STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

IN THE MATTER OF THE VERIFIED PETITION OF JERSEY CENTRAL POWER & LIGHT COMPANY FOR APPROVAL OF AN INFRASTRUCTURE INVESTMENT PROGRAM (JCP&L RELIABILITY PLUS)	)))))))	**BPU DOCKET NO. EO18070728**

DIRECT TESTIMONY OF KEVIN O'DONNELL, CFA ON BEHALF OF THE DIVISION OF RATE COUNSEL

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is Kevin W. O'Donnell. I am President of Nova Energy Consultants, Inc. My business address is 1350 Maynard Rd., Suite 101, Cary, North Carolina 27511.

Q. ON WHOSE BEHALF ARE YOU PRESENTING TESTIMONY IN THIS PROCEEDING?

A. I am testifying on behalf of the New Jersey Division of Rate Counsel ("Rate Counsel"), which represents consumers before the New Jersey Board of Public Utilities ("Board" or "BPU").

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND RELEVANT EMPLOYMENT EXPERIENCE.

A. I have a Bachelor of Science in Civil Engineering from North Carolina State University and a Master of Business Administration from the Florida State University. I earned the designation of Chartered Financial Analyst (CFA) in 1988. I have worked in utility regulation since September 1984, when I joined the Public Staff of the North Carolina Utilities Commission (NCUC). I left the NCUC Public Staff in 1991 and have worked continuously in utility consulting since that time, first with Booth & Associates, Inc. (until 1994), then as Director of Retail Rates for the North Carolina Electric Membership Corporation (1994-1995), and since then in my own consulting firm. I have been accepted as an expert witness on rate of return, cost of capital, capital structure, cost of service, rate design, and other regulatory issues in general rate cases, fuel cost proceedings, and other proceedings before the North Carolina Utilities Commission, the South Carolina Public Service Commission, the Wisconsin Public Service Commission, the Virginia State Commerce Commission, the

Minnesota Public Service Commission, the New Jersey Board of Public Utilities, the Colorado Public Utilities Commission, the District of Columbia Public Service Commission, and the Florida Public Service Commission. In 1996, I testified before the U.S. House of Representatives' Committee on Commerce and Subcommittee on Energy and Power, concerning competition within the electric utility industry. Additional details regarding my education and work experience are set forth in Appendix A.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony in this proceeding is to present my findings and recommendations to the Board as to the proper rate of return to Jersey Central Power & Light Company ("JCP&L" or "Company") in it Petition for approval of the Company's Infrastructure Investment Plan ("IIP").

Q. WHAT RATE OF RETURN DID JCP&L ASK THE BOARD TO GRANT THE COMPANY IN THIS PROCEEDING?

A. According to paragraph 30 of the Petition in this case, JCP&L is requesting revenues be based on the same rate of return it was allowed in its 2016 general base rate case filing (BPU Docket No. ER16040383). In response to Rate Counsel Data Request No. RCR-ROR-1, JCP&L cited paragraph 14 of the 2016 settlement for the capital structure and associated cost rates it used in this petition. These capital ratios and associated cost rates can be seen in Table 1 below and, when combined, produce an overall 7.47% cost of capital.

Table 1: JCP&L Requested Overall Cost of Capital

Component	Capital Structure Ratio (%)	Cost Rate (%)	Wgtd. Cost Rate (%)
Long-Term Debt	55.00%	5.73%	3.15%
Common Equity	45.00%	9.60%	4.32%
Total Capitalization	100.00%		7.47%

When grossed up for taxes, the requested pre-tax weighted cost of capital is 9.16%.[1]

Q. DO YOU AGREE WITH JCP&L'S REQUEST?

A. No. I disagree with JCP&L's requested return on equity (ROE). The requested ROE is excessive and unwarranted given the current financial market conditions and the lower risk associated with accelerated cost recovery.

Q. PLEASE SUMMARIZE YOUR PRIMARY RECOMMENDATIONS IN THIS CASE.

A. My findings and recommendations in this case are as follows:

- the return on equity requested by the Company is simply out-of-touch with current market conditions;
- the requested ROE does not adjust for changes in the market since JCP&L's last rate case;
- the requested ROE does not reflect the lower risk, automatic nature of the proposed IIP;
- the proper return on equity for the IIP, based on current capital market conditions, for JCP&L in this proceeding is 8.75%, which reflects a 50

[1] Prefiled direct testimony of Mr. Mark Mader, p. 3, l. 7.

basis point reduction for the lower risk associated with the fast and automatic cost recovery associated with the IIP from JCP&L's cost of equity that I calculate at 9.25%;

- the proper capital structure to use in this proceeding is 45.0% common equity and 55.0% long-term debt as imputed by the Board in JCP&L's last base rate case;
- for ratemaking purposes, the proper cost of long-term debt is 5.38%; and
- the overall rate of return that should be granted JCP&L in this case is 6.90%, based on a 8.75% ROE.

II. OVERVIEW

Q. MR. O'DONNELL, PLEASE EXPLAIN JCP&L's IIP PETITION

A. On July 13, 2018, JCP&L filed its petition requesting that it be allowed to make annual investments to its electric grid that would improve JCP&L's service reliability. The plan includes $386.8 million[2] in investments the Company claims are above and beyond its regular annual investments in transmission and distribution. The investments proposed by the Company include overhead circuit upgrades, system reliability equipment, distribution automation, and underground system improvements. Table 2 below provides the specific investment categories and associated costs to consumers.

[2] Petition, paragraph 7

Table 2: JCP&L Reliability Plus Investment Totals

Project Category	Capital Investment 2019-2022[3]
	($ millions)
Overhead Circuits	$132.9
Substation	$85.9
Distribution Automation	$108.4
Underground	$59.7
Total Program Cost	$386.8

Q. HOW DOES JCP&L PROPOSE TO CHANGE RATES IN ORDER FOR THE COMPANY TO RECOVER THE COSTS ASSOCIATED WITH THE JCP&L IIP?

A. The Company is proposing to recover its costs for the IIP through twice a year base rate filings with the Board that will change rates on a per kWh basis, a per kW basis, or through a per fixture charge.[4] These rates will represent a separate clause in the JCP&L tariffs.[5]

Q. MR. O'DONNELL, HOW HAVE THE FINANCIAL MARKETS CHANGED SINCE THE BOARD'S FINAL ORDER IN THE COMPANY'S LAST RATE CASE IN 2016?

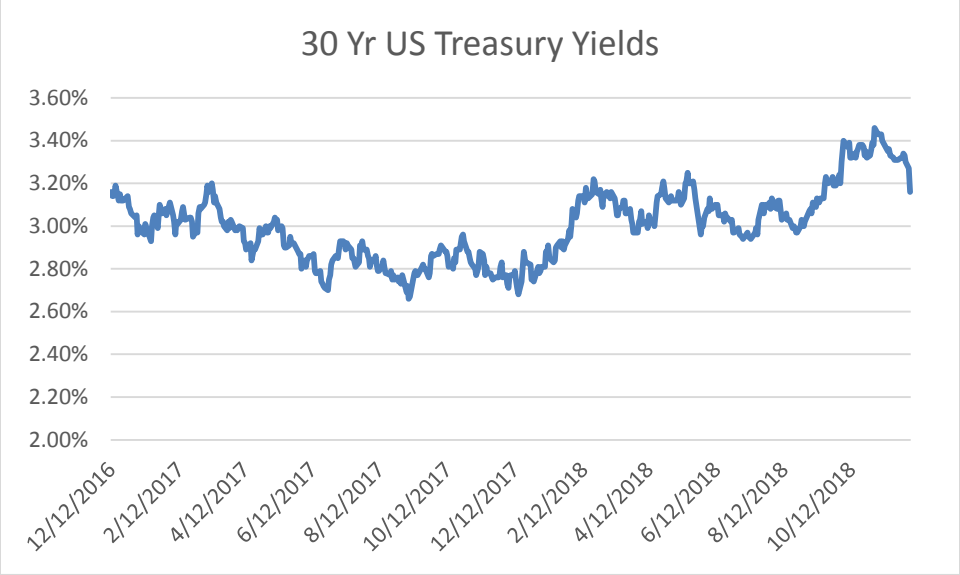
A. Interest rates have fallen and then risen over the past two years while the stock market continues to churn higher reflecting strong underlying economic growth.

[3] Petition, paragraph 15
[4] Direct testimony of Mr. Dennis Pavagadhi, p. 6, l. 11-13
[5] Direct testimony of Mr. Mark Mader, p. 2, l. 6

Q. PLEASE PROVIDE EVIDENCE TO SHOW HOW INTEREST RATES HAVE CHANGED SINCE THE BOARD'S DECISION IN THE COMPANY'S 2016 BASE RATE CASE.

A. In Chart 1 below, I have provided the change in the 30-year US Treasury bond market since the Board's final order in JCP&L's last base rate case. On the date (December 12, 2016) of the Board's order in the last JCP&L rate case, the yield on 30-year US Treasury bonds was 3.16%. As of December 4, 2018, the yield on 30-year US Treasury bonds was exactly the same, 3.16%.

Chart 1: Yield on 30-Year US Treasury Bonds



Source for raw data: https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2017, 2018

Q. HOW HAVE EQUITY MARKETS CHANGED SINCE JCP&L'S LAST RATE CASE?

A. Equity investors have recognized the lower cost investment environment and have driven up the Dow Jones Utility Average over the past two years. Chart 2 below shows the strength of the utility sector since the Board's order in the JCP&L 2016 base rate case.

Chart 2: Dow Jones Utility Average Since Last JCPL Base Rate Case

Source for chart: Yahoo Finance accessed on December 12, 2018

The utility market over the past two years has been very strong. While the S&P 500 index has risen approximately 20% over the past two years, the utility index has, likewise, risen approximately 15%. When utility stock prices increase, the corresponding expected return falls as investors are willing to pay more for a given level of income from utility stocks. Failing to recognize the lower expected return on utility investments will result in the economy of New Jersey being harmed by unnecessarily high and punitive utility rates.

Q. DIDN'T THE FEDERAL RESERVE JUST RAISE INTEREST RATES?

A. Yes, on September 26, 2018, the Federal Reserve increased the Federal Funds rates from 2.0% to 2.25%. [6]

[6] https://www.cnbc.com/2018/09/26/fed-hikes-rates-by-a-quarter-point.html

Q. DOES THIS MEAN THAT THE COST OF CAPITAL HAS INCREASED FOR COMPANIES LIKE JCP&L?

A. No. The interest rate increase represents only the interest rate at which banks borrow short-term money.

In announcing its decision to hike the Federal Reserve funds rate by only 0.25%, the Federal Reserve noted the strength of the economy and the tame inflation expectations when it stated in its press release announcing the rate increase:

> Information received since the Federal Open Market Committee met in August indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has stayed low. Household spending and business fixed investment have grown strongly. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectations are little changed, on balance.[7]

The interest rate hike from the Federal Reserve does not always result in an increase in long-term rates. As noted in Chart 1 above, the yield on 30-year US Treasury rates is at the same level it was two years ago. However, the Federal Reserve has increased the overnight rate charged to banks three times in 2017 and, again, three times in 2018. Short-term interest rates are ticking slightly upward but long-term rates are stubbornly flat. This situation is known as a flattening of the yield curve and, often times, is a harbinger of slow economic times ahead. Layering a utility rate hike on top of a slowing New Jersey economy may hurt growth prospects for the region going forward.

[7] Federal Reserve issued FOMC statement, Sept. 26, 2018

III. ECONOMIC AND REGULATORY POLICY GUIDELINES FOR A FAIR RATE OF RETURN

Q. PLEASE BRIEFLY DESCRIBE THE ECONOMIC AND REGULATORY POLICY CONSIDERATIONS YOU HAVE TAKEN INTO ACCOUNT IN DEVELOPING YOUR RECOMMENDATION CONCERNING THE FAIR RATE OF RETURN THAT UTILITY COMPANIES SHOULD BE ALLOWED THE OPPORTUNITY TO EARN.

