Exhibit No.:
Issues: RESRAM and Project Economics
Witness: Maurice Brubaker
Type of Exhibit: Rebuttal Testimony
Sponsoring Party: Missouri Industrial Energy Consumers
Case No.: EA-2018-0202
Date Testimony Prepared: August 20, 2018

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Construct a Wind Generation Facility.	)))))))	**Case No. EA-2018-0202**

Rebuttal Testimony and Schedule of

Maurice Brubaker

On behalf of

Missouri Industrial Energy Consumers

August 20, 2018

BRUBAKER & ASSOCIATES, INC.

Project 10610

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Union Electric Company d/b/a Ameren Missouri for Permission and Approval and a Certificate of Public Convenience and Necessity Authorizing it to Construct a Wind Generation Facility.	)	**Case No. EA-2018-0202**

STATE OF MISSOURI)
) **SS**
COUNTY OF ST. LOUIS)

Affidavit of Maurice Brubaker

Maurice Brubaker, being first duly sworn, on his oath states:

1. My name is Maurice Brubaker. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 16690 Swingley Ridge Road, Suite 140, Chesterfield, Missouri 63017. We have been retained by the Missouri Industrial Energy Consumers in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes are my rebuttal testimony and schedule which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. EA-2018-0202.

3. I hereby swear and affirm that the testimony and schedule are true and correct and that they show the matters and things that they purport to show.

M S Brubaker
Maurice Brubaker

Subscribed and sworn to before me this 20th day of August, 2018.

TAMMY S. KLOSSNER
Notary Public - Notary Seal
STATE OF MISSOURI
St. Charles County
My Commission Expires: Mar. 18, 2019
Commission # 15024862

Tammy S Klossner
Notary Public

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Rebuttal Testimony of Maurice Brubaker

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Maurice Brubaker. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a consultant in the field of public utility regulation and President of Brubaker & Associates, Inc., energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A This information is included in Appendix A to this testimony.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A This testimony is presented on behalf of the Missouri Industrial Energy Consumers ("MIEC"), a non-profit company that represents the interest of large customers in Missouri utility matters. These companies purchase substantial quantities of electricity from Ameren Missouri and the outcome of this proceeding will have an impact on their cost of electricity.

INTRODUCTION AND SUMMARY

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A My testimony addresses the proposal of Ameren Missouri to install 400 MW of wind generation capacity in the northeastern corner of Missouri. This capacity is for the purpose of complying with the state Renewable Energy Standard ("RES") under which, by 2021, 15% of resources must be from qualifying renewable facilities; subject to the rate impact condition which specifies that standard need not be met if doing so would cause retail rates to exceed the level that they otherwise would have been, plus 1%.

Q HAVE YOU REVIEWED THE FILING IN THIS CASE?

A Yes. I have reviewed Ameren Missouri's public and confidential filings, its workpapers, responses to numerous data requests, and have participated in several technical discussions with Ameren Missouri and other parties.

Q WHAT ARE MIEC'S PRINCIPAL CONCERNS IN THIS PROCEEDING?

A The first concern is whether Ameren Missouri has appropriately evaluated the economics of this project, and to what extent there are provisions built into the proposal that will protect customers in the event that the future course of events (e.g., operating performance of the wind turbines, the price received for the output of the wind turbines, qualification for 100% of the maximum PTC values, and receipt by customers of the full grossed-up value of the PTCs) differs from the assumptions built into Ameren Missouri's economic evaluation.

A second major concern is the cost recovery mechanism proposed for the Renewable Energy Standard Rate Adjustment Mechanism ("RESRAM"). Ameren

Missouri requests waivers for a number of provisions in the Commission's RESRAM rules. Most are not objectionable, however, Ameren Missouri's proposal to structure the recovery mechanism as a per kilowatthour recovery factor, rather than a percentage of revenue factor, is inappropriate and objectionable.

A third concern is the project cost which would be flowed through the RESRAM. Ameren Missouri is proposing to flow through costs of existing renewable energy facilities and rebates, as well as the costs of new facilities and rebates. Existing facilities have been given appropriate rate treatment in past rate cases. It would be inappropriate to now change that by moving costs of these facilities out of base rates and into an adjustment mechanism. If a RESRAM is adopted, it should only apply to new projects.

