ORIGINAL

BEFORE THE

ARIZONA CORPORATION COMMISSION

COMMISSIONERS:

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

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS 2016 RENEWABLE ENERGY STANDARD AND TARIFF IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-15-0239
IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF THE PROPERTIES OF TUCSON ELECTRIC POWER COMPANY DEVOTED TO ITS OPERATIONS THROUGHOUT THE STATE OF ARIZONA AND FOR RELATED APPROVALS.	DOCKET NO. E-01933A-15-0322

Initial Post-Hearing Brief

of

United States Department of Defense
and all other Federal Executive Agencies

October 28, 2016

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The United States Department of Defense and all other Federal Executive Agencies ("DoD/FEA"), by and through their undersigned counsel, file this Initial Post-Hearing Brief.

DoD/FEA presented two witnesses in this proceeding. Michael Gorman testified concerning return on equity ("ROE"), overall cost of capital, and fair value rate of return ("FVROR"). Mr. Gorman filed direct testimony, and also filed surrebuttal testimony in opposition to the ROE and FVROR contained in the non-unanimous[1] Settlement Agreement ("Settlement") and recommended that rather than an increase of $81.5 million, Tucson Electric Power Company ("TEP" or "Company") should receive an increase of not more than $67.3 million.

DoD/FEA presented Maurice Brubaker as the witness on cost of service and revenue allocation. Mr. Brubaker supports use of the average and excess ("A&E") methodology, and makes a recommendation with respect to the appropriate allocation of whatever amount of increase the Commission finds appropriate for TEP. **Attachment A** to this brief sets forth how DoD/FEA recommends that either the $81.5 million increase that is the subject of the Settlement, or the $67.3 million increase that would result from adoption of DoD/FEA's cost of capital recommendations, would be allocated among customer classes. These allocations

[1]Signatories were Tucson Electric Power Company; Arizona Corporation Commission Utilities Division ("Staff"); Residential Utility Consumer Office ("RUCO"); Freeport Minerals Corporation ("Freeport Minerals"); Arizonans for Electric Choice and Competition ("AECC"); Arizona Investment Council ("AIC"); Western Resource Advocates ("WRA"); Wal-Mart Stores, Inc, and Sam's West, Inc, (collectively "Wal-Mart"); Noble Americas Energy Solutions, LLC ("Noble Solutions"); The Kroger Co. ("Kroger"); and Sierra Club.

are based on the methodology stated in Mr. Brubaker's direct testimony and as described at the hearing. Should the Commission choose an amount in between these two numbers, the appropriate allocation could be determined using the same methodology.

I. NON-UNANIMOUS SETTLEMENT AGREEMENT

The Settlement filed with the Arizona Corporation Commission ("Commission") on August 15, 2016 is based on a proposed ROE of 9.75% and a capital structure consisting of 50.03% common equity and 49.97% long-term debt, which produces an overall rate of return of 7.04%. It also specifies an FVROR of 5.34%, which includes a fair value return increment of 1.0%. These parameters result in a revenue increase of $81.5 million for TEP.[2]

I.A. The Non-Unanimous Settlement Agreement is Not Reasonable

DoD/FEA did not join the Settlement because it contained a revenue requirement that is excessive and will produce rates that are not just and reasonable. DoD/FEA witness Gorman testified that the settlement revenue requirement is overstated by at least $14.2 million[3] because the rate of return component of the settlement is excessive.

In his surrebuttal testimony Mr. Gorman outlined the major flaws with the Settlement. The Settlement is based on an inflated ROE of 9.75% and FVROR of 5.34%. Mr. Gorman states that the record in this case contains irrefutable market evidence that the current market cost of equity for electric utilities is no higher than 9.5%,[4] and an FVROR is no higher than 5.2%. All non-Company witnesses in this proceeding recommended an ROE in the range of

[2]Settlement at 3-4.
[3]Gorman Surrebuttal at 5.
[4]Gorman Surrebuttal at 5, 7-9 and Exhibit MPG-24.

9.2% to 9.5%. No non-Company rate of return witness recommended an ROE above 9.5%. The overwhelming record evidence in this case proves that the Settlement ROE of 9.75% and FVROR of 5.34% are excessive and should be rejected.

The summary of the witnesses' recommended ROEs and FVRORs is shown below in Table 1.

TABLE 1

ROE Recommendations

Party (Witness)	ROE Range	FVROR
TEP (Bulkley)[1]	10.00%*	5.69%
Staff (Parcell)[2]	9.2% - 9.5%	5.00%
DoD/FEA (Gorman)[2]	8.9% - 9.7%	5.00%
RUCO (Mease)[2]	7.91% - 9.65%	5.20%
Wal-Mart (Tillman)[2]	Max 9.50%	N/A

*10.35% in Direct, revised to 10.00% in Rebuttal.

Sources:

[1]TEP Ann Bulkley Direct at 3.

[2]TEP Ann Bulkley Rebuttal at 3, Table 1.

An ROE reflecting an Original Cost ROE of 9.75% and an FVROR of 5.34% provides TEP with an effective ROE of 10.5%.[5] A 10.5% ROE is amongst the highest authorized ROEs for an integrated electric utility company in the last seven years.[6] The record evidence shows that authorized ROEs for electric utilities have ranged from 9.58% to 9.8% most recently, and

[5]a) ROR = Settlement Req. Operating Income ÷OCRB = 7.427% = $151.9 million ÷ $2,045.2 million.
b) ROR Less Weighted Debt Cost (2.159%) = (49.97% x 4.32%) = 7.427% - 2.159%.
c) (7.427% – 2.159%) ÷ Common Equity Weight of 50.03% = 10.53%.

[6]Gorman Direct, Exhibit MPG-13.

these authorized ROEs have supported improvements to utilities' credit ratings and access to substantial amounts of capital to fund large capital programs at reasonable terms and prices.[7] A settlement that contains an excessive rate of return is not balanced and fair, and would produce rates that are not just and reasonable.