A. The theory of utility regulation assumes that public utilities perform functions that are natural monopolies. Historically, it was believed or assumed that it was more efficient for a single firm to provide a particular utility service than multiple firms. Even though deregulation for the procurement of natural gas and generation of electric power and energy is spreading, delivery of these products to end-use customers is still a monopoly business and will, for the foreseeable future, be regulated. On this basis, state legislatures or public utility commissions establish exclusive franchised territories to public utilities or determine territorial boundaries where disputes arise, in order for these utilities to provide services more efficiently and at the lowest reasonable cost. In exchange for the protection within its monopoly service area, the utility is obligated to provide adequate service at fair, regulated rates.

This naturally raises the question - what constitutes a just and reasonable rate? The generally accepted answer is that a prudently managed electric utility should be allowed to charge prices that allow the utility the opportunity to recover the reasonable and prudent costs of providing utility service and the opportunity to earn a fair rate of return on invested capital. This just and reasonable rate of return on capital should allow the utility, under prudent management, to provide adequate service and attract capital to meet future expansion needs in its service area. Since public utilities are capital-intensive businesses, the cost of capital is a crucial issue for utility companies, their customers, and regulators. If the allowed rate of return is set too high, then consumers are burdened with excessive costs,

current investors receive a windfall, and the utility has an incentive to overinvest. If the return is set too low, adequate service is jeopardized because the utility will not be able to raise new or working capital on reasonable terms.

Since every equity investor faces a risk-return tradeoff, the issue of risk is an important element in determining the fair rate of return for a utility.

Regulatory law and policy recognize that utilities compete with other firms in the market for investor capital. In the often-cited case of *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591 (1944), the U.S. Supreme Court recognized that utilities compete with other firms in the market for investor capital. Historically, this case has provided legal and policy guidance concerning the return which public utilities should be allowed to earn.

In *Hope Natural Gas*, the U.S. Supreme Court stated that the return to equity owners (or shareholders) of a regulated public utility should be "commensurate" to returns on investments in *other* enterprises whose "*risks* correspond" to those of the utility being examined:

> [T]he return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise so as to maintain credit and attract capital. (320 U.S. at 603)

IV. CURRENT COST OF COMMON EQUITY

A. Overview of Cost of Equity Analyses

Q. PLEASE EXPLAIN HOW THE ISSUE OF DETERMINING AN APPROPRIATE RETURN ON A UTILITY'S COMMON EQUITY INVESTMENT FITS INTO A REGULATORY AUTHORITY'S

DETERMINATION OF JUST AND REASONABLE RATES FOR THE UTILITY.

A. In New Jersey, as in virtually all regulatory jurisdictions, a utility's rates generally must be "just and reasonable." Thus, regulation recognizes that utilities are entitled to an opportunity to recover the reasonable and prudent costs of providing service, and the opportunity to earn a fair rate of return on the capital invested in the utility's facilities, such as electric distribution equipment, buildings, vehicles, and similar long-lived capital assets.

Q. **HOW DOES THE MANNER IN WHICH UTILITIES OBTAIN CAPITAL FUNDING RELATE TO THE BOARD'S DETERMINATION OF THE APPROPRIATE COST OF CAPITAL FOR A SPECIFIC UTILITY?**

A. Utilities obtain capital funding through a combination of borrowing (debt financing) and issuing stock (equity financing). Unless in the very rare event a company's borrowing is determined to be imprudent, the determination of ratepayer reimbursement for debt financing is generally uncontroversial, as the amount is simply the principal and interest repaid by the company to bondholders.

In contrast, the determination of the allowed ROE is where disputes often arise. The allowed ROE is the amount that is determined to be appropriate for the utility's common stockholders to earn on the capital that they invest in the utility when they buy its stock. If the regulatory authority sets the ROE too low, the stockholders will not have the opportunity to earn a fair return and this may either cause existing shareholders to sell their shares or deter new investors from buying shares. If, on the other hand, the regulatory authority sets the ROE too high, the ratepayers will pay too much. Because ratepayers cannot choose a different utility due to the monopolistic service territory restrictions, countervailing competitive market forces are absent and the resulting rates will be unjust and unreasonable to the ratepayer.

Q. HOW IS THE ESTIMATED SHARE PRICE USED IN DETERMINING THE LEVEL OF A UTILITY'S ALLOWED EARNINGS?

A. The required equity return, which is based on the market value of a utility's stock, is combined with the cost of debt to produce the Company's "overall rate of return", which is then applied to the net book value of the utility's investment, otherwise known as the rate base. Under this procedure, the market price of a stock is used only to determine the return that investors expect from that stock. That expectation is then applied to the book value of the utility's investment to identify the level of earnings that regulation should allow the utility the opportunity to earn.

Q. WHAT IS THE "COMPARABLE EARNINGS" TEST AND HOW DOES THAT FACTOR IN TO DETERMINING THE APPROPRIATE RETURN ON EQUITY?

A. The "comparable earnings" standard, i.e., that the earnings must be "commensurate with the returns on investments in other enterprises having corresponding risks," is derived from the Supreme Court's ruling in the *Hope Natural Gas* case to which I earlier referred. In my opinion, enterprises of "corresponding" or comparable risk are companies that are engaged in the same activities as JCP&L and are also regulated like JCP&L.

Q. HOW DO REGULATORY AUTHORITIES GO ABOUT DETERMINING A JUST AND REASONABLE RATE OF RETURN ON EQUITY FOR A UTILITY COMPANY?

A. Regulatory commissions and boards, as well as financial industry analysts, institutional investors, and individual investors, use different analytical models and methodologies to estimate/calculate reasonable rates of return on equity. Among the measures used are Discounted Cash Flow ("DCF") analysis, the Capital Asset Pricing Model (CAPM), and Comparable Earnings Analysis. I believe the most useful methodology is the DCF Analysis, but I am also

presenting the CAPM and the Comparable Earnings Model as checks for my DCF results.

Q. CAN YOU EXPLAIN WHY REGULATORY AUTHORITIES AND FINANCIAL ANALYSTS NEED TO USE THESE METHODOLOGIES TO DERIVE A COMPANY'S ESTIMATED RATE OF RETURN ON EQUITY?

A. Yes. There is no direct, observable way to determine the rate of return required by equity investors in any company or group of companies, investors must make do with indications from market data and analysts' predictions to estimate the appropriate price of a share. The principal and most reliable methodology for obtaining these indications is the Discounted Cash Flow procedure. Other procedures, such as the CAPM and the comparable earnings method, are less reliable than the DCF procedure.

Q. PLEASE EXPLAIN WHY YOU BELIEVE THE DCF MODEL IS SUPERIOR TO THE CAPM AND COMPARABLE EARNINGS METHOD APPROACHES.

A. The DCF is a pure investor-driven model that incorporates current investor expectations based on daily and ongoing market prices. When a situation develops in a company that affects its earnings and/or perceived risk level, the price of the stock adjusts immediately. Since the stock price is a major component in the DCF model, the change in risk level and/or earnings expectations is captured in the investor return requirement with either an upward or downward movement to account for the change in the company.

The comparable earnings model is based on earned returns from book equity, not market equity. There is no direct and immediate stockholder input into the comparable earnings model and, as a fault, that model lacks a clear and unmistaken link to stockholder expectations.

The CAPM suffers, to a degree, from the same problem as the comparable earnings model in that there is not a direct and immediate link from stock market prices to the CAPM result. The beta in the CAPM can reflect changes in the ROE, but the delay can, sometimes, make the CAPM results meaningless.

B. Selection of Proxy Companies

Q. DID YOU PEFORM AN ANALYSIS DIRECTLY ONJCP&L?

A. I was not able to perform a DCF analysis directly on JCP&L since it is a subsidiary of FirstEnergy Corp. and not separately tracked by analysts. However, since FirstEnergy is publicly traded, I was able to perform a rate of return analysis on the parent company. As the owner of JCP&L, FirstEnergy provides useful information that is directly applicable to its subsidiary, JCP&L.

Q. PLEASE DESCRIBE HOW YOU SELECTED YOUR PROXY GROUPS FOR ESTIMATING JCP&L'S RETURN ON EQUITY.

A. FirstEnergy is an electric holding company, so my first criterion was that inclusion in the comparable group required that the company be followed by The Value Line Investment Survey as an electric utility.

Secondly, I screened companies for the S&P Global Market Intelligence's Quality Ranking (SPGMI), which is a measure of growth and stability of earnings and dividends. Since FirstEnergy has a SPGMI rating of B, I included only companies listed as "Electric Utilities" by The Value Line Investment Survey" and had a SPGMI rating of B+ or B.

Another criterion was that none of the companies in the comparable group could be involved in a merger. For this reason, I removed SCANA, Dominion, Centerpoint, and Vectren.

The last criterion was that I removed any company that is under current financial distress. I removed PG&E Corp. from the comparable group due to the recent fires in California that may have started from a PG&E power line.

The list of companies in my comparable group can be seen in Exhibit KWO-1.

C. Discounted Cash Flow (DCF) Model

Q. PLEASE EXPLAIN THE DISCOUNTED CASH FLOW MODEL.

A. The DCF method is a widely used method for estimating an investor's required return on a firm's common equity. In my thirty-three years of experience, first with the Public Staff of the North Carolina Utilities Commission and later as a consultant, I have seen the DCF method used much more often than any other method for estimating the appropriate return on common equity. Witnesses from utilities, consumer advocates and other intervenors have used the DCF method, either by itself or in conjunction with other methods such as the Comparable Earnings Method or the CAPM, in their analyses.

The DCF method is based on the concept that the price which the investor is willing to pay for a stock is the discounted present value (i.e. its present worth) of what the investor *expects* to receive in the future as a result of purchasing that stock. This return to the investor is in the form of future dividends and price appreciation. However, price appreciation is only realized when the investor sells the stock, and a subsequent purchaser presumably is also focused on dividend growth following his or her purchase of the stock. Mathematically, the relationship is:

Let D = dividends per share in the initial future period
g = expected growth rate in dividends
k = cost of equity capital
P = price of asset (or present value of a future stream of dividends)

$$\frac{D}{} \qquad \frac{D(1+g)}{} \qquad \frac{D(1+g)}{} \qquad \frac{D(1+g)}{}$$

then $P = (1+k) + (1+k)^2 + (1+k)^3 + \ldots\ldots + (1+k)^t$

This equation represents the amount (P) an investor will be willing to pay *today* for a share of common equity with a given dividend stream over (t) periods.

Reducing the formula to an infinite geometric series, we have:

$$P = \frac{D}{k-g}$$

Solving for k yields:

$$k = \frac{D}{P} + g$$

Q. DO INVESTORS IN UTILITY COMMON STOCKS REALLY USE THE DCF MODEL IN MAKING INVESTMENT DECISIONS?

A. Yes, I believe that to be so. There are three primary reasons for my conclusion. First, there is much literature that supports the fact that, while emotional or so-called "irrational" behavior in the short term may affect (and has affected) share prices, over the long term a company's financial fundamentals drives the market.[8] Second, analysts give great weight to earnings, dividend, and book value growth in formulating their recommendations to clients. Finally, even a casual search on the internet produces hundreds of pages discussing the definition of the DCF methodology and how to apply it for investment decisions, from which I infer that general investor interest in DCF analysis is significant and widespread.

[8] See, for example, "Valuation: Measuring and Managing the Value of Companies," 4th Edition, McKinsey & Company Inc., Tim Koller, Marc Goedhart, David Wessels ("Provided that a company's share price eventually returns to its intrinsic value in the long run, managers would benefit from using a discounted-cash-flow approach for strategic decisions. What should matter is the long-term behavior of the share price of a company, not whether it is undervalued by 5 or 10 percent at any given time." http://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/do-fundamentalsor-emotionsdrive-the-stock-market (accessed March 2, 2016). See also, for example, http://www.businessinsider.com/what-drives-the-stock-market-2012-8 (Accessed March 2, 2016).

