

**COMMONWEALTH OF PUERTO RICO
PUERTO RICO ENERGY COMMISSION**

IN RE: PUERTO RICO ELECTRIC
POWER AUTHORITY RATE REVIEW
(PREPA)

) **CASE NO.:** CEPR-AP-2015-0001
)
) **Subject:** Expert Report: Financial Issues

EXPERT REPORT

OF

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EXPERT REPORT: FINANCIAL ISSUES

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I. PREPA's FINANCIAL CONDITION

A. Why is PREPA's financial condition important in the determination of rates in this proceeding?

The financial condition is an important consideration in the ratesetting process for any regulated entity, but it is an especially important factor in this proceeding. In normal circumstances, the regulated entity must raise the monies needed to finance the infrastructure (plant and equipment) necessary for it to carry out its obligation to serve the public. Those monies are raised from investors in the capital marketplace. The cost of that financing, which is ultimately borne by ratepayers, is directly related to the financial condition of the regulated firm. If the regulated firm is financially sound and represents a relatively safe (lower risk) investment, the return that investors require in order to invest in the regulated firm will be relatively low.² Lower financial risk translates into a lower cost of capital, which translates into a lower revenue requirement for ratepayers, all else equal.

Conversely, a regulated firm that is not financially sound represents a riskier investment—one that must provide a higher return to attract investor capital. As the financial condition of the firm declines, the cost of capital to the firm (the percentage rate of return required by investors) increases. Moreover, those higher returns, incurred by the regulated firm as higher capital costs, must be recovered from ratepayers (at least in the case of a government-owned, nonprofit utility like PREPA). The financial condition of the regulated entity, therefore, is directly related

¹ Mr. Hill's curriculum vitae is contained in Hill Exhibit 1 attached to this report.

² In this context, the term "require" refers to the commercial reality that investors have no obligation to invest in any particular company. Whether lenders or shareholders, they will invest in a company only if their expected returns from that investment match or exceed their "required" returns—the return level that persuades them to invest in a particular company rather than in alternative opportunities.

to the capital costs that must be borne by ratepayers. Good financial condition will produce lower rates for customers, while poor financial conditions will produce higher rates for customers.³

The current financial condition of PREPA, one of the largest public power utilities in the United States,⁴ described in more detail in Part I-D below, is very poor—the Company is effectively in a financial emergency. All three major bond rating agencies give PREPA a credit rating of “near default” or “default,” meaning that the Company is unable to or very likely to be unable to meet its financial obligations to its creditors. The only reason that PREPA’s credit rating is not uniformly determined to be labeled “default” is that the Company is currently working with a majority of its creditors to restructure a large portion of its debt in order to lower costs for that debt.⁵ As a result, those debtholders participating in the restructuring are forgoing their interest and principal payments for five years while the restructuring is underway. That reduction in financial requirements along with reduced maintenance and other cost reductions have allowed PREPA to continue to operate.⁶

Currently PREPA is considered by financial markets to be an extremely risky investment. Given this situation, PREPA is unlikely to be able to access the capital markets for any “new” money; or, if it did try to attract capital in its current financial condition, it is likely that the cost rate required by investors would be extremely high—too high to be cost-effective. Therefore, in its current financial condition, PREPA cannot raise from investors the monies necessary to build and maintain a reliable electric system.

³ The benefits of financial strength are not unlimited. While the highest possible credit rating would produce the lowest capital cost, the rate levels required to achieve such a lofty credit rating would be excessive, and therefore not cost-effective for ratepayers. In other words, the rates necessary to “get to” the highest credit rating would be more expensive than the rate benefits of that higher rating. Therefore, a more moderate credit rating would, over-all, be more cost-effective for ratepayers.

⁴ American Public Power Association, *2015-2016 Annual Directory and Statistical Report*, p. 36.

⁵ In its *Restructuring Order* (CEPR-AP-2016-0001), the Commission approved a “Transition Charge” that would lower the cost to ratepayers of that portion of debt whose bondholders participate in the debt restructuring described in that Order. In return for the participating bondholders agreeing to receive only 85% of the face value of their debt, receiving a lower-than-contract interest rate on that debt and deferring principal payments for five years, the Transition Charge ensures that the portion of PREPA’s rates necessary to pay that reduced debt will be collected separately and differently from the rates to be determined in this rate proceeding. The restructured debt costs will be recovered in a separate charge which is lower than the costs would be if the debt were not restructured. Negotiations over the debt restructuring are ongoing and have not yet been concluded.

