BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

DOUG LITTLE, Chairman
BOB STUMP
BOB BURNS
TOM FORESE
ANDY TOBIN

IN THE MATTER OF THE APPLICATION OF THE ARIZONA ELECTRIC POWER COOPERATIVE, INC. FOR A HEARING TO DETERMINE THE FAIR VALUE OF ITS PROPERTY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RETURN THEREON AND TO APPROVE RATES DESIGNED TO DEVELOP SUCH RETURN	Docket No. E-01773A-12-0305 **APPLICATION FOR APPROVAL OF INITIAL ENVIRONMENTAL COMPLIANCE STRATEGY AND REVISED ECAR TARIFF**

GALLAGHER & KENNEDY, P.A.
2575 E. CAMELBACK ROAD
PHOENIX, ARIZONA 85016-9225
(602) 530-8000

Pursuant to the Environmental Compliance Adjustment Rider ("ECAR") Plan of Administration ("POA") approved by the Commission in Decision No. 75350, Arizona Electric Power Cooperative, Inc. ("AEPCO" or the "Cooperative") hereby requests Commission approval of its initial Environmental Compliance Strategy (the "May 2016 ECS") and associated ECAR Tariff, attached hereto as Exhibit 1.

BACKGROUND

AEPCO is an Arizona non-profit electric generation and transmission cooperative, which supplies all or most of the power and energy requirements of its five Arizona Class A member distribution cooperatives: Duncan Valley Electric Cooperative, Inc.; Graham County Electric Cooperative, Inc.; Mohave Electric Cooperative, Inc.; Sulphur Springs Valley Electric Cooperative, Inc.; and Trico Electric Cooperative, Inc. AEPCO also provides power and energy to a sixth Class A member located in south-central California – Anza Electric Cooperative, Inc.

AEPCO filed an application for a rate decrease in 2012. In that case, the Commission's Utilities Division Staff ("Staff") expressed some concerns regarding potential costs associated with certain U.S. Environmental Protection Agency ("EPA) regulations. In response to those concerns and in order to pass along immediate rate relief to its members and their retail customers, AEPCO proposed a mechanism for the recovery of future environmental compliance obligations that would be available when those compliance costs became more certain. In Decision No. 74173, the Commission approved the rate decrease and authorized the Cooperative to work with Staff on a proposed cost recovery mechanism. After consultation with Staff, AEPCO sought and received Commission approval of the ECAR. As required by Decision No. 75350, AEPCO filed its initial ECAR Tariff in December 2015 with rates set at $0.00. Under the terms of the POA, AEPCO may change the rates from $0.00 by filing an initial Environmental Compliance Strategy ("ECS") plan and a revised ECAR Tariff for Commission approval.

AEPCO'S MAY 2016 ECS

The ECAR is designed to provide AEPCO with a funding mechanism that is both (1) narrowly tailored to specific environmental compliance costs and (2) available to the Cooperative if – after consultation with its members – it determines that additional funds are necessary to respond to a particular Environmental Regulation. The procedure established by the POA requires AEPCO to prepare an initial ECS that includes the following elements:

(1) Environmental Regulation addressed by the plan;
(2) Qualified Environmental Compliance Project implemented in order to comply with the Environmental Regulation;
(3) Qualified ECS Costs associated with the Qualified Environmental Compliance Project;
(4) Scope of work for the Qualified Environmental Compliance Project;
(5) Timeline for the Qualified Environmental Compliance Project; and
(6) Identification and estimation of Qualified ECS Costs.

After preparing the initial ECS, AEPCO is then required to obtain authorization from its Board and unanimous consent of its members before submitting the ECS and revised tariff to the Commission.

In keeping with these requirements and the intent of the ECAR, AEPCO's May 2016 ECS identifies two Environmental Regulations – (1) Regional Haze and (2) Mercury and Air Toxics Standards ("MATS") – and describes a Qualified Environmental Compliance Project for each, including scope of work and timeline. In developing these Qualified Environmental Compliance Projects, AEPCO identified the various costs to be incurred and evaluated the potential need for ECAR recovery of those costs based on the Cooperative's financial status, including its current rate levels and expenses that qualify for recovery through AEPCO's Commission-approved Purchased Power and Fuel Adjustment Charge. Based on that analysis, AEPCO has included two Qualified ECS Costs in the May 2016 ECS. Both are chemical costs classified under RUS Account 502 – Steam Expenses, which is an eligible account under the terms of the POA. Specifically, AEPCO seeks to recover the cost of urea as part of its Regional Haze Qualified Environmental Compliance Project and the cost of activated carbon as part of its MATS Qualified Environmental Compliance Project. The May 2016 ECS also provides forecasted costs for the chemicals and explains how AEPCO will bill its members monthly based on actual costs as they are incurred. Finally, AEPCO's May 2016 ECS incorporates by reference the administrative and compliance reporting requirements established by the POA.

AEPCO's Board has approved the May 2016 ECS. *See* Board Resolution, attached as Exhibit 2. Also, AEPCO has received unanimous consent of its Class A member distribution cooperatives.

CONCLUSION

Based on the foregoing, AEPCO requests that the Commission enter its Order approving the May 2016 ECS as well as the revised ECAR tariff included in Exhibit 1 hereto.

RESPECTFULLY SUBMITTED this 27th day of May, 2016.

GALLAGHER & KENNEDY, P.A.

By _____

Jennifer A. Cranston
2575 East Camelback Road
Phoenix, Arizona 85016-9225
Attorneys for Arizona Electric Power Cooperative, Inc.

Original and 13 copies filed this 27th day of May, 2016, with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Copies of the foregoing delivered this 27th day of May, 2016, to:

Bridget Humphrey
Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Terri Ford
Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Barbara Keene
Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Candrea Allen
Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Copies of the foregoing mailed
this 27th day of May, 2016, to:

Michael W. Patten
Snell & Wilmer
One Arizona Center
400 East Van Buren, Suite 1900
Phoenix, Arizona 85004-2202
Attorneys for Trico Electric Cooperative, Inc.