Thus, in today's investment environment, a stock investor will likely calculate the amount of funds he/she will receive in the future relative to the initial investment. These future funds include the current dividend yield, as well as the amount of funds that the investor can expect in the future from the growth in the dividend. The combination of the current dividend yield and the future growth in dividends is the basic tenet of the DCF model.

Q. IS THE DCF FORMULA EASY TO UNDERSTAND?

A. Yes. While the DCF formula stated above may appear complicated, it is intuitively a very simple model to understand. To determine the total rate of return one expects from investing in a particular equity security, the investor adds the dividend yield, which he or she expects to receive in the future, to the expected growth in dividends over time. If the regulatory authority sets the rate at a fair level, the utility will be able to attract capital at a reasonable cost, without forcing the utility's customers to pay more than necessary to attract needed capital.

Q. CAN YOU GIVE AN EXAMPLE?

A. Yes. For example, if investors expect a current dividend yield (D/P) of 5%, and also expect that dividends will grow (g) at 4%, then the Constant Growth DCF model indicates that investors would buy the utility's common stock if it provided a return on equity (k) of 9%, where k = (D/P) + g.

Q PLEASE EXPLAIN HOW YOU DEVELOPED THE DIVIDEND YIELD RANGES.

A. I developed the dividend yield range for the comparable group and FirstEnergy by averaging each Company's Value Line forecasted 12-month dividend yield over the above-stated 13-week, and 4-week periods as well as examining the most recent forecasted 12-month dividend yield reported by Value Line for each company. I examined the dividend yield over three different time frames to minimize the possibility of short-term price movements unnecessarily influencing

the model results. To further ensure the validity of the model results and to minimize the possibility of an isolated event skewing the DCF results, I also averaged the dividend yield over multiple time periods.

Q. HOW DID YOU DERIVE THE EXPECTED GROWTH RATE?

A. I used several methods in determining the growth in dividends that investors expect. The first method I used was an analysis commonly referred to as the "plowback ratio" method. If a company is earning a rate of return (r) on its common equity, and it retains a percentage of these earnings (b), then each year the earnings per share ("EPS") are expected to increase by the product (br) of its earnings per share in the previous year. Therefore, br is a good measure of growth in dividends per share. For example, if a company earns 10% on its equity and retains 50% (the other 50% being paid out in dividends), then the expected growth rate in earnings and dividends is 5% (50% of 10%). To calculate a plowback for the comparable group, I used the following formula:

$$g = \frac{br(2016) + br(2017) + br(2018E) + br(2021E\text{-}2023E\ Avg)}{4}$$

The plowback estimates for all companies in the comparable group can be obtained from The Value Line Investment Survey under the title "percent retained to common equity." Schedule KWO-2 lists the plowback ratios for each company in the comparable group as well as FirstEnergy.

A key component in the DCF Method is the expected growth in dividends. In analyzing the proper dividend growth rate to use in the DCF Method, the analyst must consider how dividends are created. Since over the long-term dividends cannot be paid out without a corporation first earning the funds paid out, earnings growth is a key element in analyzing what if any growth can be expected in dividends. Similarly, what remains in a corporation after it pays its dividend is reinvested, or "plowed back", into a corporation in order to generate future

growth. As a result, book value growth is another element that, in my opinion, must be considered in analyzing a corporation's expected dividend growth. To analyze the expected growth in dividends, I believe the analyst should first examine the historical record of past earnings, dividends, and book value. Hence, the second method I used to estimate the expected growth rate was to analyze the historical 10-year and 5-year historical compound annual rates of change for earnings per share (EPS), dividends per share (DPS), and book value per share (BPS) as reported by Value Line for each of the relevant corporations.

Value Line is the most recognized investment publication in the industry and, as such, is used by professional money managers, financial analysts, and individual investors worldwide. A prudent investor tries to examine all aspects of an enterprise's performance when making a capital investment decision. As such, it is only practical to examine historical growth rates for the corporation for which the analysis is being performed. The historical growth rates for the comparable group and FirstEnergy can be seen in Schedule KWO-1.

The third method I used was the Value Line forecasted compound annual rates of change for earnings per share, dividends per share, and book value per share.

The fourth method I used was the forecasted rate of change for earnings per share as recorded by CFRA Equity Research.

The last method was another forecasted earnings growth rate as supplied to Charles Schwab & Co. This forecasted rate of change is not a forecast supplied by Charles Schwab & Co. but is, instead, a compilation of forecasts by industry analysts.

The details of my constant growth DCF analysis can be seen in Schedule KWO-1 for the comparable group and FirstEnergy.

Q. HOW IS THE ELECTRIC UTILITY INDUSTRY CHANGING AND HOW IS THAT CHANGE BEING REFLECTED IN THE RESULTS FOUND IN SCHEDULE KWO-1?

A. As a whole, the United States is becoming more efficient in the manner in which it uses electricity. As a result, load growth for electric utilities is, essentially, flat and utility executives are looking at other ways to grow earnings. Grid modernization efforts are underway around the country as a means to address infrastructure needs as well as to grow utility earnings.

Q. PLEASE EXPLAIN HOW FIRSTENERGY'S GROWTH COMPARES TO COMPANIES IN THE COMPARABLE GROUP.

A. FirstEnergy Corp. has, undoubtedly, struggled over the past 10 years in comparison to other utility holding companies. FirstEnergy's earnings have fallen due, in large part, to actions in the deregulated competitive generation market. Indeed, on March 31, 2018, FirstEnergy announced its competitive generation subsidiary had filed for bankruptcy and that FirstEnergy would shift its focus to transition back to operating as a fully regulated utility company.[9] On April 23, 2018, FirstEnergy announced an agreement with creditors that would release it from all claims. [10]

As a result of all its troubles operating in a competitive environment, the earnings, dividend, and book value growth rates of FirstEnergy have significantly trailed those of the comparable group.

The price of FirstEnergy has reflected its rocky financial performance as evidenced in Chart 3 below.

[9] CFRA Stock report, Nov., 24, 2018, p. 2
[10] id

Chart 3: FirstEnergy Stock Price

Source for graph: https://www.macrotrends.net/stocks/charts/FE/firstenergy/stock-price-history

At a time of a very strong bull market over the past 10 years (2008-2018), the stock of FirstEnergy has languished behind.

Q. WHAT IS THE INVESTOR RETURN REQUIREMENT FROM THE DCF ANALYSIS?

A. As can be seen on Schedule KWO-1, the dividend yield for the three time-frames are fairly tight for FirstEnergy and the comparable group: 3.8% to 3.9% for FirstEnergy; and 3.6% to 3.7% for the comparable group.

The comparable group has grown at a solid and steady pace. Over the past 10-years, the comparable group has grown in the range of approximately 2.5% to 4.5%. The forecasted growth rates for the comparable are higher than its historical growth rates and are in the range of 4.0% to 6.0%.

For the reasons cited above, historical growth rates for FirstEnergy have been abysmal. Forecasted growth rates, again primarily due to the recent bankruptcy of the unregulated generation unit, are mixed.

In terms of the proper dividend growth rate to employ for the comparable group in the DCF analysis, it is appropriate to examine the recent history of earnings and dividend growth to assess and provide the best estimate of the dividend growth that investors expect in the future. An examination of the 10-year and 5-year historical growth rates for the comparable group show that dividends have been growing slightly faster than earnings. Over the past 10 years, dividends, as reported by Value Line, have been growing at 4.0% whereas earnings have grown at a rate of only 2.2%. For the most recent 5-year period, dividends have growth at a rate of 4.4% as compared to the earnings growth rate of 3.9%. Dividends cannot, however, sustain a higher growth rate than earnings over the long-term as, eventually, there will not be sufficient earnings to pay dividends. The market expects this situation to right itself in the future as the Value Line forecasted dividends for the group is forecasted to be 5.2% whereas the earnings growth is expected to be in the range of 5.0% (Schwab) to 5.9% (CFRA and Value Line). Book value growth is expected to be approximately 4.3%.

Based on these results, I believe the proper growth rate range to use in the DCF model for the combination utility group is 4.0% to 6.0%. The low-end (4.0%) of this range is very close to the 10-year and 5-year growth in dividends whereas the high end (6.0%) of the range is equal to the high end of the range for the forecasted growth in earnings for the comparable group.

Given that the dividend yield of FirstEnergy is only slightly lower than that of the comparable group, the market is expecting the growth prospects of FirstEnergy to be similar to the growth rate of the comparable group. Based on the results as found in Exhibit KWO-1 as well as the similar dividend yields, I believe the

growth rate range to use in the DCF model for FirstEnergy is in the range of 3.5% to 5.5%

Q. SHOULD ONLY EARNINGS GROWTH RATES IN THE DCF METHODOLOGY BE USED? IF NOT, WHAT DID YOU DO TO MITIGATE THIS PROBLEM?

A. No. Since the DCF formula is dependent on future dividend growth, it would be inaccurate to use only earnings growth rates in the DCF. Doing so produces unrealistically high return on equity numbers that cannot be sustained in real life. To mitigate this problem, I have presented earnings per share (EPS), dividends per share (DPS), and book value per share (BPS) figures to the Board and systematically explained my rationale for arriving at the above stated growth rates. I believe it is incumbent upon every analyst presenting testimony in this case to present such a robust analysis to the Board.

Q. WHAT IS THE DCF RANGE THAT YOUR ANALYSES PRODUCED?

A. Combining the dividend yields of the comparable group members and FirstEnergy produces the results as stated below:

Table 3: DCF Results

	Forecasted Div. Yld		Exp Growth Rate Range		DCF Results	
	Low	High	Low	High	Low	High
Comparable Group	3.6%	3.7%	4.0%	6.0%	7.6%	9.7%
FirstEnergy	3.8%	3.9%	3.5%	5.5%	7.3%	9.4%

Q. WHAT DO YOU CONCLUDE IS THE DCF RESULT FOR JCP&L TO BE USED IN THIS CASE?

A. The DCF results as found in Table 3 above show a relatively wide range of results for the comparable group and FirstEnergy, I believe the range of results from the DCF model is 8.25% to 9.25%, which is right in the middle of the above-stated results.

D. Comparable Earnings Analysis

Q. PLEASE EXPLAIN HOW YOU PERFORMED THE COMPARABLE EARNINGS ANALYSIS?

A. Schedule KWO-3 presents a list of the earned returns on equity of the comparable group and FirstEnergy over the period of 2016 through 2023. I picked this range to provide the Board with at least two historical returns and five years of forecasted returns. As can be seen in Schedule KWO-3, the range of results are summarized as follows:

Table 4: Earned Returns on Equity

	% Return on Common Equity	
Comparable Group	Low	High
Comparable Group	9.2%	10.2%
FirstEnergy	9.0%	30.9%

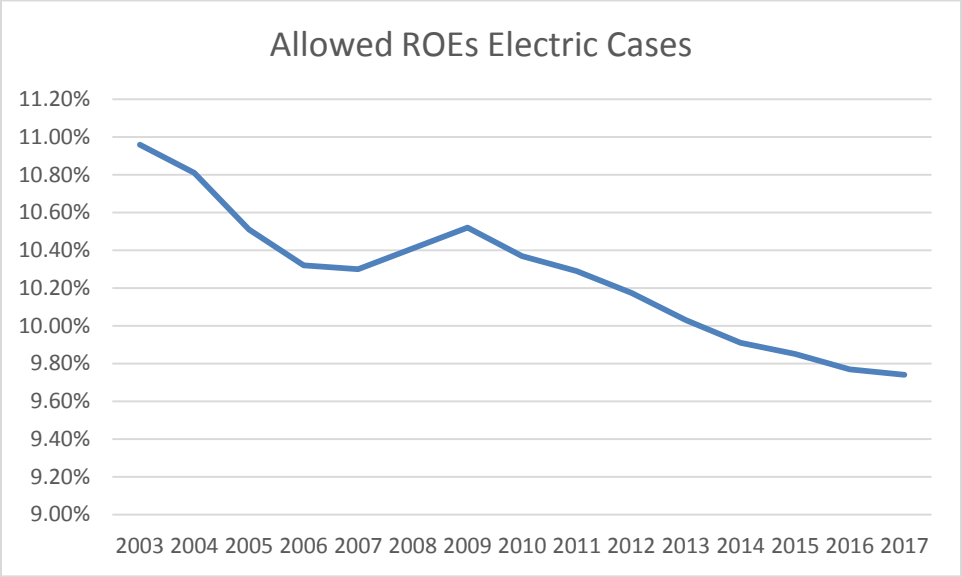
The comparable earnings of FirstEnergy must be given little weight due to the recent troubles in its unregulated generation unit. Simply put, it is impossible for any regulated utility to sustain growth rates in excess of 30%, as is noted which was the reported 2017 return of the Company.