⁶ See PREPA Ex. 2.0, pp. 10-12, Direct Testimony of Lisa Donahue, PREPA Chief Restructuring Officer.

PREPA cannot continue to operate in the financial condition in which it currently exists. It is essential that the Company's financial position be improved in order that it can eventually raise the additional capital needed for investment in Puerto Rico's 21st Century electric utility system. Beginning with this rate proceeding, PREPA must initiate a return to a reasonable state of financial well-being in order to provide the cost-effective, environmentally sound, and reliable electricity infrastructure essential to the island's eventual economic recovery. Even if the Company, the Commission's experts, and all the intervenors accurately assess and project all facets of PREPA's rates (e.g., operating costs, fuel costs, CILT, debt restructuring, rate design, resource plan), doing so will not provide the electric system Puerto Rico needs in the long term unless PREPA can raise the capital necessary to fulfill its obligation to serve the people of Puerto Rico.

The Chairman of the Board of Directors of the Puerto Rico Manufacturer's association, Mr. Rodrigo Masses and Artze, in his testimony in this proceeding, disagrees that a central focus of this rate proceeding should be returning PREPA to the financial markets. Rather, Mr. Masses and Artze recommends that the Commission require that PREPA "explore all reasonable methods of private financing for its generating infrastructure."⁷

With due respect to Mr. Masses and Artze, his recommendation is reasonable except for one crucial point, which he encourages the Commission to ignore—PREPA's near-default financial position. First, it is unlikely that a third-party generation plant builder would seek to invest in a firm that is unable to pay its debts in a timely fashion. Also it is unclear how the builder would be assured of earning a return on a substantial investment from a financially unstable firm with an uncertain cash flow. Second, even if there were a corporation willing to build utility-scale generation to be delivered through PREPA's grid, that does not diminish, in any way, PREPA's responsibility to meet its current contractual debt obligations. That is, if PREPA, under Commission order, were to seek, find and attract a third-party generator, PREPA would still have to meet its current debt obligations. Moreover, until those obligations are meaningfully addressed, PREPA cannot begin to operate normally. Once PREPA returns to a stronger financial position, then it becomes a more interesting investment for both bondholders and for third-party equipment vendors, but in my view, its financial position must be addressed, first.

As stated at the outset, the financial position of the regulated entity is always a factor in determining its rates. In this proceeding, I believe it is a key factor; one which must be addressed by creating a path toward the resumption of financial stability for PREPA.

⁷ Testimony of Rodrigo Masses and Artze, ll. 159-161.

B. How are publicly-owned utilities traditionally financed, and why?

1. The relative cost of equity and debt.

Capital-intensive corporations must make large investments in plant and equipment relative to the revenues they are able to generate. Utilities are prominent examples. Like all corporations, utilities generate cash from operations through earnings retained in excess of operating expenses and taxes and from depreciation. However, those internally generated monies are, over the long-term, insufficient to fund a utility's substantial capital needs because those capital needs are very large relative to current revenues. For example, a new electric generating facility can cost hundreds of millions of dollars (or even billions, depending on the size and complexity of the generating facility), an amount which would exceed the internal cash generation capabilities of even the largest utilities. Therefore, it is common for utilities to seek the capital needed to build the utility plant necessary to serve ratepayers from sources outside the corporation. The outside sources of capital are investors in the capital marketplace.

There are, broadly, two types of capital: equity and debt. There are gradations or "shadings" of each of those two types of capital. For example, preferred stock is a hybrid type of equity capital with a fixed/contractual cost rate (which common stock does not have); it is not used widely today for utilities. There is also short-term debt financing, which is debt due within a year; it is not used for financing long-lived assets such as generating plants. Therefore, for purposes of this discussion, we will consider the primary means by which utilities are capitalized by outside sources (investors) to be common equity and long-term debt.