Vincent Nitido
Karen Cathers
Trico Electric Cooperative, Inc.
8600 West Tangerine Road
P.O. Box 930
Marana, Arizona 85653

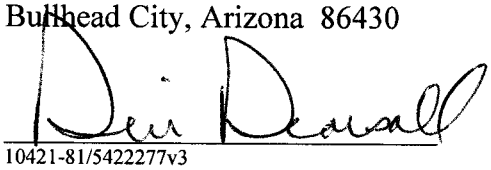
Jeffrey W. Crockett
Crockett Law Group PLLC
1702 East Highland Avenue, Suite 204
Phoenix, Arizona 85016
Attorneys for Sulphur Springs Valley
Electric Cooperative, Inc.

Kirby Chapman
Surphur Springs Valley Electric
Cooperative, Inc.
311 East Wilcox Drive
Sierra Vista, Arizona 85635

William P. Sullivan
Law Offices of William P. Sullivan, P.L.L.C.
501 East Thomas Road
Phoenix, Arizona 85012-3205
Attorneys for Mohave Electric Cooperative, Inc.

Tyler Carlson
Mohave Electric Cooperative, Inc.
P.O. Box 1045
Bullhead City, Arizona 86430

Peggy Gillman
Mohave Electric Cooperative, Inc.
P.O. Box 1045
Bullhead City, Arizona 86430



10421-81/5422277v3

EXHIBIT 1

ARIZONA ELECTRIC POWER COOPERATIVE, INC.

ENVIRONMENTAL COMPLIANCE STRATEGY

MAY 2016

ARIZONA ELECTRIC POWER COOPERATIVE, INC.
ENVIRONMENTAL COMPLIANCE STRATEGY

TABLE OF CONTENTS

APPENDICES

I. INTRODUCTION

The Arizona Corporation Commission ("ACC") approved an Environmental Compliance Adjustment Rider ("ECAR") mechanism for Arizona Electric Power Cooperative ("AEPCO") in Decision No. 75350, dated December 17, 2015. The ECAR Plan of Administration ("POA"), which is attached as Appendix A, requires that an Environmental Compliance Strategy ("ECS") be developed by AEPCO. The ECS contained herein is the formal plan, developed by AEPCO from various studies, external sources, and other relevant materials over the course of the past several years to meet the Environmental Regulations described herein.

II. SCOPE OF WORK

1. Background

This ECS addresses two Environmental Regulations prescribed by the Environmental Protection Agency ("EPA"): (1) Regional Haze and (2) Mercury and Air Toxics Standards ("MATS"). This ECS describes the Qualified Environmental Compliance Projects developed in response to both of the Environmental Regulations, and includes the project timelines and estimates for the Qualified ECS Costs.

AEPCO's Regional Haze Qualified Environmental Compliance Project is based on the Apache Station Study, which was performed by Burns & McDonnell in 2014. The Study's Executive Summary is attached as Appendix B. The purpose of the study was to analyze AEPCO's State Implementation Plan Alternative ("SIP Alternative") in light of the various options that were available to meet the requirements of the Clean Air Act's Regional Haze rules. The study was commissioned as a review of AEPCO's own internal efforts as well as to address ACC Staff's concerns regarding the continuing viability of the Apache Station generating units. The study confirmed AEPCO's SIP Alternative as the least cost alternative to meet the Regional Haze requirements.

2. Chemical Requirements & Estimated Qualified ECS Costs

The SIP Alternative calls for the conversion of Steam Unit 2 ("ST2") to natural gas-fired operation and the installation of selective non-catalytic reduction ("SNCR") technology on Steam Unit 3 ("ST3"). Once the SNCR is installed on ST3, it will continue to operate on coal, but AEPCO will need to use a chemical – urea – to further reduce the unit's emissions by removing NOx from the flue gas in order to comply with the Regional Haze requirements. In connection with its Regional Haze Qualified Environmental Compliance Project, AEPCO is seeking recovery of the costs associated with urea (which is a cost recorded in RUS Account 502 – Steam Expenses) as Qualified ECS Costs.

AEPCO's MATS Qualified Environmental Compliance Project requires the use of two chemicals: calcium bromide ("CaBr") and activated carbon ("ACI"). CaBr acts as an oxidizer for mercury emissions control. CaBr is sprayed on the coal prior to entering the boiler plant bunker. When the coal is burned, the CaBr breaks down and reacts with the mercury so that it can be captured by downstream pollution control equipment. ACI is a mercury abatement sorbent. ACI absorbs the mercury in the flue gas and prevents its emission into the environment. CaBr qualifies for inclusion in RUS Account 501 – Fuel and, therefore, is recovered through AEPCO's Purchased Power & Fuel Adjustment Clause ("PPFAC"). Meanwhile, ACI is recorded in RUS Account 502 – Steam Expenses and, therefore, qualifies as a Qualified ECS Cost under the ECAR POA.

AEPCO developed the estimates shown in Tables 1 and 2, below, as part of its planning efforts related to the Regional Haze Qualified Environmental Compliance Project and the MATS Qualified Environmental Compliance Project. Table 1, Option 2, provides the basis for the development of the expected ACI costs associated with mercury control. Table 2 contains a summary of AEPCO's engineering estimates of the amounts of urea required to meet the SIP Alternative requirements. The forecasted dollar amounts for each Qualified ECS Cost are illustrated in Table 3.[1] At this time, AEPCO is not seeking to recover any capital costs associated with either the Regional Haze or MATS projects through the ECAR and, therefore, the estimated Qualified ECS Costs are limited to the above-described chemical costs.

[1] These estimates are subject to change depending upon the actual coal blend necessary to meet the subject Environmental Regulations.