Q. DO YOU HAVE ANOTHER COMPARABLE EARNINGS METHODOLOGY TO PRESENT IN THIS CASE?

A. Yes. We can also examine allowed ROEs from state regulators across the country as another comparable earnings methodology.

As this Board is likely aware, regulated ROEs have trended down over the past 10 years. In Chart 4 below, I have provided a graph that shows the ROEs allowed for electric utilities by state regulators across the United States from 2003 through 2017.

Chart 4: Allowed ROEs 2001 - 2017



Source for raw data: Regulatory Research Associates as accessed through SNL.com

The average ROE for regulated electric utilities to-date in 2018 is 9.53%.[11]

Q. WHAT CONCLUSIONS DO YOU DRAW FROM THE COMPARABLE EARNINGS ANALYSIS?

A. Regulators across the United States have continued to recognize the decrease in capital cost and, as found in Chart 4 above, steadily reduced the allowed returns of utilities over the past 10 years.

Based on the above-stated findings, I believe the proper rate of return using a comparable earnings analysis is in the range of 9.25% to 10.25%. This lower end of this range recognizes the unmistakable downward trend of the average allowed ROE allowed by state regulators for electric utilities dating back to 2003 and the high end of the range recognizes high forecasted earned returns on equity on book

[11] Data taken from snl.com

equity as noted by the 10.2% forecasted ROE for the comparable group in Exhibit KWO-3.

E. Capital Asset Pricing Model (CAPM)

Q. HAVE YOU PREVIOUSLY PRESENTED THE CAPM IN COST OF EQUITY TESTIMONIES?

A. Yes, but I have not given it much weight. I have long maintained the application of the CAPM can lead one to erroneous results when applied in an inaccurate manner, such as when "forecasted" risk premiums or "forecasted" interest rates are employed. For this reason, I have historically not used the CAPM in cost of equity analyses. However, I do recognize the Federal Energy Regulatory Commission ("FERC") has recently expressed an interest in reviewing additional models in the cost of equity analysis, and I am aware that the Maryland PSC[12] welcomes several different methods. As a result of the FERC and Maryland decisions, I am adding the CAPM in my analysis to supplement my DCF analysis as well as my Comparable Earnings analysis.

Q. PLEASE EXPLAIN THE CAPITAL ASSET PRICING MODEL.

A. The CAPM is a risk premium model that determines a firm's ROE relative to the overall market return on equity. The formula for the CAPM is as follows:

ROE = Rf + Beta [E(RM) – Rf]

where ROE is the return on equity;
Rf is the risk-free rate;
Beta is the risk of the studied company relative to the overall market; and
E(RM) is the expected return on the market.

[12] *In the Matter of the Petition of Delmarva Power & Light Co. for Adjustments to Its Retail Rates for the Distribution of Elec. Energy*, __ Md. PSC __2017 WL 661351, at *15 (Feb. 15, 2017)

To be specific, the CAPM is a measure of firm-specific risk, known as unsystematic risk and measured by beta, as well as overall market risk, otherwise known as systematic risk and measured by the expected return on the market.

The CAPM calculates ROE based on a company's risk and can be restated as follows:

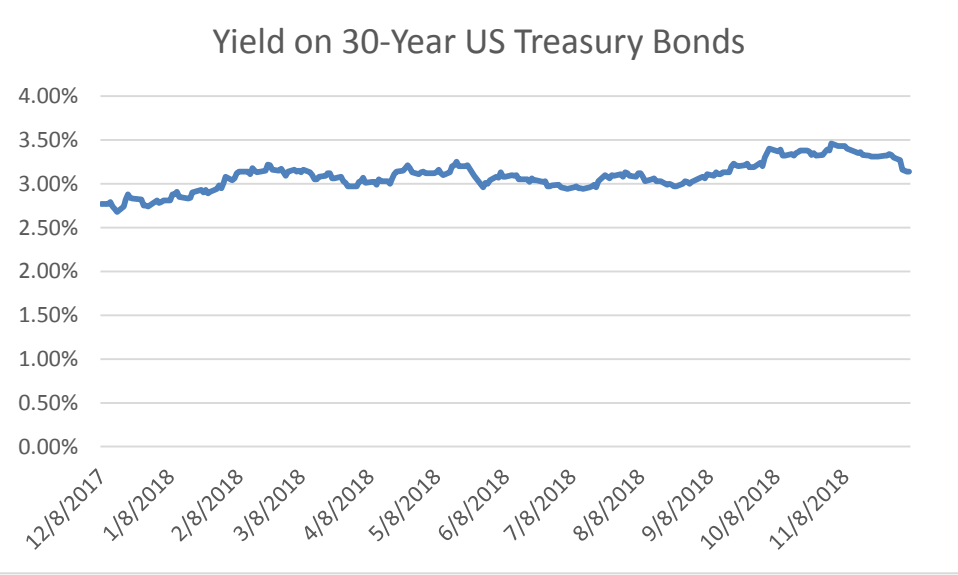
ROE = Rf + (Beta * Risk Premium)

where Risk Premium represents the adjusted company-specific risk of the company.

Q. HOW IS THE RISK-FREE RATE MEASURED?

A. The risk-free rate is designated as the yield on United States government bonds, but the term of those bonds is often debated by investment professionals. In my analysis for this case, I have developed risk premiums relative to the 30-year US Treasury bonds. Chart 5 below provides the yield on 30-year US Treasury bonds over the past year.

Chart 5: Historic Yields on 30-Year US Treasury Bonds



Source for raw data: United States Department of Treasury, https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2017, 2018

As can be seen in this chart, current yields have been relatively flat over the past year. These low yields are in spite of the fact that the Federal Reserve has hiked its overnight rate three times in 2018.

Q. IS THE CURRENT LEVEL OF INTEREST RATES EXPECTED TO CHANGE MATERIALLY IN THE FORESEEABLE FUTURE?

A. No. Economic forecasters as well as the Federal Reserve all believe that the current interest rate environment is expected to remain relatively stable for many years to come. In fact, in June 16, 2016, Bloomberg published an article entitled "Yellen Says Forces Holding Down Rates May Be Long Lasting." The key takeaway from the article is the following statement:

> In a press conference after the Fed held policy steady, Yellen spoke of a sense that rates may be depressed by "factors that are not going to be rapidly disappearing, but will be part of the new normal.". [13]

The statement above adds more evidence to the long-term forecast of lower financing costs for years into the future. Indeed, even though this statement by former Chairperson Yellen is over two years old, long-term interest rates are simply not showing much movement.

Q. HOW IS BETA MEASURED IN THE CAPM?

A. Beta is a statistical calculation of a company's stock price movement relative to the overall stock movement. A company whose stock price is less volatile than the overall market will have a beta less than 1.0. A company whose stock price is more volatile than the overall market will have a beta more than 1.0. Since

[13] https://www.bloomberg.com/news/articles/2016-06-15/yellen-seems-to-sign-on-to-summers-view-of-lingering-low-rates

utilities are generally conservative equity investments, utility betas are almost always less than 1.0.

Q. WHAT IS THE CURRENT MARKET RISK PREMIUM APPROPRIATE FOR USE IN THE CAPM?

A. The development of the current market risk premium is, undoubtedly, the most controversial aspect of the CAPM calculations. To gauge the historical risk premium, I turned to the Ibbotson database published by Morningstar. The long-term geometric and arithmetic returns for both equities and fixed income securities and the resulting risk premiums are as follows:

Table 5: Equity Risk Premium Calculations

Asset Class	Geometric Mean	Arithmetic Mean
Large Company Stocks	10.10%	12.10%
Long-Term Govt. Bonds	5.50%	5.90%
Resulting Risk Premium	4.60%	6.20%

Source: Ibbotson® SBBI®, 2014 Classic Yearbook: Market Results for Stocks, Bonds, Bills, and Inflation, 1926–2013 (Chicago: Morningstar, 2014).

Q. WHAT MARKET RETURNS ARE WELL-KNOWN PROFESSIONAL INVESTORS EXPECTING FOR THE FORESEEABLE FUTURE?

A. On January 14, 2016, Morningstar.com published an article entitled "What Market Experts are Saying About Future Returns".[14] By future returns, these market experts are discussing total market returns, and not just the equity risk premium. Below are some of the market return forecasts from this article:

[14] http://news.morningstar.com/articlenet/article.aspx?id=736083

John Bogle, Founder of Vanguard Group
6% nominal (non-inflation adjusted) equity returns during the next decade

Josh Peters, Morningstar Director of Equity-Income Strategy and Morningstar Dividend Investor Editor
6-7% (nominal 4-5%) returns for the S&P 500 over the next few decades

Matt Coffina, Morningstar Equity Strategist and Morningstar Stock Investor Editor
6% to 8% over the long-run

Morningstar Investment Management
4.5% 10-year nominal returns for US stocks

Charles Schwab
6.3% nominal returns for US large caps (the S&P 500) during the next 10 years

Vanguard
Nominal equity market returns of 6% to 8% during the next decade

The above-stated equity returns are consistently in the 6% to 8% range. When the current yield of 2.74%, which is the one-year average of 30-year US Treasuries, is deducted from this expected return, the resulting equity risk premium is between 3.26% and 5.26%.

Earlier in 2018, Duke University finance professors published their annual equity risk premium estimates that stated the expected average risk premium exhibited by a survey of U.S. Chief Financial Officers (CFOs) around the country is 4.42%. [15] The article states as follows:

> During the past 18 years, we have collected almost 25,000 responses to the survey. Panel A of Table 1 presents the date that the survey window opened, the number of responses for each survey, the 10-year Treasury bond rate, as well as the average and median expected excess returns. There is relatively little time variation in the risk premium. This is confirmed in Fig. 1a, which displays the historical risk premiums contained in Table 1. The

[15] "The Equity Risk Premium in 2018", John R. Graham and, Campbell R Harvey, Duke University, March 28, 2018.

current premium, 4.42%, is above the historical average of 3.64%. The December 2017 survey shows that the expected annual S&P 500 return is 6.79% (=4.42%+2.37%) which is slightly below the overall average of 7.11%. The total return forecasts are presented in Fig. 1b.2 [16]

Q. WHAT IS YOUR CONCLUSION AS TO THE ESTIMATED EQUITY RISK PREMIUM FOR USE IN THE CAPM?

A. Using historical data as well as ex ante (forecasts) data, the evidence suggests the equity risk premium is clearly within the range of 4% to 6%.

Q. HOW DID YOU DETERMINE THE BETA YOU USED IN THE CAPM?

A. I used the Value Line derived beta that I found in the most recent Value Line editions for each company in the comparable groups as well as FirstEnergy, the parent holding company of JCP&L.

Q. WHAT WERE YOUR CAPM RESULTS?

A. The actual calculations for the CAPM can be seen in Schedule KWO-4. The yield on 30-year US Treasury yields (Rf) has ranged from 2.68% to 3.46% in the past year. The average beta for the comparable groups and for FirstEnergy are very close to one another. Combining the 30-year US Treasury yields of 2.68% to 3.46% with the product of the Beta multiplied by the equity risk premium ([E(RM)-Rf]) show a consistent range of 5.1% to 7.1% for the comparable group as well as for FirstEnergy. Based on this range of results for the CAPM, I find the proper ROE derived from the CAPM is in the range of 5.25% to 7.25%.