II. COST OF COMMON EQUITY

DoD/FEA filed testimony on ROE and proposed capital structure that will support a fair compensation for TEP's investment risk and will preserve the Company's financial integrity and credit standing while finding an equitable balance between customers and shareholders, recognizing the reality of the economic hardships of TEP's customers.

The recommendations of intervenors reflect current market conditions under which utilities, including TEP, have strong and improving credit ratings and are able to access capital at low costs. TEP Witness Ann Bulkley's recommendation of 10.35%, revised to 10.00% in rebuttal, as well as TEP's requested fair value increment of 1.42%,[8] is unrealistic and inflated. As DoD/FEA witness Michael Gorman testified, the principal flaws in TEP witness Bulkley's analysis are that: (1) her constant growth DCF model is based on excessive and unsustainable growth estimates; (2) her multi-stage DCF is based on an unrealistic gross domestic product ("GDP") estimate; (3) her CAPM assumes inflated market risk premiums; (4) her bond yield plus risk premium model is based on inflated equity risk premiums; and (5) her risk premium studies are based on stale Treasury yields.[9] Due to these errors, Ms. Bulkley's recommendation significantly overstates TEP's market cost of equity.

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[7] *Id.*
[8] Bulkley Direct at 3 and Bulkley Rebuttal at 80.
[9] Gorman Direct at 54.

II.A. Market Conditions

In setting ROE, it is important to consider current market conditions. The evidence in this case shows that the market continues to embrace the utility industry as a low-risk investment, that utilities have been able to access large amounts of capital at low cost to fund large capital programs and that the industry's credit outlook is stable.[10]

Mr. Gorman began his investigation by reviewing industry credit rating assessments by Standard & Poor's ("S&P") and Moody's. S&P and Moody's both rate the utility industry as "Stable".[11]

Mr. Gorman also concluded that utility stocks have considerably less volatility than the overall market and moved in a more stable and predictable trading range, consistent with the low-risk nature of electric utility investments.[12]

DoD/FEA's evidence also proves that capital market costs are low for utility companies, which reflects that such companies are perceived as low-risk by market participants. This is illustrated by Mr. Gorman in his Exhibit MPG-14. In this exhibit, Mr. Gorman showed that Moody's A-rated, such as TEP, public utility bond yield spreads currently and in 2016 were lower than the spreads over the 36-year average period.[13] This is an indication that public utility bond yields are relatively low in comparison to market bond yields, providing proof that utilities have access to low-cost capital in this market.[14] Access to low-cost capital is also apparent by comparing utility bond yields to corporate bond yields. In 2016, Baa utility bond yields traded

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[10] *Id.* at 5-9.
[11] *Id.*
[12] *Id.* at 8-9.
[13] Gorman Direct, Exhibit MPG-14.
[14] Gorman Direct at 42.

at a discount to that of Baa corporate bond yields, again showing that utilities' cost of capital is lower than that of Baa rated general corporate issues.[15]

Mr. Gorman's review thus demonstrates that market conditions are favorable for the utility industry generally. The same is true of TEP specifically. TEP's corporate bond ratings from S&P and Moody's are BBB+ and A3, respectively.[16]

II.B. The Proxy Group

A utility's cost of equity is the return that investors require to invest in the utility. Investors expect to achieve this return through dividends and appreciation in stock price.[17] Because a utility's cost of equity is not directly observable, it is necessary to estimate the proper return through the use of financial models such as the ones utilized by Mr. Gorman in this case. These models, in turn, are applied to a proxy group of publicly traded companies that are similar in total risk profile to TEP.[18] Mr. Gorman reviewed Ms. Bulkley's proxy group and concluded that he did not have sufficient information to confirm that her proxy group complied with her selection criteria. Further, in an updated analysis, Ms. Bulkley's proxy group would be reduced to 10 companies due to recent merger and acquisition ("M&A") activities. Therefore, Mr. Gorman developed his own proxy group, which is based on the following criteria:

- Have investment grade credit rating from S&P and Moody's.
- Have consistently paid dividends over the last two years.
- Have positive consensus analysts' growth rates from at least one of Mr. Gorman's sources: Zacks, SNL Financial, and Reuters.

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[15]Gorman Direct, Exhibit MPG-14.
[16]Gorman Direct at 10.
[17]*Id.* at 16.
[18]*Id.* at 17.

- Have not been involved in recent merger and acquisition ("M&A") transactions or bankruptcy proceedings.

- Are classified as Regulated (80%+ of total assets are regulated) or Mostly Regulated (50%-80%) by the Edison Electric Institute ("EEI").[19]

II.C. Mr. Gorman's Recommendation

Mr. Gorman's recommendation in this case is based on Discounted Cash Flow ("DCF") analyses, a Risk Premium analysis, and a Capital Asset Pricing Model ("CAPM") analysis. His recommended ROE range based on his models, his consideration of market data, and his professional judgment is 8.90% to 9.70%, with a midpoint of 9.30%.[20]

II.C.1. DCF Models

DCF models are based on the assumption that a current stock price represents the present value of all future cash flows. Central to a DCF analysis is the dividend growth rate used in the model. All things being equal, the higher the growth rate, the higher the ROE the model suggests. Mr. Gorman utilized three types of DCF models: a constant growth DCF, a sustainable growth DCF, and a multi-stage DCF.

II.C.1.a. Constant Growth DCF Model

A constant growth DCF model assumes that dividends and earnings will grow at a constant rate. The inputs to the model are a current stock price, an expected dividend, and an expected growth rate in dividends. For the current stock price input, Mr. Gorman used an average stock price because average prices are less susceptible to market variations than spot

[19]Gorman Direct at 18.
[20]*Id.* at 3.

prices. Specifically, Mr. Gorman used the average of the weekly high and low stock prices of the utilities in the proxy group over a 13-week period ending on May 13, 2016.[21]

For the dividend input, Mr. Gorman started with the most recently paid annualized quarterly dividend as reported by *Value Line*, adjusted to account for next year's growth.[22]

With respect to the dividend growth rate, often the most contentious factor in a DCF model, Mr. Gorman used consensus analysts' earnings growth estimates from three sources, Zack's, SNL, and Reuters as of May 13, 2016.[23] Based on these consensus projections, the average growth rate used for the proxy group is 5.09%.[24] As explained in Mr. Gorman's testimony, consensus analysts' growth projections are the best measure of investor expectations.