Table 1

ESTIMATED ECAR CHEMICAL COSTS - ACTIVATED CARBON (ACI)

ST3 Carbon Usage [1]			ST3 Carbon Usage [2]		
Load	195,000	kW	Load	195,000	kW
Heat Rate	10,300	Btu/kWh	Heat Rate	10,300	Btu/kWh
ELS Coal	9,200	Btu/lb	ELS/PRB Coal	9,080	Btu/lb
Fuel Flow	109	ton/hr	Fuel Flow	111	ton/hr
Fuel Flow	1.82	ton/min	Fuel Flow	1.84	ton/min
Capacity Factor	0.80		Capacity Factor	0.80	
ACI rate	4.0	lb/min	ACI rate	2.5	lb/min
Carbon*	1.87	$/lb	Carbon*	1.87	$/lb
Carbon usage	1,683,072	lb/year	Carbon usage	1,051,920	lb/year
Carbon costs	$3,147,345	$/year	Carbon costs	$1,967,090	$/year
Results in:	2.2	lbs ACI /ton	Results in:	1.4	lbs ACI /ton

[1] Assumes 100% El Segundo Coal (ELS) as source of fuel mixture
[2] Assumes a blend of 70% El Segundo Coal (ELS) and
30% Powder River Basin Coal (PRB) as source of fuel mixture
* Activated Carbon price includes estimated transportation costs of $0.27 per pound

Table 2

ST3 Urea Usage [1]		
Load	195,000	kW
Heat Rate	10,300	Btu/kWh
Coal Blend	9,080	Btu/lb
Fuel Flow	111	ton/hr
Fuel Flow	1.84	ton/min
Capacity Factor	0.80	
Urea Injection rate	2	gal/min
Urea	2.25	$/gal
Urea usage	818,160	gal/year
Urea costs	$1,840,860	$/year
Results in:	1.1	gal Urea /ton coal

[1] Assumes wet handling of Urea and implied feed rate of 2,800 gallons per day.
* Urea usage rates based upon Fuel-Tech, Inc. estimates, and are heavily influenced by Capacity Factor.

Table 3

ESTIMATED CHEMICAL EXPENSE BY YEAR					
ACI			UREA		
YEAR	ST3	ST2	YEAR	ST3	ST2
2016	$813.49	$815.78	2016	$0.00	$0.00
2017	$1,172.57	$1,178.16	2017	$0.00	$0.00
2018	$1,326.89	$0.00	2018	$1,195.22	$0.00
2019	$1,500.56	$0.00	2019	$1,351.66	$0.00
2020	$1,499.92	$0.00	2020	$1,351.06	$0.00
2021	$1,819.06	$0.00	2021	$1,638.54	$0.00
2022	$1,989.97	$0.00	2022	$1,792.48	$0.00
2023	$1,847.41	$0.00	2023	$1,664.04	$0.00
2024	$2,246.00	$0.00	2024	$2,023.10	$0.00
2025	$2,376.14	$0.00	2025	$2,140.31	$0.00
2026	$2,303.74	$0.00	2026	$2,075.07	$0.00
2027	$2,597.19	$0.00	2027	$2,339.42	$0.00
2028	$2,707.69	$0.00	2028	$2,438.96	$0.00
2029	$2,454.44	$0.00	2029	$2,210.81	$0.00
2030	$2,864.27	$0.00	2030	$2,580.01	$0.00
2031	$2,956.91	$0.00	2031	$2,663.46	$0.00
2032	$2,762.21	$0.00	2032	$2,488.05	$0.00
2033	$3,090.62	$0.00	2033	$2,783.91	$0.00
2034	$3,162.91	$0.00	2034	$2,849.02	$0.00

3. Timeline

The ACI injection process began in April 2016 on both ST2 and ST3 in order to meet the MATS requirements. Pursuant to the SIP Alternative, the conversion of ST2 to natural gas, the addition of SNCR and upgraded scrubbers to ST3, and the installation of low NOx burners on both units are currently on schedule and are projected to become operational in December of 2017. Once the conversion of ST2 is complete, it will no longer require ACI. The installation of the SNCR on ST3 will coincide with the requirement to utilize urea. As a result, and as shown in Table 3, AEPCO will incur the following forecasted Qualified ECS Costs: (1) ACI for ST2 in 2016 and 2017 and for ST3 beginning in 2016 and for all years in the forecast period and (2) Urea for ST3 beginning in 2018 and for all years in the forecast period.

III. ECAR TARIFF

The original ECAR tariff was approved in ACC Decision No. 75350 and its current rates are set at $0.00. The tariff is designed to collect amounts associated with environmental compliance without the need for a general rate case. As described in the Scope of Work section, AEPCO is not requesting recovery of capital costs associated with either the Regional Haze or MATS Qualified Environmental Compliance Projects at this time.

The proposed tariff, attached as Appendix C, is designed to recover the Qualified ECS Costs identified in this ECS, specifically ACI and urea. Amounts recovered will be based on the actual dollars spent by AEPCO in the month the costs were incurred and will be billed with a one-month lag. The costs will be apportioned among the Members based on each Member's consumption of energy from Base Resources for that billing month.[2] Funds collected through the ECAR tariff will be tracked and administered pursuant to the provisions of the POA.

[2] Total base energy is used as a proxy for coal-fired energy. Although hydro energy is a part of base energy, the hydro energy is dispatched first. Removal of the hydro energy in order to calculate coal-fired energy is not necessary because the resulting proportionate shares would be equal in either case.

APPENDIX A

Arizona Electric Power Cooperative, Inc.

Environmental Compliance Adjustment Rider

Plan of Administration

ECAR – Plan of Administration

General Description:

The purpose of the Environmental Compliance Adjustment Rider ("ECAR") Surcharge is to establish a fund to be used for the purpose of meeting, in whole or in part, the cost of environmental compliance obligations imposed on or applicable to the Arizona Electric Power Cooperative, Inc. ("AEPCO") that are mandated by federal, state or local laws or regulations or judicial or regulatory agency interpretations of such laws or regulations ("Environmental Regulations"). The ECAR provides for the recovery of capital addition costs, operations' costs and any other costs specified in the Environmental Compliance Strategy, as approved by the Commission. The ECAR is not intended to recover any costs already recovered in base rates approved in Decision No. 74173 or any subsequent rate case decision or recovered through any other Commission-approved adjustor mechanism.

Key Definitions:

1. ECAR Surcharge – A rate rider approved by the Arizona Corporation Commission ("ACC" or "Commission") in Decision No. 75350 which authorizes AEPCO to: recover or mitigate Environmental Regulations operations' costs; or fund, in whole or in part, capital additions required by Environmental Regulations.

2. Environmental Compliance Strategy ("ECS") – A formal plan developed by AEPCO to meet Environmental Regulations. The ECS shall include, at a minimum, a scope of work, anticipated timelines and cost estimates.