Q PLEASE SUMMARIZE YOUR TESTIMONY AND RECOMMENDATIONS.

A My testimony and recommendations may be summarized as follows:

1. Ameren Missouri's proposed formulation of its RESRAM with the cost recovery mechanisms as a uniform amount per kilowatthour is at odds with the Commission's rules and also with Proposition C.

2. Given the Proposition C rate impact limitation of 1%, only a percentage application of the RESRAM values to base rates can ensure that this mandate is observed. Ameren Missouri's proposed per kilowatthour application cannot assure compliance and should be rejected.

3. The scope of the RESRAM should be limited to prospective projects only. Costs associated with projects that have received previous ratemaking treatment through settlements and/or Commission orders should continue under the terms of those settlements and Commission orders.

4. Customers face many risks associated with this 400 MW wind farm project. They broadly can be characterized as project costs, project output, market prices received for project output and receipt of full grossed-up PTC value on all PTCs earned, regardless of Ameren Missouri's ability to contemporaneously monetize those tax offset benefits.

5. Ameren Missouri could provide assurances in a number of different areas in order to increase the probability that customers will benefit from this project. At a minimum, because the PTCs are so critical to project economics, Ameren Missouri should provide assurances that customers will receive the full grossed-up value of all PTCs actually earned by the project. My recommendation is to include the following condition:

> "Ameren Missouri will provide the full grossed-up value of PTCs to customers through RESRAM or in rates when earned (subject to normal billing lags), without any reduction and without a return on any deferred tax assets, regardless of Ameren Missouri's tax position."

RISKS FACED BY CUSTOMERS

Q WHAT RISKS DO CUSTOMERS FACE AS A RESULT OF A UTILITY PURSUING A PROJECT SUCH AS THE PROPOSED 400 MW WIND FARM?

A Risks are faced by customers in a number of areas. Generally, they exist because the key economic assumptions used to evaluate the project and conclude that it is likely to be economic actually may not be achieved. In other words, reality differs from the assumptions.

Q WHAT ARE SOME OF THESE RISKS?

A These include: (1) qualifying all facilities for maximum PTC values; (2) achieving the capacity factor which Ameren Missouri has used in its economic modeling; (3) achieving the physical (i.e., kW) capacity ratings that have been assumed; (4) achieving the 30-year proposed depreciable life of the wind equipment; (5) not exceeding Ameren Missouri's forecasted operation and maintenance ("O&M") estimates; (6) realizing the forecasted market prices for electric energy; and (7) ratepayers do not receive the full grossed-up value of the PTCs because Ameren Missouri does not have the "tax appetite" to utilize them contemporaneous with their

being earned, and does not pass them through to customers, or does pass them through to customers but capitalizes the deferred tax asset and earns a return on it, which it charges to ratepayers.

As proposed by Ameren Missouri, most of the project risk is shifted to ratepayers because of the combination of capitalizing and deferring 85% of the depreciation and return on the project investment through the Plant In Service Accounting ("PISA") option in Senate Bill 564, and the collection of the balance of the costs in the RESRAM.

ECONOMIC EVALUATION OF THE PROJECT

Q HAVE YOU REVIEWED AMEREN MISSOURI'S ECONOMIC EVALUATION OF THE PROPOSED WIND PROJECT?

A Yes, I have. The details of Ameren Missouri's evaluation are presented in the workpapers of Ameren Missouri witness Matt Michels.

Q WHAT WAS THE BASIC FRAMEWORK OF AMEREN MISSOURI'S ANALYSIS?

A It is the conventional net present value revenue requirement ("NPVRR") analysis of the project economics under several different combinations of conditions under various price scenarios. These are summarized on page 9 of Mr. Michels' direct testimony.

Q WHAT DO THOSE ANALYSES SHOW?

A They generally show that under two of the three price scenarios the project benefits are relatively robust. However, under the low price scenario, the indicated benefits

are very small in relation to the overall capital outlay and expected benefits, and in some cases would represent a cost to customers rather than a savings.

Q DO YOU HAVE CONCERNS ABOUT THE MARKET PRICE ASSUMPTIONS THAT ARE USED IN THE ANALYSIS?