Debt is the least expensive form of investor-supplied capital. That is because the debt sold by the utility to investors carries with it a contractual agreement to pay a specified percentage of the face value (sometimes called coupon value) of the bond at specified intervals, over a specified period and to repay the original investment at the end of that period of time. That contractual agreement between the borrower (utility) and the lender (debt investor) provides a level of assurance for the cash flow stream expected by the investor—an assurance that lowers the risk of non-payment and thus lowers the risk to the bond investor. Given that lower risk, the bond investor will accept a lower return than if the cash stream were less certain.

For example, when an investor buys a 5%, 20-year, \$1000 bond from a utility, the utility, via the bond indenture (i.e., the contract stating the terms of the loan), agrees to pay that debt investor \$50 per year on a certain date (5% coupon rate x \$1000 face value) and to pay that amount every year for twenty years, and, at

the end of that time period, to pay back the originally-borrowed \$1,000.⁸ If the borrower (in our example, the utility) does not fulfill its obligation to pay the contractual interest and principal, the debt is in default and the bondholder is entitled to seek legal redress for its promised compensation. That legal redress could mean the borrower (utility) being required to provide available monies to the investor instead of using those monies to operate the utility.

The income stream available to the common equity investor is less secure than the income stream available to the debt investor. There is no contractual arrangement between the common equity investor and the corporate entity selling the stock. Purchasing common stock conveys to the investor a share of ownership in the company in which he or she invests, i.e., the investor owns a portion of the company and can vote on company policy and elect members of the board of directors. However, the purchase of a share of common stock does not convey a contractual promise by the company to provide periodic payments or to repay the original investment, as with debt.

Stockholders are entitled to receive dividends (usually paid quarterly), which are paid out of earnings and are determined by the corporation's board of directors. While it may be true that our hypothetical utility has paid a dividend of 4% of the stock price for the last forty years, and, for that reason, there is an investor expectation that dividends will continue to be paid at that level, there is no guarantee, explicit or implicit, that such will be the case. Also, the dividend can be reduced or eliminated by the board of directors at any time, if the company were to become financially distressed, for example.

Therefore, the cash flow stream received by common equity investors (the dividend and the potential gain in stock price when the stock is sold) is less secure than the cash flow stream associated with the bond payments of interest and principal received by a bond investor. For that reason, the rate of return required by common equity investors is higher than that required by debt investors. To the utility, then, the cost of common equity capital (the percentage return that must be paid to induce common equity investors to contribute capital to the firm—to buy stock) is significantly higher than the return that must be provided to debt investors in the same company—the cost to the utility of debt capital.

Finally, another reason why common equity capital is a more expensive form of investor-supplied capital for utilities than long-term debt capital is due to

⁸ Of course, those bonds can be sold by the investor at any point and the market price and yield vary inversely and directly, respectively, with the current market-based yield of similar risk debt. However, no matter who holds the debt, the lender's (utility's) contractual responsibility to pay the specified amount on the specified day as well as, ultimately, the principal, remain. Also, some bond covenants require that a portion of principal be paid back periodically; in the discussion here, we examine a simplified example in which all principal is returned to the investor at the end of the life of the bond.

difference in tax treatment of bond interest and dividends. Interest on debt is deductible from gross income prior to the calculation of income tax and, for utility ratemaking purposes, carries no tax implications. However, a utility's net income is taxed. So for a utility to be able to earn, say, a 10% return on common equity,⁹ it must be allowed to earn (and ratepayers are required to pay) a return above that expected allowed return so that, after-taxes, the intended return will be earned. If, for example the tax rate is 35%, in order for a utility to earn a 10% return on equity (fulfilling equity investors' expectations with regard to an appropriate return), the utility will have to include in rates an equity return of 15.38% ($10\% \div (1.00 - 0.35 \text{ tax rate}) = 10\% \div 0.65 = 15.38\%$). Therefore, even if we assume that the current cost rate for utility debt is 4.5%,¹⁰ the cost of common equity capital, while 10% on an after-tax basis, would be more than 15% on a ratemaking, pre-tax basis. Thus the cost of common equity capital that must be borne by ratepayers is roughly three times more than that of long-term debt capital.

