations in Order to Verify that the Costs were Appropriately Included

Larkin reviewed DEO's Rider AER-R workpapers for the 2016 review period, which the Company provided in the original and supplemental response to LARKIN2-DR-01-002. Because DEO's Rider AER-R costs are trued-up to actuals, Larkin's review focused primarily on the workpapers for the second quarter 2017 forecast since this quarterly filing contained the final reconciliation calculation for 2016 . As noted above, the Company's quarterly Rider AER-R filings reflect only the forecast Rider AER-R rate for the quarterly period in question, which is then reconciled in a subsequent quarterly filing. For example, the quarterly filing for the first quarter of 2016 reflects the forecasted AER rate for the January through March 2016 period. However, the Company's reconciliation for the first quarter of 2016 was not reflected in the calculated Rider AER-R rate until the third quarter 2016 Rider AER-R quarterly filing. For purposes of illustrating how DEO calculated its forecasted Rider AER-R rate, the exhibit below replicates Confidential Attachment 6 from the response to LARKIN2-DR-01-002, which is the Company's quarterly filing for the second quarter of 2016.

Exhibit 4-2. Calculation of Rider AER-R Rate for the Second Quarter 2016

Line No.	Description		April - June 2016 Projection	Source	
	Weighted Average Cost of Inventory ($/REC[a])				
1	Non-Solar REC Cost	$	[redacted]	Projection	January 2016 WACI (456,044 RECs in inventory)
2	Solar REC Cost	$	[redacted]	Projection	January 2016 WACI (9,835 RECs in inventory)
	Quarterly Alternative Energy Requirment				
3	Non-Solar Requirement (MWh's)		33,297		Case No. 15-707-EL-ACP
4	Solar Requirement (MWh's)		1,679		Case No. 15-707-EL-ACP
	Alternative Energy Costs				
5	Non-Solar REC Cost	$	[redacted]	Line 1 x Line 3	
6	Solar REC Cost	$	[redacted]	Line 2 x Line 4	
7	Total REC Cost	$	459,255	Sum of lines 5 through 6	
8	Brokerage Expense	$	-		based on 12 months ended 12/31/2015
9	Tracking participation expenses	$	-		
10	Realized Gains and Losses	$	-		
11	Carrying Costs on the REC Inventory balance for 3 months	$	49,964		based average of Jan - Dec 2015 * 3
12	Projected REC cost including carrying charge	$	509,219	Sum of lines 7 through 11	
13	Prior Period (Over) / Under Recovery (per Schedule B)	$	65,336	Line 21 Schedule B	
14	Total REC expense	$	574,555		
15	Total Forecasted Non-switched Sales		1,094,130,482	kWh	
16	Calculated AER-R Rate	$	0.000525	per kWh	
17	AER-R Rate including CAT tax	$	0.000526	per kWh	

As shown in the exhibit, the calculation of the Rider AER-R rate includes the following components:

- Projected WACI;
- Projected Quarterly Alternative Energy Requirement;
- Projected alternative energy costs;
- Brokerage expense, if any;

- Tracking participation expense, if any;
- Realized gains and losses, if any;
- Carrying costs on the REC inventory;
- Prior period over/under recovery (reconciliation);
- Forecasted non-switched sales; and
- CAT Tax

The Company determines the projected WACI in its quarterly Rider AER-R filings by taking the WACI from its inventory worksheets, which were calculated by dividing the value of the REC inventory balance by the quantity from the prior two months. For example, the projected WACI in the second quarter 2016 Rider AER-R filing was calculated using the non-solar and solar REC inventory balances from January 2016.

The Company's supplemental response to LARKIN2-DR-01-002 included Attachment2, which reflected the Company's actual 2016 Rider AER-R reconciliation activity for the period January through December 2016 on Schedule B of the workpapers, and which are summarized in the following exhibit:

Exhibit 4-3. Summary of Actual Costs for January through December 2016

Line No.	Period	REC Expense	Brokerage Expense	Tracking Participation Expenses	Realized Gains and Losses	Audit Fees	Carrying Costs	Total Costs	Revenue	(Over)/Under Recovery	Per Prior Filing	Net (Over)/Under Recovery
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
1	Jan-16	$ 149,982	$ -	$ -	$ -	$ -	$ 22,443	$ 172,425	$ (173,555)	$ (1,130)	$ (1,130)	$ -
2	Feb-16	$ 149,081	$ -	$ -	$ -	$ -	$ 21,887	$ 170,968	$ (166,453)	$ 4,515	$ 4,515	$ -
3	Mar-16	$ 13,055	$ -	$ -	$ -	$ -	$ 22,565	$ 35,620	$ (133,708)	$ (98,088)	$ (98,088)	$ -
4	Apr-16	$ 147,992	$ -	$ -	$ -	$ -	$ 23,202	$ 171,194	$ (160,425)	$ 10,769	$ 10,769	$ -
5	May-16	$ 147,208	$ -	$ -	$ -	$ 34,026	$ 22,655	$ 203,889	$ (139,119)	$ 64,770	$ 30,744	$ 34,026
6	Jun-16	$ 146,802	$ -	$ -	$ -	$ -	$ 22,070	$ 168,872	$ (190,069)	$ (21,197)	$ 12,829	$ (34,026)
7	Jul-16	$ 146,397	$ -	$ -	$ -	$ -	$ 21,466	$ 167,863	$ (176,541)	$ (8,678)	$ (8,678)	$ -
8	Aug-16	$ 145,136	$ -	$ -	$ -	$ -	$ 20,900	$ 166,036	$ (186,708)	$ (20,672)	$ (20,672)	$ -
9	Sep-16	$ 144,298	$ -	$ -	$ -	$ -	$ 20,339	$ 164,637	$ (171,351)	$ (6,714)	$ (6,714)	$ -
10	Oct-16	$ 143,750	$ -	$ -	$ -	$ -	$ 19,741	$ 163,491	$ (165,005)	$ (1,514)	$ -	$ (1,514)
11	Nov-16	$ 142,780	$ -	$ -	$ -	$ -	$ 19,157	$ 161,937	$ (140,700)	$ 21,237	$ -	$ 21,237
12	Dec-16	$ 139,141	$ -	$ 1,500	$ -	$ -	$ 18,588	$ 159,229	$ (203,253)	$ (44,024)	$ -	$ (44,024)
13	2016 Totals	$ 1,615,622	$ -	$ 1,500	$ -	$ 34,026	$ 255,013	$ 1,906,161	$ (2,006,887)	$ (100,726)	$ (76,425)	$ (24,301)

Notes and Source:
January through December 2016 amounts from Supplmental Attachment 2 to the response to LARKIN2-DR-01-002

As shown in the above exhibit, the Company reported total REC expense of $1,615,622 in 2016[20] along with tracking participation expense and audit fees of $1,500 and $34,026, respectively. Larkin requested that DEO provide the accounting support for the tracking participation expenses and audit fees (see additional discussion below).

Administrative Expense

For 2016, DEO reported renewables compliance administrative costs which totaled an overall amount of $35,526. These administrative costs are comprised of: (1) tracking participation expenses, and (2) audit fees. As discussed in Chapter 3, DEO made certain solar REC purchases

[20] DEO provided the general ledger detail for the 2016 REC expense in response to LARKIN2-DR-01-028.

in 2016, but as shown in Exhibit 4-3 above, the Company did not include any brokerage expense in Rider AER-R for 2016. Upon Larkin's inquiry, in response to LARKIN2-DR-04-001, DEO stated that the brokerage fees associated with the 2016 solar REC purchases are not included in its accounting records until they are paid, which they were not during 2016. Consequently, the brokerage fees were not included in Rider AER-R in 2016 for that reason.

The exhibit below provides a breakout of each component of the administrative costs that flowed through Rider AER-R during 2016:

Exhibit 4-4. 2016 Renewables Compliance Administrative Expense

Period	Tracking Participation Expenses	Audit Fees	Total
Jan-16	$ -	$ -	$ -
Feb-16	$ -	$ -	$ -
Mar-16	$ -	$ -	$ -
Apr-16	$ -	$ -	$ -
May-16	$ -	$ -	$ -
Jun-16	$ -	$ 34,026	$ 34,026
Jul-16	$ -	$ -	$ -
Aug-16	$ -	$ -	$ -
Sep-16	$ -	$ -	$ -
Oct-16	$ -	$ -	$ -
Nov-16	$ -	$ -	$ -
Dec-16	$ 1,500	$ -	$ 1,500
Total	$ 1,500	$ 34,026	$ 35,526

Source: LARKIN-DR-01-002, Supplemental Attachment 2

As shown in the above exhibit, during 2016, DEO reported tracking participation expense totaling $1,500, and audit fees totaling $34,026 for a grand total of $35,526. The amount for tracking participation expense relate to the subscription fees associated with DEO's PJM-GATS account which is the tracking system through which DEO's RECs are retired.

As noted above, Larkin requested that DEO provide the accounting support for the tracking participation expense and audit fees. A discussion of each category of administrative costs is as follows:

Review of 2016 Tracking Participation Expense

With regard to the tracking participation expense totaling $1,500, in its original response to LARKIN2-DR-01-036, the Company provided copy of an invoice from PJM-GATS for the $1,500 subscription fee that was related to 2016. However, the response to LARKIN2-DR-01-036 states that the $1,500 GATS subscription fee was paid in December 2015 and reflected in the Company's second quarter 2016 quarterly Rider AER-R filing. Upon reviewing the second quarter 2016 Rider AER-R filing quarterly workbook (provided in LARKIN2-DR-01-002), Larkin noted that the $1,500 GATS subscription fee is reflected on Schedule B, which is the fourth quarter 2015 reconciliation, under the column for December 2015. Attachment 2 from the response to LARKIN2-DR-01-008 reflects the general ledger Rider AER-R cost detail for the period January through June 2016. Larkin noted that in February 2016, DEO recorded an entry for $1,500 in Account 921400. A footnote included on the attachment states:

> The payment of the GATS fee was incorrectly recorded in account 565000. It was corrected in February 2016 to record the expense to account 921400 product RECFPP.