The results of Mr. Gorman's constant growth DCF model show an average and median constant growth return for the proxy group of 8.71% and 8.70%, respectively, for the 13-week analysis.[25]

Ms. Bulkley argues that Mr. Gorman's assumed growth rate is too low due to two outliers and suggests removing those estimates.[26] However, Mr. Gorman testifies that this biased approach distorts the validity of the DCF model.[27] Therefore, relying on median results as Mr. Gorman has done is a better approach to measure the central tendency of the proxy group results. Further, Mr. Gorman's assumed growth rate (5.09%) is actually higher than consensus

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[21] *Id.* at 24.
[22] *Id.* at 25.
[23] *Id.*
[24] *Id.* at 26.
[25] *Id.*
[26] Bulkley Rebuttal at 59.
[27] Gorman Surrebuttal at 11.

analysts' projections of GDP growth (4.20%), which as explained below is the best proxy for a maximum long-term sustainable growth rate.[28]

II.C.1.b. Sustainable Growth DCF Model

Mr. Gorman also performed a constant growth DCF model using sustainable growth rates. The sustainable growth model is an internal growth methodology that is based on the percentage of earnings retained by the utility and not paid out as dividends.[29] Mr. Gorman's sustainable growth model showed an average sustainable growth rate for the proxy group of 4.46% for the 13-week period.[30] These growth rates, in turn, produce average and median DCF results for the 13-week period of 8.06% and 7.72%, respectively.[31] Ms. Bulkley disagrees with the use of the sustainable growth DCF model, however her concerns are without merit. As discussed in Mr. Gorman's surrebuttal testimony, the sustainable growth methodology is widely accepted and particularly relevant for the utility industry.[32]

II.C.1.c. Multi-Stage Growth DCF Model

Mr. Gorman also performed a multi-stage DCF model, which captures expectations that a utility would have changing growth rates over time.[33] Mr. Gorman's multi-stage DCF model reflected three growth periods: (1) a short-term growth period of five years, (2) a transition period for years six through ten, and (3) a long-term growth period starting in year 11 through

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[28]Gorman Direct at 27.
[29]*Id.* at 28.
[30]*Id.*
[31]*Id.*
[32]Gorman Surrebuttal at 12.
[33]*Id.* at 29.

perpetuity.[34] For the short-term period, Mr. Gorman relied on the consensus analysts' growth projections from his constant growth DCF model (5.09%).[35] For the second stage (i.e., the transition period), growth rates were reduced or increased by an equal factor, which reflected the difference between the analysts' growth rates and the GDP growth rate.[36] For the long-term period, he used consensus analysts' projected growth rate for the U.S. GDP (4.20%) as a proxy for the maximum sustainable growth rate for a utility company.[37]

Mr. Gorman used a GDP growth projection as a proxy for the maximum sustainable growth rate because, over the long term, a utility cannot be expected to sustain a growth rate that exceeds the growth rate of the economy into which it sells services.[38] As Mr. Gorman testified:

> Utilities' earnings/dividend growth is created by increased utility investment or rate base. Such investment, in turn, is driven by service area economic growth and demand for utility service. In other words, utilities invest in plant to meet sales demand growth, and sales growth, in turn, is tied to economic growth in their service areas.[39]

Data from the U.S. Department of Energy Information Administration ("EIA") confirms that utility growth largely tracks the U.S. GDP growth rate, but that utilities grow at a slower pace. Indeed, as demonstrated by Mr. Gorman's Exhibit MPG-9, GDP growth has outpaced utility sales growth for more than a decade.[40]

Mr. Gorman's conclusion is also supported by analysts and academic publications, which hold that dividends are generally expected to grow at about the same rate as the nominal

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[34] *Id.* at 30.
[35] *Id.*
[36] *Id.*
[37] *Id.* at 32.
[38] *Id.* at 30.
[39] *Id.*
[40] Gorman Direct, Exhibit MPG-9.

GDP.[41] And it is supported by historical data showing that, from the period 1926-2014, the U.S. nominal compound annual growth of the U.S. GDP exceeded the growth of the U.S. stock market.[42] Based on the foregoing, nominal GDP growth is a reasonable proxy for the highest sustainable long-term growth rate of a utility. If anything, the use of GDP growth as a proxy overstates the prospects for utility growth.

To determine the projected growth rate for the U.S. GDP, Mr. Gorman relied on the publication *Blue Chip Economic Indicators* ("*Blue Chip*"), which publishes consensus economists' GDP growth projections twice a year.[43] Because these projections are based on a consensus of economists' views, they reflect all current outlooks and are the best available measure of the market's expectation of long-term GDP growth.[44] Specifically, Mr. Gorman used the projected 5- and 10-year average GDP consensus growth rates of 4.20% as an estimate of long-term sustainable growth.[45]

Notably, *Blue Chip's* projected growth rates are consistent with long-range forecasts from other sources. For example, the EIA forecasts real GDP growth through 2040, and its data produces a long-term nominal GDP growth outlook of 4.2%.[46] The Congressional Budget Office ("CBO") projection over the next 10 years is 4.0%.[47] Moody's Analytics projects nominal GDP growth of 4.1% over the next 30 years.[48] The Social Security Administration

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[41]Gorman Direct at 31 (quoting *Fundamentals of Financial Management*, Eugene F. Brigham and Joel F. Houston, Eleventh Edition 2007, Thomson South-Western at 298).

[42]*Id.* at 32 and *Morningstar, Inc., Ibbotson SBBI 2015 Classic Yearbook* inflation rate of 3.0% at 91, and U.S. Bureau of Economic Analysis, January 29, 2016.

[43]Gorman Direct at 32.

[44]*Id.*

[45]*Id.*

[46]*Id.* at 33, Table 3.

