BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PUGET SOUND ENERGY, INC., Respondent.	Dockets UE-121697 and UG-121705 *(Consolidated)* Dockets UE-130137 and UG-130138 *(Consolidated)*

EXHIBIT NO.___(MPG-3)

RETURN ON EQUITY STUDY

April 26, 2013

SUMMARY

Q. PLEASE SUMMARIZE YOUR RETURN ON EQUITY RECOMMENDATIONS.

A. I recommend the Washington Utilities and Transportation Commission ("WUTC" or "Commission") approve a return on common equity of 9.30% for Puget Sound Energy, Inc. ("Company" or "PSE"). I will show that this return on equity is fair and balanced in the current low-cost capital market, and considering capital market costs projected over the next three to five years.

Q. HOW DID YOU ESTIMATE PSE'S CURRENT MARKET COST OF EQUITY?

A. I performed analyses using three Discounted Cash Flow ("DCF") models, a Risk Premium ("RP") study, and a Capital Asset Pricing Model ("CAPM"). These analyses were performed on a proxy group of publicly traded electric utility companies that have similar investment risk to PSE.

Electric Utility Industry Market Outlook

Q. PLEASE DESCRIBE THIS SECTION OF YOUR TESTIMONY.

A. I begin my estimate of a fair return on equity for PSE by reviewing the market's assessment of electric utility industry investment risk, credit standing, and stock price performance in general. I used this information to get a sense of the market's perception of the risk characteristics of electric utility investments in general, which is then used to produce a refined estimate of the market's return requirement for assuming investment risk similar to PSE's utility operations.

Based on the assessments described below, I find the credit rating outlook of the industry to be strong and supportive of the industry's financial integrity, and

electric utilities' stocks have exhibited strong price performance over the last several years.

Further, the electric utility industry in general is in a large capital expenditure portion of its cycle, which is creating significant demands for external capital in order to support large capital improvement programs. Credit rating agencies and market participants have embraced the utilities' need for significant amounts of external capital by meeting the capital market demands of electric utilities at near historical low capital market costs. All of this supports my belief that PSE should have sufficient access to capital to support its major capital program, including the MGS and relatively moderate capital costs currently available, and expected to be available for the next several years.

Based on this review of credit outlooks and stock price performance, I conclude that the market continues to embrace the electric utility industry as a safe-haven investment, and views utility equity and debt investments as low-risk securities.

Q. PLEASE DESCRIBE ELECTRIC UTILITIES' CREDIT RATING OUTLOOK.

A. Electric utilities' credit rating outlook has improved over the recent past and is stable. Standard & Poor's ("S&P") recently provided an assessment of the credit rating of U.S. electric utilities. S&P's commentary included the following:

> Standard & Poor's Ratings Services' [sic] expects the outlook for credit quality in the U.S. investor-owned regulated electric, gas, and water utility sectors to remain stable in 2013. These companies have continued to weather the challenging economy of the past few years with little lasting effect on collective business and financial risk profiles. The essential commodities that the utility sector provides and the rate-regulated nature of the business enable them to generate reasonably stable and predictable cash flows through timely recovery of

> most costs from customers, despite economic conditions and the challenge of substantial capital investment. In addition, the U.S. utility sector continues to enjoy favorable access to debt and equity capital markets. As a result, we expect utilities' creditworthiness to remain stable.
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> **Solid industry fundamentals support stable outlook**
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> Regulated utilities have continue[d] to proactively manage their liquidity needs by extending the tenor and/or size of their revolving credit facilities with maturity dates well into 2015 and beyond. Ongoing risks posed by the European sovereign debt crisis, together with a slow economic recovery in the U.S., contributed to the high demand for utility bonds, which drove down bond yields. Liquidity is an industry strength and credit fundamentals indicate that most, if not all, electric utilities should continue to have ample access to funding sources and credit. The certainty provided by the regulatory framework under which utilities operate, regulated utilities' effective monopoly position, the long-lived assets, and associated financing necessary to fund them are all factors that make the utility sector attractive to investors. In addition, many utilities are accessing short-term credit markets through commercial paper programs at very low rates. Issuance of common stock to partially fund construction is also possible for some firms, and would help to support the capital structure balance.[1/]

Similarly, Fitch states:

> **Rating Outlook**
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> **Flat Growth Base Case:** Fitch Ratings expects overall stable ratings for issuers within the U.S. Power and Gas Utility sector in 2013 despite modest deterioration in operating environment.
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> * * *

[1/] *Standard & Poor's RatingsDirect*: "Industry Economic And Ratings Outlook: U.S. Regulated Utilities Expected To Continue On Stable Trajectory In 2013," January 25, 2013 at 2 and 6, emphasis added.

Stable Regulation but Authorized ROEs Trending Down

Fitch expects the downward pressure on authorized ROEs for regulated utilities to persist in tandem with falling interest rates in the economy. Lower ROEs are also associated with features increasingly common in tariff structures that minimize cash flow volatility. Many state regulators are awarding lower ROEs as an offset to awarding special tariff mechanisms such as revenue decoupling, forward test year, rate-adjustment trackers[,] etc.

* * *

Strong Liquidity Conditions to Prevail

Fitch expects the power and gas utility sectors to continue to enjoy strong capital market access. Low interest rates due to accommodative monetary policies by the Fed continue to bring down the cost of debt for companies, which represents a significant expense item for the capital-intensive utility sector. Since 2006, interest expense has declined almost 150 bps for the typical utility holding company as financing costs for new debt issuance is at historic lows and these companies have unprecedented access to the capital and bank markets.[2/]

The Edison Electric Institute ("EEI") also opined as follows:

Steady Industry Fundamentals

Indeed, broad global macroeconomic forces have been the principle [sic] driver of utility stock returns in recent years, relative to other market sectors. Investors now take mostly as a given the industry's reasonably strong business fundamentals. Utilities are undertaking sizeable and wide-ranging capital investment programs that include distribution network upgrades, Smart Grid investments, a significant boost in the pace of transmission investment, rising emissions-related capex driven by the need to comply with EPA regulations, and generation investments in select power markets.