A Yes. These market price assumptions were developed as part of Ameren Missouri's Triennial Integrated Resource Plan ("IRP"), filed in 2017 and based on data and projections available at that time, so the basic analysis is somewhat dated.

Q HAVE YOU HAD AN OPPORTUNITY TO REVIEW MARKET PRICES MORE RECENTLY?

A Yes. I have reviewed forward market prices as recently reported by Standard & Poor's Global Market Intelligence Service for Ameren Missouri in MISO, and in addition for MidAmerican Energy and Alliant Energy (Interstate Power and Light Company or "IPL") in Iowa. I have summarized that information on Schedule MEB-1 attached to this testimony. It shows the forward prices for Ameren Missouri, for MidAmerican Energy and for IPL along with the price assumptions that Ameren Missouri has used prior to the adjustments that Ameren Missouri applied for basis differences and the variability in the wind output.

Page 1 of Schedule MEB-1 compares forward market prices as of August 15, 2018, and shows that the average prices at each of the comparative pricing zones (including Ameren Missouri) are less than the Ameren "IRP Low" Scenario, as reported in Schedule MRM-D2. The current average forward market price in the Ameren Missouri zone ranges between 14% and 28% below the low price scenario

modeled by Ameren Missouri. Note that lower market prices worsen the economics of the proposed wind project.

Page 2 of Schedule MEB-1 provides a longer historical look at forward market prices, but results in the same conclusion, that forward market prices are much lower than Ameren Missouri's low price scenario assumptions. Further, I would note that market prices in MISO, and in many other pricing zones throughout the country, have been in backwardation for much of the last year, due to the backwardation present in the long-term natural gas forward price curve. Backwardation occurs when the current trade price for a commodity contract farther out in the future is less expensive than the current trade price for the same commodity contract in the near-term. Schedule MEB-1 shows this reality, where the Balance of the 2018 strip is trading at a higher price point than the Calendar 2019 strip; the Calendar 2019 strip is trading higher than the Calendar 2020 strip, etc. The backwardation is present until about 2023 or 2024, for each pricing zone, but backwardation is absent from all of Ameren Missouri's pricing scenarios. Therefore the Ameren Missouri pricing assumptions underlying each of its scenarios do not reflect current information about market conditions.

Q WHAT DO YOU CONCLUDE FROM THIS INFORMATION?

A I conclude that based on current expectations for market prices (for the years that the data is available) the market is expecting prices much closer to what Ameren Missouri has used in its low price scenario, than what it has used in its other scenarios. Mr. Michels also calculates that if forward power prices were to drop 18% or more below the prices in the low price scenario, the project could risk surpassing the 1% impact

on customer rates limit set by Proposition C.[1] The risk of a market price reduction of this magnitude is significant, given that current and recent historical market prices are between 14% and 28% below the low price scenario assumptions for the years 2021 through 2027, as shown on my Schedule MEB-1. As a result, I believe the project poses considerable risk for customers.

Q PREVIOUSLY, YOU MENTIONED SAFEGUARDS FOR CUSTOMERS. WHAT TYPES OF GUARANTEES OR SAFEGUARDS COULD BE PROVIDED?

A In addition to the construction cost caps and other features that Ameren Missouri has negotiated into its agreement with the project developer, guarantees could be provided to ensure the receipt of value from the project as a result of achieving the expected capacity factor, of realizing the expected market revenue from the sale of output from the facility that has been assumed, or a combination of both.

Q EARLIER YOU MENTIONED THE IMPORTANCE OF PTCs. BESIDES OUTPUT GUARANTEES, WHAT FORM OF ASSURANCES OR SAFEGUARDS WOULD BE IMPORTANT TO CUSTOMERS?

A The ability to fully utilize the revenue requirement value of PTCs, in other words the grossed-up value of PTCs, is critical to project economics. If Ameren Missouri earns PTCs from operation of the wind facilities, but does not have the tax appetite in each of the 10 years when PTCs will be received, there is a risk that customers will not receive the full benefit of the PTCs. Since the PTCs are extremely critical in making wind projects economical, and because Ameren Missouri is the only party that can effectively evaluate its future tax appetite, it would be reasonable for Ameren Missouri

[1]Direct Testimony of Ameren Missouri witness Mr. Michels at 10.

to assume the risk of it not having sufficient tax appetite during the 10-year period. This is a risk to customers that could be mitigated by a commitment from Ameren Missouri to ensure that ratepayers receive full value.

