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**FINAL REPORT (REDACTED)
MANAGEMENT/PERFORMANCE AUDIT
OF THE ALTERNATIVE ENERGY RESOURCE RIDER (RIDER AER)
OF THE FIRSTENERGY OHIO UTILITY COMPANIES
FOR OCTOBER 2009 THROUGH DECEMBER 31, 2011**

CASE NO. 11-5201-EL-RDR

**PREPARED FOR:
PUBLIC UTILITIES COMMISSION OF OHIO
180 EAST BROAD STREET
COLUMBUS, OHIO 43215-3793**

JUNE 15, 2012

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Executive Summary

On September 20, 2011, the Public Utilities Commission of Ohio (“PUCO”) issued an entry on rehearing In the Matter of the Annual Alternative Energy Status Report of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company, Case No. 11-2479-EL-ACP. In that entry on rehearing, the PUCO stated that it had opened Case No. 11-5201-EL-RDR for the purposes of reviewing the Alternative Energy Resource Rider (“Rider AER”) of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company (collectively, “FirstEnergy Ohio utilities” or “Companies”). Additionally, the PUCO indicated that its review would include the Companies' procurement of renewable energy credits for purposes of compliance with Ohio’s Alternative Energy Portfolio Standard (“AEPS”). The PUCO further noted that it would determine the necessity and scope of an external auditor for this matter.

The PUCO subsequently decided that an external auditor would be necessary for the review, and on January 18, 2012 directed Staff to issue a request for proposals (“RFP”) for audit services. After consideration of the proposals received, the PUCO selected Exeter Associates, Inc. (“Exeter”), to conduct the management/performance portion of the audit and Goldenberg Schneider, LPA, to conduct the financial portion of the audit.

This report presents the findings of Exeter’s management/performance audit of the Rider AER of the FirstEnergy Ohio utility companies for the time period October 2009 through December 31, 2011.¹ Dr. Steven L. Estomin and Mr. Thomas S. Catlin acted as the primary investigators for this audit.

The principal information on which this management/performance audit is based is from a variety of sources, including:

- Responses of the First Energy Ohio utilities to requests for information prepared by Exeter Associates, Inc.
- Independent research conducted by Exeter Associates, Inc. related to the availability and market prices of SRECs and RECs in Ohio and elsewhere.
- Orders issued by the Public Utilities Commission of Ohio related to Ohio’s AEPS and the FirstEnergy Ohio utilities Rider AER.
- Interview of personnel from the FirstEnergy Ohio utilities and Navigant Consulting, Inc., consultant to the Companies.

General SREC/REC Acquisition Approach

The FirstEnergy Ohio utilities employed Requests for Proposals (“RFPs”), with responses provided in sealed bids, to secure all four categories of Renewable Energy Credits

¹ Though the Rider AER was in place beginning in October 2009, the Companies undertook activities related to compliance with the Ohio AEPS earlier in 2009. This management/performance audit report addresses those activities undertaken by the Companies beginning earlier in 2009 to facilitate compliance with the AEPS requirements.

(“RECs”) – In-State Solar RECs; All-State Solar RECs; In-State All Renewables RECs; and All-State All Renewables RECs. In total, six RFP’s were issued.

Exeter examined the FirstEnergy Ohio utilities procurement process for evaluation relative to the following important characteristics: (1) competitiveness; (2) transparency; (3) cost; and (4) ability to obtain adequate industry response. Each of these considerations appears to have been satisfied by the REC acquisition approach employed by the Companies.

Exeter also considered the key elements of the RFPs issued as well as the processes associated with advance market research, issuance, dissemination of information to potential bidders, evaluation of bids, and handling of feedback obtained from bidders. The RFPs were assessed for the following key elements: (1) clarity; (2) financial/security requirements; (3) time between bid receipt and award; and (4) bidder feedback. Also examined was the RFP planning process which was assessed for: (1) preparation and mechanics; (2) market research; and (3) contingency planning.

Exeter’s analysis led to the following findings and recommendations on the RFPs and RFP processes:

Findings.

1. The RFPs issued by the FirstEnergy Ohio utilities are reasonably developed and do not appear to incorporate any provisions or terms that could be assessed to be anti-competitive.
2. The basic terms and conditions contained in the RFPs were generally acceptable by the industry and to the extent that individual bidders were unwilling to provide bids in response to the solicitations, those decisions were based on specific elements contained in the RFPs that were at odds with the business models of the individual potential bidders. Such conditions include the duration of the contract periods and the firmness of the supply requirements.
3. The security requirements contained in the RFPs are assessed to strike a reasonable balance between safeguarding the FirstEnergy Ohio utilities and making the RFP attractive to potential bidders.
4. The processes in place to disseminate information to potential bidders and to address issues and questions that arose during the time that potential bidders were deciding whether to proffer a bid and the offer due dates were adequate.
5. The mechanisms in place to review and evaluate the bids were adequate, although a shorter period of time between the bid due date and the award in the first RFP would have been an improvement. The approximately three-week review period established by the FirstEnergy Ohio utilities was generally deemed excessive by industry participants and this was rectified by the FirstEnergy Ohio utilities in subsequent RFPs.
6. The mechanisms in place to solicit industry feedback, through both the nature of the questions and comments raised by potential bidders and the conduct of a survey by NCI, are seen as an acceptable approach to inform the FirstEnergy Ohio utilities about the strengths and weaknesses of the issued RFPs. Further, the information obtained through

the process was effectively used and served as a basis for modifications in RFPs subsequent to the conduct of the survey.

7. Market information for In-State Solar and All Renewables RECs was limited prior to the first two RFPs.
8. The contingency planning in place for the first three RFPs was inadequate and should have encompassed a specific set of fall-back approaches, or in the alternative, specified a mechanism by which to distill the information gained from the solicitations to develop a modified approach.

Recommendations.

1. The FirstEnergy Ohio utilities should implement a more robust contingency planning process as it relates to the procurement of RECs and SRECs in compliance with Ohio's AEPS. We also recommend that the contingency plan be subject to review by the PUCO Staff prior to its implementation.
2. A thorough market analysis should precede the issuance of any future RFPs by the FirstEnergy Ohio utilities for RECs and SRECs in compliance with Ohio's AEPS.
3. The FirstEnergy Ohio utilities should consider a mark-to-market approach to the security requirement for future procurements when the RECs and SRECs market mature to a point when a mark-to-market approach is feasible.

Solicitation Results and Procurement Decisions

As part of the management/performance audit, Exeter Associates, Inc. reviewed the results of the FirstEnergy Ohio utilities' procurement of SRECs and RECs to meet the Ohio AEPS requirements for 2009, 2010, and 2011. In particular, Exeter reviewed the quantities of SRECs and RECs bid, the prices associated with those bids, and the decisions of the FirstEnergy Ohio utilities regarding the bids (quantity and price) received. Exeter's analysis resulted in the following findings and recommendations.

Findings:

1. The prices paid by the Companies for All-States All Renewables RECs were reasonably consistent with other regional RECs prices.
2. While lower prices would have been available to the Companies were fewer RECs purchased under RFP 1 and more RECs purchased under RFP 3, the Companies' decisions to purchase the bulk of the 2009, 2010, and 2011 requirements under RFP 1 were not unreasonable.
3. The lower prices available for All-States SRECs in the 2011 timeframe could not have been reasonably foreseen by the Companies. The prices paid by the Companies for All-States SRECs are consistent with SRECs price regionally.
4. The FirstEnergy Ohio utilities did not establish a maximum (or limit) price that the Companies were willing to pay for In-State All Renewables RECs prior to the issuance of the RFPs.

5. The FirstEnergy Ohio utilities paid unreasonably high prices for In-State All Renewables RECs purchased from [REDACTED].
6. Prices for In-State All Renewable RECs in the range of \$[REDACTED] to \$[REDACTED] exceeded the reported prices paid for non-solar compliance RECs anywhere in the country between July 2008 and December 2011 by at least \$[REDACTED] to \$[REDACTED].
7. The FirstEnergy Ohio utilities had several alternatives available to the purchase of high-priced In-State All Renewables RECs, none of which were considered or acted upon.
8. The FirstEnergy Ohio utilities should have been aware that the prices bid by FirstEnergy Solutions reflected significant economic rents and were excessive by any reasonable measure.
9. The procurement of In-State Solar RECs by the FirstEnergy Ohio utilities was competitive and, when Ohio SRECs became reasonably available, the prices paid for those SRECs by the Companies were consistent with prices for SRECs seen elsewhere.

Recommendations:

Based on the findings presented above, we recommend that the Commission examine the disallowance of excessive costs associated with purchasing RECs to meet the FirstEnergy Ohio utilities' In-State All Renewables obligations.

Miscellaneous Issues

During the course of conducting the management/performance audit of the FirstEnergy Ohio utilities, several issues emerged that warrant brief discussion, though these issues are not directly related to the FirstEnergy Ohio utilities and affect all of the regulated utilities in Ohio with respect to compliance with Ohio's AEPS legislation. Specifically, there are three aspects of either the legislation or the method by which the legislation is implemented that may warrant some reconsideration by the appropriate bodies.

Recovery of ACP Charges

Ohio's AEPS legislation does not permit the Ohio utilities to recover the costs associated with Alternative Compliance Payments. The fundamental purpose of the ACP is to set a limit on the exposure of retail customers for the costs of RPS (or AEPS) compliance. Not allowing recovery of the ACP provides a significant deterrent to regulated firms from employing the ACP in lieu of the procurement of RECs, even at prices well in excess of the ACP.

Commission Approval of RECs Purchases

A second modification that merits consideration is a requirement that the Commission approve the purchase of RECs for the retail suppliers of SSO before the RECs contracts are signed. That requirement would eliminate some of the issues that have arisen in the context of this management/performance audit.

Application of the Three-Percent Rule

The legislation does not clearly lay out how the “three-percent rule” is to be applied. The apparent intent of the rule is to limit the degree to which retail customers are exposed to excessive costs related to the satisfaction of the renewable energy requirements. The rule, however, is based on “expected” impacts. An algorithm based on expected sales volumes that accounts for customer migration and projections of market pricing for power is recommended as an improved approach.

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- Interview of, and communications with, personnel from the FirstEnergy Ohio utilities and Navigant Consulting, Inc., consultant to the Companies.

The remainder of this management/performance report is organized into three sections. The following section, Section 2, addresses the approach used by the Companies to procure Solar and Non-solar Renewable Energy Credits. This section includes assessment of the general approach, the structure of the Requests for Proposals, the Companies' treatment of industry feedback on the solicitation documents, market research, and contingency planning.

Section 3 of the report addresses the results of the acquisition process, including the effectiveness of the solicitations and the prices ultimately paid for Solar and Non-solar Renewable Energy Credits, both in-State and out-of-State.

Section 4 of the report addresses certain miscellaneous issues that emerged during the conduct of the management/performance audit.

Findings and recommendations are presented throughout the document following the discussion of the relevant issues.

II. GENERAL SREC/REC ACQUISITION APPROACH

The FirstEnergy Ohio utilities employed Requests for Proposals (“RFPs”), with responses provided in sealed bids, to secure all four categories of Renewable Energy Credits (“RECs”) – In-State Solar RECs; All-States Solar RECs; In-State All Renewables RECs; and All-States All Renewables RECs. Because the competitive RFP approach did not fully satisfy all of the FirstEnergy Ohio utilities’ requirements for in-State solar and non-solar for 2010 and 2011, the Companies also pursued broker transactions and bilateral arrangements following the issuance of the third RFP (October 2010). In addition, a limited number of Solar RECs (“SRECs”) were available to the Companies internally from the operation of programs to promote renewable energy development within their service areas. In total, six RFP’s were issued. The specifics of the RFP approach employed by the Companies is addressed below followed by an assessment of the alternative approaches employed to supplement the bids received through the RFP process.

A. RFP Approach Overview

The appropriateness of any particular acquisition approach needs to be judged on basis of several important characteristics. Most important among the characteristics are: (1) competitiveness; (2) transparency; (3) cost; and (4) the ability to obtain adequate industry response. Each of these considerations appears to have been met by the approach employed by the Companies.