* * *

Credit analysts are generally positive on the industry's ability to finance an aggressive pace of investment, noting that while it is now cash flow negative on an annual operating basis, its balance sheets are generally strong and utilities have access to a diverse range of funding

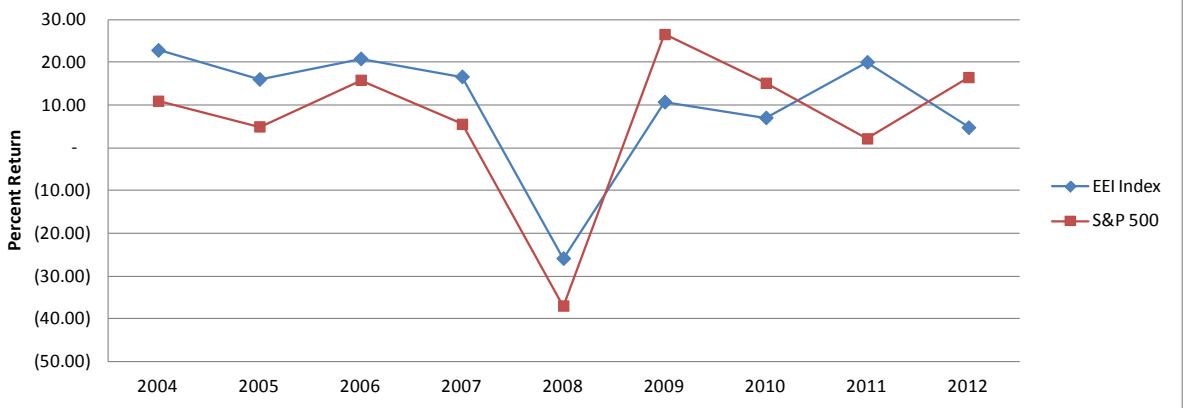
[2/] *FitchRatings*: "2013 Outlook: Utilities, Power, and Gas," December 7, 2012 at 1, 6-7 and 10, emphasis added.

sources. The industry weathered the storm of the 2008/2009 financial crisis by postponing optional capex projects and finding cost savings where possible without jeopardizing service quality. Today's economic backdrop is much improved from that period, and with interest rates at multi-decade lows and investors of all types hungry for yield, the capital markets are wide open for most economic sectors, including utilities. The execution risk inherent in managing large, complex construction projects in a way that addresses the interests of both shareholders and regulators seems far more pronounced than financing risk.[3/]

Q. PLEASE DESCRIBE ELECTRIC UTILITY STOCK PRICE PERFORMANCE OVER THE LAST SEVERAL YEARS.

A. As shown in the graph below, the EEI has recorded electric utility stock price performance compared to the market. The EEI data shows that its Electric Utility Index has outperformed the market in downturns and trailed the market during recovery. This supports my conclusion that utility stock investments are regarded by market participants as a moderate to low-risk investment.

FIGURE 1



Source: EEI Q3 2012 Stock Performance Financial Update, at Page 1.

3/ *EEI Q3 2012 Financial Update* "Stock Performance" at 5, emphasis added.

The EEI describes electric utility stock price/valuation as sustainable:

> **Mixed Valuation Signals**
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> The broad market's gains during Q3 along with the EEI Index's flat performance removed some of the richness to utility share valuations that several analysts noted at the end of Q2. Indeed, the magnitude of underperformance for the first nine months of 2012 is similar to that which occurred during the same period of 2009, after markets bottomed and then recovered from the losses produced by the financial crisis. As the market recovery continued in 2010, with 14% to 17% gains, the staid utility sector's 7% return could not keep pace. Yet when 2011 produced worries of economic slowdown, the worsening of the European debt crisis and the summer's woefully memorable deficit gridlock and S&P downgrade of U.S. Treasury debt in August — along with sharply falling interest rates — the EEI Index powered forward with a 20% return against single-digit gains across the broader markets.
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> With the industry business models now set on regulated or mostly regulated structures, and with slow growth in earnings and dividends as the main appeal for investors, such periodic reversals of fortune, driven by changing economic prospects and investor sentiments, seem likely to continue. Interest rates are now at multi-decade lows and while analysts still cite utility price/earnings ratios as above average, 4% dividend yields give utility shares considerable price support relative to the lower yields available from bonds.[4/]

Q. WHAT ARE THE IMPORTANT TAKEAWAY POINTS FROM THIS ASSESSMENT OF ELECTRIC UTILITY INDUSTRY CREDIT AND INVESTMENT RISK OUTLOOKS?

A. Credit rating agencies consider the electric utility industry to be stable and believe investors will continue to provide an abundance of capital to support utilities' large capital programs and at moderate capital costs. All of this supports the continued belief that electric utility investments are generally regarded as safe-haven or low-risk investments, and the market embraces low-risk investments – like utility investments.

[4/] Id. at 6, emphasis added.

The demand for low-risk investments will provide funding for electric utilities in general, and PSE and its parent, Alliant Energy Corp., in particular to fund major capital investments in Iowa.

PSE Investment Risk

Q. PLEASE DESCRIBE THE MARKET'S ASSESSMENT OF PSE'S INVESTMENT RISK.

A. The market assessment of PSE's investment risk is accurately described by credit rating analysts' reports. PSE's corporate credit ratings from S&P and Moody's are "BBB" and "Baa2" respectively. The Company's credit standing from both agencies is "Stable."

S&P specifically stated:

> **Rationale**
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> The 'BBB' corporate credit rating (CCR) on Puget Sound Energy Inc. (PSE) reflects the "excellent" business risk profile and "aggressive" financial risk profile of integrated electric and gas utility operations, consolidated financial measures that are weaker than PSE's stand-alone measures because of additional debt leverage at 'BB+' rated holding company Puget Energy Inc. (Puget), and the insulating regulatory provisions pledged at the utility operating company that further disadvantage holding company financial obligations relative to the operating company. However, the holding company's financial dependence on subsidiary cash flows and the absence of other operating units limit the degree of differentiation between the two credit ratings.
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> However, we recognize that the private ownership of the utility may allow it to have a more aggressive dividend strategy now that its period of significant capital expenditures has concluded, and it has historically issued significant amounts of debt at the

parent company level. Strategic positioning appears consistent with organizational capabilities and marketplace conditions.[5]

RETURN ON EQUITY

Q. PLEASE DESCRIBE WHAT IS MEANT BY A "UTILITY'S COST OF COMMON EQUITY."

A. A utility's cost of common equity is the return investors require on an investment in the utility. Investors expect to achieve their return requirement from receiving dividends and stock price appreciation.