V. RETURN ON EQUITY RECOMMENDATIONS

Q. WHAT IS THE CURRENT COST OF EQUITY FOR JCP&L??

A. Based upon the analysis performed in this case, I believe the current cost of equity for JCP&L is 9.25%.

[16] Id, p. 3-4

Q. IS 9.25% YOUR RECOMMENDED ROE FOR JCP&L IN THIS PROCEEDING?

A. No, it is not. As noted previously, the current proceeding involves a shifting of risk from JCP&L/FirstEnergy stockholders to consumers. As a result, the ROE found appropriate for use in this case must recognize the lower risk to stockholders and the higher risk for consumers.

Q. PLEASE EXPLAIN HOW THE CURRENT IIP CASE INVOLVES A SHIFT FROM STOCKHOLDERS TO CONSUMERS.

A. The current JCP&L IIP case is not a typical rate case proceeding. This proceeding involves a rate recovery mechanism far different than a traditional rate case/rate of return case. In such a traditional rate case, all of the utility's costs are examined in detail and, in time, the state regulator renders a decision in regard to cost recovery. In the proposed IIP case, only the costs associated with the IIP investments will be reviewed in abbreviated rate proceedings to occur twice a year. As a result, a large portion of the risk of cost recovery shifts from stockholders to consumers. In essence, the proposed cost recovery mechanism significantly lowers the risk of JCP&L.

Q. HOW DO CREDIT RATING AGENCIES VIEW THE IIP COST RECOVERY MECHANISM?

A. Overall, the credit rating agencies view the proposed IIP cost recovery mechanism in a positive manner. Below is an excerpt from the March 24, 2018 Moodys report on JCP&L.

> In addition to the constructive rate case settlement, the BPU approved rulemaking for a new utility Infrastructure Investment Program (IIP) in December 2017. The IIP will provide a cost recovery mechanism for utility infrastructure investments made by

> JCP&L, which we believe is credit supportive. JCP&L is expected to file its investment plan under the IIP later in 2018. [17]

Q. HAS THIS BOARD PREVIOUSLY RULED ON THIS ISSUE OF RATE OF RETURN IN A CASE SIMILAR IN NATURE TO THE CURRENT JCP&L IIP PROCEEDING?

A. Yes. Public Service Electric & Gas (PSEG) previously filed a case that is very similar in nature to the current JCP&L IIP proceeding. In that case, PSEG sought recovery of costs associated with its Energy Strong program in Board Docket Nos. EO13020155 and GO13020156 through semi-annual rate cases. In determining the proper ROE to allow in that case, the Board stated:

> The Board is also persuaded that the reduced return on common equity from that approved by the Board in the Company's 2009 Base Rate Case is reasonable in light of the recovery of costs from ratepayers on a more contemporaneous basis which reduces the risk of recovery of capital invested during the time between rate cases.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR ROE ANALYSIS IN THIS CASE.

A. The table below lists the results of my DCF analysis, the comparable earnings analysis and the CAPM analysis.

Table 6: ROE Method Results

Model	Range	
	Low	High
DCF	8.25%	9.25%
Comparable Earnings	9.25%	10.25%
CAPM	5.25%	7.25%

[17] March 24, 2018 Moodys report on JCP&L

Q. WHAT IS YOUR RECOMMENDED ROE IN THIS PROCEEDING?

A. My recommendation in this proceeding is to allow JCP&L a ROE of 8.75%. This recommended ROE incorporates a 50 basis point reduction associated with the automatic nature of the IIP rate recovery mechanisms that shifts risk from stockholders to consumers.

Q. WOULD YOU PLEASE PROVIDE THE REASONS FOR YOUR RECOMMENDATIONS?

A. In making these recommendations, I recognize the strength of the stock market over the past two years and recommend a ROE at the very top of my DCF results which, in my opinion, is the most indicative model for investor expectations for earned returns of JCP&L and similar utilities.

This ROE recommendation at the top end of the DCF model also recognizes that, relative to the comparable group, FirstEnergy has more financial risk. This higher financial risk can be seen in the lower equity ratio (25% forecast for year-end 2018) of FirstEnergy as reported by Value Line as well as the 45% equity ratio sought by the Company in this proceeding. The comparable group's equity ratio, on the other hand is 46.8%. Since return is inversely related to risk, the higher financial risk warrants a higher return for JCPL. To recognize the higher financial risk, I am recommending a ROE on the upper end of my DCF range.

Furthermore, as the Board is aware, interest rates remain quite low relative to historic levels. Individuals seeking an income stream see utility dividends as good alternatives at the present time with the lack of adequate fixed income (bond) opportunities. As a result, utility stock prices have soared in the past five years. When stock prices increase, dividend *yields* decrease even though the dollar amount of the dividend remains the same or even increases. Hence, over the past two years, the increase in utility stock prices has driven dividend yields of utility stocks downward. Thus, we cannot ignore the current low cost of capital

environment. If a utility's rates are set too high, the economy in its service territory will suffer and stockholders will receive a windfall at the expense of captive ratepayers.

Q. PLEASE DESCRIBE CURRENT ECONOMIC CONDITIONS AND THE GENERAL STATE OF EQUITY MARKETS.

A. Overall, the United States economy is strong. The U.S. Gross Domestic Product ("GDP") is hovering right around a three percent (3%) growth rate, which implies slow and steady growth. Unemployment has fallen as more and more Americans are bouncing back from the financial meltdown of 2008.

Proving direct causal links between macroeconomic conditions and stock market prices is difficult due to the complexity of the world's now linked economies. Stock prices rise and fall based on future corporate earnings reports, intrinsic values, investor risk tolerances and a large number of other factors. It is thought, however, that because during an economic expansion the prices of commodities such as oil and steel rise as a result of competition for those commodities due to increased construction activity and consumption, the reverse might also be true; that is, extremely low oil prices are an indicator of the same or increased production in a slowing economy.

Q. HOW WILL EXPECTED LOWER STOCK MARKET RETURNS AFFECT ROEs SET BY STATE UTILITY REGULATORS ACROSS THE COUNTRY?

A. It is important to note that stock market returns and rate base returns as set by state regulators, are two different items. Stocks go up and down with, sometimes, little influence from state regulators. However, there is no doubt that state regulators have noticed the tremendous increase in the stock market and correspondingly lower debt costs over the past six years and have lowered the allowed rate of return granted to utilities over this time period.

If market returns are in the single-digits for years to come and the U.S. economy continues its present slow expansion in the years ahead, allowed returns on equity for regulated utilities should either decrease or stay roughly at current levels for the foreseeable future.

VI. CAPITAL STRUCTURE

Q. WHAT IS A CAPITAL STRUCTURE AND HOW WILL IT IMPACT THE REVENUES THAT JCP&L OR ANY OTHER UTILITY IS SEEKING IN A RATE CASE?

A. The term "capital structure" refers to the relative percentage of debt, equity, and other financial components that are used to finance a company's investments. For simplicity, there are three financing methods. The first method is to finance an investment with common equity, which essentially represents ownership in a company and its investments. Returns on common equity, which in part take the form of dividends to stockholders, are not tax deductible which, on a pre-tax basis alone, makes this form of financing about 40% more expensive than debt financing. The second form of corporate financing is preferred stock, which is normally used to a much smaller degree in capital structures. Dividend payments associated with preferred stock are not tax deductible. Corporate debt is the third major form of financing used in the corporate world. There are two basic types of corporate debt: long-term and short-term. Long-term debt is generally understood to be debt that matures in a period of more than one year. Short-term debt is debt that matures in a year or less. Both long-term debt and short-term debt represent liabilities on the company's books that must be repaid prior to any common stockholders or preferred stockholders receiving a return on their investment

Q. HOW IS A UTILITY'S TOTAL RETURN CALCULATED?

A. A utility's total return is developed by multiplying the component percentages of its capital structure represented by the percentage ratios of the various forms of capital financing relative to the total financing on the company's books by the

cost rates associated with each form of capital and then totaling the results over all of the capital components. When these percentage ratios are applied to various cost rates, a total after-tax rate of return is developed. Because the utility must pay dividends associated with common equity and preferred stock with after-tax funds, the post-tax returns are then converted to pre-tax returns by grossing up the common equity and preferred stock dividends for taxes. The final pre-tax return is then multiplied by the Company's rate base in order to develop the amount of money that customers must pay to the utility for return on investment and tax payments associated with that investment.

Q. HOW DOES CAPITAL STRUCTURE IMPACT THIS CALCULATION?

A. Costs to consumers are greater when the utility finances a higher proportion of its rate base investment with common equity and preferred stock versus long-term debt. However, long-term debt, which is first in line for repayment, imposes a contractual obligation to make fixed payments on a pre-established schedule, as opposed to common equity where no similar obligations exist.

Q. WHY SHOULD THE BOARD BE CONCERNED ABOUT HOW JCP&L FINANCES ITS RATE BASE INVESTMENT?

A. There are two reasons that the Board should be concerned about how JCP&L finances its rate base investment. First, JCP&L's cost of common equity is higher than the cost of long-term debt, meaning that an equity percentage above an optimal level will translate into higher costs to JCP&L's customers without any corresponding improvement in quality of service. Long-term debt is a financial promise made by the company and is carried as a liability on the company's books. Common stock is ownership in the company. Due to the nature of this investment, common stockholders require higher rates of return to compensate them for the extra risk involved in owning part of the company versus having a more senior claim against the company's assets.

The second reason the Board should be concerned about JCP&L's capital structure is due to the tax treatment of debt versus common equity. Public corporations, such as JCP&L, can deduct payments associated with debt financing. Corporations are not, however, allowed to deduct common stock dividend payments for tax purposes. All dividend payments must be made with after-tax funds, which are more expensive than pre-tax funds. Because the regulatory process allows utilities to recover reasonable and prudent expenses, including taxes, rates must be set so that the utility pays all its taxes and has enough left over to pay its common stock dividend. If a utility is allowed to use a capital structure for ratemaking purposes that is top-heavy in common stock, customers will be forced to pay the associated income tax burden, resulting in unjust, unreasonable, and unnecessarily high rates. Setting rates through the use of capital structure that is top-heavy in common equity violates the fundamental principles of utility regulation that rates must be just and reasonable and only high enough to support the utility's provision of safe, adequate, and reliable service at a fair price.

Q. HOW IS SETTING A CAPITAL STRUCTURE FOR A RATE-REGULATED ELECTRIC UTILITY COMPANY DIFFERENT THAN SETTING A CAPITAL STRUCTURE FOR A NON-REGULATED COMPANY THAT OPERATES IN A COMPETITIVE ENVIRONMENT?

A. Unregulated companies in competitive markets must carefully weigh the risk of using lower cost debt that can be used to leverage profits versus the use of the more expensive common equity that dilutes profits. Such a capital sourcing decision is based, in large part, on the competitive nature of the business in which the entity operates.

In the case of a rate-regulated electric utility with a licensed service territory that has little-to-no competition in its service territory, there is a strong incentive for the company to use common equity to build assets that can be placed in rate base. The utility is guaranteed the opportunity to earn its allowed rate of return on plant

investment and, as such, can maximize profits by building plant and receiving favorable regulatory treatment from state regulators. In essence, normal competitive markets serve to lower capital costs through efficient capital cost decisions whereas electric utility rate regulation can act as an incentive for plant investment.

Q. PLEASE EXPLAIN HOW ONGOING CONSTRUCTION NEEDS ARE IMPACTING UTILITIES AND THEIR CUSTOMERS.

A. Utilities finance construction with three primary sources of capital: retained earnings; common equity issuances; and long-term debt issuances. Financing construction with retained earnings is preferable to the utility because using funds from ongoing operations does not dilute common equity (as would an equity issuance) and does not add debt leverage to the utility's balance sheet. However, in most cases, financing a large asset with only retained earnings may not be possible due to sheer size of the plant investment. As a result, utilities undergoing large construction projects often issue common equity or long-term debt to finance these projects.