[47]*Id.*

[48]*Id.*

("SSA") makes economic projections out to 2090. Under its intermediate cost scenario for 50 years, SSA projects nominal GDP growth of 4.5%.[49] Finally, the Economist Intelligence Unit, a division of *The Economist*, projects long-term nominal GDP growth of approximately 3.9% out to 2050.[50] Based on all of this information, Mr. Gorman assumed a long-term sustainable GDP growth rate of 4.2%.

Mr. Gorman's multi-stage DCF model indicated an average ROE of 7.99% and a median of 7.89% for the 13-week period.[51] In her rebuttal testimony, Ms. Bulkley criticizes Mr. Gorman's multi-stage DCF model, because it is 110 basis points lower relative to historical estimates.[52] However, Mr. Gorman has clearly explained that he relied on consensus analysts' estimates that provide relevant information to investors.[53] Hence, Ms. Bulkley's argument is without merit.

II.C.1.d. Summary of DCF Results

The results of Mr. Gorman's DCF models are as follows:

[49] *Id.*
[50] *Id.*
[51] Gorman Direct at 35.
[52] Bulkley Rebuttal at 62.
[53] Gorman Surrebuttal at 13.

TABLE 2

Summary of DCF Results

Description	Average	Median
Constant Growth DCF Model (Analysts' Growth)	8.71%	8.70%
Constant Growth DCF Model (Sustainable Growth)	8.06%	7.72%
Multi-Stage Growth DCF Model	7.99%	7.89%
Average	8.25%	8.10%

Applying his professional judgment in light of all available data, Mr. Gorman concluded that these DCF results indicate an ROE of 8.70%, which is a reasonable high-end DCF return estimate primarily based on his constant growth model using consensus analysts' projections of growth.[54]

II.C.2. Risk Premium Model

Mr. Gorman also utilized a risk premium model, which is based on the concept that investors require a higher return to assume greater risk.[55] Mr. Gorman's model was based on two estimates of an equity risk premium. First, he estimated the difference between the required return on utility common equity investments and U.S. Treasury bonds for the period 1986 through 2016.[56] This produced an average indicated equity risk premium of 5.46% with a five-year rolling average equity risk premium ranging from 4.25% to 6.71%.[57]

[54]Gorman Direct at 36.
[55]*Id.* at 36.
[56]*Id.* at 37.
[57]*Id.* at 38.

The second equity risk premium estimate was based on the difference between regulatory commission-authorized returns on common equity and contemporary Moody's "A" rated utility bond yields for the period 1986 though 2016.[58] This produced an average equity risk premium of 4.08%, with a five-year rolling average premium ranging from 2.88% to 5.53%.[59] In order to mitigate the impact of anomalous market conditions and better capture the risk premium over an entire business cycle, Mr. Gorman used the five-year rolling averages for both the Treasury bond and utility bond estimates.[60]

Mr. Gorman's recommendation considers both utility security risk and market interest rate risk. To be conservative, Mr. Gorman applied 75% weight to the high end of his risk premium estimates and 25% weight to the low end.[61] To arrive at a recommended cost of equity from his risk premium for his Treasury bond estimate, Mr. Gorman next added a projected long-term Treasury bond yield of 3.50% (*Blue Chip's* 30-year projection) to a weighted equity risk premium over Treasury yields of 6.09%, which produced a common equity return of 9.60%.[62] With respect to the utility bond estimate, Mr. Gorman added his average estimated equity risk premium of 4.87% to a current 13-week average yield on "Baa" rate utility bonds for the period ending May 13, 2016 (4.91%), resulting in a cost of equity of 9.78%.[63]

This results in a risk premium estimate over U.S. Treasury bond yields of 9.60% and a risk premium over "Baa" utility yields of 9.80%, with a midpoint of 9.70%.[64]

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[58] *Id.*
[59] *Id.*
[60] *Id.* at 37-38.
[61] *Id.*
[62] *Id.* at 43.
[63] *Id.*
[64] *Id.*

In her rebuttal testimony, Ms. Bulkley argues that Mr. Gorman's risk premium analysis is flawed because it is inconsistent with the notion of an inverse relationship between a risk premium and interest rates.[65] However, academic studies do not support the existence of a simplistic inverse relationship. As Mr. Gorman testified:

> While academic studies have shown that, in the past, there has been an inverse relationship among these variables, researchers have found that the relationship changes over time and is influenced by changes in perception of the risk of bond investments relative to equity investments, and not simply changes to interest rates.[66]

Indeed, even the studies cited by Ms. Bulkley[67] do not support her conclusion. For example, while Brigham et al. found an inverse correlation between risk premiums and interest rates beginning in 1980, they also found that the opposite had been true prior to that time.[68] And as discussed by Robert Harris, another author cited by Ms. Bulkley, the Brigham study "did not provide direct empirical proxies for changes in equity risks that would explain changes in equity risk premia over time."[69]

Instead of a simplistic inverse relationship, the literature shows that risk premiums change over time based not only on the level of interest rates, but also on other factors such as the spread between corporate and government bond yields and the dispersion of analysts' forecasts.[70] The academic studies conclude that "[o]ne would expect changes in measured equity risk premia to be related to changes in perceived riskiness."[71] Neither logic nor academic

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[65]Bulkley Rebuttal at 69-70.
[66]Gorman Direct at 64-65.
[67]*Id.*
[68]*Id.*
[69]*Id.*
[70]*Id.*
[71]*Id.*

findings support Ms. Bulkley's assertion that the premium investors require to purchase stocks compared to debt securities is based purely on the level of interest rates.

In sum, changes in risk premiums are attributable to changes in the perceived relative investment risk of equity and debt securities based on current market conditions.[72] Because Ms. Bulkley ignores investment risk differentials in favor of a simplistic inverse relationship between an equity risk premium and interest rates, her criticism of and adjustment to Mr. Gorman's risk premium model should be rejected.