3. Qualified Environmental Compliance Projects – Projects, as specified in the ECS plan, implemented in order to comply with standards mandated by Environmental Regulations. These standards include, but are not limited to, restrictions of carbon dioxide (CO_2), nitrogen oxide (NO_x), sulfur oxide (SO_x), ozone, particulate matter (PM), volatile organic compounds (VOC), mercury (Hg), and other toxins, coal ash and other requirements.

4. Qualified ECS Costs – The costs associated with Qualified Environmental Compliance Projects as identified in the ECS plan and approved by the Commission as appropriate for recovery through the ECAR Surcharge pursuant to ACC review of the ECS plan. The Qualified ECS Costs must be classified in one or more of the Rural Utilities Service ("RUS") accounts, or any other successor RUS account, listed below under Qualified RUS Accounts. Any costs already recovered in base rates approved in Decision No. 74173 or any subsequent rate case decision or recovered through any

other Commission-approved adjustor mechanism are not Qualified ECS Costs and are not recoverable through the ECAR. Environmental fines or penalties do not qualify for cost recovery through the ECAR Surcharge nor do costs that have been included as part of AEPCO's authorized cost of service for recovery through established rate tariffs.

Calculation of ECAR:

Based on costs detailed in the ECS, AEPCO will calculate the capital costs (including carrying costs and/or contributions in aid of construction) and operations' costs (including chemical costs) to be collected from each Class A Member Distribution Cooperative through the ECAR. AEPCO will allocate the capital costs to each Class A Member Distribution Cooperative as a monthly fixed charge based on the Allocated Capacity Percentage ("ACP") of each Member. The fixed charge to be collected from each individual Collective All-Requirements Member ("CARM") will be based upon each CARM's monthly Demand Ratio Share. The Demand Ratio Share is calculated each month as the percentage of each CARMs' 12-month rolling average demand to the total of the CARMs' 12-month rolling average demand. The operating costs associated with environmental compliance will be assessed to each Member on a per kWh basis. AEPCO will also determine the term of collection for any contributions in aid of construction.

Qualified RUS Accounts:

The costs classified in the following RUS accounts are eligible to be recovered through the ECAR. This list may be expanded to include other accounts approved by the Commission in the future.

Steam Production Plant

- 310 Land and Land Rights
- 311 Structures and Improvements
- 312 Boiler Plant Equipment
- 313 Engines and Engine Driven Generators
- 314 Turbogenerator Units
- 315 Accessory Electric Equipment
- 316 Miscellaneous Power Plant Equipment

Other Production Plant

- 340 Land and Land Rights
- 341 Structures and Improvements
- 342 Fuel Holders, Producers, and Accessories

- 343 Prime Movers
- 344 Generators
- 345 Accessory Electric Equipment
- 346 Miscellaneous Power Plant Equipment

Steam Power Generation Operations

- 502 Steam Expenses (limited to chemical expenses incurred solely due to Environmental Regulation(s) but not including any indirect expenses such as overhead)

Accounting:

Funds collected from the ECAR Surcharge will be separately identified by AEPCO and recorded as a regulatory liability. Accounting for these funds shall be done on a contributing Member Distribution Cooperative basis. Use of these funds to meet Qualified ECS Costs will reduce that regulatory liability on a dollar-for-dollar basis. Funds used for qualified environmental capital additions (as opposed to capital carrying costs) will be recorded as contributions in aid of construction.

Investment Administration:

AEPCO will deposit all funds collected through the ECAR Surcharge in a separate interest bearing investment account ("ECAR Surcharge Account") and may only draw monies from the account to fund Qualified ECS Costs. Interest earned on the investment of these funds shall be retained in the account. Upon completion or termination of the ECS plan, all remaining funds in the ECAR Surcharge Account, including interest earned, will be refunded to Members within ninety (90) days, returning the rates to zero, using the same method established for the collection of the ECAR (see Calculation of ECAR above).

Compliance Reports:

On September 1 for the previous January through June period and March 1 for the prior year July to December period of each year, AEPCO will file semi-annual reports concerning the ECAR Surcharge with the Commission, with a copy to its Members, containing the following information for the reporting period:

1. The beginning balance of the ECAR Surcharge Account.
2. The amount collected from each Class A Member through the ECAR Surcharge, including the total amount collected.
3. The total amount of interest earned by the ECAR Surcharge Account.
4. The total withdrawals for Qualified ECS Costs.
5. The ending balance of the ECAR Surcharge Account.

AEPCO will also file the following supporting information with the semi-annual report:

1. A listing of the dates and amounts of withdrawals.
2. A description of each Qualified ECS Cost paid during the period and the accounting for each cost.

Each report will be certified by AEPCO's Chief Executive Officer or Chief Financial Officer that all information provided in the filing is true and accurate to the best of his or her information and belief. However, no report shall be required for reporting periods during which there is no account activity and both the beginning and ending balances of the ECAR Surcharge Account are zero ($0.00).

ECS and ECAR Surcharge Modifications:

Pursuant to Decision No. 75350, the initial ECAR rates shall be set at $0.00. Thereafter, in response to an Environmental Regulation, AEPCO shall file its initial ECS plan and a revised ECAR tariff with Docket Control for Commission approval.

The level of funding and ECAR rates may be adjusted (up or down) depending on the actual environmental compliance funding needs of the Company as outlined in the ECS plan. Any changes to the ECS and ECAR tariff after the initial ECS plan is approved will be subject to a sixty (60) day ACC Staff review period. The revised tariff shall become effective at the end of the sixty (60) day period unless the Commission elects to suspend the revised tariff, in which case it shall become effective upon Commission approval.

Upon completion or termination of the ECS plan, all remaining funds in the ECAR Surcharge Account not needed to meet the Company's objective(s) for the ECS plan, including interest earned, will be refunded to Members within ninety (90) days, returning the rates to zero, using the same method established for the collection of the ECAR. AEPCO will file a revised tariff returning the rates to zero. The rates shall remain at zero until AEPCO deems it necessary to utilize the ECAR tariff again in response to an Environmental Regulation, in which case it will prepare and file an initial ECS plan and initial revised tariff for Commission approval.