Q PLEASE ELABORATE.

A In the ordinary course of events, Ameren Missouri will gross-up the earned PTCs for income taxes and pass those to customers through the RESRAM mechanism. As long as Ameren Missouri has sufficient income tax obligations each year that the PTCs are earned, customers benefit as expected.

Should there arise a circumstance in which Ameren Missouri does not have sufficient tax appetite in a particular year to fully utilize those PTCs in that year, customers are at risk for not receiving full value unless Ameren Missouri pledges that it will protect ratepayers from that risk.

Q HOW COULD THIS BE DONE?

A This could be done by Ameren Missouri agreeing that ratepayers are guaranteed receipt through the RESRAM of the full grossed-up value of the PTCs without having to compensate Ameren Missouri for return on any deferred tax assets that might be created as a result of Ameren Missouri's inability to contemporaneously monetize PTCs to full value in the year earned (subject to normal billing delays). The condition could be phrased this way:

> "Ameren Missouri will provide the full grossed-up value of PTCs to customers through RESRAM or in rates when earned (subject to normal billing lags), without any reduction and without a return on any deferred tax assets, regardless of Ameren Missouri's tax position."

Q ARE YOU AWARE OF ANY OTHER UTILITIES WHICH HAVE MADE SUCH A COMMITMENT?

A Yes. For example, Rocky Mountain Power Company agreed to this provision as part of a settlement for Idaho Case No. PAC-E-17-06 involving ratemaking treatment for the repowering of certain existing wind facilities.

COST RECOVERY MECHANISM AND RESRAM

Q WHAT PROVISION IN THE COMMISSION'S RULES ADDRESSES COST RECOVERY FOR RESRAM?

A This appears in CSR 240-20.100(6)(A) (10), which says:

> "The RESRAM charge will be calculated as a percentage of the customer's energy charge for the applicable billing period."

Q IS A PERCENTAGE CHARGE CONSISTENT WITH PROPOSITION C AND THE COMMISSION'S RULES LIMITING THE IMPACT OF COMPLIANCE WITH THE RES STATUTE TO 1% OF RETAIL RATES?

A Yes.

Q HOW DOES MR. WILLS INTERPRET THIS PROVISION?

A As set forth on pages 36 and 37 of his direct testimony, he discusses an interpretation that would apply the percentage only to the component of a customer's bill that specifically is called an energy charge. He notes, and correctly so, that such an application would be absurd. His illustration applies a percentage to all of the energy charges in a customer's rate in a given period, which is contrary to the language of the rule which says "…percentage of the customer's energy charge…."

Note that “energy charge” in the Commission’s rules is singular, not plural. That also undermines Mr. Wills’ preferred interpretation of that provision of the Commission’s rules.

Q WHAT IS THE PROPER INTERPRETATION OF THIS PROVISION?

A The only way to ensure compliance with the 1% retail rate impact provision mandated by the RES statute would be to apply the recovery factor as a percentage to customers’ billings, so any interpretation would be consistent with that mandate.

Q WHAT DOES MR. WILLS PROPOSE?

A Mr. Wills proposes to apply the RESRAM cost recovery as a uniform amount per kilowatthour to all customers.

Q IS THIS REASONABLE?

A No. Even if one were to believe that the language meant what Mr. Wills suggests that it does, a waiver to permit recovery on a per kilowatthour basis, as opposed to a percentage of electric bill basis, would not make sense. It certainly would not be consistent with how the costs of all other generation facilities are collected. The wind farms essentially are fixed costs, and fixed costs traditionally are recovered on a demand charge basis or some form of percentage basis. It is not appropriate, nor common, to recover fixed costs on a per kilowatthour basis.

Q WHAT IS YOUR RECOMMENDATION?

A I recommend a uniform percentage applied to the base rate charges of each customer.