Selecting the ratio of equity to debt is important. Entities in more competitive markets have a profit motive that provides an incentive for such entities to select the most efficient capitalization ratio. However, electric utilities operating in exclusive, rate-regulated service territories have an incentive to maximize the amount of common equity in their capital structure so as to increase rates and, correspondingly, the utility profit. Rate-regulated electric utilities should only be allowed to recover in rates a revenue requirement derived from a capitalization ratio that allows the utility to provide reliable service at the least cost. Finding the right balance between debt and equity is critical.

Q. PLEASE EXPLAIN THE RAMIFICATIONS OF RATES BEING SET AT AN UNBALANCED DEBT/EQUITY LEVEL.

A. If a utility issues too much common equity and not enough debt for a certain project, the consuming public pays higher rates to support a capital structure that is neither prudent nor reasonable. It is also important to recognize how rate levels affect economic development. A utility with high rates will, all else being equal, cause its service territory to lose out on economic development opportunities.

If, on the other hand, the utility incurs too much debt, the utility's capitalization ratios presents excess financial risk to the capital markets, thereby driving up the costs required by the markets to compensate them for the added risk. In this case, the consumer would also lose because the cost it must pay the utility for accessing the capital markets is higher than it would pay using a less debt-leveraged capital structure.

One role of regulation is to balance the needs of the capital markets, including utility stockholders, with the needs of ratepayers. Too much equity or too much debt can harm both the stockholders of the corporation as well as the consuming public. Careful study of the risks and costs of various capitalization ratios is important.

Q. HAVE YOU REVIEWED THE CAPITAL STRUCTURE REQUESTED BY THE COMPANY IN THIS PROCEEDING?

A. Yes, I have.

Q. WHAT CAPITAL STRUCTURE IS JCP&L SEEKING IN THIS CASE?

A. According to the Petition, the Company is seeking approval of the same capital structure as approved in the Company's 2016 base rate case. That capital structure is as follows:

Table 7: JCP&L Requested Capital Structure

Component	Capital Structure Ratio (%)
Long-term Debt	55.0%
Common Equity	45.0%
Total Capitalization	100.0%

The above-stated capital structure is the same hypothetical capital structure granted to the Company by this Board in JCP&L's 2016 base rate case. [18] This hypothetical capital structure excluded goodwill and mark-to-market adjustments.[19]

Q. WHAT IS THE AVERAGE COMMON EQUITY RATIO OF THE COMPANIES IN YOUR COMPARABLE GROUP?

A. Tables 8 below shows the average common equity ratio of each company in the comparable group.

Table 8: Comparable Group Equity Ratio

Company	**2017 Eq Ratio**
Alliant Energy Corp	51.0%
Ameren Corp	49.8%
Avangrid	74.4%
Black Hills Corp	35.5%
Consolidated Edison Inc	51.1%
Duke Energy Corp	46.0%
Edison International	45.8%
El Paso Electric Co	48.8%
Entergy Corp	35.5%

[18] BPU Final Order in Docket No. ER16040383, ordering paragraph 14
[19] Id, ordering paragraph 20

Evergy Corp.	NA
Exelon Corp	47.8%
Fortis	37.1%
Otter Tail Corp	58.7%
PNM Resources Inc	43.6%
Portland General Electric Co	49.9%
PPL Corp	35.2%
Public Service Enterprise Group Inc	53.4%
Sempra Energy	43.5%
Southern Co (The)	35.0%
Average	**46.8%**

As can be seen in the table above, the average common equity ratio in the comparable group is 46.8%, which is slightly higher than the equity ratio requested by JCP&L in this proceeding.

Q. WHAT IS THE AVERAGE COMMON EQUITY RATIO GRANTED BY UTIILTY REGULATORS ACROSS THE UNITED STATES IN 2017?

A. The average common equity ratio granted by regulators in 2017 to electric utilities was 49.0%.[20]

Q. PLEASE SUMMARIZE YOUR FINDINGS IN REGARD TO THE REQUESTED EQUITY RATO IN THIS CASE RELATIVE TO THE EQUITY RATIO OF OTHER ELECTRIC UTILITIES.

A. Table 9 below provides a summary of how JCP&L's request in this case compared to the following equity ratios: the equity ratio requested by the Company, the equity ratio of the comparable group, and the average allowed equity ratio by state regulators across the country in 2017.

[20] Regulatory Research Associates, accessed through SNL.com on December 10, 2018

Table 9: Common Equity Comparison	
JCP&L Request	45.0%
Comparable Group Average	46.8%
2017 Average Regulatory Eq Ratio	49.0%

Q. GIVEN THE ABOVE, DO YOU BELIEVE THAT THE CAPITAL STRUCTURE BEING PROPOSED BY JCP&L IN THIS CASE IS APPROPRIATE FOR RATEMAKING PURPOSES?

A. Yes, I believe the Company's requested equity ratio is reasonable for ratemaking purposes. As a result, my recommendation is that the Board use a 45.0% common equity ratio in the capital structure. My specific recommendation is found in the table below.

Table 10: O'Donnell Recommended Capital Structure and Associated Cost Rates

Component	Capital Structure Ratio (%)	Cost Rate (%)	Wgtd. Cost Rate (%)
Long-Term Debt	55.00%	5.38%	2.96%
Common Equity	45.00%	8.75%	3.94%
Total Capitalization	100.00%		6.90%

The embedded cost of debt is the JCP&L embedded cost of long-term debt. My recommended cost rate of 5.38% is lower than the 5.787% cost rate as supplied by JCP&L in response to Rate Counsel Data Request No. ROR-14. The reason is that I removed $300 million of 7.35% series debt that is set to mature on February

1, 2019. As a result of this maturity date, the Company should have re-classified this debt as a current maturity and not a long-term debt cost.

VII. SUMMARY

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. JCP&L's requested 9.60% ROE for the IIP is excessive, unnecessary, and burdensome on the ratepayers of New Jersey. My specific recommendations in this case are as follows:

- the Company's IIP cost recovery mechanism significantly reduces the risk of JCP&L's investments;
- the allowed return on equity should be set at 8.75% to reflect the cost of capital in current market conditions as well as to recognize the lower risk of the IIP cost recovery mechanism.;
- the capital structure used for ratemaking purposes should consist of 45.0% common equity and 55.0% long-term debt;
- the embedded cost of debt for use in this case is 5.38%;
- the overall rate of return JCP&L should be allowed in this case is 6.90%.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes. However, I reserve the right to supplement my direct testimony in response to relevant new information presented subsequent to the filing date.

APPENDICES

Appendix A

Kevin W. O'Donnell, CFA

Nova Energy Consultants, Inc. (Nova)

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Cary, NC

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Kevin W. O'Donnell, is the founder of Nova Energy Consultants, Inc. in Cary, NC. Mr. O'Donnell's academic credentials include a B.S. in Civil Engineering - Construction Option from North Carolina State University as well as a MBA in Finance from Florida State University. Mr. O'Donnell is also a Chartered Financial Analyst (CFA).

Mr. O'Donnell has over thirty-three years of experience working in the electric, natural gas, and water/sewer industries. He is very active in municipal power projects and has assisted numerous southeastern U.S. municipalities cut their wholesale cost of power by as much as 67%. On Dec. 12, 1998, ***The Wilson Daily Times*** made the following statement about O'Donnell.

> **Although we were skeptical of O'Donnell's efforts at first, he has shown that he can deliver on promises to cut electrical rates.**

As of the start of 2015, Mr. O'Donnell has completed over 25 wholesale power projects for municipal and university-owned electric systems throughout North and South Carolina. In May of 1996 Mr. O'Donnell testified before the U.S. House of Representatives, Committee on Commerce, Subcommittee on Energy and Power regarding the restructuring of the electric utility industry.

Mr. O'Donnell has appeared as an expert witness in 95 regulatory proceedings before the North Carolina Utilities Commission, the South Carolina Public Service Commission, the Virginia Corporation Commission, the Minnesota Public Service Commission, the New Jersey Board of Public Utilities, the Colorado Public Service Commission, District of Columbia Public Service Commission, the Maryland Public Service Commission, the Public Utility Commission of Texas, the Wisconsin Public Service Commission, and the Florida Public Service Commission. His area of expertise has included rate design, cost of service, rate of return, capital structure, nuclear decommissioning, natural gas expansion feasibility studies, fuel adjustments, merger transactions, cogeneration studies, holding company applications, as well as numerous other accounting, financial, and utility rate-related issues.

Mr. O'Donnell is the author of the following two articles: "Aggregating Municipal Loads: The Future is Today" which was published in the Oct. 1, 1995 edition of *Public Utilities Fortnightly;* and "Worth the Wait, But Still at Risk" which was published in the May 1, 2000 edition of *Public Utilities Fortnightly.* Mr. O'Donnell is also the co-author of "Small Towns, Big Rate Cuts" which was published in the January, 1997 edition of *Energy Buyers Guide.* All of these articles discuss how rural electric systems can use the wholesale power markets to procure wholesale power supplies.

Regulatory Cases of Kevin W. O'Donnell, CFA
Nova Energy Consultants, Inc.

Name of Applicant	State Jusrisdiction	Docket No.	Client/ Employer	Case Issues
Public Service Company of NC	NC	G-5, Sub 200	Public Staff of NCUC	Return on equity, capital structure
Piedmont Natural Gas Company	NC	G-9, Sub 251	Public Staff of NCUC	Return on equity, capital structure
General Telephone of the South	NC	P-19, Sub 207	Public Staff of NCUC	Return on equity, capital structure
Public Service Company of NC	NC	G-5, Sub 207	Public Staff of NCUC	Return on equity, capital structure
Piedmont Natural Gas Company	NC	G-9, Sub 278	Public Staff of NCUC	Return on equity, capital structure
Public Service Company of NC	NC	G-5, Sub 246	Public Staff of NCUC	Return on equity, capital structure
North Carolina Power	NC	E-22, Sub 314	Public Staff of NCUC	Return on equity, capital structure
Duke Energy	NC	E-7, Sub 487	Public Staff of NCUC	Return on equity, capital structure
North Carolina Natural Gas	NC	G-21, Sub 306	Public Staff of NCUC	Natural gas expansion fund
North Carolina Natural Gas	NC	G-21, Sub 307	Public Staff of NCUC	Natural gas expansion fund
Penn & Southern Gas Company	NC	G-3, Sub 186	Public Staff of NCUC	Return on equity, capital structure
North Carolina Natural Gas	NC	G-21, Sub 334	Carolina Utility Customers Assoc.	Return on equity, capital structure, rate design, cost of service
Carolina Power & Light Company	NC	E-2, Sub 680	Carolina Utility Customers Assoc.	Fuel adjustment proceeding
Duke Power	NC	E-7, Sub 559	Carolina Utility Customers Assoc.	Fuel adjustment proceeding
Piedmont Natural Gas Company	NC	G-9, Sub 378	Carolina Utility Customers Assoc.	Return on equity, capital structure, rate design, cost of service
Piedmont Natural Gas Company	NC	G-9, Sub 382	Carolina Utility Customers Assoc.	Return on equity, capital structure, rate design, cost of service
Public Service Company of NC	NC	G-5, Sub 356	Carolina Utility Customers Assoc.	Return on equity, capital structure, rate design, cost of service
Cardinal Extension Company	NC	G-39, Sub 0	Carolina Utility Customers Assoc.	Capital structure, cost of capital
Public Service Company of NC	NC	G-5, Sub 327	Carolina Utility Customers Assoc.	Return on equity, capital structure, rate design, cost of service
Public Service Company of NC	NC	G-5, Sub 386	Carolina Utility Customers Assoc.	Return on equity, capital structure, rate design, cost of service
Public Service Company of NC	NC	G-5, Sub 386	Carolina Utility Customers Assoc.	Natural gas transporation rates
Public Service Company of NC/SCANA	NC	G-5, Sub 400	Carolina Utility Customers Assoc.	Merger case
Public Service Company of NC/SCANA	NC	G-43	Carolina Utility Customers Assoc.	Merger Case
Carolina Power & Light Company	NC	E-2, Sub 753	Carolina Utility Customers Assoc.	Holding company application
Carolina Power & Light Company	NC	G-21, Sub 387	Carolina Utility Customers Assoc.	Holding company application
Carolina Power & Light Company	NC	P-708, Sub 5	Carolina Utility Customers Assoc.	Holding company application
Piedmont Natural Gas Company	NC	G-9, Sub 428	Carolina Utility Customers Assoc.	Return on equity, capital structure, rate design, cost of service
NUI Corporation	NC	G-3, Sub 224	Carolina Utility Customers Assoc.	Holding company application
NUI Corporation/Virginia Gas Compan	NC	G-3, Sub 232	Carolina Utility Customers Assoc.	Merger application
Duke Power	NC	E-7, Sub 685	Carolina Utility Customers Assoc.	Emission allowances and environmental compliance costs
NUI Corporation	NC	G-3, Sub 235	Carolina Utility Customers Assoc.	Tariff change request.
Carolina Power & Light Company/Prog	NC	E-2, Sub 778	Carolina Utility Customers Assoc.	Asset transfer case
Duke Power	NC	E-7, Sub 694	Carolina Utility Customers Assoc.	Restructuring application
Piedmont Natural Gas Company	NC	G-9, Sub 461	Carolina Utility Customers Assoc.	Return on equity, capital structure, rate design, cost of service
Cardinal Pipeline Company	NC	G-39, Sub 4	Carolina Utility Customers Assoc.	Cost of capital, capital structure
South Carolina Public Service Commiss	SC	2002-63-G	South Carolina Energy Users Committee	Rate of return, accounting, rate design, cost of service
Piedmont Natural Gas/North Carolina ?	NC	G-9, Sub 470	Carolina Utility Customers Assoc.	Merger application
Piedmont Natural Gas/North Carolina ?	NC	G-9, Sub 430	Carolina Utility Customers Assoc.	Merger application
Piedmont Natural Gas/North Carolina ?	NC	E-2, Sub 825	Carolina Utility Customers Assoc.	Merger application