AEPCO Board Approval and Member Consent:

Prior to filing an initial ECS plan and revised ECAR tariff or seeking a subsequent modification to either the ECS or ECAR, AEPCO will obtain authorization from its Board. AEPCO shall also notify its Member Distribution Cooperatives sixty (60) days in advance of a proposed filing with the Commission in order to confirm the unanimous consent of its Members. Absent receipt of timely written objections, Member consent shall be deemed obtained and AEPCO may proceed with the filing.

APPENDIX B

1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

Arizona Electric Power Cooperative, Inc. (AEPCO) is a generation and transmission (G&T) cooperative serving five distribution cooperatives in Arizona and one in Southern California. Three of the distribution cooperatives are all requirements members (ARM or ARMs) and three are partial requirements members (PRM or PRMs). Aside from the power required to be purchased to meet retail net metering regulatory requirements, the ARMs contract with AEPCO to provide the resources necessary to serve their load. The PRMs satisfy their load through their respective Allocated Capacity (AC) in AEPCO Resources and must obtain supplemental resources on their own behalf to meet any of their additional requirements. AEPCO expressly is not obligated to plan for or meet any PRM supplemental resources, but AEPCO and each PRM may agree to joint planning. These arrangements between AEPCO and each of its members are set out in wholesale power contracts, which have been approved by the Arizona Corporation Commission (ACC) and are in effect through 2035.

Currently, AEPCO's power supply comes primarily from the Apache Generating Station (Apache Station) in Cochise County, Arizona. The Apache Station consists of three steam units and four gas turbines with a combined nominal generating capacity of 555 MW (net). AEPCO also has a Federal hydro allocation and, from time to time, enters into purchase power contracts to supplement its generation. For purposes of this report, hydro allocations and purchases account for 32.6 MW (net) of additional AEPCO capacity.

In mid-2012, AEPCO was advised by the Environmental Protection Agency (EPA) that, under the Clean Air Act's regional haze rules, AEPCO would need to install Selective Catalytic Reduction (SCR) technology on ST2 and ST3 by the end of 2017 if AEPCO intended to continue to operate them as coal-fired units. Due to the high capital costs of this SCR approach (estimated to exceed $200 M in 2012$), AEPCO initiated processes to address this "Federal Implementation Plan" (FIP) as prescribed by the EPA, one of which was an internal study of potential outcomes for these units considering various alternative solutions to regional haze and potential future environmental regulation of coal-fired resources. In late 2012, representatives of AEPCO's member cooperatives joined in the study effort.

As a result of these efforts, AEPCO – working with EPA staff through the Arizona Department of Environmental Quality (ADEQ) – in early 2013 proposed an "AEPCO SIP Alternative." It has been now published and publicly aired by ADEQ as a SIP revision. EPA has also agreed to process it through a

revised SIP procedure. This AEPCO SIP Alternative consists of retaining one coal-fired unit (ST3), modified to enable its operation with Selective Non-catalytic Reduction (SNCR) technology, as well as modifying the gas firing infrastructure of the other coal-capable unit (ST2) to be fired on natural gas which delivers an improved emissions profile. In addition, the AEPCO SIP Alternative includes capital projects to improve the emissions profile of ST1, a 72 MW natural gas-fired unit at Apache. The capital costs of this plan are estimated at less than $32 M, as opposed to the more than $200 M cost of meeting the initial EPA FIP.

The EPA's release of its FIP came shortly after AEPCO had filed a rate case (Docket No. E-01773A-12-0305) at the ACC. To address ACC Staff's concerns with respect to the continuing viability of Apache in the face of, without limitation, the EPA FIP, other expected future environmental regulations and conditions affecting the operation of ST1, ST2 and ST3, AEPCO agreed to continue its alternatives analysis so as to produce this Apache Station Study (Study). AEPCO would also confirm its assumptions with respect to the costs of replacement assets or PPA alternatives through a Request for Information (RFI), which is a process similar to a Request For Proposal (RFP). This report documents the results to date of both the technical studies and the RFI process that AEPCO used to confirm the validity of the market prices used in the Strategist models of the Study.

The Study analyzes the operational and investment costs and other relevant factors associated with the ongoing operation of coal and gas-fired facilities at Apache Station compared against other power supply alternatives. Alternatives considered include:

- capacity and energy purchases;
- purchase of existing supply resources;
- different operating configurations of the two steam turbine units;
- construction of new natural gas-fired resources; and
- replacement purchased power agreements (PPA) with associated transmission upgrades.

The Study captures the effects of, *inter alia*, existing debt obligations, new capital investment, changes to operations and maintenance (O&M) practices, and capital and associated O&M costs that may be required at Apache. The Study also considers the potential availability of a "distressed asset" based on the recent trend of certain efficient combined cycle generating units being purchased by electric utilities in Arizona at prices of 50 percent or less of new build costs.

The Study examines alternative resource configurations for compliance with EPA Regional Haze rules under two potential load scenarios[1] and under two different power market, natural gas and coal forecasts (Wood Mackenzie and ACES). The Study also takes into account potential costs of resolving current constraints on the capacity of the Southwest Transmission Cooperative, Inc. (SWTC) transmission system to accommodate both the spot market purchases required in the event of the outage of the remaining coal-fired unit as well as delivery to member loads of the output of any newly acquired replacement resources. Finally, the Study examines what would be an economically viable resource plan under a hypothetical load scenario (Scenario 3) that assumes the PRMs join with AEPCO in acquiring additional resources to supplement existing Apache resources to serve expected PRM future load growth.

The results, as summarized in Section 1.2, indicate that the AEPCO SIP Alternative together with the consent of AEPCO's members to continue operation of the other gas-fired resources at Apache beyond 2020 through 2035, is the most economically viable resource plan. The results show the primary driver of energy rates will be future market and natural gas prices. They also show that under the AEPCO SIP Alternative, AEPCO's fixed capacity and O&M costs are not expected to rise to any noticeable degree over the long term. Further, the Study shows that the AEPCO SIP Alternative represents a solid foundation from which to plan for the hypothetical PRM load growth of Scenario 3.