Ms. Bulkley also argues that Mr. Gorman's use of a five-year rolling average equity risk premium is not supported by any evidence. This argument is without merit and should be rejected because Mr. Gorman discussed in detail in his direct testimony the reasoning for using a rolling average methodology.[73]

II.C.3. CAPM

Mr. Gorman also ran a CAPM analysis to estimate TEP's cost of equity. CAPM is based on the concept that the market-required rate of return for a security equals the risk-free rate plus a risk premium associated with the specific security.[74] The inputs for Mr. Gorman's CAPM are an estimate of the market risk-free rate, the company's beta, and the market risk premium.

For the risk-free rate, Mr. Gorman used *Blue Chip's* projected 30-year Treasury bond yield of 3.50%.[75] This is a reasonable proxy for the risk-free rate because Treasury securities

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[72] *Id.*
[73] Gorman Surrebuttal at 17.
[74] Gorman Direct at 44.
[75] *Id.* at 45.

are backed by the full faith and credit of the U.S. government and thus have negligible credit risk. Moreover, long-term Treasury bonds have a similar investment horizon to common stock, meaning that both reflect investor expectations of long-term inflation.[76]

The "beta" is the investment risk of a specific stock that cannot be diversified away when the stock is held in a diversified portfolio.[77] For this input, Mr. Gorman used the average *Value Line* beta estimate for the proxy group companies of 0.75.[78]

With respect to the market risk premium, Mr. Gorman developed two estimates, one forward looking and one based on a long-term historical average. Mr. Gorman derived the forward-looking estimate by estimating the expected return on the S&P 500 and subtracting the risk-free rate. Mr. Gorman obtained the expected return on the S&P 500 by adding an expected inflation rate to the long-term historical arithmetic average real return on the market. Specifically, Mr. Gorman used Duff & Phelps's average real market return over the period 1926 to 2014 (8.9%), and added that to the current consensus analysts' inflation projection as measured by the Consumer Price Index (2.3%), resulting in an expected market return of 11.40%. Subtracting the risk-free rate of 3.50% from this return yields a market risk premium of 7.90% for the forward-looking analysis.[79]

For the historical estimate of the market risk premium, Mr. Gorman started with Duff & Phelps's estimated arithmetic average of the achieved total return on the S&P 500 from 1926 to 2014 (12.1%) and subtracted the total return on long-term Treasury bonds (6.1%).[80] This results in a market risk premium of 6.0%. The average of Mr. Gorman's two market premium

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[76] *Id.*
[77] *Id.* at 44.
[78] *Id.* at 46.
[79] *Id.* at 46-47.
[80] *Id.* at 47.

estimates is thus 7.0% (6.0% to 7.9%).[81] Mr. Gorman confirmed the veracity of his estimates by comparing them to Morningstar's market risk premiums, which are in the range of 6.3% to 7.0%.[82] This is evidence that Mr. Gorman's market risk premiums are reasonable.

Mr. Gorman's CAPM analysis produces a return in the range of 8.01% to 9.44%. Due to the relatively low historical level of risk-free rates, Mr. Gorman concluded a reasonable CAPM cost of equity estimate is 9.1%, giving 75% weight to his high-end estimate.[83]

In addition to the inverse relationship argument discussed above, Ms. Bulkley criticizes Mr. Gorman's historical market risk premium for not reflecting the current market conditions. As discussed in Mr. Gorman's surrebuttal testimony, this argument is without merit. Mr. Gorman fully captures the current market conditions by giving 75% weight to his high-end estimates.[84] Further, Ms. Bulkley responded to Mr. Gorman's criticism of using a forward-looking expected return by simply stating that that was the methodology endorsed by the Federal Energy Regulatory Commission ("FERC"). However, as Mr. Gorman testifies, her forward-looking market return is based on overstated growth rate estimates and should be rejected.[85]

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[81] *Id.*
[82] *Id.* at 48-49.
[83] *Id.* at 49.
[84] Gorman Surrebuttal at 15.
[85] *Id.* at 16.

II.C.4. Summary of ROE Analyses

The results of Mr. Gorman's analyses are set out below:[86]

TABLE 3

Results of Mr. Gorman's ROE Analysis

Description	Results
DCF	8.7%
Risk Premium	9.7%
CAPM	9.1%

Based on the results of these analyses, Mr. Gorman's recommended range for TEP's ROE is 8.90% to 9.70%, with a midpoint of 9.30%. The low end of this range is based on the DCF and CAPM results, while the high end is the based on the risk premium studies. An ROE of 9.30% would fairly compensate investors for TEP's total investment risk. And, as set out in detail in Mr. Gorman's testimony, it would preserve TEP's financial integrity and support an investment grade bond rating for the Company. Mr. Gorman's ROE recommendation should be adopted.

II.D. Ms. Bulkley's Recommendation

In her direct testimony, Ms. Bulkley recommended a range of 10.00% to 10.60%, with a point estimate of 10.35%, and a fair value increment of 1.42%.[87] Similarly, the Company's revised ROE proposal of 10.00% is unreasonable and should be rejected. Ms. Bulkley's

[86]Gorman Direct at 50.
[87]Bulkley Direct at 3.

recommended return for TEP substantially exceeds a fair rate of return and its current market cost of equity capital. The flaws in Ms. Bulkley's estimates are explained below.

II.D.1. Constant Growth DCF

Ms. Bulkley's constant growth DCF assumes an unreasonable growth rate for her proxy group of 5.55%, which is substantially higher than analysts' growth outlooks, even over the next three to five years.[88]

Ms. Bulkley's constant growth DCF model produces ROE estimates in the range of 9.29% to 9.59%, with a midpoint of 9.45%. These results should be considered as reasonable high-end estimates, because they are subject to an excessive growth rate.

II.D.2. Multi-Stage Growth DCF

Ms. Bulkley's multi-stage DCF results are illogical and suspect because she uses a lower growth rate of 5.40% relative to the average growth rate in her constant growth DCF model, but produces higher multi-stage DCF returns. As such, her multi-stage DCF study appears to be unreasonable.