Q. PLEASE DESCRIBE THE FRAMEWORK FOR DETERMINING A REGULATED UTILITY'S COST OF COMMON EQUITY.

A. In general, determining a fair cost of common equity for a regulated utility has been framed by two hallmark decisions of the U.S. Supreme Court: Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n of W. Va., 262 U.S. 679 (1923) and Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944).

These decisions identify the general standards to be considered in establishing the cost of common equity for a public utility. Those general standards provide that the authorized return should: (1) be sufficient to maintain financial integrity; (2) attract capital under reasonable terms; and (3) be commensurate with returns investors could earn by investing in other enterprises of comparable risk.

Q. PLEASE DESCRIBE THE METHODS YOU HAVE USED TO ESTIMATE PSE'S COST OF COMMON EQUITY.

A. I have used several models based on financial theory to estimate PSE's cost of common equity. These models are: (1) a constant growth Discounted Cash Flow ("DCF") model using consensus analysts' growth rate projections; (2) a constant

5/ *Standard & Poor's RatingsDirect*: "Summary: Puget Sound Energy Inc.," January 22, 2013, at 2, emphasis added.

growth DCF using sustainable growth rate estimates; (3) a multi-stage growth DCF model; (4) a Risk Premium model; and (5) a Capital Asset Pricing Model ("CAPM"). I have applied these models to a group of publicly traded utilities that I have determined share investment risk similar to PSE's.

Risk Proxy Group

Q. HOW DID YOU SELECT A UTILITY PROXY GROUP SIMILAR IN INVESTMENT RISK TO PSE TO ESTIMATE ITS CURRENT MARKET COST OF EQUITY?

A. I developed a broad-based group of integrated electric utility companies followed by *Value Line* that meet the following criteria:

1. Have credit ratings from S&P and Moody's in the range of "BBB-" to "A-," and "Baa3" to "A3," respectively.
2. Are characterized as "Regulated" utilities by the EEI.
3. Have positive analysts' growth rate estimates from Zacks, Reuters and SNL Financial.
4. Have paid consistent dividends over the last two years.
5. Have not been involved in major merger and acquisition ("M&A") activities over the last year.

The results of these selection criteria identified 22 integrated electric utility companies which I believe to be reasonably comparable in investment risk to PSE.

Q. PLEASE DESCRIBE WHY YOU BELIEVE YOUR PROXY GROUP IS REASONABLY COMPARABLE IN INVESTMENT TO PSE.

A. The proxy group is shown in Exhibit No.___(MPG-8). This proxy group has an average corporate credit rating from S&P of "BBB+," which is similar to S&P's corporate credit rating for PSE of "BBB." The proxy group's corporate credit rating from Moody's of "Baa2" is identical to PSE's corporate credit rating from Moody's.

The comparable bond rating indicates that the proxy group has reasonably comparable investment risk to PSE.

The proxy group has an average common equity ratio of 46.8% (including short-term debt) from SNL Financial ("SNL") and 49.9% (excluding short-term debt) from *Value Line* in 2012. The proxy group's common equity ratio is comparable to the Company's recently authorized common equity ratio of 48.0%, and my proposed utility common equity ratio of 46.0%.

I also compared PSE's business risk to the business risk of the proxy group based on S&P's ranking methodology. PSE has an S&P business risk profile of "Excellent," which is identical to the S&P business risk profile of the proxy group. The S&P business risk profile score indicates that PSE's business risk is comparable to that of the proxy group.[6/]

Based on these proxy group selection criteria, I believe that my proxy group reasonably approximates the investment risk of PSE, and can be used to estimate a fair return on equity for PSE.

[6/] S&P ranks the business risk of a utility company as part of its corporate credit rating review. S&P considers total investment risk in assigning bond ratings to issuers, including utility companies. In analyzing total investment risk, S&P considers both the business risk and the financial risk of a corporate entity, including a utility company. S&P's business risk profile score is based on a six-notch credit rating starting with "Vulnerable" (highest risk) to "Excellent" (lowest risk). The business risk of most utility companies falls within the lowest risk category, "Excellent," or the category one notch lower (more risk), "Strong." *Standard & Poor's:* "Criteria Methodology: Business Risk/Financial Risk Matrix Expanded," May 27, 2009.

Discounted Cash Flow Model

Q. PLEASE DESCRIBE THE DCF MODEL.

A. The DCF model posits that a stock price is valued by summing the present value of expected future cash flows discounted at the investor's required rate of return or cost of capital. This model is expressed mathematically as follows:

$$P_0 = \frac{D_1}{(1+K)^1} + \frac{D_2}{(1+K)^2} \ldots . \frac{D_\infty}{(1+K)^\infty} \text{ where} \qquad \text{(Equation 1)}$$

P_0 = Current stock price
D = Dividends in periods 1 - ∞
K = Investor's required return

This model can be rearranged in order to estimate the discount rate or investor-required return, "K." If it is reasonable to assume that earnings and dividends will grow at a constant rate, then Equation 1 can be rearranged as follows:

$$K = D_1/P_0 + G \qquad \text{(Equation 2)}$$

K = Investor's required return
D_1 = Dividend in first year
P_0 = Current stock price
G = Expected constant dividend growth rate

Equation 2 is referred to as the annual "constant growth" DCF model.

Q. PLEASE DESCRIBE THE INPUTS TO YOUR CONSTANT GROWTH DCF MODEL.

A. As shown in Equation 2 above, the DCF model requires a current stock price, expected dividend, and expected growth rate in dividends.