Also, the results of the RFI associated with the Study suggest there are distressed assets currently available, although not necessarily in the sizes assumed in Strategist, that AEPCO and its PRMs could purchase economically as a replacement for the base load portion of ST2's historic operation (which is approximately 100 MW). However, larger portions could also be used to satisfy future load growth. In either case, ST2 operated on natural gas would be a summer season peaking resource. If such a distressed asset resource could be found in proximity to member loads, AEPCO could avoid additional transmission for serving load growth and limit the need for incremental transmission capacity to ensure backup of ST3. AEPCO and its members are continuing to explore among themselves and with RFI bidders the possibilities of acquiring a correctly sized portion of such resources and related transmission capacity to realize such an opportunity. Thus, the planning efforts of AEPCO and its members on these issues are ongoing.

[1] Load Scenario 1 reflects AEPCO's current wholesale contract obligations to the ARMs and PRMs. Load Scenario 2 reflects amending the wholesale contract obligations to retain the operability of existing gas-fired units at Apache Station beyond their current end of 2020 commitment.

Finally, it is noted that on June 2, 2014, the EPA released its draft of a proposed regulation of greenhouse gas emissions from existing generating units (Clean Power Plan). The draft proposal, which includes state-specific goals for reductions in CO_2 emission rates, appears to have a potentially serious impact on coal-fired resources in Arizona, but it is a long way from being a final rule. Because the impact to existing resources will not be known until a formal rule is adopted and states then develop their individual plans, AEPCO and its members cannot determine at this time what ultimate impact the final rule and its implementation will have on Apache Station's operations under the AEPCO SIP Alternative. However, we are confident that the flexibility afforded the states under the Clean Power Plan, changes likely to arise out of the public notice and comment period, and the diversity of Apache Station's dual-fuel capability and favorable location on a major interstate natural gas pipeline indicate Apache Station will remain a viable power source for the foreseeable future.

1.2 SUMMARY OF ANALYSIS AND CONCLUSIONS

In order to analyze the previously discussed compliance and other long range planning factors, several resource planning models were developed to study the period 2015 through 2035.[2] Development of the resource planning models requires use of a variety of data regarding future costs of resource options, capacity, energy and fuels, financial parameters, and load growth.

BMcD used Strategist, a production cost modeling and investment optimization software program, to perform the Study analysis. The Strategist model is a resource portfolio optimization tool that provides an analysis of multiple resources with a variety of performance and cost characteristics. The model analyzes the resources available for selection under all possible resource portfolio combinations. The resource portfolio made available for selection in Strategist included new construction generation options, short and long term PPAs, purchase of portions from 75 MW to 150 MW or more of a distressed asset, economy market purchases, as well as conversion of ST2 and ST3 to natural gas, installation of SCRs on both ST2 and ST3, and the AEPCO SIP Alternative. The net present values of the portfolios are calculated for all feasible combinations and timings of resource portfolios, based on unit specific performance and operating/capital costs parameters. The portfolios are then sorted and ranked by net present value from lowest to highest cost.

[2] The study period of 2015 through 2035 represents the remaining term of the wholesale power contracts between AEPCO and its members.

The Study uses forecasts from Wood Mackenzie and ACES Power Marketing (ACES) for market energy prices, natural gas and coal fuel costs. The market and natural gas prices are significantly different in the longer term. Wood Mackenzie fuel and market energy prices are referenced as the 'A' forecast; ACES fuel and market energy prices are the higher of the two and are referenced as the 'B' forecast. The forecast case and associated source is summarized in Table 1.1 Each alternative resource and load scenario and sensitivity case is evaluated using both forecasts to reflect resource portfolio costs under this wide range of fuel and market price assumptions.

Table 1.1: Forecast Definition

Forecast Reference	Forecasting Company
A	Wood Mackenzie
B	ACES Power Marketing

The overall Study methodology and analysis focused on relevant factors affecting the long-term viability of Apache Station resources. Conceptually, the analysis was developed around two key Study questions:

1. What is the most cost effective means to provide the resource capacity currently provided by the natural gas-fired combined cycle and gas turbines at Apache Station beyond 2020 through 2035?
2. What is the most cost effective means to provide the energy currently provided by the coal-fired ST2 and ST3 at Apache Station over the study period?

Multiple scenarios were developed to analyze these resource questions. The parameters defining each scenario are as follows:

- **Scenario 1**
  - Assumes current member contractual commitments for the use of CC1, GT2, and GT3 expire at the end of 2020 – the current contract end date.
  - Assumes PRM load associated with the allocated capacity in the gas units is covered by the PRM members rather than AEPCO once the associated contractual commitments expire.
- **Scenario 2**
  - Rather than expiring at the end of 2020, the contractual commitments associated with CC1, GT2, and GT3 are extended through 2035.

- The PRM load associated with the allocated capacity in the gas units is served by AEPCO through the new contract end date of the end of 2035.

- **Scenario 3**
  - Assumes AEPCO serves all current and expected load requirements of the PRMs through 2035.
  - Gas units CC1, GT2, and GT3 continue to be available through 2035.

These scenarios are summarized in Table 1.2.

Table 1.2: Scenarios Outline

Scenario	ARM Load	PRM Load	Gas Unit Extension
1	Total	Allocated Capacity	No
2	Total	Allocated Capacity	Yes
3	Total	Total	Yes

The first Study question addresses ongoing use of the peaking units at Apache Station and the cost effectiveness of extending operability of those units beyond their currently scheduled contract end date. In relation to this question, resource plans with and without the gas units extended were developed and compared. In order to compare the resource plans on the same load basis, AEPCO member load requirements presented in Scenario 2 were used in both analyses. Scenario 1 resources (1R) were combined with Scenario 2 load requirements (2L) to present the scenario in which availability of these gas units ends at the end of 2020. This analysis compares the cost of replacing the gas units' capacity with the cost of extending the availability of these gas units through 2035.

The results of this comparison are shown on Table 1.3.

Table 1.3: Scenario 1R/2L NPV Summary, 2015$

	A		B	
	% Diff	NPV ($M)	% Diff	NPV ($M)
Scenario 1R/2L: Gas Contracts Terminated	4.57%	$ 2,366	3.28%	$ 2,375
Scenario 2: Gas Contracts Extended	0.00%	$ 2,263	0.00%	$ 2,300

The results support extension of the peaking resources to 2035 as the lower cost option for AEPCO members. As shown, allowing the contractual commitment to expire and replacing the capacity and energy of those resources would result in a more than 3 percent higher cost to AEPCO members, and that is before including any transmission costs that may be associated with the replacement of the units' capacity at locations other than Apache Station.