Most importantly, Ms. Bulkley's multi-stage DCF model uses an inflated long-term growth rate. To come up with her long-term rate input, Ms. Bulkley simply takes the historical GDP growth rates for the period from 1929 to 2014 and adds a current inflation rate to create a nominal GDP growth rate.[89] The historical real GDP growth rate is 3.25%, and Ms. Bulkley used an inflation rate of 2.09%. This produces a 5.40% nominal GDP growth rate. As an initial

[88]Gorman Direct at 56.
[89]Bulkley Direct at 28.

matter, Ms. Bulkley fails to explain the basis of her assumption that a historical real GDP growth rate is appropriate for projecting future growth. The world economy has changed a great deal since 1926, and Ms. Bulkley has provided no credible evidence that the U.S. economy will simply grow at the exact same rate in the future that it has in the past. Nor has she provided evidence that investors expect the historical rate to prevail in the future.

Further, Ms. Bulkley's use of a historical real GDP growth rate is inflated in light of current economic outlooks. As Mr. Gorman demonstrated in the following chart, Ms. Bulkley's historical real GDP growth rate is significantly higher than independent consensus economists' projections of long-term GDP growth in the future.[90]

TABLE 4

GDP Projections

Description	GDP Inflation	Real GDP	Nominal GDP
Ms. Bulkley	2.1%	3.3%	5.40%
Consensus Economists (5-Year)	2.1%	2.1%	4.20%
Consensus Economists (10-Year)	2.0%	2.1%	4.20%

Ms. Bulkley can cite no analysts' projections of long-term GDP growth that are consistent with her inflated estimate. Because her historically derived GDP growth rate overstates future long-term growth, Ms. Bulkley's multi-stage DCF model overestimates the cost of equity for the proxy group.

For all these reasons, Ms. Bulkley's multi-stage DCF model produces an exaggerated return estimate. Mr. Gorman testified that Ms. Bulkley's model could be corrected if consensus

[90]Gorman Direct at 59.

economists' projections were used for the GDP growth rate. This reduces Ms. Bulkley's multi-stage DCF estimated return from 9.62% to 8.68%.[91]

II.D.3. CAPM

Ms. Bulkley's CAPM analysis is flawed because it uses an inflated market risk premiums of 10.33%, 9.85% and 8.61%.[92] These premiums are based on a market DCF return of 13.41%. The DCF returns, in turn, include stock market index growth rates of approximately 11.23%.[93] As explained in Mr. Gorman's testimony, the DCF model requires the use of a long-term sustainable growth rate, but a growth rate of 11.23% is far too high to be a reasonable outlook for sustainable long-term stock market growth.[94] Indeed, these rates are more than double consensus economists' projections of GDP growth (4.20%). Mr. Gorman also takes issue with Ms. Bulkley's risk-free rates because they are almost a year old.

Because Ms. Bulkley's long-term market growth rate estimates are unreasonably high, her CAPM analysis produces an inflated return. Mr. Gorman testified that Ms. Bulkley's CAPM analysis could be adjusted to provide a more reasonable result. Specifically, using (i) Ms. Bulkley's updated current (2.72%), near-term (3.15%) and projected (4.50%) risk-free rates, (ii) beta estimates of 0.696 (*Value Line*) and 0.767 (Bloomberg), and (iii) a market premium of 7.0%, which is the highest Morningstar estimate, results in a CAPM estimated return no higher than 8.8%.[95]

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[91]Gorman Direct at 60.
[92]Bulkley Direct, Exhibit AEB-5.
[93]Gorman Direct at 62.
[94]*Id.*
[95]Gorman Direct at 63.

II.D.4. Bond Yield Risk Premium

Ms. Bulkley also ran a bond yield risk premium model, which is based on her assumption that there is an inverse relationship between the level of interest rates and the equity risk premium. Ms. Bulkley starts with an average electric risk premium of 5.65% over the period January 1980 to second quarter of 2015. However, based on the assumed inverse relationship, Ms. Bulkley applies a regression analysis to Treasury bond yields to increase this risk premium to a range of 5.86% to 6.82%, which results in ROE estimates in the range of 9.91% to 10.66%.[96]

As discussed above, Ms. Bulkley's assumption of a simple inverse relationship is inaccurate. Academic findings support the common-sense notion that investors look at the totality of risk when deciding whether to purchase a stock or a debt security and do not rely exclusively on the level of interest rates. Accordingly, Ms. Bulkley's attempt to use a regression analysis to increase the risk premium she calculated should be rejected. Applying Ms. Bulkley's average equity risk premium over Treasury yields of 5.65% to Ms. Bulkley's current consensus Treasury yield of 3.50%, will produce a CAPM return of 9.15%.[97]

II.E. Summary of ROE

For all of the foregoing reasons, Ms. Bulkley's recommendation should be rejected. DoD/FEA requests that the Commission adopt Mr. Gorman's recommendation of an ROE of 9.30% for TEP.

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[96]Exhibit AEB-6.
[97]Gorman Direct at 65.

II.F. Financial Integrity

Mr. Gorman also assessed the reasonableness of his recommended ROE of 9.3% based on S&P key credit rating financial ratios. Mr. Gorman concluded at his recommended ROE, the Company's proposed embedded cost of debt and actual test-year end capital structure, TEP will support its investment grade bond rating.[98]

II.G. Capital Structure

TEP's proposed capital structure consists of 50.03% common equity capital and 49.97% long-term debt.[99] Mr. Gorman disputes TEP's proposed capital structure because it is not based on actual capital structure weights at the end of the test-year period. Alternatively, he proposes a capital structure consisting of 48.69% common equity and 51.31% long-term debt capital as provided by the Company on Schedule D-1.

In his rebuttal testimony, Mr. Grant explained that the two debt issuances that were removed from the actual long-term debt balance are "known and measurable" and should be reflected in the Company's proposed capital structure.[100] However, Mr. Gorman explained in great detail in his direct and surrebuttal testimonies that TEP's actual capital structure has supported the Company's strong investment grade credit rating while allowing TEP to access external capital at reasonable prices to support its capital improvement programs. Therefore, there is no justifiable reason to increase the Company's common equity ratio and inflate the revenue requirements.