Q. WHAT STOCK PRICE HAVE YOU RELIED ON IN YOUR CONSTANT GROWTH DCF MODEL?

A. I relied on the average of the weekly high and low stock prices of the utilities in the proxy group over a 13-week period ending on April 19, 2013. An average stock price

is less susceptible to market price variations than a spot price. Therefore, an average stock price is less susceptible to aberrant market price movements, which may not be reflective of the stock's long-term value.

A 13-week average stock price reflects a period that is still short enough to contain data that reasonably reflect current market expectations, but the period is not so short as to be susceptible to market price variations that may not reflect the stock's long-term value. In my judgment, a 13-week average stock price is a reasonable balance between the need to reflect current market expectations and the need to capture sufficient data to smooth out aberrant market movements.

Q. WHAT DIVIDEND DID YOU USE IN YOUR CONSTANT GROWTH DCF MODEL?

A. I used the most recently paid quarterly dividend, as reported in *The Value Line Investment Survey*.[7/] This dividend was annualized (multiplied by 4) and adjusted for next year's growth to produce the D_1 factor for use in Equation 2 above.

Q. WHAT DIVIDEND GROWTH RATES HAVE YOU USED IN YOUR CONSTANT GROWTH DCF MODEL?

A. There are several methods that can be used to estimate the expected growth in dividends. However, regardless of the method, for purposes of determining the market-required return on common equity, one must attempt to estimate investors' consensus about what the dividend or earnings growth rate will be, and not what an individual investor or analyst may use to make individual investment decisions.

7/ *The Value Line Investment Survey*, February 1, February 22, and March 22, 2013.

As predictors of future returns, security analysts' growth estimates have been shown to be more accurate than growth rates derived from historical data.[8/] That is, assuming the market generally makes rational investment decisions, analysts' growth projections are more likely to influence observable stock prices than growth rates derived only from historical data.

For my constant growth DCF analysis, I have relied on a consensus, or mean, of professional security analysts' earnings growth estimates as a proxy for investor consensus dividend growth rate expectations. I used the average of analysts' growth rate estimates from three sources: Zacks, SNL, and Reuters. All such projections were available on April 19, 2013, and all were reported online.

Each consensus growth rate projection is based on a survey of security analysts. There is no clear evidence whether a particular analyst is most influential on general market investors. Therefore, a single analyst's projection does not as reliably predict consensus investor outlooks as does a consensus of market analysts' projections. The consensus estimate is a simple arithmetic average, or mean, of surveyed analysts' earnings growth forecasts. A simple average of the growth forecasts gives equal weight to all surveyed analysts' projections. Therefore, a simple average, or arithmetic mean, of analyst forecasts is a good proxy for market consensus expectations.

8/ See, e.g., David Gordon, Myron Gordon, and Lawrence Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management*, Spring 1989.

Q. WHAT ARE THE GROWTH RATES YOU USED IN YOUR CONSTANT GROWTH DCF MODEL?

A. The growth rates I used in my DCF analysis are shown in Exhibit No.___(MPG-9). The average growth rate for my proxy group is 5.01%.

Q. WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF MODEL?

A. As shown in Exhibit No.___(MPG-10), the average and median constant growth DCF return for my proxy group is 9.10% to 9.29%.

Q. DO YOU HAVE ANY COMMENTS ON THE RESULTS OF YOUR CONSTANT GROWTH DCF ANALYSIS?

A. Yes. The three- to five-year growth rates are slightly above the sustainable long-term growth rate, as required by the constant growth DCF model. Therefore, I believe my constant growth DCF analysis, using consensus analysts' growth projections produces conservative results. Hence, I have developed additional DCF studies to enhance the information available to accurately estimate PSE's current market cost of common equity.

Sustainable Growth DCF

Q. PLEASE DESCRIBE HOW YOU ESTIMATED A SUSTAINABLE LONG-TERM GROWTH RATE FOR YOUR SUSTAINABLE GROWTH DCF MODEL.

A. A sustainable growth rate is based on the percentage of the utility's earnings that is retained and reinvested in utility plant and equipment. These reinvested earnings increase the earnings base (rate base). Earnings grow when plant funded by reinvested earnings is put into service, and the utility is allowed to earn its authorized return on such additional rate base investment.

The internal growth methodology is tied to the percentage of earnings retained in the company and not paid out as dividends. The earnings retention ratio is 1 minus the dividend payout ratio. As the payout ratio declines, the earnings retention ratio increases. An increased earnings retention ratio will fuel stronger growth because the business funds more investments with retained earnings. The payout ratios of the proxy group are shown on my Exhibit No.___(MPG-11). These dividend payout ratios and earnings retention ratios then can be used to develop a sustainable long-term earnings retention growth rate. A sustainable long-term retention ratio will help gauge whether analysts' current three- to five-year growth rate projections can be sustained over an indefinite period of time.

The data used to estimate the long-term sustainable growth rate is based on the Company's current market to book ratio and on *Value Line's* three- to five-year projections of earnings, dividends, earned returns on book equity, and stock issuances.

As shown in Exhibit No.___(MPG-12), page 1, the average sustainable growth rate for the proxy group using this internal growth rate model is 4.36%.

Q. WHAT IS THE DCF ESTIMATE USING THESE SUSTAINABLE LONG-TERM GROWTH RATES?

A. A DCF estimate based on these sustainable growth rates is developed in Exhibit No.___(MPG-13). As shown there, a sustainable growth DCF analysis produces proxy group average and median DCF results of 8.42% and 8.38%, respectively.

Multi-Stage Growth DCF Model

Q. HAVE YOU CONDUCTED ANY OTHER DCF STUDIES?

A. Yes. My first constant growth DCF is based on consensus analysts' growth rate projections, so it is a reasonable reflection of rational investment expectations over the

next three to five years. The limitation on the constant growth DCF model is that it cannot reflect a rational expectation that a period of high/low short-term growth can be followed by a change in growth to a rate that is more reflective of long-term sustainable growth. Hence, I performed a multi-stage growth DCF analysis to reflect this outlook of changing growth expectations.