The sealed bid RFP protocol used by the FirstEnergy Ohio utilities entailed a two-part submission, which is a common practice used in the electric utility industry for the purchase of not only RECs but also for electric power supplies. Potential bidders are required to submit documents verifying credit-worthiness and the financial capability of meeting the requirements of the RFP. Once the credit/financial qualifications have been reviewed and a set of qualified bidders identified, the Phase 2 price/quantity bids submitted in response to the RFP are then evaluated purely on the basis of least cost, that is, lowest price. Offers are accepted from lowest price to highest until the specified requirement is filled. Typically, the seller conditions the RFP to permit rejection of bids even if the full requirement is not met. This allows the buyer to avoid paying for supplies assessed to be above market or to adjust the amount purchased due to circumstances that have developed since the issuance of the RFP.

Competitiveness. – The sealed-bid pricing requirement of the RFPs for SRECs/RECs issued by the FirstEnergy Ohio utilities is assessed to be competitive and to minimize the potential for bidder collusion and “gaming” of the process. Because bidders recognize that there may be only one opportunity to secure a buyer, bidders tend to provide competitive prices reflective of market conditions.

Winning bidders are paid their own individual bid prices, in contrast to certain other competitive procurement methods (for example, descending clock auctions) where all selected bidders are paid the marginal bid, that is, the highest price bid selected that fulfills the established requirement. Paying the individual bid prices eliminates incentives on the part of bidders to potentially influence the clearing price, for example by bidding some supplies at low prices and other supplies at higher prices. Because all bids are paid the bid price, no bidder can influence the price paid to bidders below the marginal price – the price of the last accepted bid.

Transparency. – The sealed-bid RFP process is transparent due to its simplicity and tractability. A paper trail exists for the bids and the awards, and the approach is straightforward and one with which industry participants are familiar and comfortable.

RFP Cost. – The sealed bid RFP method is relatively low-cost in comparison to alternative approaches that rely on a live auction platform. Using an RFP does not require monitoring of the bid process to attempt to identify collusive bidding practices. Bid evaluation is straightforward. Because the FirstEnergy Ohio utilities issued multiple RFPs, the same set of documents with only minor modifications were able to be relied upon, which eliminated the incurrence of duplicative costs.

Adequate Industry Response. – The RFPs issued by the FirstEnergy Ohio utilities generally succeeded in obtaining bids from a variety of potential suppliers and were structured so as not to preclude bids from small entities wishing to bid only a small number of SRECs/RECs. The table below (Table 1) shows the number of successful bids and the number of successful bidders responding to each of the six RFPs. To place the number of responses in context, the type of RECs solicited in each RFP are also shown. Note that for bids with no responses, in some cases the requisite RECs/SRECs had been previously secured by the Companies and in some cases, the market was not sufficiently developed to allow industry response (for example, RFP1 for In-State Solar RECs).

Table 1 FirstEnergy Ohio REC RFPs 2009 – 2011

| | <u>In-State Solar</u> | | <u>In-State All Renewables</u> | | <u>All-States Solar</u> | | <u>All-States All Renewables</u> | |
|-------------|---|--|---|--|---|--|---|--|
| | <u>Number of Successful Bidders</u> | <u>Number of Successful Bids</u> | <u>Number of Successful Bidders</u> | <u>Number of Successful Bids</u> | <u>Number of Successful Bidders</u> | <u>Number of Successful Bids</u> | <u>Number of Successful Bidders</u> | <u>Number of Successful Bids</u> |
| RFP1 | --- | --- | 2 | 6 | --- | --- | 2 | 46 |
| RFP2 | 2 | 6 | 1 | 6 | 2 | 5 | --- | --- |
| RFP3 | 10 | 18 | 2 | 3 | 3 | 9 | 2 | 8 |
| RFP4 | 2 | 2 | --- | --- | --- | --- | --- | --- |
| RFP5 | 8 | 9 | --- | --- | 3 | 7 | --- | --- |
| RFP6 | 7 | 10 | 2 | 2 | --- | --- | --- | --- |

B. RFP Elements

This section addresses the key elements of the RFPs issued by the FirstEnergy Ohio utilities, as well as the processes associated with advance market research, issuance, dissemination of information to potential bidders, evaluation of bids, and handling of feedback obtained from bidders.

Clarity. – All six RFPs issued by the FirstEnergy Ohio utilities were assessed for clarity with respect to the submissions required; the deadlines for submission; the type, quantities, and vintage of RECs sought to be procured; and the means by which potential bidders could obtain additional information and have questions addressed. All RFPs were found to be adequate with respect to clarity.

Financial/Security Requirements. – All RFPs contained financial and security documentation requirements to ensure that the bidders had the financial capabilities of satisfying the contract terms and conditions based on the number of RECs bid in aggregate by the bidder. Additionally, posting of security following award was required. The security requirements serve to protect the FirstEnergy Ohio utilities in the event that the supplier defaults on the contract and one or more of the Companies must then go back to the market to obtain the necessary RECs. This circumstance could emerge, for example, in the case of a winning bidder filing for bankruptcy protection before fulfillment of the contract. If market prices for RECs increased during the contract period, the contract could be voided by a bankruptcy judge and FirstEnergy required to replace the undelivered RECs with RECs obtained at market prices higher than those contained in the contract. Security requirements, however, often serve as an impediment to bidders, especially smaller companies.

The first five RFPs contained financial/security terms that exempted bidders offering less than \$100,000 of RECs from having to obtain security guarantees. This arrangement facilitated participation by smaller entities offering a relatively small number of RECs. For those bidders offering RECs with an aggregate value (the product of price and the number of RECs) greater than \$100,000, security of ten percent of the value of the bid was required. The requirement was placed on the aggregate value to avoid suppliers attempting to circumvent the security requirement by offering multiple smaller bids. Since the potential existed that the bidder would be awarded all the bids proffered, the aggregate bid requirement utilized by the FirstEnergy Ohio utilities was appropriate.

The sixth RFP, which was to obtain in-State SRECs for a term up to 10 years, raised the threshold for security from \$100,000 to \$250,000. Given the longer term of the resulting contracts, the \$100,000 threshold, if left intact, would serve only to exempt bidders offering only a very small number of SRECs. The higher threshold did not serve to put the Companies, or the Companies' customers, at a significant additional risk relative to the lower security threshold

contained in the prior RFPs since any risk exposure was spread out over a ten-year period rather than concentrated in just one or two years.

RFPs are sometimes issued with a requirement that security be posted not later than the time of the bid, that is, the bidder must provide a security commitment (for example, a letter of credit, a parent-company guarantee, or cash) on or before the submission of the price/quantity bid. If the bidder is not selected, the security commitment can then be cancelled. The RFPs issued by the FirstEnergy Ohio utilities did not require the posting of security until the contract was awarded. The approach employed by the FirstEnergy Ohio utilities reduces the cost associated with bid preparation and is conducive to enhancing to pool of potential bidders without imposing added risks on the Companies or the Companies' electric customers.

An alternative approach to the one used by the Companies is to adjust the security periodically on a mark-to-market ("MtM") basis. Under this alternative approach, the winning bidders are required to increase the amount of security in accordance with the differential between the market price and the bid price. If market prices rise above the bid (award) price such that the initial security requirement is insufficient to cover the differential in the event of default, the seller is required to post additional security to provide protection to the buyer. When market prices decline below the bid (award) price, the level of security can be reduced since the buyer would not require price protection in the event of default, that is, the relevant commodity can be purchased in the market by the buyer at a price below the bid (award) price. The contracts awarded by the FirstEnergy Ohio utilities do not contain an MtM security adjustment mechanism. The absence of an MtM adjustment clause in the contracts is appropriate given the nature of the market for Ohio RECs. Determining the market price in any meaningful way, particularly for In-State Solar and In-State All Renewables RECs, would have proven difficult given the lack of maturity in those markets at the time that the RFPs were issued. Consequently, any MtM adjustment would have been subject to significant uncertainty given the lack of liquidity in the markets. As the markets mature, however, and market price data become more transparent and more readily available, the Companies should give consideration to reliance on an MtM security mechanism, particularly for longer term contracts where the potential for differences between the market prices and the bid prices can become more pronounced over time.

Time Between Bid Receipt and Award. – The amount of time between the receipt of bids by the buyer and the award of contracts affects the risk to which the bidders are exposed. The longer the time interval, the greater the degree of risk since market conditions could change and adversely affect the financial position of the sellers. To compensate for increased risk related to an extended time between bid and award, bidders will sometimes increase the bid price over what it would be were the interval shorter. While the interval between bid receipt and award is much more important in the context of electric power supply procurement than it is for the procurement of RECs, bidders have a strong preference for shorter intervals (e.g., a few days) compared to longer intervals (e.g., two or more weeks).

The first RFP issued by the FirstEnergy Ohio utilities for the procurement of both SRECs and RECs, both in-State and out-of-State, contained a time interval of 17 days. This was shortened in subsequent RFPs to less than a week in response to feedback obtained from bidders. This bid/award interval, as modified following the issuance of the first RFP, is reasonable and appropriate, affords the Companies adequate time to evaluate the bids and select a suite of awards, and does not expose the bidders to unwanted and unnecessary risk.

Bidder Feedback. – Obtaining the perspective of potential bidders is critically important to structuring an RFP that is capable of eliciting broad industry participation. The FirstEnergy Ohio utilities held bidder conferences to address questions and also received questions from bidders outside of the bidder conferences. Questions and responses were posted and available to all potential bidders so as not to provide any bidding advantage to any one entity.

In addition to compiling and addressing the comments of potential bidders on each of the RFP issuances, the FirstEnergy Ohio utilities also directed Navigant Consulting, Inc. (“NCI”) to conduct a survey of supplier views on the 2009 RFPs.³ Various types of suppliers were contacted (e.g., regional developers, national developers, marketers, generators) to allow NCI to obtain a range of views on the RFPs based on the alternative perspectives of various survey participants. Several of the modifications suggested by the various survey respondents were implemented by the FirstEnergy Ohio utilities, including: (1) shortening the time between bid and award notification,⁴ (2) allowing for unit-contingent bids, and (3) extending the length of the contract period.

C. RFP Planning

Planning for the issuance of the RFP can be divided into three elements:

- Preparation of the relevant documents and the putting in place of the mechanisms to effectuate the execution of the issuance of the RFP and the evaluation of results;
- Market research prior to issuance of the RFP; and
- Contingency planning.

Each of these elements is addressed below.

Preparation and Mechanics. – The FirstEnergy Ohio utilities appear to have exercised reasonable care in preparation of the documents for the solicitations and arranged the appropriate mechanisms for the evaluation of the bids received to allow award to be made within the timeframes specified in the solicitations. The Companies also put in place adequate mechanisms

³ Navigant Consulting, *Market Research Report Regarding Supplier Views on REC RFPs*, June 3, 2010. Prepared for FirstEnergy. Provided as a confidential response to Exeter Associates, Inc.’s first information request, interrogatory 3.

⁴ The modification was implemented in the second RFP issued by the FirstEnergy Ohio utilities, prior to the compilation of the survey by NCI.

to address issues and questions raised by potential bidders and to resolve those issues within a reasonable amount of time.

Market Research. – The RECs markets within which the FirstEnergy Ohio utilities operate currently, and during the period addressed by this management and performance audit, are extremely complex. The markets contain geographic and product definition dimensions which need to be recognized and information available as to the quantity of applicable RECs generated (or that will likely be generated during the contract performance period) is difficult to assemble and verify. This is largely the result of the nascent nature of the markets, particularly in 2009 and 2010 and also, although to a lesser extent, in 2011.