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[98] *Id.* at 53-54.
[99] Grant Direct at 12 and Schedule D-1, page 1.
[100] Grant Rebuttal at 8.

Ms. Bulkley also criticizes Mr. Gorman's proposed capital structure primarily because he compared his recommendation to the capital structure of the proxy group companies instead of their operating subsidiaries.[101] While Mr. Gorman does not dispute the fact that comparing his recommended capital structure to the capital structures of the proxy group operating subsidiaries provides a reasonable comparative basis, he disagrees with Ms. Bulkley that it is inappropriate to use the proxy group capital structure when determining the reasonableness of his recommendation because these are the companies used to determine a fair return for TEP based on the companies' credit rating as a risk-comparable screening criteria. Further, electric utility subsidiaries also show that capital structures do not include as much as equity as proposed by TEP. Most importantly, Mr. Gorman presents market evidence that shows that TEP's actual capital structure mix is adequate to support the Company's access to capital and its current investment bond rating. Therefore, TEP's proposal to increase its actual common equity ratio should be rejected.[102]

II.H. Fair Value

Ms. Bulkley's estimate of an FVROR for TEP is flawed because it does not accurately measure market participants' required cost of capital for TEP, or alternative comparable investment risk utilities. Rather, Ms. Bulkley's FVROR is largely driven by projections of Treasury bond yields five to ten years into the future, rather than current observable cost of capital for TEP and other electric utilities in the current capital market, or in the capital market projected to prevail during the period TEP's rates will be in effect.[103] Using Ms. Bulkley's own

[101]Gorman Surrebuttal at 19.
[102]Gorman Surrebuttal at 20.
[103]*Id.* and Exhibit MPG-23, page 2.

methodology, but substituting current observable Treasury bond yields, and Treasury bond yields projected by independent economists over the expected rate-effective period for this proceeding, demonstrates that an FVROR should be no higher than 5.1%.[104] This evidence clearly shows that TEP's original requested FVROR of 5.69% and the settlement FVROR of 5.34% are excessive and should be rejected.

Ms. Bulkley recommends an FVROR of 5.69% to be applied to TEP's Fair Value Rate Base ("FVRB") of $2.9 billion, which is the weighted average of the Original Cost Rate Base ("OCRB") of $2.1 billion (50%) and the Reconstruction Cost New, Depreciated ("RCND") rate base of $3.7 billion (50%). This methodology results in a fair value increment of 0.54% to the Company's ROR-ORCB of 7.34%.[105]

Mr. Gorman testifies that it is not appropriate to add an incremental rate of return to the ROR-OCRB to support a higher requested operating income because investors should be fairly compensated using either the original cost or a fair value methodology. Specifically, Mr. Gorman states:

> The primary difference between an ROR-OCRB and an ROR-FVRB relates to compensating investors for the expected investment growth. In an ROR-OCRB, the expected growth rate in asset values is included in the rate of return and investors are compensated for this growth in the utility's operating income. Conversely, in a fair value methodology, expected growth in the value of the assets is picked up in the growth to the rate base itself, and not in the rate of return.[106]

Even though Mr. Gorman disagrees with the Company's application of the fair value methodology, he revises the Company's proposed 0.54% rate of return increment to reflect his

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[104]Gorman Surrebuttal at 4-5, and Exhibit MPG-23, page 2.
[105]Gorman Direct at 70.
[106]Gorman Direct at 71.

proposed actual capital structure, his recommended ROE of 9.30% and his updated risk-free rate of 0.92%, which results in a fair value increment of 0.18%.[107]

In her rebuttal testimony, Ms. Bulkley criticizes Mr. Gorman for using current observable risk-free rates and proposes to give primary weight to the projected risk-free rates.[108] As Mr. Gorman explained, this is a major flaw in Ms. Bulkley's analysis because current market evidence is the best information available to market participants investing in TEP utility plant. Therefore Ms. Bulkley's fair methodology should be rejected as inconsistent with market evidence and not a reasonable measure of the current market cost of equity.

III. COST OF SERVICE AND REVENUE ALLOCATION

DoD/FEA presented Maurice Brubaker as its witness on cost of service and revenue allocation. Mr. Brubaker was cross-examined on his testimony on September 9, 2016.

III.A. Cost of Service

Mr. Brubaker presented a detailed recitation of the process and the components of cost of service studies, highlighting functionalization, classification and allocation. For the most part, there is general agreement among all of the cost of service witnesses in this case as to these various steps and elements.

Beginning at page 20 of his direct testimony, Mr. Brubaker outlined the primary reasons for basing rates on cost of service. Those primary reasons are to achieve equity, to enhance the opportunities for conservation, and to permit cost minimization consistent with cost of service and providing economically rational price signals.

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[107] *Id.* at 73-75.
[108] Gorman Surrebuttal at 20.

The objective of basing rates on cost of service was also supported by TEP witness Jones (Direct Testimony at page 4), TEP witness Overcast (Rebuttal Testimony at page 22), Staff witness Solganick (Direct Testimony at page 3), RUCO witness Radigan (Direct Testimony at pages 2 and 6) and Freeport/AECC/Noble Americas witness Higgins (Direct Testimony at page 3).

In terms of the specific cost of service methodology that should be used in this case, the witnesses were essentially unanimous that an average and excess ("A&E") methodology should be employed. (See Direct Testimony of TEP witness Jones at page 4, Rebuttal Testimony of TEP witness Overcast at page 60, Direct Testimony of Staff witness Solganick at page 20, Direct Testimony of RUCO witness Radigan at pages 2 and 6 and Direct Testimony of Freeport/AECC/Noble Americas witness Higgins at page 2). To be sure, there were nuances of application of the A&E methodology, but as Mr. Brubaker testified during cross-examination (September 9, 2016 Transcript at pages 255-256), these nuances had little impact on the overall outcome of the cost of service studies, so there was basic alignment with the relative degree of profitability of the various customer classes as indicated by these studies.