Q. WHEN DO YOU BELIEVE SHORT-TERM GROWTH RATES CHANGE OVER TIME?

A. Analyst projected growth rates over the next three to five years will change as utility earnings growth outlooks change. Utility companies typically go through cycles in making investments in their systems. When utility companies are making large investments, their rate base grows rapidly, which accelerates their earnings growth. Once a major construction cycle is completed or levels off, growth in the utility rate base slows, and its earnings slow from an abnormally high three- to five-year growth rate period to a lower sustainable growth rate.

As major construction cycles extend over longer periods of time, even with an accelerated construction program, the growth rate of the utility will slow simply because it is adding to a larger rate base, and the utility has limited human and capital resources available to expand its construction program. Hence, the three- to five-year growth rate projection should be used as a long-term sustainable growth rate but not without making a reasonable informed judgment to determine whether it considers the current market environment, the industry, and whether the three- to five-year growth outlook is sustainable.

Q. IS THE USE OF A MULTI-STAGE DCF MODEL SUPPORTED IN ACADEMIC AND INDUSTRY LITERATURE?

A. Yes. In his book *New Regulatory Finance*, Dr. Roger Morin states the following:

> Dividends need not be, and probably are not, constant from period to period. Moreover, there are circumstances where the standard DCF model cannot be used to assess investor return requirements. For example, if a utility company is in the process of altering its dividend payout policy and dividends are not expected to grow at the same rate as earnings during the transition period, the standard DCF model is inapplicable. This is because the expected growth in stock price has to be different from that of dividends, earnings, and book value if the market price is to converge toward book value.
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> * * *
>
> A Non-Constant Growth DCF model is appropriate whenever the growth rate is expected to change, and the only way to produce a change in the forecast payout ratio is by introducing an intermediate growth rate that is different from the long-term growth rate, as in the previous example.[9/]

Q. PLEASE DESCRIBE YOUR MULTI-STAGE GROWTH DCF MODEL.

A. The multi-stage growth DCF model reflects the possibility of non-constant growth for a company over time. The multi-stage growth DCF model reflects three growth periods: (1) a short-term growth period, which consists of the first five years; (2) a transition period, which consists of the next five years (6 through 10); and (3) a long-term growth period, starting in year 11 through perpetuity.

For the short-term growth period, I relied on the consensus analysts' growth projections described above in relationship to my constant growth DCF model. For the transition period, the growth rates were reduced or increased by an equal factor, which reflects the difference between the analysts' growth rates and the United States Gross Domestic Product ("U.S. GDP") growth rate. For the long-term growth period,

9/ *New Regulatory Finance*, Roger A. Morin, PhD, 2006 Public Utilities Reports, Inc., Vienna, Virginia, pp. 264 and 267.

I assumed each company's growth would converge to the maximum sustainable growth rate for a utility company as proxied by the consensus analysts' projected growth for the U.S. GDP of 4.9%.

Q. WHY IS THE GDP GROWTH PROJECTION A REASONABLE PROXY FOR THE MAXIMUM SUSTAINABLE GROWTH RATE FOR A UTILITY?

A. Utilities cannot indefinitely sustain a growth rate that exceeds the growth rate of the overall economy. Utilities' earnings/dividend growth is created by increased utility investment or rate base. Such investment, in turn, is driven by service area economic growth and demand for utility service. In other words, utilities invest in plant to meet sales demand growth, and sales growth, in turn, is tied to economic growth in their service areas. The Energy Information Administration ("EIA") has observed that utility sales growth is less than U.S. GDP growth, as shown in Exhibit No.___(MPG-14). Utility sales growth has lagged behind GDP growth for more than a decade. As a result, nominal GDP growth is a very conservative, albeit overstated, proxy for electric utility sales growth, rate base growth, and earnings growth. Therefore, GDP growth is a conservative proxy for the highest sustainable long-term growth rate of a utility.

Q. IS THERE RESEARCH THAT SUPPORTS YOUR POSITION THAT, OVER THE LONG TERM, A COMPANY'S EARNINGS AND DIVIDENDS CANNOT GROW AT A RATE GREATER THAN THE GROWTH OF THE U.S. GDP?

A. Yes. This concept is supported in both published analyst literature and academic work. Specifically, in a textbook entitled "Fundamentals of Financial Management," published by Eugene Brigham and Joel F. Houston, the authors state as follows:

> The constant growth model is most appropriate for mature companies with a stable history of growth and stable future expectations. Expected growth rates vary somewhat among companies, but dividends

for mature firms are often expected to grow in the future at about the same rate as nominal gross domestic product (real GDP plus inflation).[10/]

Q. HOW DID YOU DETERMINE A SUSTAINABLE LONG-TERM GROWTH RATE THAT REFLECTS THE CONSENSUS OF THE MARKET?

A. I relied on the consensus analysts' projections of long-term GDP growth. *The Blue Chip Financial Forecasts* publishes consensus economists' GDP growth projections twice a year. These consensus analysts' GDP growth outlooks are the best available measure of the market's assessment of long-term GDP growth. These analyst projections reflect all current outlooks for GDP, as reflected in analyst projections, and are likely the most influential on investors' expectations of future growth outlooks. The consensus economists' published GDP growth rate outlook is 5.0% to 4.7% over the next 10 years.[11/]

Therefore, I propose to use the consensus economists' projected 5- and 10-year average GDP consensus growth rates of 5.0% and 4.7%, as published by *Blue Chip Economic Indicators,* as an estimate of long-term sustainable growth. *Blue Chip Economic Indicators'* projections provide real GDP growth projections of 2.9% and 2.5%, and GDP inflation of 2.1%[12/] over the 5-year and 10-year projection periods, respectively. This consensus GDP growth forecast represents the most likely views of market participants because it is based on published consensus economist projections.

10/ "Fundamentals of Financial Management," Eugene F. Brigham and Joel F. Houston, Eleventh Edition 2007, Thomson South-Western, a Division of Thomson Corporation at 298.

11/ *Blue Chip Economic Indicators*, March 10, 2013 at 15.

12/ GDP growth is the product of real and inflation GDP growth.