The table below demonstrates the difference in annual percentage capital costs borne by ratepayers in (a) a publicly-owned utility financed with 100% debt and (b) a privately-owned utility financed with 50% equity/50% debt, given the cost and tax rates set out above.

Table 1.
 Overall Cost of Capital Comparison

Capital	Percent	Cost Rate	Wt. Cost Rate	Pre-tax Wt. Cost Rate
Publicly-owned Utility				
Debt	100%	5.20% ¹¹	5.20%	5.20%
Privately-owned Utility				
Equity	50%	10%	5.00%	7.69%
Debt	50%	4.5%	<u>2.25%</u>	<u>2.25%</u>
Totals	100%		7.50%	9.94%

In this simplified example, the capital costs paid by the ratepayers of the privately-owned utility with substantial common equity funding (9.94%) would be almost

⁹ *Public Utilities Fortnightly* 2015 ROE Study: median ROE for US investor-owned electric utilities = 9.7%.

¹⁰ This is a conservative estimate, according to the most recent Federal Reserve Statistical Release H.15, the current (September 26, 2016) BBB-rated corporate bond is approximately 4.3%.

¹¹ Embedded cost rate of PREPA debt in 2017, No. CEPR-AP-2015-0001, Schedule D-1 REV.

twice the capital cost paid annually by ratepayers of the publicly-owned utility, one with all debt financing (5.20%).

2. How are government-owned and investor-owned utilities traditionally capitalized?

Both publicly-owned (i.e., government-owned) utilities like PREPA and, investor-owned utilities are traditionally capitalized with a mix of common equity and debt capital. Publicly-owned electric utilities are deemed to have less risk than public utilities due their support from governmental authorities, which have taxing authority, as well as publicly-owned utilities' ability to autonomously increase rates if determined to be necessary.¹² Due to that lower risk, publicly-owned utilities utilize more debt to finance utility operations than do privately-owned electric utilities.

Private electric utilities were, for many years, capitalized with approximately 40% common equity and 60% debt. However, with the high interest rates and nuclear plant building problems of the 1980s, and the deregulation that began in the 1990s, that industry was deemed to carry greater investment risk. The average capital structure for private electric utilities has shifted to one with more common equity and less debt. Today, the median common equity ratio for private electric utility holding companies is 47% of total capital.¹³ A 47% common equity ratio would indicate a debt/equity ratio of 1.34 for privately-owned electric utilities. $[(1-47\%)/47\%]$ The average bond rating for the privately-owned electric utility industry is approximately "BBB+ to "A-".¹⁴

According to the most recent annual financial reports of the American Public Power Association (APPA), its twenty largest publicly-owned utility companies other than PREPA, had an average capital structure consisting of 40% common equity and 60% debt, or a debt/equity ratio of 1.54. The average bond rating for the largest companies in the public power industry ranges from "AA-" to "AA," higher than the industry-average common equity ratio for the investor-owned electric utility industry. Due to the lower structural risk of publicly-owned utilities, they are

¹² Prior to the creation of the Commission by the Legislature in Act 57, PREPA, like many other municipal or publicly-owned utilities had the ability to increase rates if necessary to meet its operating costs. However, the Company elected not to exercise that authority and, by 2014, PREPA was unable to pay its debt costs. Following the reduction in PREPA's financial position, the Legislature created the Commission to review and establish PREPA's rates.

¹³ AUS Utility Reports, September 2016, pp. 6-10.

¹⁴ Bond rating letter grades and their meaning will be explained in more detail in the next section of this report. Ratings of "BBB-" or above ("A," "AA," and "AAA") denote relatively lower investment risk and are deemed to be "investment grade" while ratings below "BBB-" are deemed "non-investment grade."

able to finance their operations with higher levels of debt and also maintain higher bond ratings, on average.

PREPA's bond rating history also shows that publicly-owned utilities can sustain investment grade bond ratings with more debt than is used on average by the investor-owned electric industry. PREPA's 2013 Annual Report, published on its website, at page 18, shows that the Company actually had a debt ratio (long-term debt divided by total capital) that was greater than 100% of total capital. That was because the Company had exhibited negative net income over the 2008-2013 period, resulting in a negative net position, or, what would be negative common equity in a non-governmental corporation.¹⁵ In 2013, with a capitalization of more than 100% debt, PREPA was able to maintain an investment grade bond rating from the rating agencies.¹⁶ Subsequently, that rating declined precipitously when it became clear that PREPA would be unable to meet its debt obligations. Nevertheless, PREPA's history shows that a large publicly-owned utility can utilize significant amounts of debt to capitalize its operations while maintaining an investment-grade bond rating.