With the gas units' extension supported, the second Study question of determining the preferred compliance option for ST2 and ST3 at Apache Station was explored under Scenario 2. A 'Base' scenario was compared against both the 'A' and 'B' market and fuel price forecasts and tested for sensitivities to (1) the existence of a hypothetical carbon tax (Carbon Tax), (2) removing the ability to sell resources into the market (No Market Sales) and (3) removing from Strategist the distressed asset model as an available resource in 2018 (No Distressed Asset). These sensitivities were designed to test how each compliance alternative might perform under different market and regulatory hypotheticals. Table 1.4 shows the low cost compliance plan identified by Strategist under the Base and the other identified sensitivity assumptions for both the 'A' and 'B' market and fuel price forecasts.

Table 1.4: Scenario 2 NPV Summary, 2015$

	Scenario 2A		Scenario 2B	
Sensitivity	Low Cost Plan	NPV ($M)	Low Cost Plan	NPV ($M)
Base	AEPCO SIP Alternative	$ 2,263	ST2 Inoperable, 100 MW DA 2018	$ 2,300
Carbon Tax	AEPCO SIP Alternative	$ 2,622	ST2 Inoperable, 100 MW DA 2018	$ 2,669
No Market Sales	AEPCO SIP Alternative	$ 2,263	ST2 Inoperable, 100 MW DA 2018	$ 2,306
No Distressed Asset	AEPCO SIP Alternative	$ 2,263	AEPCO SIP Alternative	$ 2,345

Under the lower market prices of the 'A' forecast, the AEPCO SIP Alternative option is identified as the low cost compliance approach under all Scenario 2 sensitivities. Under the higher market prices of the 'B' forecast, more efficient resources are necessary to avoid the cost of market purchases; a portfolio where ST2 is rendered inoperable, rather than retrofitted to operate on natural gas, was identified as the low cost compliance approach under the Scenario 2B Base, Carbon Tax and No Market Sales sensitivities. However, the AEPCO SIP Alternative was the next lowest compliance alternative under these three sensitivity cases. Under the No Distressed Asset sensitivity (which assumes no distressed asset is available for purchase in the 2018 timeframe, with sufficient transmission capacity for delivery of the

energy to member loads, and at the pricing assumed), the AEPCO SIP Alternative is the low cost compliance approach.

Based on the analysis for the various approaches in order to achieve environmental compliance at Apache Station, it was determined that use of SNCR on ST3 and conversion of ST2 to operation on natural gas, i.e., the AEPCO SIP Alternative, was the lower cost and most flexible of the approaches identified. This approach balances Apache Station fuel diversity; minimizes additional system investment such as replacement capacity or additional transmission; and results in the lowest risk of stranded cost associated with the units.

Another attribute of the AEPCO SIP Alternative considered is the reduction in carbon emissions at ST2 when compared with keeping it on coal, i.e., SCR Retrofit.[3] As shown in Table 1.5, ST2's CO_2 emissions are approximately 237 lbs/MMBtu on coal versus approximately 120 lbs/MMBtu on natural gas. This roughly 49 percent reduction on a lbs/MMBtu basis for ST2 results from its conversion to natural gas.

Table 1.5: Carbon Emissions Comparison

	CO_2 Emissions lbs/MMBtu
Apache ST2 SCR Retrofit	237
Apache ST2 NG Fuel Switch	120

Another consideration in Apache Station's future compliance decisions is the potential load requirements of the PRMs above the Scenario 1 or Scenario 2 forecasts. Scenario 3 assumes AEPCO's future load requirements to be the total requirements of both the ARMs and PRMs. Under Scenario 3, the Study evaluates AEPCO's ability to serve a higher load obligation under the AEPCO SIP Alternative versus a variety of resource portfolio alternatives, including distressed asset availability in 2015. Because of existing transmission constraints, this analysis incorporated summer season must run parameters that apply to ST2 on natural gas in order to cover the potential unscheduled outage of ST3. Table 1.6 shows the NPV of the low cost resource portfolio identified by Strategist under various distressed asset options.

[3] The carbon reductions achieved in practice will depend upon unit dispatch and related considerations.

Table 1.6: Scenario 3 NPV Summary, 2015$

	Scenario 3A		Scenario 3B	
Sensitivity	Low Cost Plan	NPV ($M)	Low Cost Plan	NPV ($M)
No Distressed Asset	AEPCO SIP Alternative	$ 2,757	AEPCO SIP Alternative	$ 2,876
100 MW Distressed Asset[1]	AEPCO SIP Alternative	$ 2,725	AEPCO SIP Alternative	$ 2,778
150 MW Distressed Asset[1]	ST2 Inoperable	$ 2,710	AEPCO SIP Alternative	$ 2,728

[1] *Distressed asset acquired in 2015 if selected*

Under both the 'A' and 'B' market and fuel price forecast cases in Scenario 3, the AEPCO SIP Alternative for compliance at Apache Station results in the low cost resource portfolio for AEPCO members in all but one sensitivity analysis. The results of Scenario 3 support the flexibility and preference of the AEPCO SIP Alternative at Apache Station as the foundation for the most economic solution for AEPCO members. Given the additional AEPCO load obligation under Scenario 3, the analysis suggests augmenting its existing resources with procurement of an appropriately priced distressed asset, if possible and agreeable to the PRMs.

1.3 CONCLUSIONS

Based on the analysis performed, the following general conclusions are provided.

1. In response to the first Study question, maintaining the existing portfolio of resources, including continuing the availability of certain Apache gas units beyond 2020, provides the lower cost approach to peaking capacity for AEPCO's member cooperatives.
2. In response to the second Study question, the AEPCO SIP Alternative is the lowest cost and most flexible alternative over the study period and under market/fuel price options considered under the Strategist modeling for Scenario 2, in which AEPCO's load obligation for PRM member cooperatives is satisfied through 2035 at existing Allocated Capacities (AC).
3. As determined by Strategist modeling for Scenario 3, in which AEPCO's load obligation includes existing AC plus the future load growth of its PRM member cooperatives, the AEPCO SIP Alternative in combination with the procurement of distressed asset capacity, if possible and agreed to by the PRMs, is the lowest cost and most flexible alternative over the study period under the market and fuel price options considered.