In essence, the FirstEnergy Ohio utilities were operating in four separate, but overlapping, markets: the All-States All Renewables market; the All-States Solar market; the Ohio All Renewables market; and the Ohio Solar market. In the case of the All-States All Renewables market, the RECs available to the FirstEnergy Ohio utilities are also (largely) eligible to satisfy the Renewable Portfolio Standards (“RPS”) in other states located in the mid-Atlantic area. For example, wind power generated in West Virginia, the RECs for which would be eligible to be used for compliance with the Ohio requirement, can also be used to satisfy RPS requirements for Pennsylvania; Maryland; Delaware; Washington, D. C.; New Jersey; and other states. In assessing the market, the quantity of such RECs that would be available to the FirstEnergy Ohio utilities cannot be viewed in isolation, but must also consider the requirements of the other states for which those RECs are eligible. Confounding that analysis is that the various states have different definitions of what types of fuels and technologies can be used for RPS compliance. For example, Pennsylvania’s list of eligible resources includes facilities that produce electricity from waste coal; and Maryland’s list of eligible resources includes facilities generating electric power from black liquor (a waste by-product of paper production). Consequently, West Virginia wind power competes against these eligible resources in those states, which affects the availability of the West Virginia resources to meet the Ohio AEPS requirements. These considerations extend to the Ohio All Renewables market, recognizing that RECs generated in Ohio can be used to not only satisfy the Ohio requirements but also the requirements in other states for which those resources are eligible.

The market research conducted by FirstEnergy prior to the issuance of the first and second RFPs consisted principally of review of the prices for RECs being traded in nearby states and contacting brokers to obtain information on Ohio-eligible RECs and SRECs. This avenue of research is limited with respect to what information might be able to be gleaned as it would relate to the initial two RFPs.

While information on market prices that the FirstEnergy Ohio utilities could expect to pay for All-States All Renewables and All-States Solar RECs would be reasonably obtainable from these sources, the amount of available (or potentially available) RECs and SRECs meeting the Ohio in-State criterion would not be available in any meaningful way. In the context of

prices for In-State All Renewables RECs and In-State Solar RECs, those markets were nascent at the time of the first two RFPs and market data were not generally reported and available to potential market participants. The information from the PJM queue would also be of little help, since most of the projects in the queue at any particular time, and at the time of the first two RFPs in particular given the nation's economic condition, do not ultimately get developed.

Following the issuance of the second RFP, and prior to the issuance of the third RFP, the FirstEnergy Ohio utilities directed NCI to conduct a market analysis. That study was completed in July 2010. A previous study focusing on In-State Solar and All Renewables RECs was conducted by Navigant in October 2009. By the time these studies were completed, the FirstEnergy Ohio utilities had already purchased virtually all of the All Renewables RECs required (both In-State and All-States) to meet the utilities' requirements for years 2009 and 2010 and a portion of the 2011 requirements.

Contingency Planning. – FirstEnergy Ohio indicated that it relied on the “FirstEnergy Corp FE Utilities Commodity Portfolio Risk Management Policy”⁵ to provide guidance on contingency planning for the purchase of RECs and SRECs to satisfy the Ohio AEPS requirements for 2009, 2010, and 2011. The document (2009, 2010, and 2011 versions) was reviewed and there is no requirement for contingency planning contained therein.

Based on the actions undertaken by the FirstEnergy Ohio utilities following the issuance of the first RFP, the general approach was to re-issue RFPs with relatively minor modifications in hopes of attracting a larger pool of bidders than the previous RFP for particular categories of RECs. No formal contingency plan was in place to guide the follow-up actions of the FirstEnergy Ohio utilities in the event insufficient bids were received or if bid prices were excessive based on pre-established criteria.

As a follow-up to a telephone discussion held among Exeter, PUCO Staff, and the FirstEnergy Ohio utilities, the Companies provided a copy of the Direct Testimony of Dean W. Stathis on behalf of the four FirstEnergy Pennsylvania electric utilities regarding the Companies' Default Service plans for the period from June 1, 2013 to May 31, 2015. Contained within that testimony is a description of the Pennsylvania Companies' contingency plans related to the procurement of Default Service power supply and Solar RECs for compliance with Pennsylvania's Alternative Energy Portfolio Standard. The FirstEnergy Ohio utilities indicated that “...the Companies use similar contingency planning for RECs as it does for power supply. Also, similar contingency planning to that which is used in Pennsylvania is also used in Ohio.”⁶ Exeter reviewed Mr. Stathis' Direct Testimony and found that the contingency plan proposed by the FirstEnergy Pennsylvania utilities with respect to Default Service power supply issues

⁵ Provided in response to Exeter Associates' request for information, set 5, item 1.

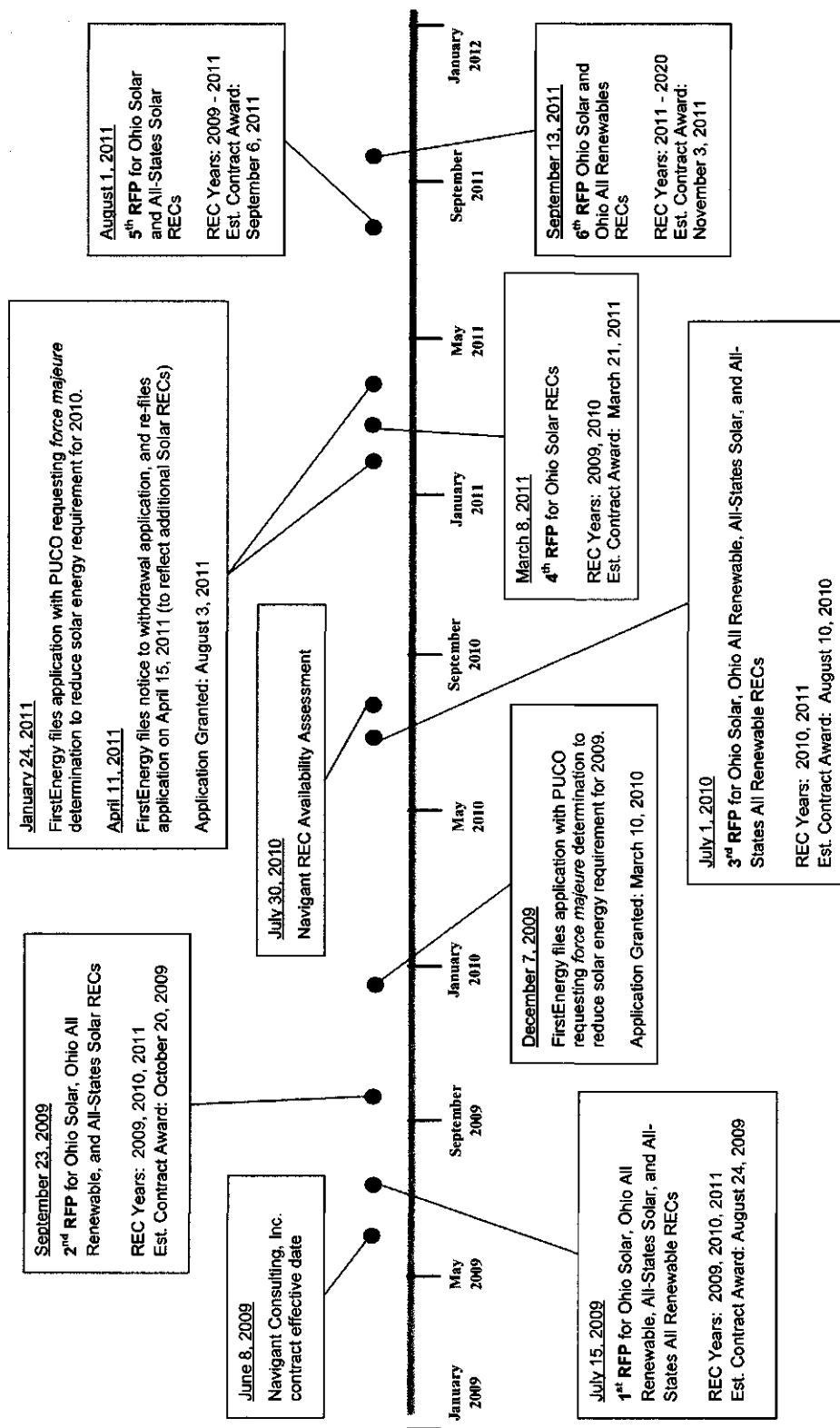
⁶ Email transmission from Meghan C. Moreland (FirstEnergy, Rate Strategy) to Steven Estomin (Exeter Associates, Inc.), June 13, 2012 (received 12:16 p.m. EDT). Mr. Stathis' Direct Testimony, filed with the Pennsylvania Public Utility Commission, was included with the email as an attachment.

entailed short-term purchases on the PJM spot market (which has no meaningful application to RECs markets) followed by inclusion of the unfilled (or defaulted upon) Default Service power supply tranches in the next available power supply RFP. With respect to compliance with Pennsylvania's AEPS requirement, Mr. Stathis' Direct Testimony indicates that the FirstEnergy Pennsylvania utilities, if faced with unfilled solar tranches (or solar tranches on which the competitive supplier defaulted), would conduct short-term procurements at market prices pending the approval of the Pennsylvania PUC of an alternative mechanism.⁷ These contingency plans, however, have only limited applicability in Ohio with regard to the satisfaction of the Ohio AEPS. The contingency approach adopted by the FirstEnergy Ohio utilities in response to insufficient bidder participation, as noted previously, was to reissue the RFP with certain modifications to the terms and conditions. We also note that the contingency plans proposed for Pennsylvania Default Service (both power supply and RECs) address supplier default and insufficient bidder response. The contingency plans do not address the issue of unacceptable bids due to non-competitive pricing.

Figure 1 shows the dates of RFP issuance and the RECs solicited under each of the six RFPs along with other key dates related to SREC/REC procurement activities.

⁷ Direct Testimony of Dean Stathis before the Pennsylvania Public Utility Commission, Docket Nos. P-2011-2273650, P-2011-2273668, P-2011-2273669, and P-2011-2273670 (Default Service Programs for the Period June 1, 2013 to May 31, 2015 on behalf of Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power Company, pp. 11-14 and 20-22).

**Figure 1 Timeline of RFPs for RECs by FirstEnergy Ohio Utilities
Calendar Years: 2009, 2010, and 2011**



D. Findings and Recommendations on RFPs and RFP Processes

Based on the foregoing discussion and analysis, the following findings and recommendations are provided:

Findings.

1. The RFPs issued by the FirstEnergy Ohio utilities are reasonably developed and do not appear to incorporate any provisions or terms that could be assessed to be anti-competitive.
2. The basic terms and conditions contained in the RFP were generally acceptable by the industry and to the extent that individual bidders were unwilling to provide bids in response to the solicitations, those decisions were based on specific elements contained in the RFPs that were at odds with the individual business models. Such conditions include the duration of the contract periods and the firmness of the supply requirements.
3. The security requirements contained in the RFPs are assessed to strike a reasonable balance between safeguarding the interests of the FirstEnergy Ohio utilities and their customers and making the RFP attractive to potential bidders.
4. The processes in place to disseminate information to potential bidders and to address issues and questions that arose during the time that potential bidders were deciding whether to proffer a bid and the offer due dates was adequate.
5. The mechanisms in place to review and evaluate the bids were adequate, although a shorter period of time between the bid due date and the award in the first RFP would have been an improvement. The approximately three-week review period established by the FirstEnergy Ohio utilities was generally deemed excessive by industry participants and this was rectified by the FirstEnergy Ohio utilities in subsequent RFPs.
6. The mechanisms in place to solicit industry feedback, through both the nature of the questions and comments raised by potential bidders and the conduct of a survey by NCI, are seen as an acceptable approach to inform the FirstEnergy Ohio utilities about the strengths and weaknesses of the issued RFPs. Further, the information obtained through the process was effectively used and served as a basis for modifications in RFPs subsequent to the conduct of the survey.
7. Market information for In-State Solar and All Renewables RECs was limited prior to the issuance of the first and second RFPs.
8. The contingency planning in place for the first three RFPs was inadequate and should have encompassed a specific set of fall-back approaches, or in the alternative, specified a mechanism by which to distill the information gained from the solicitations to develop a modified approach.

Recommendations.