DEO confirmed that while the correcting entry for the PJM-GATS fee was made in February 2016, the $1,500 was included in Rider AER-R in December 2015.[21] In addition, the Company stated that the $1,500 PJM-GATS subscription fee for 2017 was paid in December 2016 and therefore, flowed through Rider AER-R in December 2016. In its supplemental response to LARKIN2-DR-01-036, DEO provided a copy of the invoice related to the 2017 PJM-GATS fee that was paid in December 2016. In addition, the Company provided a copy of the journal entry associated with the recording of the 2017 PJM-GATS fee into Account No. 921400. Larkin confirmed that the $1,500 is embedded in the period over-recovery amount of $24,301 for 2016 that is reflected on Schedule B, which then flows to Schedule A and included in the calculation of the Rider AER-R rate for the second quarter of 2017.

Review of 2016 Audit Fees

As noted above, DEO included audit fees totaling $34,026 in Rider AER-R during 2016. In response to LARKIN2-DR-01-003, which requested a complete set of supporting working papers for the calculations in Rider AER-R for the 2016 review period, DEO provided copies of two invoices that Larkin had submitted to DEO pursuant to the 2014 and 2015 reviews of Rider AER-R. The sum of these two invoices totaled the $34,026 that DEO included in Rider AER-R for audit fees in the 2016 review period. However, Larkin's authorized budget for the 2014 and 2015 review periods was $27,000. In that prior review, Larkin exceeded its budget by approximately $7,026, but only billed up to the $27,000 that Larkin was contracted for. The audit fees totaling $34,026 in Rider AER-R included Larkin's authorized budget of $27,000 plus the $7,026 which exceeded the budget.

Since Larkin only billed up to its authorized budget of $27,000, we recommend that the audit fees included in Rider AER-R for 2016 be reduced by $7,026.

Over/Under REC Recovery

As shown in Exhibit 4-2 above, the calculation of the Company's projected Rider AER-R rate in its quarterly filing for the second quarter of 2016, Line 13 reflects a prior period under recovery of $65,336, which as previously discussed, is reflected on Schedule B from the Rider AER-R workpapers provided in LARKIN2-DR-01-002 for the second quarter 2016 Rider AER-R filing. Specifically, when DEO over or under recovers revenues through Rider AER-R in a given quarterly period, the over/under recovery is included in DEO's reconciliation calculation two

[21] DEO included a copy of the correcting journal entry dated February 29, 2016 in response to LARKIN2-DR-01-008.

quarters later. For example, the $65,336 under recovery reflected in the second quarter 2016 Rider AER-R filing that was included in the calculation of the projected AER-R rate for that period was based on the actual Rider AER-R revenues, expenses and calculated carrying costs from the fourth quarter of 2015. Exhibit 4-5 below provides a summary of the (over)/under recovered balances from the Rider AER-R filings for each quarter of 2016.

Exhibit 4-5. Summary of 2016 (Over)/Under Recovery

Description	1Q 2016 Rider AER-R Quarterly Filing	2Q 2016 Rider AER-R Quarterly Filing	3Q 2016 Rider AER-R Quarterly Filing	4Q 2016 Rider AER-R Quarterly Filing	2016 Net (Over)/Under Recovery
(Over)/Under Recovery Per DEO's Reconciliation Workpaper	$ 61,541	$ 65,336	$ (94,704)	$ 54,342	$ 86,515
Source: LARKIN2-DR-01-002					

As shown in the above exhibit, the Company's (over)/under recovery balances reflected under-recovered balances of $61,541, $65,336 and $54,342 for the first, second and fourth quarters of 2016, respectively. The third quarter reflected an over-recovered balance of $94,704. The combined total over-under recoveries resulted in an overall net under-recovered balance of $86,515 at December 31, 2016.

REC Inventories

Pursuant to R.C.4928.65, RECs that were purchased by the Company are usable within a five-year period. Any RECs held by DEO at December 31, 2016 that are in excess of its 2016 Benchmarks will be applied to future year benchmarks.

Pursuant to the passage of S.B. 310 in September 2014, the Company's requirement to purchase at least 50% of it renewable energy resources through facilities located in the State of Ohio was eliminated. As a result, inventories in 2016 were maintained for the following two types of RECs:

(1) Non-Solar RECs; and

(2) Solar RECs.

Larkin reviewed DEO's inventory worksheets, which were provided in the response to LARKIN2-DR-01-010. The inventory worksheets reflected month ending REC balances, third party purchases, and RECs that were used for consumption during 2016. In addition, the inventory worksheets include the quantity, price per REC and overall cost of the RECs purchased from third party suppliers. Using the information for REC quantities and cost, the Company calculated the WACI at each month's end. As previously discussed, certain of the WACI amounts calculated on the inventory worksheets are used by the Company for the WACI component of the projected Rider AER-R rate calculations in the quarterly filings. For example, the Rider AER-R workpapers for the second quarter 2016 quarterly filing reflects the WACI amounts calculated on the inventory worksheets for January 2016.[22]

[22] See Confidential Attachment 2 from the response to LARKIN-DR-01-002.