PROJECT COSTS TO BE INCLUDED IN RESRAM

Q AMEREN MISSOURI HAS PROPOSED TO INCLUDE IN RESRAM A TRACKING OF CHANGES IN COSTS ASSOCIATED WITH A NUMBER OF FACILITIES THAT ALREADY HAVE RECEIVED RATEMAKING TREATMENT IN PREVIOUS CASES, EITHER THROUGH SETTLEMENTS OR THROUGH COMMISSION ORDERS. DO YOU AGREE WITH AMEREN MISSOURI'S PROPOSAL?

A No, I do not. All of these previously included projects were reflected in rates in the context of either a settlement or a Commission order in specific rate cases. The decisions in those cases (including those which approve settlements) determined the amount of cost to be included in base rates. Adding them to a new RESRAM now would violate many of the terms of those prior stipulations and Commission orders and should not be approved. To the extent a RESRAM is approved, it should only apply to new projects that have not previously received regulatory considerations. This would include the current 400 MW wind proposal that is the subject of this case, additional wind facilities, additional solar rebates, and possibly other projects.

Q DOES THAT CONCLUDE YOUR REBUTTAL TESTIMONY?

A Yes, it does.

Qualifications of Maurice Brubaker

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Maurice Brubaker. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q PLEASE STATE YOUR OCCUPATION.

A I am a consultant in the field of public utility regulation and President of the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A I was graduated from the University of Missouri in 1965, with a Bachelor's Degree in Electrical Engineering. Subsequent to graduation I was employed by the Utilities Section of the Engineering and Technology Division of Esso Research and Engineering Corporation of Morristown, New Jersey, a subsidiary of Standard Oil of New Jersey.

In the Fall of 1965, I enrolled in the Graduate School of Business at Washington University in St. Louis, Missouri. I was graduated in June of 1967 with the Degree of Master of Business Administration. My major field was finance.

From March of 1966 until March of 1970, I was employed by Emerson Electric Company in St. Louis. During this time I pursued the Degree of Master of Science in Engineering at Washington University, which I received in June, 1970.

In March of 1970, I joined the firm of Drazen Associates, Inc., of St. Louis, Missouri. Since that time I have been engaged in the preparation of numerous

studies relating to electric, gas, and water utilities. These studies have included analyses of the cost to serve various types of customers, the design of rates for utility services, cost forecasts, cogeneration rates and determinations of rate base and operating income. I have also addressed utility resource planning principles and plans, reviewed capacity additions to determine whether or not they were used and useful, addressed demand-side management issues independently and as part of least cost planning, and have reviewed utility determinations of the need for capacity additions and/or purchased power to determine the consistency of such plans with least cost planning principles. I have also testified about the prudency of the actions undertaken by utilities to meet the needs of their customers in the wholesale power markets and have recommended disallowances of costs where such actions were deemed imprudent.

I have testified before the Federal Energy Regulatory Commission ("FERC"), various courts and legislatures, and the state regulatory commissions of Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Guam, Hawaii, Illinois, Indiana, Iowa, Kentucky, Louisiana, Michigan, Missouri, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, South Dakota, Texas, Utah, Virginia, West Virginia, Wisconsin and Wyoming.

The firm of Drazen-Brubaker & Associates, Inc. was incorporated in 1972 and assumed the utility rate and economic consulting activities of Drazen Associates, Inc., founded in 1937. In April, 1995 the firm of Brubaker & Associates, Inc. was formed. It includes most of the former DBA principals and staff. Our staff includes consultants with backgrounds in accounting, engineering, economics, mathematics, computer science and business.

Brubaker & Associates, Inc. and its predecessor firm has participated in over 700 major utility rate and other cases and statewide generic investigations before utility regulatory commissions in 40 states, involving electric, gas, water, and steam rates and other issues. Cases in which the firm has been involved have included more than 80 of the 100 largest electric utilities and over 30 gas distribution companies and pipelines.

An increasing portion of the firm's activities is concentrated in the areas of competitive procurement. While the firm has always assisted its clients in negotiating contracts for utility services in the regulated environment, increasingly there are opportunities for certain customers to acquire power on a competitive basis from a supplier other than its traditional electric utility. The firm assists clients in identifying and evaluating purchased power options, conducts RFPs and negotiates with suppliers for the acquisition and delivery of supplies. We have prepared option studies and/or conducted RFPs for competitive acquisition of power supply for industrial and other end-use customers throughout the Unites States and in Canada, involving total needs in excess of 3,000 megawatts. The firm is also an associate member of the Electric Reliability Council of Texas and a licensed electricity aggregator in the State of Texas.