1. The FirstEnergy Ohio utilities should implement a more robust contingency planning process as it relates to the procurement of RECs and SRECs in compliance with Ohio's AEPS. We also recommend that the contingency plan be subject to review by the PUCO Staff prior to its implementation.
2. A thorough market analysis should precede the issuance of any future RFPs by the FirstEnergy Ohio utilities for RECs and SRECs in compliance with Ohio's AEPS. While market information was relatively modest prior to the issuance of the first two RFPs, greater market information regarding In-State Solar and All Renewables is currently available.
3. The FirstEnergy Ohio utilities should consider a mark-to-market approach to the security requirement for future procurements.

III. SOLICITATION RESULTS AND PROCUREMENT DECISIONS

As part of this management/performance audit, Exeter Associates, Inc. reviewed the results of the FirstEnergy Ohio utilities' procurement of SRECs and RECs to meet the Ohio AEPS requirements for 2009, 2010, and 2011. In particular, Exeter reviewed the quantities of SRECs and RECs bid, the prices associated with those bids, and the decisions of the FirstEnergy Ohio utilities regarding the bids (quantity and price) received. In the broadest terms, the procurement results can be characterized as follows:

- All-States All Renewables
 - All required RECs were secured at reasonable prices, though additional temporal diversity in establishing the REC portfolio would be desirable.
- All-States Solar
 - Based on information available at the time the bids were received, the Companies' purchasing decisions are found to be generally reasonable.
- In-State All Renewables
 - The Companies purchased significant quantities of RECs for 2009, 2010, and 2011 compliance years at prices assessed to be unreasonable on their face and also in comparison to prices paid elsewhere throughout the country.
- In-State Solar
 - The unavailability of Ohio SRECs in 2009 and 2010 led the Companies to request *force majeure* determinations from the Commission, which were granted. The procurements of Ohio SRECs made by the Companies when such SRECs became available were made at prices comparable to SRECs traded elsewhere.

While the principal concerns of the procurements center on the costs of the In-State All Renewables RECs, each of the categories of SREC and REC purchases are discussed below.

A. All-States All Renewables RECs

Table 2 provides a summary of the bids received for All-States All Renewables RECs by the FirstEnergy Ohio utilities by compliance year and by RFP issued. Where SRECs and/or RECs were acquired through bilateral transactions or supplied by the FirstEnergy Ohio utilities directly, that is so indicated.

The bulk of All-States All Renewables RECs required to meet the 2009, 2010, and 2011 AEPS requirements were procured through the first RFP. Under that RFP, all of the 2009 requirement, 93 percent of the 2010 requirement (based on kWh sales data available in 2009), and 60 percent of the 2011 requirement (based on kWh sales data available in 2009) were

procured. Prices ranged between \$[REDACTED] and \$[REDACTED] for the 2009 requirement, \$[REDACTED] and \$[REDACTED] for the 2010 requirement, and \$[REDACTED] and \$[REDACTED] for the 2011 requirement.

Additional RECs for 2010 were acquired through a transfer of excess 2009 RECs from 2009. This level of RECs purchases more than fulfilled the 2010 RECs requirement.

Table 2 FirstEnergy Ohio – All-States All Renewables RECs

| Table 2. REC Requirements by CMS All States All Renewable RECs | | | | | | |
|--|----------|-----|--------------------|------|---------|-----|
| REC Requirement ^{(1) (2) (3)} | 2009 | | 2010 | | 2011 | |
| | 57,965 | | 111,477 | | 176,156 | |
| RECs Acquired ⁽⁴⁾ | 2009 | | 2010 | | 2011 | |
| RFP1 | 87,360 | | 104,000 | | 105,084 | |
| RFP2 | (a) | | (a) | | (a) | |
| RFP3 | (a) | | (a) | | 49,351 | |
| RFP4 | (a) | | (a) | | (a) | |
| RFP5 | (a) | | (a) | | (a) | |
| RFP6 | (a) | | (a) | | (a) | |
| Bilateral Transactions | (b) | | (b) | | (b) | |
| Adjustment/Transfer | (29,396) | | 29,396 (21,920) | | 21,920 | |
| TOTAL | 87,360 | | 133,396 | | 176,355 | |
| Percent of Total | 2009 | | 2010 | | 2011 | |
| RFP1 | 151% | | 93% | | 60% | |
| RFP2 | (a) | | (a) | | (a) | |
| RFP3 | (a) | | (a) | | 28% | |
| RFP4 | (a) | | (a) | | (a) | |
| RFP5 | (a) | | (a) | | (a) | |
| RFP6 | (a) | | (a) | | (a) | |
| Bilateral Transactions | (b) | | (b) | | (b) | |
| Adjustment/Transfer | (51%) | | 26% (20%) | | 12% | |
| TOTAL | 100% | | 100% | | 100% | |
| Price Range (\$/REC) ⁽⁴⁾ | 2009 | | 2010 | | 2011 | |
| | MIN | MAX | MIN | MAX | MIN | MAX |
| RFP1 | ■ | ■ | ■ | ■ | ■ | ■ |
| RFP2 | (a) | (a) | (a) | (a) | (a) | (a) |
| RFP3 | (a) | (a) | (a) | (a) | ■ | ■ |
| RFP4 | (a) | (a) | (a) | (a) | (a) | (a) |
| RFP5 | (a) | (a) | (a) | (a) | (a) | (a) |
| RFP6 | (a) | (a) | (a) | (a) | (a) | (a) |
| Bilateral Transactions | (b) | (b) | (b) | (b) | (b) | (b) |
| Adjustment/Transfer | | | 0.00 | 0.00 | ■ | ■ |
| Weighted Average Price (\$/REC) ⁽⁴⁾ | 2009 | | 2010 | | 2011 | |
| RFP1 | ■ | | ■ | | ■ | |
| RFP2 | (a) | | (a) | | (a) | |
| RFP3 | (a) | | (a) | | ■ | |
| RFP4 | (a) | | (a) | | (a) | |
| RFP5 | (a) | | (a) | | (a) | |
| RFP6 | (a) | | (a) | | (a) | |
| Bilateral Transactions | (b) | | (b) | | (b) | |
| Adjustment/Transfer | | | 0.00 | | ■ | |

Table 2 FirstEnergy Ohio – All-States All Renewables RECs (Continued)

Notes:

- (a) This RFP did not solicit the indicated type of REC for the given energy year.
- (b) No RECs were procured through bilateral transactions for the given energy year.

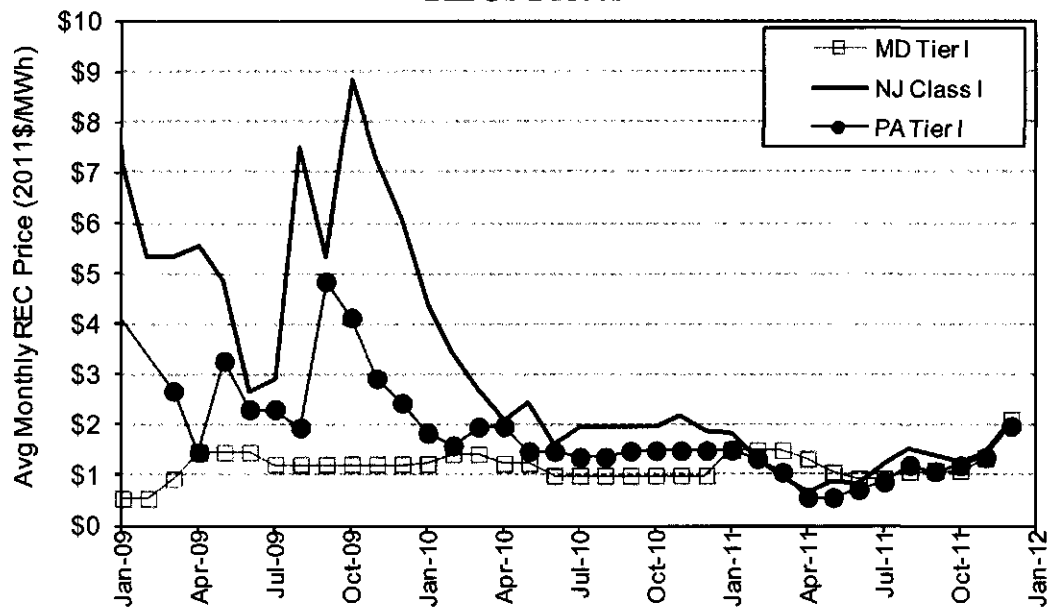
Sources:

- (1) PUCO Case No. 10-499-EL-ACP, Annual Status Report and 2009 Compliance Review, Appendix A: 2009 Alternative Energy Resource Benchmarks and Compliance Reconciliation.
- (2) PUCO Case No. 11-2479-EL-ACP, Annual Status Report and 2010 Compliance Review, Appendix A: 2010 Alternative Energy Resource Benchmarks and Compliance Reconciliation.
- (3) PUCO Case No. 12-1246-EL-ACP, Annual Status Report and 2011 Compliance Review, Appendix A: 2011 Alternative Energy Resource Benchmarks and Compliance Reconciliation.
- (4) Calculated based on EA Set 1-INT-5 Attachment 1.

For 2011, an additional 49,351 All-States All Renewable RECs were procured through the third RFP issued in July 2010, and 21,920 All-States All Renewable RECs, which fulfilled the 2011 requirement, were obtained through a transfer of excess 2010 RECs. The 2011 All-States All Renewable RECs were bid at prices between \$■ and \$■. The transferred RECs were purchased at a price of \$■ per REC.

Figure 2 shows non-solar REC prices in Pennsylvania, Maryland, and New Jersey over the 2009 through 2011 period. As is shown in Figure 2, RECs prices in New Jersey tended to be above the prices paid by the FirstEnergy Ohio utilities in 2009 for 2009-Vintage RECs and the Pennsylvania RECs are shown to entail prices below the RECs purchased by the FirstEnergy Ohio utilities. The pattern of prices evident in New Jersey and Pennsylvania is not atypical of RECs price trends elsewhere, that is, in the first years of enactment of a state portfolio standard, prices tend to be higher than in following years as the market adjusts and more projects become built and certified.

Figure 2 Historical Maryland, New Jersey, and Pennsylvania Compliance RECs Prices



Sources: Evolution Markets (through 2007) and Spectron (2008 onward). Plotted values are the last trade (if available) or the mid-point of Bid and Offer prices, for the earliest compliance year traded in each month.

Note: Figure provided to Exeter by personnel from the National Renewable Energy Laboratory (NREL), May 2012

As seen with the FirstEnergy Ohio utilities' experience, substantially higher prices were paid in 2009 (for 2009, 2010, and 2011 vintage RECs) than were experienced in 2011 for 2011 vintage RECs. These price relationships indicate that lower-cost compliance would have been achieved for the All-States All Renewables component of the AEPS requirement had the FirstEnergy Ohio utilities procured a greater proportion of 2011 RECs in 2011 and, perhaps, a portion of 2010 RECs in 2010. This conclusion is clear from *ex post* analysis.

With respect to whether an alternative strategy for procurement of these RECs should have been pursued by the FirstEnergy Ohio utilities based on *ex ante* information is less clear. The Companies indicated during the Exeter interview conducted on April 20, 2012, that there was concern on the part of the Companies that the needed RECs might not be available in the timeframe required for compliance were the Companies to defer the purchase of 2010 and 2011 RECs in 2009. Notwithstanding this concern, a preferred method of risk management would have been to temporally diversify the purchases to avoid exposure to prevailing prices at one point in time. This method to help manage risk would have been beneficially employed by the FirstEnergy Ohio utilities with respect to REC purchases, that is, purchases of RECs should have been spread out over time.⁸

⁸ We note that this approach is not employed for purposes of cost minimization but rather for purposes of risk mitigation.

Related to the issue of risk mitigation is the pattern of REC prices that has tended to emerge following the implementation of renewable energy portfolio standards in other states. The general downward trend, fueled by increases in the availability of RECs that has come from industry response, should have informed the FirstEnergy Ohio utilities' decision to purchase almost all RECs needed to meet the 2009 through 2011 All-States All Renewables requirement in 2009.