Larkin requested that the Company provide a final reconciliation between the per books REC inventory and the PJM-GATS REC inventory that related to the 2016 annual compliance filing. This reconciliation is replicated in the exhibit below:

Exhibit 4-6. Final Reconciliation Between Per Books REC Inventory and PJM-GATS REC Inventory for 2016

Description	1/31/2016	2/29/2016	3/31/2016	4/30/2016	5/31/2016	6/30/2016	7/31/2016	8/31/2016	9/30/2016	10/31/2016	11/30/2016	12/31/2016
PJM REC Balance	604,322	607,877	514,883	515,883	516,309	516,534	516,755	517,366	517,700	517,916	518,349	519,349
2015 Accrued Consumption	(138,443)	(138,443)	-	-	-	-	-	-	-	-	-	-
2016 Accrued Consumption	(11,425)	(22,850)	(34,275)	(45,700)	(57,125)	(68,550)	(79,975)	(91,400)	(102,825)	(114,250)	(125,675)	(137,100)
Less: Solar	(9,287)	(9,089)	(9,056)	(9,508)	(9,386)	(9,063)	(8,736)	(8,799)	(8,585)	(8,253)	(8,138)	(8,590)
Less: Non-Solar	(445,167)	(437,495)	(471,552)	(460,675)	(449,798)	(438,921)	(428,044)	(417,167)	(406,290)	(395,413)	(384,536)	(373,659)
Difference	-	-	-	-	-	-	-	-	-	-	-	-

Source: LARKIN2-DR-02-007 (Supplemental)

As shown in the exhibit above, the reconciliation between the Company's per books REC inventory and the PJM-GATS REC inventory netted no differences. Larkin tied the per-books REC inventory amounts to the inventory worksheets provided in LARKIN2-DR-01-010.

In terms of the accounting guidance used by DEO as it relates to how RECs are entered into or extracted from inventory, in response to LARKIN2-DR-01-013 the Company cited its Commodity Contract Accounting Manual. Specifically, DEO cited Chapter 4, Section 4.11.1 which states:

> Note that Duke Energy employs a hybrid model across its business units that may sometimes utilize RECs for both compliance purposes as well as trading purposes. As such, Duke Energy has elected to adopt a company-wide intangible asset model for the balance sheet classification of RECs (that are not accounted for as derivatives). The Company notes that the FASB has informally confirmed with the Big Four Accounting Firms that similar environmental-based assets, such as emissions allowances, meet the spirit of the definition of intangible assets under ASC Topic 350, *Intangibles - Goodwill and Other* (codification of SFAS No. 142), and are most appropriately classified as intangible assets (as opposed to inventory assets). Duke Energy has historically accounted for its portfolio of emissions allowances as intangible assets, and so accordingly, concludes that it is appropriate to account for similar environmental-based assets, such as RECs, in a similar manner, as intangible assets.

The response to LARKIN-DR-01-013 also stated the following with regard to how DEO maintains its REC inventory: (1) only the REC purchase cost is included in REC inventory (as opposed to also including other items such as brokerage fees); (2) the Company does not generate RECs; (3) the Company does not purchase RECs as part of a bundled energy transaction; and (4) the RECs are consumed on a monthly basis and included in rates, but they are not surrendered into PJM-GATS until April of every year to meet the annual compliance obligation.

DEO did not record any impairment related to REC inventory in 2016.[23] Larkin inquired as to whether DEO perform an impairment test on its REC inventory in 2016. During the telephone

[23] See the response to LARKIN2-DR-01-014.

interview conducted on March 14, 2017, the Company cited the Confidential response to LARKIN-DR-03-004 in which it stated that it purchases RECs solely to meet the Ohio compliance requirements and that such RECs are prudently incurred and are therefore recoverable through Rider AER-R. In addition, no triggering event or changes occurred which would indicate that RECs may not be recoverable. DEO cited the aforementioned Commodity Contract Accounting Manual and specifically Section 4.18.1 for its accounting policy related to impairment, which states:

> Duke Energy shall review its RECs recorded as finite-lived intangible assets for recoverability and/or impairment under the guidance contained in ASC Topics 350 and 360 whenever events or changes in circumstances indicate that the carrying amount of the recognized RECs may not be recoverable. If carrying amounts recognized on the balance sheet for RECs are not deemed to be recoverable, the Company shall record an impairment charge pursuant to the guidance contained in ASC Topics 350 and 360 in the event that the carrying amounts recognized on the balance sheet for RECs exceed the fair values of those RECs. After an impairment loss has been recognized (if applicable), the adjusted carrying amounts of those RECs will represent a new accounting basis for such RECs going forward.

During the March 14, 2017 telephone interview, DEO stated that the passage above still applied during 2016.