Regulatory Cases of Kevin W. O'Donnell, CFA
Nova Energy Consultants, Inc.

Name of Applicant	State Jusrisdiction	Docket No.	Client/ Employer	Case Issues
Carolina Power & Light Company	NC	E-2, Sub 833	Carolina Utility Customers Assoc.	Fuel case
South Carolina Electric & Gas	SC	2004-178-E	South Carolina Energy Users Committee	Return on equity, capital structure, rate design, cost of service
Carolina Power & Light Company	NC	E-2, Sub 868	Carolina Utility Customers Assoc.	Fuel case
Piedmont Natural Gas Company	NC	G-9, Sub 499	Carolina Utility Customers Assoc.	Return on equity, capital structure, rate design, cost of service
South Carolina Electric & Gas	SC	2005-2-E	South Carolina Energy Users Committee	Fuel application
Carolina Power & Light Company	SC	2006-1-E	South Carolina Energy Users Committee	Fuel application
IRP in North Carolina	NC	E-100, Sub 103	Carolina Utility Customers Assoc.	Submitted rebuttal testimony in investigation of IRP in NC.
Piedmont Natural Gas Company	NC	G-9, Sub 519	Carolina Utility Customers Assoc.	Creditworthiness issue
Public Service Company of NC	NC	G-5, Sub 481	Carolina Utility Customers Assoc.	Return on equity, capital structure, rate design, cost of service
Duke Power	NC	E-7, 751	Carolina Utility Customers Assoc.	App to share net revenues from certain wholesale pwr trans
South Carolina Electric & Gas	SC	2006-192-E	South Carolina Energy Users Committee	Fuel application
Duke Power	NC	E-7, Sub 790	Carolina Utility Customers Assoc.	Application to construct generation
South Carolina Electric & Gas	SC	2007-229-E	South Carolina Energy Users Committee	Rate of return, accounting, rate design, cost of service
South Carolina Electric & Gas	SC	2008-196-E	South Carolina Energy Users Committee	Base load review act proceeding
Western Carolina University	NC	E-35, Sub 37	Western Carolina University	Rate of return, accounting, rate design, cost of service
Duke Power	NC	E-7, Sub 909	Carolina Utility Customers Assoc.	Cost of service, rate design, return on equity, capital structure
South Carolina Electric & Gas	SC	2009-261-E	South Carolina Energy Users Committee	DSM/EE rate filing
Duke Power	SC	2009-226-E	South Carolina Energy Users Committee	Return on equity, capital structure, rate design, cost of service
Tampa Electric	FL	080317-EI	Florida Retail Federation	Return on equity, capital structure
Duke Power	SC	2010-3-E	South Carolina Energy Users Committee	Fuel application - assisted in settlement
South Carolina Electric & Gas	SC	2009-489-E	South Carolina Energy Users Committee	Return on equity, capital structure, rate design, cost of service
Virginia Power	VA	PUE-2010-00006	Mead Westvaco	Rate design
Duke Energy	SC	2011-20-E	South Carolina Energy Users Committee	Nuclear construction financing
Northern States Power	MN	E002/GR-10-971	Xcel Large Industrials	Return on equity, capital structure
Virginia Power	VA	PUE-2011-0027	Mead Westvaco	Capital structure, revenue requirement
Duke Energy	NC	E-7, Sub 989	Carolina Utility Customers Assoc.	Accounting, cost of service, rate design, ROE, capital structure
Duke Energy	SC	2011-271-E	South Carolina Energy Users Committee	Accounting, cost of service, rate design, ROE, capital structure
Dominion Virginia Power	VA	PUE-2011-00073	Mead Westvaco	Rate design
Town of Smithfield/Partners Equity Gr	NC	ES-160, Sub 0	Partners Equity Group	Rate design, asset valuation
Florida Power & Light	FL	120015-EI	Florida Office of Public Counsel	Capital structure
South Carolina Electric & Gas	SC	2012-218-E	South Carolina Energy Users Committee	Accounting, cost of service, rate design, ROE, capital structure
Progress Energy Carolinas	NC	E-2, Sub 1023	Carolina Utility Customers Assoc.	Accounting, cost of service, rate design, ROE, capital structure
Duke Energy Carolinas	NC	E-7, Sub 1026	Carolina Utility Customers Assoc.	Rate design
Jersey Central Power & Light	NJ	BPU ER12111052	Gerdau Ameristeel	Return on equity, capital structure
Duke Energy Carolinas	SC	2013-59-E	South Carolina Energy Users Committee	Accounting, cost of service, rate design, ROE, capital structure
Tampa Electric	FL	130040-EI	Florida Office of Public Counsel	Capital structure and financial integrity
Piedmont Natural Gas	NC	G-9, Sub 631	Carolina Utility Customers Assoc.	Accounting, cost of service, rate design, ROE, capital structure
Dominion Virginia Power	VA	PUE-2014-00033	Mead Westvaco	Recoverable fuel costs, hedging strategies
Public Service Company of Colorado	CO	14AL-0660E	Colorado Healthcare Electric Coordinating Council	Return on equity, capital structure

Regulatory Cases of Kevin W. O'Donnell, CFA
Nova Energy Consultants, Inc.

Name of Applicant	State Jusrisdiction	Docket No.	Client/ Employer	Case Issues
WEC Acquisition of Integrys	WI	9400-YO-100	Staff of Wisconsin Public Service Commission	Merger analysis
Dominion Virginia Power	VA	PUE-2015-00027	Federal Executive Agencies	Return on equity
South Carolina Electric & Gas	SC	2015-103-E	South Carolina Energy Users Committee	Return on equity
Western Carolina University	NC	E-35, Sub 45	Western Carolina University	Accounting, cost of service, rate design, ROE, capital structure
Sandpiper Energy	MD	9410	Maryland Office of People's Counsel	Return on equity, capital structure
Washington Gas Light	DC	FC 1137	Washington, DC Office of People's Counsel	Return on equity, capital structure
Florida Power & Light	FL	160021-EI	Florida Office of Public Counsel	Capital Structure
Jersey Central Power & Light	NJ	EM15060733	NJ Division of Rate Counsel	Asset valuation
Rockland Electric Company	NJ	ER16050428	NJ Division of Rate Counsel	Rate design
Dominon NC Power	NC	E-22, Sub 532	Carolina Utility Customers Assoc.	Accounting, cost of service, rate design, ROE, capital structure
Potomac Electric Power	DC	FC 1139	Healthcare Council of the National Capitol Area (HCNCA)	ROE and capital structure
Columbia Gas of Maryland	MD	FC 9447	Maryland Office of People's Counsel	ROE and capital structure
Washington Gas Light	DC	FC 1142	Washington, DC Office of People's Counsel	Merger analysis
Duke Energy Progress	NC	E-2, Sub 1142	Carolina Utility Customers Assoc.	Accounting, cost of service, rate design, ROE, capital structure
Public Service Electric & Gas	NJ	GR17070776	NJ Division of Rate Counsel	ROE and capital structure
Duke Energy Carolinas	NC	E-7, Sub 1146	Carolina Utility Customers Assoc.	Accounting, cost of service, rate design, ROE, capital structure
Elkton Gas/SJI	MD	FC 9475	Maryland Office of People's Counsel	Merger analysis
Entergy Texas	TX	PUC 48371	Public Utilities Commission of Texas	ROE
Duke Energy Carolinas	SC	2018-3-E	South Carolina Energy Users Committee	Fuel case
Elkton Gas Company	MD	FC 9488	Maryland Office of People's Counsel	Accounting, ROE, capital structure
Baltimore Gas & Electric	MD	FC9484	Maryland Office of People's Counsel	ROE, capital structure
South Carolina Electric & Gas	SC	2017-370-E	South Carolina Energy Users Committee	Creditworthiness issue

Appendix B

CHUCK JAFFE Archives Email alerts
Nov. 4, 2012, 9:01 a.m. EST

Kiss 10% market returns goodbye

Commentary: A growing number of experts say investors should no longer expect the double-digit returns of the past

By Chuck Jaffe, MarketWatch

BOSTON (MarketWatch) — As the market recently observed the 25th anniversary of the single worst day in its history — the Market Crash of 1987 — most investing experts warned that investors should expect similar crashes and free-falls in the future.

Jaffe: Surprising investing lessons from Sandy

Taking a market time out is better than short-term trading strategies, Chuck Jaffe discovered during the Sandy-imposed markets break. He discusses on Markets Hub. Photo: Getty Images.

Lost amid those headlines, however, was an arguably more dangerous prospect for regular investors: namely, that many market experts say the kinds of historic returns they've come to expect are gone for the foreseeable future.

Ask most investors what they expect to get from the stock market and the answer is typically 10%. That's a homage to an old study by Roger Ibbotson and Rex Sinquefeld that showed several generations of investors that stocks average that level of return — albeit before any transaction costs — over time.

No matter how much the market has bounced around — through periods where a 10% return lagged behind the overall market badly and downturns when a double-digit gain felt like a fairy tale — investors have had the sense that if they can stick with the market long enough, they will come away with that 10% gain.

The problem is that the experts, including Ibbotson himself, don't believe it.

New ways to pay for college

Some families are forgoing pricey student loans in favor of alternative strategies. Photo: AP.

"Starting in 1926, the return on the large-cap market has been 9.8%, but this was during a period when inflation rates are higher than they are today, and risk-less rates were higher than they are today," said Ibbotson, a Yale professor who also currently serves as chairman and chief investment officer at Zebra Capital Management. "You have to knock it all down by a couple of percent, because we really are in a risk-less rate environment where the rates are close to zero."

For the next quarter-century or more,

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Ibbotson said he would "not predict more than an 8% return on the market, but that's not bad. That's a great return."