While we believe that an alternative approach should have been relied upon by the FirstEnergy Ohio utilities, there are considerations that may have reasonably influenced the Companies' decision to maximize purchases in 2009 to fulfill the 2009 through 2011 AEPS requirements for All-States All Renewables RECs. One such consideration, as noted above, was the potential unavailability of the necessary RECs in later months. Given the annual increases in the percentage renewable requirements over time, not only in Ohio but in other states from which the FirstEnergy Ohio utilities could expect to draw RECs, this perspective is not without some basis. A related concern would emerge in the context of pricing, which could increase in the face of tightening market conditions. Even with growth in the amount of RECs available, the increases in RECs offered on the market would need to be greater than the increase in renewable requirements to induce downward pressure on prices and ensure availability.

A final factor simply relates to the structure of incentives faced by the FirstEnergy Ohio utilities. The Companies were required to secure the necessary RECs for the 2009 through 2011 period. Absent the availability of RECs post 2009, the Companies would be faced with either obtaining a *force majeure* ruling from the Commission, for which a risk would be incurred (i.e., the Commission could deny the request) or, in the event that the required number of RECs were unavailable, the Company could pay the alternative compliance payment ("ACP") of \$45 per REC. The Companies, however, could not recover the ACP expense from customers pursuant to the legislation. As a consequence, the Companies had every incentive to secure the required number of RECs and avoid the incurrence of any risk that the RECs would be unavailable in the future. In that way, the Companies would avoid any potential of incurring a non-recoverable ACP expense.

Findings

1. The prices paid by the Companies for All-States All Renewables RECs were reasonably consistent with other regional RECs prices.
2. While lower prices would have been available to the Companies were fewer RECs purchased under RFP 1 and more RECs purchased under RFP 3, given Finding No. 1, above, the Companies' decision to purchase the bulk of the 2009, 2010, and 2011 requirements under RFP 1 was not unreasonable.

B. All-States Solar RECs

Table 3 shows a summary of the RFP results (and bilateral arrangements) related to the procurement of All-States Solar RECs by the FirstEnergy Ohio utilities. As shown in Table 3, the Companies procured enough Solar RECs in each year to meet their All-States Solar RECs requirements. Though the first RFP failed to solicit any All-States Solar REC purchases, the second RFP (in 2009) resulted in the successful procurement of enough 2009 All-States Solar RECs to meet the 2009 requirement along with a small number of 2010 and 2011 All-States Solar RECs. Prices for the 2009 All-States Solar RECs ranged from \$[REDACTED] to \$[REDACTED].

The third RFP, issued in 2010, resulted in the Companies procuring 550 vintage 2010 All-States Solar RECs. However, the majority of the Solar RECs procured in the 2010 auction were for the 2011 compliance year (3,331 vintage 2011 SRECs). The Companies engaged in extensive efforts to execute deals with brokers and make bilateral trades to meet the bulk of the 2010 All-States Solar RECs requirement. The Companies purchased a total of 2,454 Solar RECs from brokers and through other bilateral arrangements. The price range for the vintage 2010 All-States Solar RECs procured through the 2009 RFP was \$[REDACTED] to \$[REDACTED]. The price range for the vintage 2010 All-States Solar RECs procured through the 2010 RFP was very similar -- \$[REDACTED] to \$[REDACTED]. As noted earlier, the bulk of the 2010 All-States Solar RECs were procured through bilateral trades and the price range for these transactions was \$[REDACTED] to \$[REDACTED].

Table 3 FirstEnergy Ohio – All-States Solar REC's

| Table 3: Procurement by Energy Year and REC Type | | | | | | |
|---|--|------------|------------|------------|------------|-----------------------|
| | | 2009 | 2010 | 2011 | | |
| SREC Requirement ^{(1) (2) (3)} | | 48 | 3,169 | 5,447 | | |
| SRECs Acquired ⁽⁴⁾ | | 2009 | 2010 | 2011 | | |
| RFP1 | | 0 | 0 | 0 | | |
| RFP2 | | 48 | 208 | 4 | | |
| RFP3 | | (a) | 550 | 3,331 | | |
| RFP4 | | (a) | (a) | (a) | | |
| RFP5 | | 0 | 0 | 2,200 | | |
| RFP6 | | (a) | (a) | (a) | | |
| Bilateral Transactions | | (b) | 2,454 | 37 | | |
| TOTAL | | 48 | 3,212 | 5,572 | | |
| Percent of Total | | 2009 | 2010 | 2011 | | |
| RFP1 | | 0% | 0% | 0% | | |
| RFP2 | | 100% | 7% | 0% | | |
| RFP3 | | (a) | 17% | 61% | | |
| RFP4 | | (a) | (a) | (a) | | |
| RFP5 | | 0% | 0% | 40% | | |
| RFP6 | | (a) | (a) | (a) | | |
| Bilateral Transactions | | (b) | 77% | 1% | | |
| TOTAL | | 100% | 101% | 102% | | |
| Price Range (\$/SREC) ⁽⁴⁾ | | 2009 | | 2010 | | 2011 |
| | | <u>MIN</u> | <u>MAX</u> | <u>MIN</u> | <u>MAX</u> | <u>MIN</u> <u>MAX</u> |
| RFP1 | | N/A | N/A | N/A | N/A | N/A N/A |
| RFP2 | | ████ | ████ | ████ | ████ | ████ █████ |
| RFP3 | | (a) | (a) | ████ | ████ | ████ █████ |
| RFP4 | | (a) | (a) | (a) | (a) | (a) (a) |
| RFP5 | | N/A | N/A | N/A | N/A | ████ █████ |
| RFP6 | | (a) | (a) | (a) | (a) | (a) (a) |
| Bilateral Transactions | | (b) | (b) | ████ | ████ | ████ █████ |
| Weighted Average Price (\$/SREC) ⁽⁴⁾ | | 2009 | 2010 | 2011 | | |
| RFP1 | | N/A | N/A | N/A | | |
| RFP2 | | ████ | ████ | ████ | | |
| RFP3 | | (a) | ████ | ████ | | |
| RFP4 | | (a) | (a) | (a) | | |
| RFP5 | | N/A | N/A | ████ | | |
| RFP6 | | (a) | (a) | (a) | | |
| Bilateral Transactions | | (b) | ████ | ████ | | |
| Notes: | | | | | | |
| (a) This RFP did not solicit the indicated type of REC for the given energy year. | | | | | | |
| (b) No RECs were procured through bilateral transactions for the given energy year. | | | | | | |
| Sources: | | | | | | |
| (1) PUCO Case No. 10-499-EL-ACP, Annual Status Report and 2009 Compliance Review, Appendix A: 2009 Alternative Energy Resource Benchmarks and Compliance Reconciliation. | | | | | | |
| (2) PUCO Case No. 11-2479-EL-ACP, Annual Status Report and 2010 Compliance Review, Appendix A: 2010 Alternative Energy Resource Benchmarks and Compliance Reconciliation. | | | | | | |
| (3) PUCO Case No. 12-1246-EL-ACP, Annual Status Report and 2011 Compliance Review, Appendix A: 2011 Alternative Energy Resource Benchmarks and Compliance Reconciliation. | | | | | | |
| (4) Calculated based on EA Set 1-INT-5 Attachment 1. | | | | | | |

For the 2011 compliance year, the Companies procured 3,331 All-States Solar RECs through the 2010 RFP (RFP3) at a price range of \$[REDACTED] to \$[REDACTED]. The Companies also procured 37 vintage 2011 All-States Solar RECs through an internal bilateral trade executed in 2011 at a price of \$[REDACTED] per SREC. The remaining portion of the 2011 All-States Solar RECs requirement was procured through an RFP held in mid-2011. The price range for the 2,200 All-States Solar RECs purchased through this RFP was \$[REDACTED] to \$[REDACTED], significantly lower than the prices paid for the vintage 2011 All-States Solar RECs procured in the 2009 and 2010 RFPs and through the bilateral internal trade.

As with the All-States All Renewables RECs, an *ex post* analysis indicates that FirstEnergy Ohio utilities would have paid significantly less for 2011 All-States Solar RECs if they had waited until 2011 to purchase these SRECs. As discussed in the section on All-States All Renewables RECs, the Companies expressed concerns that the needed SRECs might not be available in the timeframe required to meet for compliance.

As discussed previously in this audit report, the appropriateness and reasonableness of any particular RECs transaction cannot be assessed on the basis of information that would not have been available at the time of the transaction, such as RECs prices that would have been knowable only after the fact. The prices paid by the FirstEnergy Ohio utilities for All-States Solar RECs were roughly consistent with prices paid in other nearby states with a solar set-aside. SREC prices in Pennsylvania in 2009 averaged about \$275 and in 2010 rose to approximately \$325 per SREC.⁹ New Jersey SRECs (which must all be generated in-State) were generally priced between \$600 and \$700 in 2009, 2010, and the first half of 2011.¹⁰ By the end of 2011, New Jersey SREC prices declined to between \$150 and \$250.¹¹ In Maryland, which also requires that SRECs be generated in-State, prices in 2010 were between \$350 and \$400; between \$100 and \$350 in 2011; and declined to about \$200 in 2012.¹²

While neither New Jersey nor Maryland SRECs can be used in Ohio to satisfy the All-States Solar requirement, both New Jersey and Maryland SRECs can be used in Pennsylvania. Pennsylvania SRECs can be used for the Ohio All-States Solar requirement. Therefore, while the pricing dynamics are complicated, there are relationships among the SREC prices in New Jersey, Maryland, Pennsylvania, and Ohio.

As a general proposition, temporal diversity in purchasing to help manage risk is a prudent practice. The number of All-States SRECs that the FirstEnergy Ohio utilities were purchasing in the 2009 and 2010 timeframe were relatively small, and through the circumstances that evolved over the procurement history, a degree of temporal diversity was achieved. In

⁹ www.srectrade.com/blog/SREC/SREC-markets/Pennsylvania/page/3 (and page/4).

¹⁰ <http://markets.flettexchange.com/new-jersey-SREC>

¹¹ Ibid.

¹² <http://markets.flettexchange.com/maryland-SREC>

aggregate, the 2009 and 2010 requirement was approximately 3,200 RECs, which were purchased through two RFPs and a set of bilateral transactions.

2011 All-States Solar RECs were almost entirely purchased through two RFPs (RFP 3 and RFP 5). The average price of Solar RECs under the RFP 3 procurement was approximately \$[REDACTED]. The RFP 5 Solar RECs prices averaged \$[REDACTED] and some Solar RECs under that procurement were purchased for less than \$[REDACTED]. This pattern of Solar RECs prices over the 2009 through 2011 time period is consistent with the pricing observed in other nearby states as the supply of available Solar RECs generally exceeded the Solar RECs compliance requirements in the regional market. The excess supply of All-States Solar RECs evident in 2011 is not a circumstance that the FirstEnergy Ohio utilities could have been reasonably expected to foresee.

Findings

The lower prices available for All-States SRECs in the 2011 timeframe could not have been reasonably foreseen by the Companies. The prices paid by the Companies for All-States SRECs are consistent with SRECs prices regionally.

C. In-State All Renewables RECs

Fifty percent of the All Renewables requirement under the Ohio AEPS legislation is set aside for qualifying renewable energy generated in Ohio. In 2009, the supply of Ohio-generated RECs appears to have approximated (or was slightly below) the State-wide compliance requirement.¹³ The FirstEnergy Ohio utilities were able to successfully procure the required number of 2009, 2010, and 2011 In-State All Renewables RECs through bids offered in four RFPs. RFP 1 provided 2009 and 2010 RECs; RFP 2 provided RECs for all three compliance years; RFP 3 provided RECs for 2010 and 2011; and RFP 6 secured additional 2011 vintage RECs.