2) A Review to Verify the Accuracy of Information and Calculations Related to any Carrying Charges Included in the Company's Quarterly Rider AER-R Calculations

RFP No. RA15-DEOAER-a provides at Attachment 2, Item 3 that the auditor conduct:

> A review to verify the accuracy of information and calculations related to any carrying charges included in the Company's quarterly Rider AER-R calculations.

For DEO's 2016 Rider AER-R costs, carrying charges were based on a cost of debt of 5.32%.[24]

As noted above, the supplemental response to LARKIN2-DR-01-002 included Attachment 2, which shows the calculation of carrying costs by month for the 2016 review period[25], as follows:

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[24] The Opinion and Order in Case No. 12-1682-EL-AIR (May 1, 2013) adopted a stipulation which included a provision whereby DEO shall use 5.32% as its cost of debt for determining carrying charges for future electric deferral requests until it resets pursuant to DEO's next rate case.

[25] DEO provided the general ledger detail for the carrying costs in response to LARKIN2-DR-01-008, Attachment 3.

Exhibit 4-7. Summary of Carrying Costs for January through December 2016

Line No.	Period	Beginning Inventory Balance	Ending Inventory Balance	Average Inventory Balance	Annual Rate Based on Cost of Debt* 5.32%	Carrying Costs
(A)	(B)	(C)	(D)	(E)	(F)	(G)
1	Jan-16	$ 5,137,811	$ 4,987,829	$ 5,062,820	0.4433%	$ 22,443
2	Feb-16	$ 4,987,829	$ 4,886,575	$ 4,937,202	0.4433%	$ 21,887
3	Mar-16	$ 4,886,575	$ 5,293,765	$ 5,090,170	0.4433%	$ 22,565
4	Apr-16	$ 5,293,765	$ 5,174,273	$ 5,234,019	0.4433%	$ 23,202
5	May-16	$ 5,174,273	$ 5,046,825	$ 5,110,549	0.4433%	$ 22,655
6	Jun-16	$ 5,046,825	$ 4,910,485	$ 4,978,655	0.4433%	$ 22,070
7	Jul-16	$ 4,910,485	$ 4,774,365	$ 4,842,425	0.4433%	$ 21,466
8	Aug-16	$ 4,774,365	$ 4,654,715	$ 4,714,540	0.4433%	$ 20,900
9	Sep-16	$ 4,654,715	$ 4,521,272	$ 4,587,994	0.4433%	$ 20,339
10	Oct-16	$ 4,521,272	$ 4,384,542	$ 4,452,907	0.4433%	$ 19,741
11	Nov-16	$ 4,384,542	$ 4,257,522	$ 4,321,032	0.4433%	$ 19,157
12	Dec-16	$ 4,257,522	$ 4,127,881	$ 4,192,702	0.4433%	$ 18,588
13	2016 Totals	$ 58,029,979	$ 57,020,049	$ 57,525,014		$ 255,013

Notes and Source:

Jan-Dec amounts from Attachment 2 to the supplemental response to LARKIN2-DR-01-002

*The Opinion and Order in Case No. 12-1682-EL-AIR approved a stipulation which included a 5.32% cost of debt

As shown in the above exhibit, DEO calculated carrying costs totaling $255,013, which were flowed through Rider AER-R in 2016. During the interviews, DEO stated that it calculates carrying costs by taking the average of the beginning and ending monthly solar and non-solar REC inventory balances and multiplying the result by 1/12 of the cost of debt of 5.32%, or .4433%. The Company confirmed during the interviews that there are no carrying costs calculated on the over/under recovery in the Company's reconciliation. Larkin recalculated the AER carrying costs for each month of 2016 using the 5.32% rate that applied in 2016. No exceptions were noted.

3) A Review of the Company's Status Relative to the 3% Provision Contained within R.C. 4928.64(C)(3)

RFP No. RA15-DEOAER1 provided standards for reviewing the Company's Rider AER, which included Attachment 2, Item 4, which states:

> A review of the Company's status relative to the 3% provision contained within R.C. 4928.64(C)(3).

In accordance with R.C. 4928.64(C)(1), the Commission annually reviews electric distribution utilities and/or electric services companies compliance with the benchmarks reflected in the Renewable and Solar Benchmarks exhibit above. As part of that review, the Commission identifies under-compliance or non-compliance that it determines is related to weather, equipment, resource shortages for advanced energy, or renewable energy sources, and which is outside a utility's or electric service company's control. R.C. 4928.64(C)(3) states that:

> An electric distribution utility or an electric services company need not comply with a benchmark division (B)(1) or (2) of this section to the extent that its reasonably expected cost of that compliance exceeds its reasonably expected cost of otherwise producing or acquiring the requisite electricity by three percent or more. The cost of compliance shall be calculated as though any exemption from taxes and assessments had not been granted under section 5727.75 of the Revised Code.