Q. DO YOU CONSIDER OTHER SOURCES OF PROJECTED LONG-TERM GDP GROWTH?

A. Yes, and these sources corroborate my consensus analysts' projections. The U.S. EIA in its *Annual Energy Outlook* projects real GDP out until 2035. In its *2012 Annual Report*, the EIA projects real GDP through 2035 to be in the range of 2.0% to 3.0%, with a midpoint or reference case of 2.5%.[13/]

Also, the Congressional Budget Office ("CBO") makes long-term economic projections. The CBO is projecting real GDP growth of 3.3% to 2.4% during the next 5 and 10 years, respectively, with GDP price inflation of 1.9% to 2.0%.[14/] The CBO's real GDP projections are higher than the consensus, but its GDP inflation is lower than the consensus economists.

The real GDP and nominal GDP growth projections made by the U.S. EIA and those made by the CBO support the use of the consensus analyst 5-year and 10-year projected GDP growth outlooks as a reasonable market assessment of long-term prospective GDP growth.

Q. WHAT STOCK PRICE, DIVIDEND, AND GROWTH RATES DID YOU USE IN YOUR MULTI-STAGE GROWTH DCF ANALYSIS?

A. I relied on the same 13-week stock price and the most recent quarterly dividend payment data discussed above. For stage one growth, I used the consensus analysts' growth rate projections discussed above in my constant growth DCF model. The transition period begins in year 6 and ends in year 10. For the long-term sustainable growth rate starting in year 11, I used 4.9%, the average of the consensus economists' 5-year and 10-year projected nominal GDP growth rates.

13/ *DOE/EIA Annual Energy Outlook 2012 With Projections to 2035*, June 2012 at 70.
14/ *CBO: The Budget and Economic Outlook: Fiscal Years 2012 to 2022*, January 2012 at 128.

Q. WHAT ARE THE RESULTS OF YOUR MULTI-STAGE GROWTH DCF MODEL?

A. As shown in Exhibit No.___(MPG-15), the average and median DCF returns on equity for my proxy group are 9.01% and 9.03%, respectively.

Q. PLEASE SUMMARIZE THE RESULTS FROM YOUR DCF ANALYSES.

A. The results from my DCF analyses are summarized in Table 1 below:

TABLE 1

Summary of DCF Results

Description	Proxy Median
Constant Growth DCF Model (Analysts' Growth)	9.29%
Constant Growth DCF Model (Sustainable Growth)	8.38%
Multi-Stage Growth DCF Model	9.03%

I conclude that a reasonable and conservative DCF return for PSE in this case is 9.30%, based on my constant growth DCF model.

Risk Premium Model

Q. PLEASE DESCRIBE YOUR BOND YIELD PLUS RISK PREMIUM MODEL.

A. This model is based on the principle that investors require a higher return to assume greater risk. Common equity investments have greater risk than bonds because bonds have more security of payment in bankruptcy proceedings than common equity and the coupon payments on bonds represent contractual obligations. In contrast, companies are not required to pay dividends or guarantee returns on common equity investments. Therefore, common equity securities are considered to be more risky than bond securities.

This risk premium model is based on two estimates of an equity risk premium. First, I estimated the difference between the required return on utility common equity investments and U.S. Treasury bonds. The difference between the required return on common equity and the Treasury bond yield is the risk premium. I estimated the risk premium on an annual basis for each year over the period 1986 through 2012. The common equity required returns were based on regulatory commission-authorized returns for electric utility companies. Authorized returns are typically based on expert witnesses' estimates of the contemporary investor-required return.

The second equity risk premium estimate is based on the difference between regulatory commission-authorized returns on common equity and contemporary "A" rated utility bond yields. I selected the period 1986 through 2012 because public utility stocks consistently traded at a premium to book value during that period. This is illustrated in Exhibit No.___(MPG-16), which shows that the market to book ratio since 1986 for the electric utility industry was consistently above 1.0. Over this period, regulatory authorized returns were sufficient to support market prices that at least exceeded book value. This is an indication that regulatory authorized returns on common equity supported a utility's ability to issue additional common stock without diluting existing shares. It further demonstrates that utilities were able to access equity markets without a detrimental impact on current shareholders.

Based on this analysis, as shown in Exhibit No.___(MPG-17), the average indicated equity risk premium over U.S. Treasury bond yields has been 5.30%. Of the 27 observations, 21 indicated risk premiums fall in the range of 4.41% to 6.18%. Since the risk premium can vary depending upon market conditions and changing

investor risk perceptions, I believe using an estimated range of risk premiums provides the best method to measure the current return on common equity using this methodology.

As shown in Exhibit No.___(MPG-18), the average indicated equity risk premium over contemporary Moody's utility bond yields was 3.89% over the period 1986 through 2012. The indicated equity risk premium estimates based on this analysis primarily fall in the range of 3.03% to 4.88% over this time period.

Q. DO YOU BELIEVE THAT THESE EQUITY RISK PREMIUM ESTIMATES ARE BASED ON A TIME PERIOD THAT IS TOO LONG OR TOO SHORT TO DRAW ACCURATE CONCLUSIONS CONCERNING CONTEMPORARY MARKET CONDITIONS?

A. No. Contemporary market conditions can change dramatically during the period that rates determined in this proceeding will be in effect. A relatively long period of time where stock valuations reflect premiums to book value is an indication that the authorized returns on equity and the corresponding equity risk premiums were supportive of investors' return expectations and provided utilities access to the equity markets under reasonable terms and conditions. Further, this time period is long enough to smooth abnormal market movement that might distort equity risk premiums. While market conditions and risk premiums do vary over time, this historical time period is a reasonable period to estimate contemporary risk premiums.

The time period I use in this risk premium study is a generally accepted period to develop a risk premium study using "expectational" data. Conversely, studies have recommended that use of "actual achieved return data" should be based on very long historical time periods. The studies find that achieved returns over short time periods may not reflect investors' expected returns due to unexpected and abnormal stock

price performance. However, these short-term abnormal actual returns would be smoothed over time and the achieved actual returns over long time periods would approximate investors' expected returns. Therefore, it is reasonable to assume that averages of annual achieved returns over long time periods will generally converge on the investors' expected returns.