The fundamental issue associated with the FirstEnergy Ohio utilities' procurement of In-State All Renewables RECs for compliance with the 2009, 2010, and 2011 requirements centers on the prices paid for the RECs. Significant numbers of RECs were purchased at prices as high as \$[REDACTED] per REC. Table 4 summarizes the procurement history of the In-State All Renewables RECs for the 2009, 2010, and 2011 compliance years. As seen on Table 4, all of the 20,000 RECs purchased through RFP 1 for 2009 were priced at \$[REDACTED]. In addition, the 50,000 RECs purchased in RFP 1 for 2010 were priced between \$[REDACTED] and \$[REDACTED], with a weighted average price of \$[REDACTED]. RFP 2, which resulted in purchases of RECs for all three compliance years addressed in this audit (2009, 2010, and 2011), had associated weighted average prices of \$[REDACTED], \$[REDACTED], and \$[REDACTED], respectively. In aggregate, 95,849 In-State All Renewables RECs were purchased through this solicitation. RFP 3 resulted in procurement of almost 180,000 In-State All Renewables

¹³ Ed Holt and Associates, Inc. and Exeter Associates, Inc., *Alternative Energy Resource Market Assessment*, prepared for the Public Utility Commission of Ohio and the National Association of Regulatory Utility Commissioners, September 30, 2011, p.6.

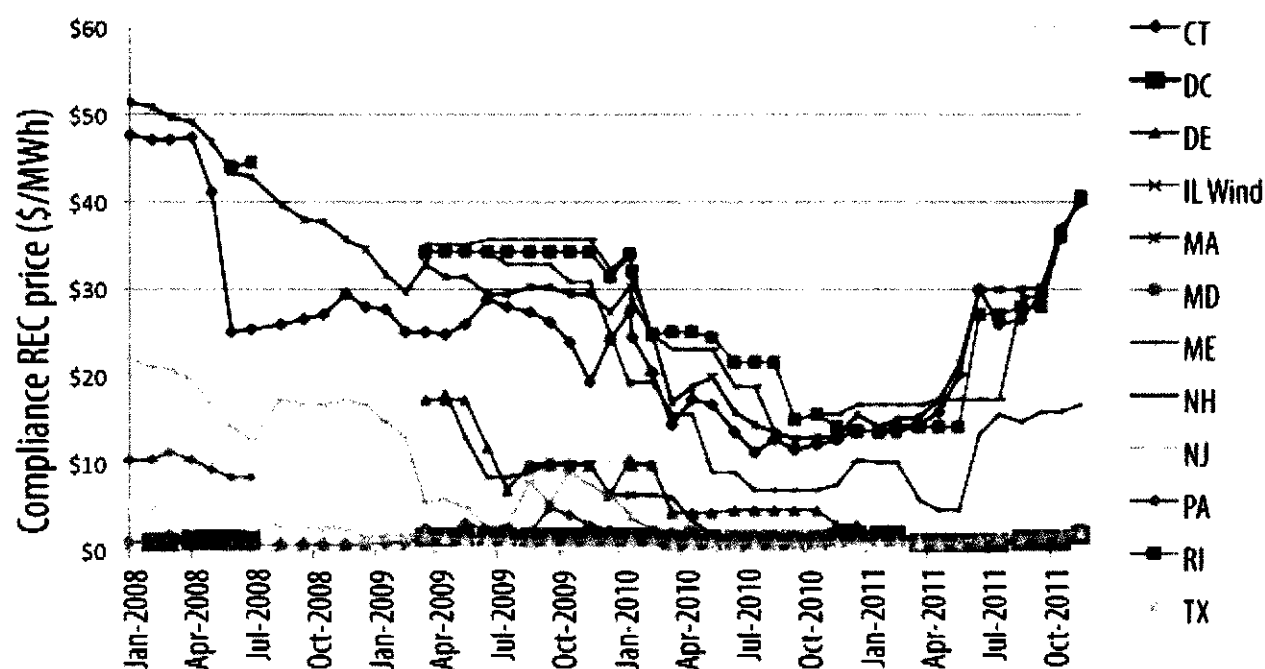
RECs, with average prices of \$[REDACTED] (for the 29,676 RECs purchased for 2010) and \$[REDACTED] for the 150,269 RECs purchased for 2011. RFP 6 entailed the purchase of an additional 20,000 2011 RECs at an average price of \$[REDACTED].

Table 4 FirstEnergy Ohio – In-State All Renewables RECs

| | 2009 | 2010 | 2011 | | | |
|---|--------|---------|---------|-----|-----|-----|
| REC Requirement ^{(1) (2) (3)} | 57,965 | 111,477 | 176,155 | | | |
| RECs Acquired ⁽⁴⁾ | 2009 | 2010 | 2011 | | | |
| RFP1 | 20,000 | 50,000 | 0 | | | |
| RFP2 | 37,965 | 31,800 | 26,084 | | | |
| RFP3 | (a) | 29,676 | 150,269 | | | |
| RFP4 | (a) | (a) | (a) | | | |
| RFP5 | (a) | (a) | (a) | | | |
| RFP6 | (a) | (a) | 20,000 | | | |
| Bilateral Transactions | (b) | 1 | (b) | | | |
| TOTAL | 57,965 | 111,477 | 196,353 | | | |
| Percent of Total | 2009 | 2010 | 2011 | | | |
| RFP1 | 35% | 45% | 0% | | | |
| RFP2 | 65% | 29% | 15% | | | |
| RFP3 | (a) | 27% | 85% | | | |
| RFP4 | (a) | (a) | (a) | | | |
| RFP5 | (a) | (a) | (a) | | | |
| RFP6 | (a) | (a) | 11% | | | |
| Bilateral Transactions | (b) | 0% | (b) | | | |
| TOTAL | 100% | 100% | 111% | | | |
| Price Range (\$/REC) ⁽⁴⁾ | 2009 | 2010 | 2011 | | | |
| | MIN | MAX | MIN | MAX | MIN | MAX |
| RFP1 | | | | | N/A | N/A |
| RFP2 | | | | | | |
| RFP3 | (a) | (a) | | | | |
| RFP4 | (a) | (a) | (a) | (a) | (a) | (a) |
| RFP5 | (a) | (a) | (a) | (a) | (a) | (a) |
| RFP6 | (a) | (a) | (a) | (a) | | |
| Bilateral Transactions | (b) | (b) | | | (b) | (b) |
| Weighted Average Price (\$/REC) ⁽⁴⁾ | 2009 | 2010 | 2011 | | | |
| RFP1 | | | N/A | | | |
| RFP2 | | | | | | |
| RFP3 | (a) | | | | | |
| RFP4 | (a) | (a) | (a) | | | |
| RFP5 | (a) | (a) | (a) | | | |
| RFP6 | (a) | (a) | | | | |
| Bilateral Transactions | (b) | | (b) | | | |
| Notes: | | | | | | |
| (a) This RFP did not solicit the indicated type of REC for the given energy year. | | | | | | |
| (b) No RECs were procured through bilateral transactions for the given energy year. | | | | | | |
| Sources: | | | | | | |
| (1) PUCO Case No. 10-499-EL-ACP, Annual Status Report and 2009 Compliance Review, Appendix A: 2009 Alternative Energy Resource Benchmarks and Compliance Reconciliation. | | | | | | |
| (2) PUCO Case No. 11-2479-EL-ACP, Annual Status Report and 2010 Compliance Review, Appendix A: 2010 Alternative Energy Resource Benchmarks and Compliance Reconciliation. | | | | | | |
| (3) PUCO Case No. 12-1246-EL-ACP, Annual Status Report and 2011 Compliance Review, Appendix A: 2011 Alternative Energy Resource Benchmarks and Compliance Reconciliation. | | | | | | |
| (4) Calculated based on EA Set 1-INT-5 Attachment 1. | | | | | | |

The U.S. Department of Energy (“DOE”) reports on solar and non-solar REC prices throughout the U.S. Between mid-2008 and December 2011, none of the non-solar REC prices reported by DOE was above \$45 and in almost all cases significantly below that level.¹⁴ The states covered include Connecticut, the District of Columbia, Delaware, Illinois (wind RECs), Massachusetts, Maryland, Maine, New Hampshire, New Jersey, Pennsylvania, Rhode Island, and Texas (See Figure 3).¹⁵ Additionally, the overall trend in REC prices has been declining during the period from January 2008 through mid-2011. Beginning in mid-2011, there have been marked increases in the prices of RECs for some of the states included in the DOE reporting due to certain state changes to renewable eligibility and also increasing percentage requirements for renewables.

Figure 3 Compliance Markets for RECs



Compliance market (primary tier) REC prices, January 2008 to December 2011

Source: apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=5

Note: Plotted values are the last trade (if available) or the mid-point of bid and offer prices for the current or nearest compliance year for various state compliance RECs.

¹⁴ <http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=5>. While this graph contains information through 2011, the pricing information for earlier years was available contemporaneously.

¹⁵ We note that there are significant differences among the RPS programs in the various states with respect to eligible resources (technologies and locations), the percentage renewable requirements, and set-asides for particular technologies.

Two qualifications, however, should be noted. First, the price decreases over time were not monotonic over the time period considered. While the average annual prices declined over time, there were interim months in which prices increased compared to prior months. Second, the specifics of the Renewable Portfolio Standard legislation in place in the various states differ from the Ohio AEPS legislation. These differences include the types of renewable resources eligible to meet the requirements and the geographic areas from which the RECs may originate. Particularly with respect to the second factor, the Ohio AEPS legislation is more restrictive than the legislation in other states, including the New Jersey, Maryland, and the Pennsylvania legislation, which, other factors equal, could result in higher REC prices in Ohio than elsewhere. We also note that the prices shown on Figure 3 do not represent the mid-point of offer and bid prices for the full market. These data are based on surveys and published data and likely exclude certain bilateral market transactions which could serve to move the reported numbers either up or down. Consequently, the non-Ohio REC prices discussed above cannot serve as a proxy for Ohio In-State All Renewables RECs prices. Rather, they provide a broad reference to what RECs have been trading for elsewhere over the relevant period under a wide range of RPS specifics and market conditions.

Table 5 shows the details of the purchases of In-State All Renewables RECs by the FirstEnergy Ohio utilities, including the dates of the purchases, the vintage year of the purchases, the quantity purchased, and the price paid. Total RECs purchased and costs incurred are also shown. The issue that is addressed below, which draws heavily on the information contained in Table 5, is the reasonableness of the prices paid by the FirstEnergy Ohio utilities for In-State All Renewables RECs for the compliance years 2009, 2010, and 2011. In addressing the reasonableness of these purchases, we avoid assessment based on *ex post* analysis and restrict the assessment to what would be considered reasonable at the time the transactions were entered into.

Table 5 In-State All Renewables RECs Prices Paid by FirstEnergy Ohio Utilities

| 2009 Vintage | Purchase Date | Quantity | Price/REC | Total |
|---------------------|----------------------|-----------------|------------------|---------------|
| | August 2009 | 20,000 | \$ [REDACTED] | \$ [REDACTED] |
| | October 2009 | 960 | [REDACTED] | [REDACTED] |
| | | 37,005 | [REDACTED] | [REDACTED] |
| | February 2010 | 13 | [REDACTED] | [REDACTED] |
| | SUBTOTAL | 57,978 | | \$ [REDACTED] |
| 2010 Vintage | August 2009 | 10,000 | \$ [REDACTED] | \$ [REDACTED] |
| | | 10,000 | [REDACTED] | [REDACTED] |
| | | 10,000 | [REDACTED] | [REDACTED] |
| | | 10,000 | [REDACTED] | [REDACTED] |
| | | 10,000 | [REDACTED] | [REDACTED] |
| | October 2009 | 30,400 | [REDACTED] | [REDACTED] |
| | | 1,400 | [REDACTED] | [REDACTED] |
| | August 2010 | 29,676 | [REDACTED] | [REDACTED] |
| | April 2011 | 1 | [REDACTED] | [REDACTED] |
| | SUBTOTAL | 111,477 | | \$ [REDACTED] |
| 2011 Vintage | October 2009 | 1,084 | \$ [REDACTED] | \$ [REDACTED] |
| | | 25,000 | [REDACTED] | [REDACTED] |
| | August 2010 | 145,269 | [REDACTED] | [REDACTED] |
| | | 5,000 | [REDACTED] | [REDACTED] |
| | November 2011 | 5,000 | [REDACTED] | [REDACTED] |
| | | 15,000 | [REDACTED] | [REDACTED] |
| | SUBTOTAL | 196,353 | | \$ [REDACTED] |
| | TOTAL | 365,808 | | \$ [REDACTED] |

Based on our review of the legislation, the responses of the FirstEnergy Ohio utilities to our requests for information, and various Commission filings, and our interview with FirstEnergy Ohio utility personnel and personnel from Navigant Consulting, there do not appear to be any technical violations of the Ohio's AEPS statute and the FirstEnergy Ohio utilities appear not to have violated the letter of the legislation. That said, we believe that the management decisions made by the FirstEnergy Ohio utilities to purchase non-solar RECs at prices in some cases more than 15 times the price of the applicable forty-five-dollar Alternative Compliance Payment to have been seriously flawed. The prices paid by the FirstEnergy Ohio utilities for these RECs were well above the prices customarily seen in any of the other RECs markets throughout the country contemporaneous with (as well as preceding and subsequent to) the purchasing decisions made by the FirstEnergy Ohio utilities.