On page 34 of its Order and Opinion dated August 7, 2013 in Case No. 11-5201-EL-RDR, the Commission adopted the following methodology for calculating the 3% cost cap:

> (1) Determine the sales baseline in MWhs for the applicable compliance year consisting of an average of each electric distribution utility's annual Ohio retail electric sales from the preceding three years; (2) calculate a "reasonably expected" dollar per MWh figure for the compliance year, consisting of a weighted average of the cost of SSO supply for the delivery during the compliance year, net of distribution system losses; (3) calculate the total cost by multiplying the Step 2 dollar per MWh figure by the baseline calculated in Step 1; and (4) multiply the total cost from Step 3 by three percent with the result representing the maximum funds available to be applied toward compliance resources for that compliance year.

Pursuant to Larkin management/performance audit recommendation number four from the 2014-2015 review period report, the Company included a description and calculation of the 3% cost cap in the Contracting Principles, Guidelines and Strategy document, which was provided in response to LARKIN2-DR-01-033 and replicated in the following exhibit:

Exhibit 4-8. DEO's 2016 3% Cost Cap Calculation

Description	2016 3% Cost Cap
[redacted]	$ [redacted]
	$ [redacted]
	$ [redacted]
Source: LARKIN2-DR-01-033	

For the first step of the Commission's adopted methodology for calculating the 3% cost cap, the Company used the baseline for compliance obligations that it reported in its 2016 annual compliance filing. While the Commission's Opinion and Order specified that this amount was to be based on an average of DEO's annual Ohio retail sales from the preceding three years, the Company's baseline amounts are based on the total MWh sales in the applicable compliance year (i.e., 2016).[26]

As shown in the exhibit above, for 2016, the 3% cost cap was [redacted]. As shown in Exhibit 4-3 above, the total cost of RECs retired for 2016 was [redacted], which is well below the cost cap calculated above. Based on the foregoing, Larkin has no recommendation regarding the 3% provision.

4) A Review Comparing the Costs Recovered Through the Company's Rider AER-R during the Audit Period to the Costs Incurred

As previously discussed, the Commission's Opinion and Order dated November 22, 2011 in Case No. 11-3549-EL-SSO, allowed DEO to recover the reasonable costs incurred pursuant to complying with the requirements of R.C. 4928.64 as it relates to Rider AER-R. Such costs include the following:

1) All reasonable and prudently incurred costs for the acquisition of RECs;
2) Brokerage expense;
3) REC tracking participation expenses;
4) Audit fees;
5) Gains and losses realized from the sale of RECs; and
6) Carrying costs calculated at the long term cost of debt

As previously discussed, the Rider AER-R workpapers that were provided in response to LARKIN2-DR-01-002 includes Schedule B, which reflects the Company's actual 2016 Rider AER-R reconciliation activity. Larkin was able to trace the Rider AER-R revenue and expense activity from the reconciliation schedules to the general ledger detail that was imported from the Company's Peoplesoft accounting system and which was provided in response to LARKIN2-DR-01-008. No exceptions were noted.

Larkin traced the amounts related to Rider AER-R administrative costs, which included (1) brokerage expense; (2) tracking participation expense; and (3) audit fees to supporting documentation (i.e., invoices).

DEO did not reflect any realized gains or losses from the sale of RECs in its 2016 reconciliation schedule. According to the response to LARKIN2-DR-01-042, the Company did not sell non-solar or solar RECs during 2016 as all RECs were needed for compliance.

Similar to the 2014-2015 review period, Larkin reviewed the Company's Rider AER-R Quarterly Filing Procedures and a document titled Process for Recording Activity to the General Ledger Associated with the REC Costs Recovered in Rider AER-R. Larkin concludes that if all of the

[26] DEO's 2016 annual compliance filing cites R.C. 4928.643(B) as its basis for using the compliance year in determining its baseline compliance obligation.

policies and procedures contained therein are followed by DEO personnel, they should provide adequate controls over the Rider AER-R filing process as well as the process of recording Rider AER-R related costs and revenues to the general ledger.

5) A Review of any Specific Items as Identified by the Commission or Staff

As noted previously in Chapter 3, Staff requested that Larkin review the Company's voluntary GoGreen Power green pricing program in order to confirm the appropriate separation between the green pricing program and the Ohio renewable mandate. The GoGreen Power program is discussed in Chapter 5. As the GoGreen costs are not recovered through Rider AER-R, a comprehensive review of DEO's GoGreen Program is beyond the scope of this audit.

In addition, Staff requested that Larkin review the recommendations and related Commission Orders that are associated with the management and financial audits of Rider AER-R for the 2014 and 2015 review periods. The purpose of this review is to confirm whether DEO has complied with the Commission's directives from that prior review. This is discussed in the Executive Summary.

5 GOGREEN POWER PRICING PROGRAM

In addition to purchasing RECs for the Ohio renewables compliance requirement, the cost of which DEO recovers in Rider AER-R, DEO also purchases RECs for its voluntary Green Pricing program ("GoGreen Power").[27]. The PUCO Staff asked Larkin to examine the potential overlap of these two programs to assure that the RECs and associated costs for the two programs were being appropriately accounted for by DEO.