My risk premium study is based on expectational data, not actual returns, and, thus, need not encompass very long time periods.

Q. BASED ON HISTORICAL DATA, WHAT RISK PREMIUM HAVE YOU USED TO ESTIMATE PSE'S COST OF COMMON EQUITY IN THIS PROCEEDING?

A. The equity risk premium should reflect the relative market perception of risk in the utility industry today. I have gauged investor perceptions in utility risk today in Exhibit No.___(MPG-19). On that schedule, I show the yield spread between utility bonds and Treasury bonds over the last 33 years. As shown in this schedule, the 2011 utility bond yield spreads over Treasury bonds for "A" rated and "Baa" rated utility bonds are 1.13% and 1.65%, respectively. The utility bond yield spreads over Treasury bonds for "A" and "Baa" rated utility bonds for 2012 are 1.21% and 1.91%, respectively. The current average "A" and "Baa" rated utility bond yield spreads over Treasury bond yields are now lower than the 33-year average spreads of 1.56% and 1.98%, respectively.

A current 13-week average "A" rated utility bond yield of 4.14%, when compared to the current Treasury bond yield of 3.10% as shown in Exhibit No.___(MPG-20), page 1 implies a yield spread of around 1.04%. This current utility bond yield spread is lower than the 33-year average spread for "A" utility bonds of

1.56%. Similarly, the current spread for the "Baa" utility yields of 1.57% is lower than the 33-year average spread of 1.98%.

These utility bond yield spreads are clear evidence that the market considers the utility industry to be a relatively low-risk investment and demonstrates that utilities continue to have strong access to capital.

Q. HOW DID YOU ESTIMATE PSE'S COST OF COMMON EQUITY WITH THIS RISK PREMIUM MODEL?

A. I added a projected long-term Treasury bond yield to my estimated equity risk premium over Treasury yields. The 13-week average 30-year Treasury bond yield, ending April 19, 2013 was 3.10%, as shown in Exhibit No.___(MPG-20), page 1. *Blue Chip Financial Forecasts* projects the 30-year Treasury bond yield to be 3.70%, and a 10-year Treasury bond yield to be 2.60%.[15/] Using the projected 30-year bond yield of 3.70%, and a Treasury bond risk premium of 4.41% to 6.18%, as developed above, produces an estimated common equity return in the range of 8.11% (3.70% + 4.41%) to 9.88% (3.70% + 6.18%). Based on the large risk premium in the market yield spreads, I recommend giving 75% weight to my high-end risk premium and 25% weight to my low risk premium estimate. This produces an equity risk premium estimate of 9.44%.[16/] I believe this is appropriate given the unusually large yield spreads between Treasury bond and utility bond yields.

I next added my equity risk premium over utility bond yields to a current 13-week average yield on "Baa" rated utility bonds for the period ending April 19, 2013 of 4.67%. Adding the utility equity risk premium of 3.03% to 4.88%, as

15/ *Blue Chip Financial Forecasts*, April 1, 2013 at 2.
16/ 75% x 9.88% + 25% x 8.11% = 9.44%.

developed above, to a "Baa" rated bond yield of 4.53%, produces a cost of equity in the range of 7.70% (4.67% + 3.03%) to 9.55% (4.67% + 4.88%). Again, recognizing the unusually wide Treasury to utility bond yield spreads, I recommend a risk premium return on equity of 9.09%.[17/]

My risk premium analyses produce a return estimate in the range of 9.09% to 9.44%, with a midpoint of 9.27%, rounded to 9.30%.

Capital Asset Pricing Model ("CAPM")

Q. PLEASE DESCRIBE THE CAPM.

A. The CAPM method of analysis is based upon the theory that the market-required rate of return for a security is equal to the risk-free rate, plus a risk premium associated with the specific security. This relationship between risk and return can be expressed mathematically as follows:

$R_i = R_f + B_i \times (R_m - R_f)$ where:

R_i = Required return for stock i
R_f = Risk-free rate
R_m = Expected return for the market portfolio
B_i = Beta - Measure of the risk for stock

The stock-specific risk term in the above equation is beta. Beta represents the investment risk that cannot be diversified away when the security is held in a diversified portfolio. When stocks are held in a diversified portfolio, firm-specific risks can be eliminated by balancing the portfolio with securities that react in the opposite direction to firm-specific risk factors (e.g., business cycle, competition, product mix, and production limitations).

[17/] 75% x 9.55% + 25% x 7.70% = 9.09%.

The risks that cannot be eliminated when held in a diversified portfolio are non-diversifiable risks. Non-diversifiable risks are related to the market in general and are referred to as systematic risks. Risks that can be eliminated by diversification are regarded as non-systematic risks. In a broad sense, systematic risks are market risks, and non-systematic risks are business risks. The CAPM theory suggests that the market will not compensate investors for assuming risks that can be diversified away. Therefore, the only risk that investors will be compensated for are systematic or non-diversifiable risks. The beta is a measure of the systematic or non-diversifiable risks.

Q. PLEASE DESCRIBE THE INPUTS TO YOUR CAPM.

A. The CAPM requires an estimate of the market risk-free rate, the company's beta, and the market risk premium.

Q. WHAT DID YOU USE AS AN ESTIMATE OF THE MARKET RISK-FREE RATE?

A. As previously noted, *Blue Chip Financial Forecasts*' projected 30-year Treasury bond yield is 3.70%.[18/] The current 30-year Treasury bond yield is 3.10%, as shown in Exhibit No.___(MPG-20), page 1. I used *Blue Chip Financial Forecasts*' projected 30-year Treasury bond yield of 3.70% for my CAPM analysis.