The mechanism employed by the FirstEnergy Ohio utilities for purchasing RECs through the RFP process was to stack the conforming bids received from eligible bidders from lowest price to highest price and to purchase the number of RECs needed to comply with the In-State

All Renewables requirement regardless of the price bid. No limit price was established by the Companies prior to the receipt of bids, that is, the Companies indicated that prior to the receipt of bids, the Companies did not establish a maximum price that they would be willing to pay for RECs, or a price that would trigger embarking on a contingency plan. Reliance on this approach resulted in the purchase of more than 337,000 In-State All Renewables RECs at prices between \$■ and \$■ dollars.

There are several issues that were considered in our assessment of the reasonableness of the high-priced RECs transactions entered into by the FirstEnergy Ohio utilities. Each is discussed in turn below.

Statutory Violations – While this audit is not a legal review and the following opinion is not based on a legal review, we found no indication that the FirstEnergy Ohio utilities operated outside of the legal requirements established by the Ohio AEPS legislation. There is nothing in the legislation that limits the price that the Companies could pay for RECs, other than the requirement that on an expected (forward looking) basis, the cost of compliance should not exceed three percent of the Companies charges for the provision of power supply. This limitation appears not to have been violated based on a reasonable application of the rule.

The solicitations issued by the Companies, as discussed earlier in this report, were competitive and the rules for the determination of winning bids appear to have been applied uniformly. We found nothing to suggest that the FirstEnergy Ohio utilities operated in a manner other than to select the lowest cost bids received from a competitive solicitation to satisfy the annual In-State All Renewables requirement established by the legislation.

Market Information – At the time the solicitations resulting in the procurement of the high-cost RECs were conducted, the market for In-State All Renewables in Ohio was still nascent; reliable, transparent information on market prices, future renewable energy projects that may have resulted in future RECs trading at lower prices, or other information that may have directly influenced the Companies' decision to purchase the high-priced RECs was generally not available. While information on planned renewable energy projects can be gleaned from the PJM interconnection queues, that information is highly unreliable. Some projects are entered multiple times (with variations on project specifics such as location or size) and most projects appearing in the queues do not come to fruition. The unreliability of the PJM queue information was further exacerbated by the economic recession and the difficulties faced by renewable energy developers in obtaining project financing. Consequently, we believe that there was significant uncertainty associated with assessing changes in future RECs prices and the potential availability of future RECs.

Market Competition – We have noted above that the procurement methods employed by the Companies are assessed to have been competitive. That does not mean, however, that the market in which the Companies were operating was competitive. The bids received by the

FirstEnergy Ohio utilities should have been interpreted by the Companies as indicative of serious market disequilibrium. The fundamental concept behind the creation of renewable energy portfolio standards, regardless of the state implementing the standard, is that to promote the development of renewable energy resources, an additional stream of revenue is required to be provided to the project owners to overcome the higher cost of renewable energy relative to energy generated from conventional sources. Absent the additional revenue stream associated with the marketability of the environmental attributes of renewable energy, i.e., the renewable energy credits, renewable technologies would not be able to effectively compete in the power markets. The market value of the RECs, therefore, should approximate the additional revenue required by project owners to facilitate the development of eligible renewable projects. We would expect, and in fact see, different values of RECs in different states based on a multitude of factors, most importantly including:

- The geographical area from which eligible RECs can be drawn; generally, the larger the geographical area from which the RECs can originate, the lower the price of the RECs;
- The types of resources that qualify as “renewable”; those states allowing relatively low-cost resources to qualify as renewable, such as black liquor or waste coal, tend to exhibit lower prices for RECs;
- The level of prevailing energy prices; the higher the price of energy, the lower the price of RECs, other factors equal;
- The size of the renewable requirement; the larger the percentage of the power supply that is required to be supplied from renewable resources, the higher is the price of the RECs, other factors equal;
- The size of the alternative compliance payment (ACP); the size of the ACP limits the market price of the RECs since RECs would not be purchased at prices higher than the ACP if energy providers can pay the ACP in lieu of paying for higher-priced RECs.

As noted previously in this report, none of the RECs prices elsewhere in the country were trading at prices more than \$45 per REC during the relevant period, and many were selling for prices considerably lower. While this information does not translate to what RECs prices in Ohio should be, the underlying economic factors are the same, that is, the price of RECs should be adequate to cover the higher costs of generation using renewable technologies, subject to the economic impacts of the differences in state legislation. There is no basis for concluding that the cost of renewable energy development in Ohio differs so markedly from the cost of renewable development elsewhere in the country so as to warrant RECs prices of \$■ or more in Ohio compared to the RECs prices seen elsewhere.

RECs prices of that magnitude clearly indicate that some degree of market power is being exercised by a segment of the market given offered prices well above the cost of production. Consequently, the prices offered for the high-priced RECs, and accepted by the Companies, were composed largely of economic rents.¹⁶ As regulated entities, those costs were in turn passed on to Standard Service Offer (“SSO”) customers.

[REDACTED]

Available Alternatives – The FirstEnergy Ohio utilities’ decisions related to acceptance of the bids for In-State All Renewables RECs at prices ranging from \$[REDACTED] to \$[REDACTED] needs to be assessed in the context of alternatives that were available to the Companies. If the Companies had no option other than to purchase these RECs at the prices offered, the decision would be evaluated differently than if alternatives existed. We believe that at least three alternatives were available to the Companies, and each of these is discussed below.

- Alternative Compliance Payment – One of the options available to the Companies was payment of the ACP in lieu of the procurement of RECs. The Companies indicated that they did not view the ACP as an alternative to the procurement of RECs and that payment of the ACP did not relieve them of the requirement to actually purchase RECs.¹⁸ Under the assumption that the Companies’ interpretation of the legislation is incorrect, that is, that the ACP could have been used as an alternative to the procurement of RECs, that

¹⁶ We note that the economic rents received may not necessarily accrue to the party selling the RECs to the FirstEnergy Ohio utilities. For example, if the seller purchased the RECs from a third party at high prices, the rents may have accrued to the third party. Economic rents can be defined as the return to the investment in excess of the minimum required to induce the investment.

¹⁷ The Companies’ decisions to purchase the high-priced RECs were consistent with the recommendations of its consultant, NCI.

¹⁸ The issue of reliance on the ACP as an alternative to the procurement of the high-priced RECs was raised during the April 20, 2012 interview with FirstEnergy Ohio utilities and Navigant Consulting personnel. During the interview, the personnel from the Companies expressed the perspective that the Alternative Compliance Payment is not an alternative to procuring RECs. In a separate request for information, the Companies’ were unwilling to provide a legal opinion on this issue, but noted that there is no language in the legislation to suggest that the Alternative Compliance Payment is an alternative to compliance through the procurement of RECs. (FirstEnergy Ohio utilities response to Exeter Associates’ request for information, set 5, item 3.)

option was available to the Companies. The legislation, however, precludes the Companies from recovery of any costs related to Alternative Compliance Payments.¹⁹ This provision of the legislation provides a serious deterrent to the State's utility companies from reliance on the ACP and payment of the ACP rather than procuring RECs, even at prices higher than the \$45 ACP. Personnel from the Companies indicated during the April 20, 2012 interview that they did not consider use of the ACP as a mechanism to avoid the cost of the high-priced RECs.

- Consultation with the Commission – FirstEnergy Ohio utilities' personnel were asked whether they considered informing the Commission of the status of the bids received to obtain Commission input regarding a decision to purchase. The Companies indicated during the April 20, 2012 interview that approaching the Commission and explaining the circumstances of the solicitation results was not considered. While the Companies were under no statutory obligation to obtain approval by the Commission for RECs purchases, the prices for the In-State All Renewables RECs that were received through the solicitation process were so far above customary prices outside of Ohio that consultation with the Commission should certainly have been at least considered by the Companies prior to transacting.
- Rejection of High-Priced Bids – As part of the solicitation process, the Companies retained the right to reject any and all bids. In the face of the high prices received [REDACTED] for the provision of In-State All Renewables RECs, the Company had the option of simply rejecting the bids. That would likely have necessitated the Companies filing a *force majeure* determination request with the Commission on the basis that In-State All Renewables RECs were not "reasonably" available (which appears to be accommodated in the legislation).²⁰

A second alternative would have been to procure the high-priced RECs for compliance with the 2009 requirements, but reject those bids for the 2010 and 2011 requirements. That decision would be based on an assessment that In-State All Renewables RECs would become more available over time and could be secured at lower prices in the future. The risk of that approach, expressed by FirstEnergy Ohio utilities personnel, was that In-State All Renewables RECs would not increase in availability and would be in shorter supply in the coming years. That circumstance would expose the Companies to being unable to procure the requisite RECs for compliance years 2010 and 2011. Based on information available from other states, a decision to delay the purchases of RECs would have been preferred. For example, the Companies were able to procure 20,000 2011-vintage RECs in 2011 at an average price of \$ [REDACTED] compared to the average prices

¹⁹ Competitive suppliers are also precluded from explicit recovery of these costs, that is, a competitive supplier cannot include a line item on its invoices separately identifying ACP costs as part of its billing. Competitive suppliers, however, can incorporate the ACP into their overall energy price to recover their costs. That option, however, is not available to regulated utilities supplying SSO energy.

²⁰ Note that this is not a legal opinion and is based on a lay reading and interpretation of the statute.

of \$[REDACTED] (RFP 2) and \$[REDACTED] (RFP 3). While the Companies could not know with certainty that prices would be declining over time or that the required number of In-State All Renewables RECs would be available at any price in sufficient time to meet the compliance requirements, the experience in other states suggests that prices would be declining and that RECs would be increasingly available as markets respond to the newly created demand for RECs. If circumstances emerged such that In-State All Renewables RECs were not available in later years, the Companies would have had a basis for requesting a *force majeure* determination by the Commission.

Findings

Based on the foregoing discussion, our findings related to the FirstEnergy Ohio utilities procurement of In-State All Renewables RECs for compliance years 2009, 2010, and 2011 are:

1. The FirstEnergy Ohio utilities did not establish a maximum price that the Companies were willing to pay for In-State All Renewables RECs prior to the issuance of the RFPs.
2. The FirstEnergy Ohio utilities paid unreasonably high prices for In-State All Renewables RECs purchased from [REDACTED].
3. Prices for In-State All Renewable RECs in the range of \$[REDACTED] to \$[REDACTED] exceeded the prices paid for non-solar compliance RECs anywhere in the country by at least \$[REDACTED] to \$[REDACTED].
4. The FirstEnergy Ohio utilities had several alternatives available to the purchase of high-priced In-State All Renewables RECs, none of which were considered or acted upon.
5. The FirstEnergy Ohio utilities should have been aware that the prices bid by [REDACTED] reflected significant economic rents and were excessive by any reasonable measure.

Recommendations

Based on the findings presented above, we recommend that the Commission examine the disallowance of excessive costs associated with purchasing RECs to meet the FirstEnergy Ohio utilities' In-State All Renewables obligations.