Likewise, Vanguard Group founder Jack Bogle — who, like Ibbotson, appeared on my radio show this month — said the current market, which he called the "most challenging he has ever seen" is going to deliver smaller returns than what experienced, adult investors have in their heads. He pegged the return in the 6% to 8% range for stocks going forward, also citing low yields and low inflation as key reasons to alter long-term expectations.

Of course, a lot of investors would be thrilled to get 8% from the market these days, a far sight better than the returns they have earned over the last decade. But if history has not been suspended — and the experts don't think it has been, they just believe returns will be lower — the lowered expectations do significantly change long-term financial and investment planning.

Consider someone who starts investing in their 20s and has a long life ahead of them. A 10% market return would double their market return every 7.2 years, compared with a 9-year time frame when the return is just 8%.

If their initial investment was $10,000, it would be $160,000 in 36 years if it compounds at 10% annually. It would be half that amount over the same time period if the return is 8%. (See How to Make the Most of Compound Returns .)

The challenge is that inflation is still in the 2% to 3% range, and investors can't get to where they want to be with a less than 2% Treasury bond, combined with a 6% to 8% stock market, said Jeffrey Coons, president of the mutual fund firm Manning & Napier. "You combine those together and you never really get to those numbers you use in your retirement calculators, or that a pension plan would use for its actuarial assumptions. Those absolute returns really are the issue."

Aside from changing the assumptions they plug into those calculators — a move that makes the ultimate outcomes look significantly more bleak and doubtful — experts are split over what investors should do as a response to this less fruitful environment.

Average long-term investors have always tried to capture the long-term trends; it's why low-cost indexing has delivered so strongly over time.

Now, however, those indexes are poised to return less, which Coons suggested could pull investors away "from buying the whole stock market and bond market and focusing on individual investments that are priced to give you better returns."

Ibbotson had other ideas, namely to get a realistic handle on spending needs, and to save more.

"We've been talking about these lower returns for a few years now," Ibbotson said, noting that the stock market's volatility and lack of strong returns over a decade has scared off a lot of investors. "But I don't know that most people have responded. They haven't changed their expectations, or increased their savings or tried to figure out if they will really have enough if the market isn't as good over the next 25 years as it was for the last 75.

"One way or another, however, I think most people have to change their behavior, change their equation. That's the only way this turns out over the coming decades the way people expect and hope for."

Chuck Jaffe is a senior MarketWatch columnist. His work appears in many U.S. newspapers.

EXHIBITS

Comparable Group and FirstEnergy Constant Growth DCF Results

Company	DCF Results														
	13 Wk. Avg. Dividend Yield	4 Wk. Avg. Dividend Yield	Current Dividend Yield	Value Line									Plowback Growth Rate	CFRA Forecasted EPS	Schwab Forecasted EPS
				10 Year			5 Year			Forecasted					
				EPS	DPS	BPS	EPS	DPS	BPS	EPS	DPS	BPS			
Alliant Energy Corp	3.1%	3.1%	3.0%	5.0%	7.5%	4.0%	6.5%	6.5%	4.5%	6.5%	6.0%	5.0%	3.7%	7.0%	6.9%
Ameren Corp	2.9%	2.8%	2.7%	-1.0%	-4.0%	-1.0%	0.5%	2.0%	-1.0%	7.5%	5.5%	4.5%	3.9%	7.0%	7.8%
Avangrid	3.6%	3.7%	3.6%	---	---	---	---	---	---	13.0%	5.0%	1.5%	1.5%	8.0%	8.6%
Black Hills Corp	3.3%	3.3%	3.2%	2.5%	2.5%	2.5%	14.0%	3.0%	1.5%	6.5%	6.0%	6.0%	4.2%	15.0%	4.4%
Consolidated Edison Inc	3.8%	3.8%	3.8%	2.5%	1.5%	4.0%	2.0%	2.0%	3.5%	3.0%	3.5%	3.5%	2.8%	3.0%	2.9%
Duke Energy Corp	4.6%	4.4%	4.3%	2.5%	10.0%	0.5%	0.5%	2.5%	2.0%	5.5%	4.0%	2.0%	1.6%	5.0%	4.4%
Edison International	3.8%	4.2%	4.7%	2.5%	6.0%	4.5%	2.5%	9.0%	3.0%	4.5%	7.5%	3.5%	5.9%	2.0%	3.8%
El Paso Electric Co	2.5%	2.6%	2.6%	6.5%	NA	7.5%	NA	18.0%	6.5%	4.5%	7.0%	4.0%	4.0%	NA	4.7%
Entergy Corp	4.3%	4.3%	4.2%	1.5%	4.0%	2.0%	-2.5%	1.0%	-1.0%	2.0%	2.0%	3.5%	4.5%	NM	-3.9%
Evergy Corp.	3.3%	3.3%	3.2%	---	---	---	---	---	---	NMF	NMF	NMF	2.3%	7.0%	9.2%
Exelon Corp	3.2%	3.2%	5.0%	-4.0%	-3.0%	7.0%	-5.5%	-9.5%	5.5%	8.0%	5.0%	5.5%	3.9%	6.0%	4.5%
Fortis	4.2%	4.0%	3.9%	5.5%	8.5%	8.5%	6.0%	6.0%	9.0%	8.0%	6.0%	5.0%	4.2%	NA	3.7%
Otter Tail Corp	2.9%	2.9%	2.8%	-0.5%	1.0%	NA	21.5%	1.0%	1.0%	7.5%	3.5%	6.5%	3.3%	NA	---
PNM Resources Inc	2.8%	2.8%	2.6%	2.0%	0.5%	NA	8.5%	11.5%	2.0%	7.5%	7.0%	4.5%	4.0%	4.0%	5.1%
Portland General Electric Co	3.2%	3.2%	3.1%	4.0%	9.0%	3.0%	3.5%	3.5%	3.5%	4.0%	6.0%	3.0%	3.3%	4.0%	5.1%
PPL Corp	5.5%	5.4%	5.3%	0.5%	3.5%	1.0%	-0.5%	1.5%	-3.5%	2.0%	2.5%	5.5%	5.5%	4.0%	4.3%
Public Service Enterprise Group Inc	3.5%	3.5%	3.4%	3.5%	3.5%	7.0%	1.0%	3.5%	5.5%	4.0%	5.0%	4.5%	4.6%	6.0%	7.3%
Sempra Energy	3.3%	3.3%	3.3%	1.5%	9.5%	6.0%	2.0%	9.0%	4.5%	8.5%	8.5%	5.0%	3.7%	10.0%	9.4%
Southern Co (The)	5.5%	5.3%	5.2%	3.0%	4.0%	4.5%	3.0%	3.5%	3.5%	3.0%	3.5%	3.5%	2.9%	1.0%	2.5%
Average	3.6%	3.6%	3.7%	2.2%	4.0%	4.1%	3.9%	4.4%	2.9%	5.9%	5.2%	4.3%	3.7%	5.9%	5.0%
FirstEnergy Corp	3.8%	3.9%	3.9%	-4.5%	-2.5%	-5.0%	-1.0%	-8.0%	-10.5%	3.0%	2.0%	0.5%	8.7%	NM	-7.2%

Exhibit KWO-1

Comparable Group and FirstEnergy Plowback Results

Company	% Retained to Common Equity				
	2016	2017	2018E	2021E/2023E	Average
Alliant Energy Corp	2.8%	4.0%	4.0%	4.0%	**3.7%**
Ameren Corp	3.3%	3.4%	4.5%	4.5%	**3.9%**
Avangrid	1.4%	NMF	1.0%	2.0%	**1.5%**
Black Hills Corp	3.3%	5.3%	4.0%	4.0%	**4.2%**
Consolidated Edison Inc	3.0%	3.0%	2.5%	2.5%	**2.8%**
Duke Energy Corp	0,6%	1.2%	1.5%	2.0%	**1.6%**
Edison International	5.6%	6.6%	5.5%	6.0%	**5.9%**
El Paso Electric Co	4.4%	3.9%	4.0%	3.5%	**4.0%**
Entergy Corp	7.7%	3.9%	1.5%	5.0%	**4.5%**
Evergy Corp.	NA	NA	1.0%	3.5%	**2.3%**
Exelon Corp	1.9%	4.7%	3.5%	5.5%	**3.9%**
Fortis	2.1%	5.2%	4.5%	5.0%	**4.2%**
Otter Tail Corp	2.1%	3.2%	3.5%	4.5%	**3.3%**
PNM Resources Inc	2.8%	4.5%	4.0%	4.5%	**4.0%**
Portland General Electric Co	3.5%	3.6%	3.0%	3.0%	**3.3%**
PPL Corp	8.8%	3.5%	5.0%	4.5%	**5.5%**
Public Service Enterprise Group Inc	4.6%	4.1%	4.5%	5.0%	**4.6%**
Sempra Energy	2.9%	3.3%	4.0%	4.5%	**3.7%**
Southern Co (The)	2.5%	3.9%	2.0%	3.0%	**2.9%**
Average	3.7%	4.0%	3.3%	4.0%	3.7%
FirstEnergy Corp	4.5%	14.6%	NMF	7.0%	**8.7%**

Comparable Earnings

Company	% Return on Common Equity			
	2016	2017	2018E	2021E/2023E
Alliant Energy Corp	9.7%	10.9%	11.0%	11.5%
Ameren Corp	9.2%	9.4%	10.5%	10.5%
Avangrid	4.0%	3.4%	4.5%	6.5%
Black Hills Corp	8.7%	10.9%	9.0%	10.0%
Consolidated Edison Inc	8.3%	8.2%	8.0%	8.5%
Duke Energy Corp	6.2%	7.1%	7.0%	8.5%
Edison International	10.8%	12.7%	12.0%	13.0%
El Paso Electric Co	9.0%	8.6%	9.0%	9.0%
Entergy Corp	15.2%	11.7%	9.0%	11.5%
Evergy Corp.	NA	NA	5.5%	9.5%
Exelon Corp	6.5%	8.8%	8.0%	9.5%
Fortis	4.5%	8.3%	8.0%	8.5%
Otter Tail Corp	9.3%	10.6%	11.0%	10.5%
PNM Resources Inc	7.0%	9.1%	8.5%	9.5%
Portland General Electric Co	8.2%	8.4%	8.5%	9.0%
PPL Corp	19.2%	13.5%	14.5%	13.5%
Public Service Enterprise Group Inc	10.9%	10.3%	10.5%	11.0%
Sempra Energy	8.2%	9.2%	10.0%	12.0%
Southern Co (The)	11.0%	13.4%	12.0%	12.5%
Average	9.2%	9.7%	9.3%	10.2%
FirstEnergy Corp	14.3%	30.9%	9.0%	16.5%

Source: The Value Line Investment Survey, Sept. 14, 2018; Oct. 26, 2018; and Nov. 26, 2018.

CAPM Results

Comparable Group

	Risk-Free Rate	Beta	Equity Risk Premium	Equity Cost Rate
Treasury - Maximum	3.46%	0.61	4.0%	5.9%
Treasury - Average	3.09%	0.61	4.0%	5.5%
Treasury - Minimum	2.68%	0.61	4.0%	5.1%

	Risk-Free Rate	Beta	Equity Risk Premium	Equity Cost Rate
Treasury - Maximum	3.46%	0.61	6.0%	7.1%
Treasury - Average	3.09%	0.61	6.0%	6.8%
Treasury - Minimum	2.68%	0.61	6.0%	6.4%

Entergy

	Risk-Free Rate	Beta	Equity Risk Premium	Equity Cost Rate
Treasury - Maximum	3.46%	0.60	4.0%	5.9%
Treasury - Average	3.09%	0.60	4.0%	5.5%
Treasury - Minimum	2.68%	0.60	4.0%	5.1%

	Risk-Free Rate	Beta	Equity Risk Premium	Equity Cost Rate
Treasury - Maximum	3.46%	0.60	6.0%	7.1%
Treasury - Average	3.09%	0.60	6.0%	6.7%
Treasury - Minimum	2.68%	0.60	6.0%	6.3%