O.A.C.4901:1-42 relates to the review of green pricing programs in Ohio. Specifically, O.A.C. 4901:1-42-02 addresses the review of green pricing programs offered in Ohio as part of competitive retail electric service ("CRES"), pursuant to R.C. 4928.70. Parties affected by the green pricing rules include all Ohio EDUs and CRES providers serving or soliciting retail electric customers in Ohio.

O.A.C.4901:1-42-03 addresses specific green pricing requirements, which became effective January 8, 2015, and includes the following:

1) Any Ohio EDU or CRES providers offering a green pricing program shall ensure that any program or marketing materials distributed to customers accurately portray the product;
2) Any program or marketing materials being used by an Ohio EDU or CRES provider that address green pricing programs shall be provided to Commission staff not later than four calendar days after being distributed to customers or after the product included in such programs is offered to Ohio customers. Additionally, any program or marketing materials requested by Staff should be provided to Staff by email or facsimile within five calendar days;
3) Any Ohio EDU or CRES provider offering a green pricing program shall report participation statistics, consistent with the requirements of O.A.C. 4901:1-25;
4) Any Ohio EDU or CRES provider offering a green pricing program shall maintain sufficient documentation to verify that adequate resources were secured and retired to support the product offerings. Such documentation, which shall be retained for no less than two years, shall be provided to Commission Staff within five calendar days of such a request;
5) Any Ohio EDU or CRES provider offering a green pricing program shall maintain sufficient documentation to verify that the resources used to support participation in the green pricing program are separate from the resources used for compliance

[27] The costs associated with the GoGreen Power program are not included in Rider AER-R, but rather are paid directly by the participants in this voluntary program.

with the state's alternative energy portfolio standard as set forth in R.C. 4928.64. Such documentation, which shall be retained for no less than two years, shall be provided to Commission staff within five calendar days of such a request; and

6) Any Ohio EDU or CRES provider offering a green pricing program shall not engage in double-counting of resources used to support participation in a green pricing program.

On May 9, 2007, the Commission approved DEO's Green Pricing option, GoGreen Power ("GoGreen"), for a pilot program through December 31, 2008. The pilot program was then extended through 2011 per the Commission's Opinion and Order dated December 17, 2008 in Case Nos. 08-920-EL-SSO, et. al. This Green Pricing option provided ratepayers the option of paying a premium to enable DEO to purchase RECs associated with generation from renewable energy sources. Following the conclusion of the pilot program, GoGreen was implemented on a long-term basis in the Commission's Opinion and Order dated November 22, 2011 in Case No. 11-3549-EL-SSO.

At the request of the PUCO Staff and pursuant to item numbers five and six from the green pricing rules listed above,[28] Larkin reviewed DEO's accounting for RECs used by DEO for its Green Pricing program to assure that there was no double counting of the RECs used for the Green Pricing program and Rider AER-R, and that the costs of the REC purchases by DEO for these two programs were being appropriately tracked and accounted for separately by DEO.

There were no changes to the GoGreen Power program during 2016.[29] During the interviews at the Company's offices, DEO's GoGreen Power Program Product and Services Manager stated that the Company's Senior Emissions Trader executes the orders for GoGreen REC purchases[30] and that such RECs are purchased on the open market by a separate broker who then sells the RECs to DEO (see additional discussion below). In its response to LARKIN2-DR-01-049, DEO stated that it is not Green-e certified,[31] but that the third party suppliers that purchase the RECs on behalf of DEO for GoGreen are Green-e certified. In addition, DEO stated that the tracking and retirement of the GoGreen RECs through a tracking system depends on the location of the third-party suppliers from which DEO purchases its GoGreen RECs. The response to LARKIN2-DR-01-050 indicates that the 2016 GoGreen RECs were retired through the PJM-GATS.[32] The exhibits below reflect the number of GoGreen RECs that relate to 2016 as well as the related PJM-GATS data including the certificate numbers associated with the retired RECs.

[28] In the context of the scope of this project, item numbers 5 and 6 from the green pricing rules are the only such rules that relate to Rider AER-R.
[29] See the response to LARKIN2-DR-01-053.
[30] The Senior Emissions Trader also executes orders for RECs purchased for RPS compliance.
[31] The Green-e Certification Program is a voluntary program that offers certification to green power electricity offerings that meet the program's environmental and consumer protection requirements.
[32] The GoGreen related RECs in 2014 and 2015 were retired through the Midwest Renewable Energy Tracking System ("M-RETS").