In addition to our main office in St. Louis, the firm has branch offices in Phoenix, Arizona and Corpus Christi, Texas.

Power Forwards Trade Date Aug. 15, 2018
Nominal $/MWh

	Alliant West (IPL)			MidAmerican			Ameren MO			Ameren Scenarios			
Year	On-Peak	Off-Peak	Avg.	On-Peak	Off-Peak	Avg.	On-Peak	Off-Peak	Avg.	IRP PWA	IRP High	IRP Low	AmMO Avg. vs. IRP Low
Bal. 2018	37.14	19.43	28.29	29.87	21.00	25.44	30.68	22.99	26.83				
Cal. 2019	35.96	18.52	27.24	29.21	20.41	24.81	30.64	22.69	26.66				
Cal. 2020	35.14	18.17	26.66	28.05	19.85	23.95	29.75	22.31	26.03				
Cal. 2021	34.66	17.85	26.25	27.59	19.52	23.56	29.28	21.98	25.63	32.26	36.98	29.66	-14%
Cal. 2022	33.52	17.26	25.39	26.42	18.93	22.68	28.12	21.39	24.76	33.16	37.90	30.53	-19%
Cal. 2023	32.99	16.61	24.80	25.88	18.28	22.08	27.58	20.75	24.16	35.14	41.57	32.02	-25%
Cal. 2024	32.80	16.79	24.79	25.72	18.58	22.15	27.42	21.06	24.24	36.30	43.68	32.80	-26%
Cal. 2025	32.90	17.10	25.00	25.80	18.92	22.36	27.51	21.46	24.48	39.27	47.69	33.58	-27%
Cal. 2026	33.01	17.74	25.37	25.89	19.63	22.76	27.60	22.26	24.93	40.81	48.41	34.65	-28%
Cal. 2027	33.44	18.26	25.85	26.23	20.21	23.22	27.96	22.91	25.44	42.61	50.65	35.52	-28%

Sources: OTC Global Holdings (S&P)
Region: MISO
Forward Term: Annual
As Of: 08/15/2018
and Schedule MRM-D2

Power Forwards - Recent 6-month Average
Nominal $/MWh

	Alliant West (IPL)			MidAmerican			Ameren MO			Ameren Scenarios			
Year	On-Peak	Off-Peak	Avg.	On-Peak	Off-Peak	Avg.	On-Peak	Off-Peak	Avg.	IRP PWA	IRP High	IRP Low	AmMO Avg. vs. IRP Low
Bal. 2018	36.40	18.28	27.34	28.27	18.18	23.22	30.55	21.86	26.20				
Cal. 2019	34.76	17.71	26.24	26.47	17.39	21.93	29.37	21.58	25.47				
Cal. 2020	34.41	17.53	25.97	26.00	17.11	21.56	29.01	21.39	25.20				
Cal. 2021	34.52	17.39	25.95	26.11	16.97	21.54	29.12	21.24	25.18	32.26	36.98	29.66	-15%
Cal. 2022	34.04	17.22	25.63	25.63	16.81	21.22	28.64	21.08	24.86	33.16	37.90	30.53	-19%
Cal. 2023	33.53	17.05	25.29	25.13	16.70	20.91	28.14	20.97	24.55	35.14	41.57	32.02	-23%
Cal. 2024	33.44	17.20	25.32	25.06	16.89	20.98	28.07	21.19	24.63	36.30	43.68	32.80	-25%
Cal. 2025	33.53	17.46	25.49	25.13	17.15	21.14	28.14	21.52	24.83	39.27	47.69	33.58	-26%
Cal. 2026	33.70	18.03	25.86	25.25	17.72	21.49	28.28	22.22	25.25	40.81	48.41	34.65	-27%
Cal. 2027	34.05	18.47	26.26	25.52	18.17	21.85	28.58	22.76	25.67	42.61	50.65	35.52	-28%

Sources: OTC Global Holdings (S&P)
Region: MISO
Forward Term: Annual
As Of: 6-mo. avg 02/17/2018 - 08/17/2018
and Schedule MRM-D2