Q. WHY DID YOU USE LONG-TERM TREASURY BOND YIELDS AS AN ESTIMATE OF THE RISK-FREE RATE?

A. Treasury securities are backed by the full faith and credit of the United States government, so long-term Treasury bonds are considered to have negligible credit risk. Also, long-term Treasury bonds have an investment horizon similar to that of common

18/ *Blue Chip Financial Forecasts*, April 1, 2013 at 2.

stock. As a result, investor-anticipated long-run inflation expectations are reflected in both common-stock required returns and long-term bond yields. Therefore, the nominal risk-free rate (or expected inflation rate and real risk-free rate) included in a long-term bond yield is a reasonable estimate of the nominal risk-free rate included in common stock returns.

Treasury bond yields, however, do include risk premiums related to unanticipated future inflation and interest rates. A Treasury bond yield is not a risk-free rate. Risk premiums related to unanticipated inflation and interest rates are systematic or market risks. Consequently, for companies with betas less than 1.0, using the Treasury bond yield as a proxy for the risk-free rate in the CAPM analysis can produce an overstated estimate of the CAPM return.

Q. WHAT BETA DID YOU USE IN YOUR ANALYSIS?

A. As shown in Exhibit No.___(MPG-21), the proxy group average *Value Line* beta estimate is 0.70.

Q. HOW DID YOU DERIVE YOUR MARKET RISK PREMIUM ESTIMATE?

A. I derived two market risk premium estimates, a forward-looking estimate and one based on a long-term historical average.

The forward-looking estimate was derived by estimating the expected return on the market (as represented by the S&P 500) and subtracting the risk-free rate from this estimate. I estimated the expected return on the S&P 500 by adding an expected inflation rate to the long-term historical arithmetic average real return on the market. The real return on the market represents the achieved return above the rate of inflation.

Morningstar's *Stocks, Bonds, Bills and Inflation 2013 Classic Yearbook* publication estimates the historical arithmetic average real market return over the period 1926 to 2012 as 8.7%.[19/] A current consensus analysts' inflation projection, as measured by the Consumer Price Index, is 2.3%.[20/] Using these estimates, the expected market return is 11.20%.[21/] The market risk premium then is the difference between the 11.20% expected market return, and my 3.70% risk-free rate estimate, or approximately 7.50%.

The historical estimate of the market risk premium was also estimated by Morningstar in *Stocks, Bonds, Bills and Inflation 2013 Classic Yearbook*. Over the period 1926 through 2012, Morningstar's study estimated that the arithmetic average of the achieved total return on the S&P 500 was 11.8%,[22/] and the total return on long-term Treasury bonds was 6.1%.[23/] The indicated market risk premium is 5.7% (11.8% - 6.1% = 5.7%). The average of my market risk premium estimates is 6.6% (7.5% to 5.7%).

Q. HOW DOES YOUR ESTIMATED MARKET RISK PREMIUM RANGE COMPARE TO THAT ESTIMATED BY MORNINGSTAR?

A. Morningstar's analysis indicates that a market risk premium falls somewhere in the range of 6.0% to 6.7%. My market risk premium falls in the range of 5.7% to 7.5%. My average market risk premium of 6.6% is at the high end of Morningstar's range.

Morningstar estimates a forward-looking market risk premium based on actual achieved data from the historical period of 1926 through 2012. Using this data,

19/ *Morningstar, Inc. Ibbotson SBBI 2013 Classic Yearbook* at 88.
20/ *Blue Chip Financial Forecasts*, April 1, 2013 at 2.
21/ { [(1 + 0.087) ∗ (1 + 0.023)] – 1 } ∗ 100.
22/ *Morningstar, Inc. Ibbotson SBBI 2013 Classic Yearbook* at 83.
23/ Id.

Morningstar estimates a market risk premium derived from the total return on large company stocks (S&P 500), less the income return on Treasury bonds. The total return includes capital appreciation, dividend or coupon reinvestment returns, and annual yields received from coupons and/or dividend payments. The income return, in contrast, only reflects the income return received from dividend payments or coupon yields. Morningstar argues that the income return is the only true risk-free rate associated with Treasury bonds and is the best approximation of a truly risk-free rate. I disagree with this assessment from Morningstar, because it does not reflect a true investment option available to the marketplace and therefore does not produce a legitimate estimate of the expected premium of investing in the stock market versus that of Treasury bonds. Nevertheless, I will use Morningstar's conclusion to show the reasonableness of my market risk premium estimates.

Morningstar's range is based on several methodologies. First, Morningstar estimates a market risk premium of 6.7% based on the difference between the total market return on common stocks (S&P 500) less the income return on Treasury bond investments. Second, Morningstar found that if the New York Stock Exchange (the "NYSE") was used as the market index rather than the S&P 500, that the market risk premium would be 6.5%, not 6.7%. Third, if only the two deciles of the largest companies included in the NYSE were considered, the market risk premium would be 6.0%.[24/]

Finally, Morningstar found that the 6.7% market risk premium based on the S&P 500 was influenced by an abnormal expansion of price-to-earnings ("P/E") ratios

[24/] Morningstar observes that the S&P 500 and the NYSE Decile 1-2 are both large capitalization benchmarks. *Morningstar, Inc. Ibbotson SBBI 2012 Valuation Yearbook* at 54.

relative to earnings and dividend growth during the period 1980 through 2001. Morningstar believes this abnormal P/E expansion is not sustainable. Therefore, Morningstar adjusted this market risk premium estimate to normalize the growth in the P/E ratio to be more in line with the growth in dividends and earnings. Based on this alternative methodology, Morningstar published a long-horizon supply-side market risk premium of 6.1%.[25/]

Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?

A. As shown in Exhibit No.___(MPG-22), based on Morningstar's market risk premium of 6.7%, a risk-free rate of 3.70%, and a beta of 0.74, my CAPM analysis produces a return of 8.39% (rounded to 8.40%.

Return on Equity Summary

Q. BASED ON THE RESULTS OF YOUR RETURN ON COMMON EQUITY ANALYSES DESCRIBED ABOVE, WHAT RETURN ON COMMON EQUITY DO YOU RECOMMEND FOR PSE?

A. Based on my analyses, I estimate PSE's current market cost of equity to be 9.30%.

TABLE 3

Return on Common Equity Summary

Description	Current Results
DCF	9.30%
Risk Premium	9.30%
CAPM	8.40%

[25/] Id. at 66.