Exhibit 5-1. Summary of 2016 GoGreen Power RECs and PJM-GATS Data

Facility ID	Facility Name	Fuel Type	Generator Location	Month of Generation	Certificate Serial Numbers	Quantity	RECs Created	Previous Owner	Reason Code	Confirm	Purchaser	State	Reporting Year
NON79132	Benton County Wind Farm LLC	Wind	Indiana	Mar-16	2037444 - 10126 to 14617	4,492	Jun-16	ACT Commodities Inc	SOLD	Yes	On Behalf of Duke Energy's GoGreen Customers	Indiana	2016
NON79132	Benton County Wind Farm LLC	Wind	Indiana	Apr-16	2109499 - 1 to 12605	12,605	Jul-16	ACT Commodities Inc	SOLD	Yes	On Behalf of Duke Energy's GoGreen Customers	Indiana	2016
NON79132	Benton County Wind Farm LLC	Wind	Indiana	May-16	2114027 - 16342 to 17244	903	Jul-16	ACT Commodities Inc	SOLD	Yes	On Behalf of Duke Energy's GoGreen Customers	Indiana	2016
					Total	18,000							
Source: Supplemental response to LARKIN2-DR-01-050													

As shown in the above table, 18,000 RECs were retired on behalf of Duke Energy for the GoGreen Power program during 2016. In addition, the separate third party broker that Duke Energy purchased the GoGreen Power RECs from was 3 Degrees. DEO stated that of the 18,000 GoGreen RECs retired through PJM-GATS in 2016, 7,500 were retired on behalf of DEO.[33] The PJM-GATS tracking system report which reflects the retirement of the 18,000 GoGreen Power RECs is owned by 3 Degrees.[34] Larkin obtained a copy of the invoice issued by 3 Degrees reflecting Duke Energy's purchase of the 18,000 GoGreen Power related RECs in response to LARKIN2-DR-04-002.

The Company stated that GoGreen is a low volume program whereby one bulk purchase of RECs is made on behalf of the Company's GoGreen customers. The bulk purchase is tracked until the RECs are consumed then additional RECs are purchased. DEO stated that such purchases occur once a year on average and that it summarizes its GoGreen REC purchases on a monthly spreadsheet, which is aggregated at year-end. Larkin requested a copy of the monthly spreadsheet aggregated to year-end for 2016, which the Company provided in its response to LARKIN2-DR-01-050. The 2016 GoGreen aggregated monthly data is replicated in following exhibit:

[33] The remaining 10,500 GoGreen Power RECs were retired on behalf of Duke Energy customers in Indiana and Kentucky.

[34] See the LARKIN2-DR-04-002.

Exhibit 5-2. Summary of 2016 Ohio GoGreen RECs Sales for 2016

Year 2016	End of Month Customers	Monthly Block Sales	YTD Total Block Sales	REC Conversion	REC Acquisition	REC Supply
						-568.20
January	921	4,815	4,815	481.5		-1049.70
February	922	4,813	9,628	481.3		-1531.00
March	923	4,798	14,426	479.8		-2010.80
April	922	5,146	19,572	514.6		-2525.40
May	913	5,184	24,756	518.4		-3043.80
June	965	5,399	30,155	539.9		-3583.70
July	994	5,541	35,696	554.1		-4137.80
August	1082	5,989	41,685	598.9		-4736.70
September	1080	6,016	47,701	601.6		-5338.30
October	1081	6,037	53,738	603.7		-5942.00
November	1081	6,046	59,784	604.6		-6546.60
December	1082	6,043	65,827	604.3	7,500	349.10
Total		**65,827**	**65,827**	**6,583**		

Source: LARKIN2-DR-01-050

As shown in the above exhibit, DEO had 65,827 year-to-date total block sales during 2016, which were then converted to 6,583 RECs. As discussed previously and noted in the above exhibit, the Company acquired an additional 7,500 GoGreen related RECs in December 2016.

As discussed in the Executive Summary of this report, the Company confirmed in its responses to LARKIN2-DR-01-047 and LARKIN2-DR-01-048 that the RECs related to Ohio renewable compliance and retired through PJM-GATS for the GoGreen Power program are accounted for separately from the RECs retired through PJM-GATS for RPS compliance. As noted above, DEO's Senior Emissions Trader is responsible for executing the orders for the REC purchases associated with both the GoGreen Power program and for RPS compliance purposes. The Company stated that the Senior Emissions Trader execute the orders for REC purchases for the GoGreen Power program on different days than the orders for RECs purchased for RPS compliance. This raised a concern about whether the RECs are being accounted for separately between the two programs. However, Larkin confirmed that this was the case by reviewing the PJM-GATS tracking system reports which list the REC retirements under both programs. Specifically, Larkin verified that the certificate serial numbers related to the RECs retired for the GoGreen Power program were different than those RECs retired for RPS compliance. In addition, Larkin confirmed that the Benton County Wind Farm, which is where the GoGreen Power RECs were generated, was not one of the generating facilities listed on the PJM-GATS tracking report that reflects the RECS retired for compliance purposes. Pursuant to this review, Larkin confirmed that there was no double-counting of the RECs between these two programs. No exceptions were noted.

Memorandum Of Findings And Recommendations

Our findings and recommendations are summarized in Chapter 1.

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Case No(s). 15-1854-EL-RDR

Summary: Report of the Management/Performance and Financial Audit of Duke Energy Ohio, Inc's Rider Alternative Energy Recovery for the period January 1, 2016, through December 31, 2016 electronically filed by Ms. Mahila Christopher on behalf of Larkin & Associates PLLC