* * * * *

APPENDIX C

ARIZONA ELECTRIC POWER COOPERATIVE, INC.

ENVIRONMENTAL COMPLIANCE ADJUSTMENT RIDER (ECAR)

TARIFF

Effective Date: [TBD], 2016

PURPOSE

The purpose of the Environmental Compliance Adjustment Rider ("ECAR") is to provide a revenue recovery mechanism that will create a fund to be used for the purpose of meeting environmental compliance obligations mandated by federal, state, or local laws or regulations. The ECAR is the tariff collection mechanism for the overall Environmental Compliance Strategy ("ECS") developed by Arizona Electric Power Cooperative, Inc. ("AEPCO" or "Company") and its Members.

APPLICABILITY

Applicable to all Class A Member Distribution Cooperatives of AEPCO.

TERMS AND CONDITIONS

1. The initial rates of the tariff shall be set at zero. AEPCO will calculate the capital costs (including carrying costs and/or contributions in aid of construction) and operations' costs (including chemical costs) to be collected from each Class A Member Distribution Cooperative through the ECAR as follows:

    a. Capital Costs – AEPCO will allocate the capital costs to each Class A Member Distribution Cooperative as a monthly fixed charge based on the Allocated Capacity Percentage ("ACP") of each Member. The monthly dollar amount to be collected from each individual Collective All-Requirements Member ("CARM") will be based upon each CARM's monthly Demand Ratio Share. The Demand Ratio Share is calculated each month as the percentage of each CARMs' 12-month rolling average demand to the total of the CARMs' 12-month rolling average demand. For contributions in aid of construction, AEPCO will also determine the term of collection for the costs.

    b. Operations' Costs – The operating costs associated with environmental compliance will be assessed to each Member on a per kWh basis.

2. Once the monthly fixed and variable charges and the term of collection, if any, have been established, AEPCO will file the ECS plan and a revised tariff with the Arizona Corporation Commission ("ACC" or "Commission"), for Commission approval.* Once the revised tariff is effective, each Member will be assessed a monthly charge on its bill for environmental compliance capital costs and a variable charge for environmental compliance operating costs in addition to other rates and charges approved by the Commission. Exhibit A sets forth the monthly Member charges and anticipated term of collection, if any.

3. The level of funding and ECAR rates may be adjusted (up or down) depending on the actual environmental compliance funding needs of the Company as outlined in the ECS plan. Any changes to the ECS and ECAR tariff after the initial ECS plan is approved will be subject to a sixty (60) day ACC Staff review period.* The revised tariff shall become effective at the end of the sixty (60) day period unless the Commission elects to suspend the revised tariff, in which case it shall become effective upon Commission approval.

Details of the operation of the ECAR and ACC compliance requirements are as set forth in the Company's Plan of Administration.

*In order for the ECAR to be revised, AEPCO must obtain Board approval and the unanimous consent of its Class A Member Distribution Cooperatives, prior to being submitted to the Commission.

EXHIBIT A

The Monthly Charges shall be as follows for each of the Company's Class A Member Distribution Cooperatives:

	[TBD], 2016*
Environmental Compliance Capital Costs	
Collective All-Requirements Members:	
Anza Electric Cooperative, Inc.	$0.00/mo.
Duncan Valley Electric Cooperative, Inc.	$0.00/mo.
Graham County Electric Cooperative, Inc.	$0.00/mo.
Partial Requirements Members:	
Mohave Electric Cooperative, Inc.	$0.00/mo.
Sulphur Springs Valley Electric Cooperative, Inc.	$0.00/mo.
Trico Electric Cooperative, Inc.	$0.00/mo.
Environmental Compliance Operations' Costs**	
All Members:	Actual Monthly Chemical Cost / Base kWh***

* The stated Monthly Rates apply to service provided on and after this date and will continue to apply until the termination or completion of the ECS or as revised by future Commission order.
** Pursuant to the ECS, Environmental Compliance Operations' Costs are limited to the cost of activated carbon and urea.
*** The actual monthly chemical costs are apportioned among the Members based on each Member's consumption of energy from Base Resources (as that term is defined in AEPCO's approved all-requirements Tariff and partial-requirements Schedule) for the billing month.

EXHIBIT 2

ARIZONA ELECTRIC POWER COOPERATIVE, INC.

The following Resolution was adopted at a **regular meeting** of the Board of Directors of Arizona Electric Power Cooperative, Inc. (AEPCO), held in Benson, Arizona on May 11, 2016.

RESOLUTION

***WHEREAS**, the Board of Directors of Arizona Electric Power Cooperative, Inc., (AEPCO) has been presented with Management's recommendation for an approval of AEPCO's Environmental Compliance Strategy (ECS) No.1 and associated Environmental Compliance Adjustment Rider (ECAR) Tariff; and*

***WHEREAS**, the Board of Directors has been presented with Management's recommendation for authority to file an application with the Arizona Corporation Commission to approve and implement AEPCO's ECS No.1 and associated ECAR Tariff; and*

***WHEREAS**, the Board of Directors has discussed the matter and considered pertinent information, including the accompanying Executive Staff Summary dated May 11, 2016;*

***NOW, THEREFORE BE IT RESOLVED**, the Board of Directors authorizes the Management of Arizona Electric Power Cooperative, Inc., to implement AEPCO's Environmental Compliance Strategy No. 1 and associated Environmental Compliance Adjustment Rider Tariff; and*

***BE IT FURTHER RESOLVED,** that Management is hereby authorized to file an application with the Arizona Corporation Commission to approve AEPCO's ECS No.1 and associated ECAR Tariff;*

***BE IT FURTHER RESOLVED,** that Management is hereby authorized to take those actions deemed necessary to give effect to this Resolution.*

I, Reuben B. McBride, do hereby certify that I am Secretary of AEPCO, and that the foregoing is a true and correct copy of the Resolution adopted by the Board of Directors at a **regular meeting** held on May 11, 2016.

(seal)

Secretary