D. In-State Solar RECs

Table 6 shows a summary of the RFP results (and bilateral arrangements) related to the procurement of In-State Solar RECs by the FirstEnergy Ohio utilities. As shown on Table 6, the Companies were unable to secure adequate solar RECs from in-State sources to meet the 2009

requirement, which necessitated a request for a *force majeure* ruling from the Commission. The Commission determined that adequate solar RECs were not available to the Companies and granted the *force majeure* request, moving the 2009 In-State Solar requirement to 2010. A similar *force majeure* request was made in 2010 for 2010 vintage In-State Solar RECs, and was again granted by the Commission. The unfulfilled obligation for 2010 was extended to 2011.

Table 6 FirstEnergy Ohio – In-State Solar REC's

| TABLE 6. Alternative Energy Resource Benchmarks and Compliance Reconciliation | | | | | | |
|---|------|-----|-------|-----|--------|-----|
| SREC Requirement ^{(1) (2) (3)} | 2009 | | 2010 | | 2011 | |
| 13 | 13 | | 1,629 | | 7,026 | |
| SRECs Acquired ⁽⁴⁾ | 2009 | | 2010 | | 2011 | |
| RFP1 | 0 | | 0 | | 0 | |
| RFP2 | 0 | | 6 | | 1,347 | |
| RFP3 | (a) | | 182 | | 946 | |
| RFP4 | 0 | | 11 | | (a) | |
| RFP5 | 0 | | 0 | | 4,653 | |
| RFP6 | (a) | | (a) | | 5,000 | |
| Bilateral Transactions | 13 | | 1,569 | | 1,057 | |
| TOTAL | 13 | | 1,768 | | 13,003 | |
| Percent of Total | 2009 | | 2010 | | 2011 | |
| RFP1 | 0% | | 0% | | 0% | |
| RFP2 | 0% | | 0% | | 19% | |
| RFP3 | (a) | | 11% | | 13% | |
| RFP4 | 0% | | 1% | | (a) | |
| RFP5 | 0% | | 0% | | 66% | |
| RFP6 | (a) | | (a) | | 71% | |
| Bilateral Transactions | 100% | | 96% | | 15% | |
| TOTAL | 100% | | 109% | | 185% | |
| Price Range (\$/SREC) ⁽⁴⁾ | 2009 | | 2010 | | 2011 | |
| | MIN | MAX | MIN | MAX | MIN | MAX |
| RFP1 | N/A | N/A | N/A | N/A | N/A | N/A |
| RFP2 | N/A | N/A | | | | |
| RFP3 | (a) | (a) | | | | |
| RFP4 | N/A | N/A | | | (a) | (a) |
| RFP5 | N/A | N/A | N/A | N/A | | |
| RFP6 | (a) | (a) | (a) | (a) | | |
| Bilateral Transactions | | | | | | |
| Weighted Average Price (\$/SREC) ⁽⁴⁾ | 2009 | | 2010 | | 2011 | |
| RFP1 | N/A | | N/A | | N/A | |
| RFP2 | N/A | | | | | |
| RFP3 | (a) | | | | | |
| RFP4 | N/A | | | | (a) | |
| RFP5 | N/A | | N/A | | | |
| RFP6 | (a) | | (a) | | | |
| Bilateral Transactions | | | | | | |
| Notes: | | | | | | |
| (a) This RFP did not solicit the indicated type of REC for the given energy year. | | | | | | |
| Sources: | | | | | | |
| (1) PUCO Case No. 10-499-EL-ACP, Annual Status Report and 2009 Compliance Review, Appendix A: 2009 Alternative Energy Resource Benchmarks and Compliance Reconciliation. | | | | | | |
| (2) PUCO Case No. 11-2479-EL-ACP, Annual Status Report and 2010 Compliance Review, Appendix A: 2010 Alternative Energy Resource Benchmarks and Compliance Reconciliation. | | | | | | |
| (3) PUCO Case No. 12-1246-EL-ACP, Annual Status Report and 2011 Compliance Review, Appendix A: 2011 Alternative Energy Resource Benchmarks and Compliance Reconciliation. | | | | | | |
| (4) Calculated based on EA Set 1-INT-5 Attachment 1. | | | | | | |

With respect to the 2009 and 2010 procurements for In-State Solar RECs, our assessment comports with the Commission rulings. The Companies exercised reasonable efforts to secure the subject Solar RECs and market conditions were such that the RECs were not available in the quantities needed. Given the Commission's review and decisions, no further examination of the Companies' efforts to secure 2009 and 2010 In-State Solar RECs was conducted pursuant to this management/performance audit.

For 2011, the Companies were able to obtain the required number of In-State Solar RECs through a combination of bilateral contracts and the issuance of the sixth RFP, which provided additional flexibility to bidders relative to previous RFPs. In particular, bidders were provided the option of bidding unit-contingent Solar RECs rather than having to bid firm quantities. This arrangement (also included in the fourth and fifth RFPs) eliminated an important source of risk for the In-State Solar RECs bidders. A second and more substantial change to the RFP structure was that the time period covered by the solicitation was extended to ten years. The longer duration of the contracts was an issue raised by the regional developers surveyed by NCI on behalf of the Companies and also was raised as an issue in the context of questions submitted to the Companies by certain potential bidders in the earlier RFP rounds. Finally, the security requirements were modified to accommodate protection under the longer contract period, while at the same time not being so onerous as to discourage bidders.

The prices paid for In-State Solar RECs for 2011 generally comport with prices seen in other nearby markets (e.g., Pennsylvania, New Jersey). As is the case for non-solar RECs, Solar RECs prices in any particular state reflect the market parameters contained in the governing legislation. New Jersey, for example, only allows for Solar RECs generated in-State to be used to meet the solar requirement. The same is true for Maryland. Maryland, however, has a fixed Solar ACP specified in the legislation whereas New Jersey's Solar ACP is established by the Board of Public Utilities. Pennsylvania allows out-of-State Solar RECs to be used to meet the Pennsylvania solar energy requirement and the Commission determines the ACP based on a multiple of prevailing market prices. The In-State Solar RECs market in Ohio is influenced by the markets in other nearby states. Ohio In-State Solar RECs can be used to satisfy the Pennsylvania RPS requirement, as can Maryland, Delaware, and New Jersey Solar RECs. Consequently, there are complex interrelationships among these various markets.

Irrespective of the differences in the levels of the Solar RECs carve-outs contained in the legislation of the various states, the level of prevailing energy prices, and the nature/levels of the ACPs, the prices paid by the FirstEnergy Ohio utilities for In-State Solar RECs (2011 vintage) were comparable to the prices for Solar RECs in other states. Table 7 shows the Solar RECs prices for 2011 RECs in several nearby jurisdictions compared with the prices paid by the FirstEnergy Ohio utilities. Based on the information presented in Table 7, the competitive solicitations (as modified over time to elicit greater market response) issued by the FirstEnergy Ohio utilities appear to have successfully secured In-State Solar RECs at reasonable prices.

Table 7 Weighted Average Monthly SREC Prices (\$/SREC)

| <u>2011</u> | <u>Delaware</u> | <u>Maryland</u> | <u>New Jersey</u> | <u>Pennsylvania</u> |
|--------------------|------------------------|------------------------|--------------------------|----------------------------|
| Jan | 229.49 | 332.72 | 573.62 | 293.97 |
| Feb | 275.92 | 335.07 | 614.88 | 274.03 |
| Mar | 210.34 | 275.34 | 632.14 | 233.13 |
| Apr | 197.19 | 304.94 | 638.17 | 227.17 |
| May | 259.04 | 298.08 | 632.17 | 239.82 |
| Jun | 158.08 | 271.79 | 610.38 | 172.25 |
| Jul | 205.34 | 285.38 | 588.92 | 223.01 |
| Aug | 259.51 | 276.52 | 541.27 | 222.24 |
| Sep | 210.40 | 274.39 | 558.45 | 135.41 |
| Oct | 197.56 | 288.67 | 553.47 | 182.85 |
| Nov | 119.00 | 257.17 | 448.74 | 143.18 |
| Dec | 192.29 | 256.86 | 405.89 | 212.38 |
| Source: PJM GATS | | | | |

Findings

The procurement of In-State Solar RECs by the FirstEnergy Ohio utilities was competitive and, when Ohio SRECs became reasonably available, the prices paid for those SRECs by the Companies were consistent with prices for SRECs seen elsewhere in the mid-Atlantic region.

IV. MISCELLANEOUS ISSUES

During the course of conducting the management/performance audit of the FirstEnergy Ohio utilities, several issues emerged that warrant brief discussion, though these issues are not directly related to the FirstEnergy Ohio utilities and affect all of the regulated utilities in Ohio with respect to compliance with Ohio's AEPS legislation. Specifically, there are three aspects of either the legislation or the method by which the legislation is implemented that may warrant some reconsideration by the appropriate bodies. These issues are addressed below.

A. Recovery of ACP Charges

Ohio's AEPS legislation does not permit the Ohio utilities to recover the costs associated with Alternative Compliance Payments. The ACP is currently set at \$45, which is comparable to the ACPs in other states. The fundamental purpose of an ACP is to set a limit on the exposure of retail customers for the costs of RPS (or AEPS) compliance. While the Ohio legislation is applicable to both regulated and competitive companies, the workings of the market are such that the legislation only affects the regulated utilities. Not allowing recovery of the ACP provides a significant deterrent to regulated firms from employing the ACP in lieu of the procurement of RECs, even at prices well in excess of the ACP. Consequently, the ACP does not accomplish what it is designed to accomplish for customers purchasing power from the regulated utilities.

One of the presumed goals of the legislation is to provide a strong inducement to the power suppliers to satisfy the renewable energy requirements using RECs rather than ACPs. One method to effectively ensure this result would be to require a regulated utility to seek Commission approval to use the ACP rather than RECs and to make a showing that RECs were not available at prices at or below the ACP. Such a modification would serve three related purposes. First, it would protect retail customers from high compliance costs. Second, it would discipline the market, that is, sellers of RECs would not be inclined to offer RECs at prices above the ACP. Third, it would limit (though not eliminate) the economic rents to sellers of RECs.²¹

B. Commission Approval of RECs Purchases

A second modification that merits consideration is a requirement that the Commission approve the purchase of RECs for the retail suppliers of SSO before the RECs contracts are signed. That requirement would eliminate some of the issues that have arisen in the context of this management/performance audit. While the review and authorization requirement would add time to the procurement process, that is, the time between when the bid is made and when a purchase commitment can be made, the review and authorization activities can be structured so

²¹ The ACP needs to be set at a level that would generate some reasonable level of economic rent as a mechanism to induce market entry. The current ACP of \$45 accomplishes that goal since the costs of renewable energy production are below the level of the ACP when added to the market prices of energy.

as not to add more than a day or two. This additional time should not adversely affect the price of the bids to any significant degree. This approach is successfully employed in other States, including Pennsylvania and Maryland.

C. Application of the Three-Percent Rule

The legislation does not clearly lay out how the “three-percent rule” is to be applied. The language in the legislation related to the three-percent rule is:

Calculations involving a three percent cost cap shall consist of comparing the total expected cost of generation to customers of an electric utility or electric services company, while satisfying an alternative energy portfolio standard requirement, to the total expected cost of generation to customers of the electric utility or electric services company without satisfying that alternative energy portfolio standard requirement.²²

The apparent intent of the rule is to facilitate the limitation of the degree to which retail customers are exposed to excessive costs related to the satisfaction of the renewable energy requirements. The rule, however, is based on “expected” impacts, and it is not unreasonable for the utilities to base the calculations related to the rule on the same algorithm used to compute the quantity of RECs required for compliance in any particular compliance year, that is, the average level of MWh sales in the prior three years. This approach, at least temporarily, has an upward bias since over time we would expect that the number of shopping customers (the number of customers taking competitive electric service) to increase. An algorithm based on expected sales volumes that accounts for customer migration and projections of market pricing for power is recommended in order to eliminate this bias.

²² Ohio Code; Chapter 4901:1-40 [Alternative Energy Portfolio Standard], Section 4901:1-40-07 Cost Cap. (C).