Mr. Brubaker noted at page 3 of his direct testimony that the A&E methodology, and coincident peak methodologies are the two generally accepted and most widely used methods for allocating generation and transmission fixed costs that would be applicable to TEP. Given the high summer demands of TEP relative to demands in other months, there also was general agreement that the peak portions of the cost of service study should be based on loads imposed on the electric system during the summer peak months. This explains why the different variations of average and excess concentrated on either the coincident peaks during the four summer months, or the non-coincident peaks during the four summer months.

III.B. Revenue Allocation

In addition to the general agreement on cost of service methodology, the parties also generally agreed in a broad sense that the Large Power Service ("LPS") class was being charged too much in relation to cost of service, and also agreed that it should receive a decrease, or an increase less than the system average increase.

TEP witness Jones explained at page 4 of his direct testimony the rationale for the allocation of the revenue increase that TEP was proposing. Essentially, alignment of revenues with cost of service was the objective. Company Schedule A-1 showed that as compared to an overall proposed increase of 12%, TEP proposed a 16.2% increase for the Residential class and a 27% increase for the Lighting class, the two classes with the lowest relative rate of return. The LPS class was proposed to receive a 2.4% decrease, in recognition of its cost of service in relation to current rates. Mr. Higgins (page 26 of Direct) proposed a decrease of about 7% for the LPS class. In terms of the allocation of the "settlement" revenue requirement, page 18 of his surrebuttal testimony shows that he proposed approximately a 5% overall decrease for the LPS class.

Exhibit HS-4 to Staff witness Solganick's direct testimony also showed a proposed decrease for the LPS class. Staff's proposal in surrebuttal testimony moved somewhat away from this position, but still recognized that the LPS class was substantially over priced, and should receive either a decrease, or an increase that is well below both the system average, and the increase to the Residential class.

In his rejoinder testimony, TEP witness Jones (see Exhibit CAJ-RJ-1, Schedule H-1, page 1) totally reversed course and now proposes an overall <u>increase</u> to the LPS class. This

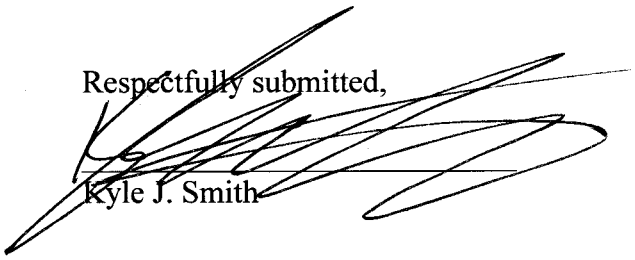
moves in absolutely the wrong direction, and is unreasonable. As Mr. Brubaker pointed out under cross-examination (September 9, 2016 Transcript at pages 249-250), as the Company's case moved from direct testimony to rebuttal to rejoinder, its revenue allocation proposal became less and less cost-based.

During cross-examination (September 9, 2016 Transcript, pages 256-257) DoD/FEA witness Brubaker explained, in response to a question from the Administrative Law Judge ("ALJ"), how the revenue allocation recommendation in his testimony would be implemented. That recommendation was to maintain the Residential class increase at the level proposed by TEP regardless of the overall increase granted, and to proportion down the revenues to be received from the other customer classes on a linear (equal proportional) basis. Attached to this brief as **Attachment A** is a summary showing how this would work. Two levels of revenue increase are illustrated. First, the non-unanimous "settlement increase" of $81.5 million is illustrated. Also shown is the allocation of the $67.3 million increase that would result from the adoption of the DoD/FEA recommendation concerning ROE.

In order to make meaningful progress toward class cost of service, the allocation proposal of DoD/FEA should be accepted. It moves toward cost of service, yet incorporates a healthy dose of gradualism. The above average increase to the Residential class is essential to closing the gap. As Mr. Brubaker explained during his cross-examination (September 9, 2016 Transcript, page 248) gradualism was part of his proposal, but in interpreting the reasonableness of the gradualism proposal it was necessary to recognize that, unlike in practically every other utility, the Residential class rate of return was actually negative (or very low depending upon which cost of service study is utilized). Simply stated, TEP's proposed revenue allocation, as set forth in its rejoinder testimony, fails to make meaningful movement toward cost of service

for the various customer classes. All parties agree that movement to cost of service is appropriate. The issue is how best to accomplish that objective while still observing the principle of gradualism. DoD/FEA submits that its proposal as illustrated in **Attachment A** best accomplishes those twin objectives.

Respectfully submitted,



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CERTIFICATE OF SERVICE

The original and thirteen (13) copies of the foregoing is being transmitted Federal Express overnight delivery this 27th day of October, 2016, to be received and filed on the 28th day of October, 2016 with:

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

Copies of the foregoing were also transmitted via regular U.S. Mail or electronic mail to all parties on the service list on this 28th day of October, 2016.

Kyle J Smith

Arizona Corporation Commission
Docket No. E-01933A-15-0322
Tucson Electric Power Company

Revenue Increase Allocation Proposal of
the United States Department of Defense and
All Other Federal Executive Agencies
(Dollar Amounts in Millions)

Line	Rate Class	Adj. TY Revenue (1)	Revenue after Increase (2)	Proposed Increase (3)	Percent Increase (4)
	"Settlement Increase" of $81.5 Million				
1	Residential	$404.6	$470.0	$65.4	16.2%
2	General Service	249.2	244.3	(4.9)	-2.0%
3	Lg Gen. Service	119.2	148.9	29.7	25.0%
4	Lg Pwr. Service	131.7	121.9	(9.9)	-7.5%
5	Lighting	4.7	5.7	1.1	23.1%
6	Total	$909.3	$990.8	$81.5	9.0%
	"DOD/FEA Proposed Increase" of $67.3 Million				
7	Residential	$404.6	$470.0	$65.4	16.2%
8	General Service	249.2	237.6	(11.6)	-4.6%
9	Lg Gen. Service	119.2	144.9	25.7	21.5%
10	Lg Pwr. Service	131.7	118.5	(13.2)	-10.0%
11	Lighting	4.7	5.6	0.9	19.7%
12	Total	$909.3	$976.6	$67.3	7.4%