C. What is the importance of bond ratings and how are they defined?

Bond ratings identify, through a letter "grade," different levels of risk and, therefore, different levels of expected return for different types of bonds. Although the three major credit rating agencies (Moody's, Standard & Poor's, and Fitch) annotate them slightly differently, they all recognize several layers of separation in the variance of bond ratings. While each rating category or "letter grade" has three levels of risk (low, middle and high), Standard & Poor's and Fitch notate them similarly. For example, the "double A" category (which are very secure bonds) would be "AA-", "AA", and "AA+" for the low, middle and high classifications of debt-specific risk in that "AA" ratings category. Moody's, on the other hand, would rate those same bonds with the same relatively low risk characteristics as "Aa3", "Aa2", and "Aa1". Therefore, "Aa1" from Moody's and "AA+" from Fitch or Standard & Poor's are the same rating.

Table 2, below, lists Standard & Poor's ratings and definitions; recall that there are three gradations to each letter grade.

¹⁵ "Net position" for a government corporation like PREPA is the difference between the liabilities and assets on its balance sheet. PREPA's continuing losses have reduced the Company's assets well below its liabilities, creating a large negative net position. Net position is similar to but not the same as equity in a standard corporation. It is similar because it represents the difference between liabilities and assets, but it is different because there is no "investor ownership" of the governmental corporation and, thus, no actual ownership or "equity" position.

¹⁶ Moody's Investors Service; Rating Action: Moody's downgrades PREPA to Baa3 from Baa2: Outlook is Negative, June 19, 2013.

Table 2
 S&P Bond Rating Categories and Definitions

RATING	DEFINITION
INVESTMENT GRADE BONDS	
AAA	An obligation rated "AAA" has the highest rating assigned by S&P Global Ratings. The obligor's capacity to meet its financial commitment on the obligation is extremely strong.
AA	An obligation rated "AA" differs from the highest-rated obligation only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.
A	An obligation rated "A" is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.
BBB	An obligation rated "BBB" exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.
SPECULATIVE GRADE BONDS	
BB	An obligation rated "BB" is less vulnerable to nonpayment than other speculative issues. However, it faces major on going uncertainties or exposure to adverse business, financial, or economic conditions which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.
B	An obligation rated "B" is more vulnerable to non payment than obligations rated "BB", but the obligor currently has the capacity to meet its financial commitment on the obligation. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitment to the obligation.
CCC	An obligation rated "CCC" is currently vulnerable to nonpayment, and is dependent upon favorable business, financial, and economic for the obligor to meet its financial commitment on the obligation. In the event of adverse business, financial, or economic conditions, the obligor is not likely to have the capacity to meet its financial commitment to the obligation.
CC	An obligation rated "CC" is currently highly vulnerable to nonpayment. The "CC" rating is used when a default has not yet occurred, but S&P Global Ratings expects default to be a virtual certainty, regardless of the anticipated time to default. An obligation rated "C" is currently highly vulnerable to nonpayment, and the obligation is expected to have lower relative seniority or lower ultimate recovery compared to obligations that are rated higher.
C	An obligation rated "C" is currently highly vulnerable to nonpayment, and the obligation is expected to have lower relative seniority or lower ultimate recovery compared to obligations that are rated higher.
D	An obligation rated "D" is in default or in breach of an imputed promise. The "D" rating also will be used upon the filing of a bankruptcy petition or the taking of similar action and where default on an obligation is a virtual certainty, for example due to automatic stay provisions. An obligation's regain is lowered to "D" if it is subject to a distress exchange offer.

Data from S&P Global Ratings, August 2016.

It is important to note that the bond ratings are also classified in two broad categories: "investment grade," and "below investment-grade." Bonds in the latter category are commonly called "junk bonds." That common classification does not mean that bonds below investment grade are not widely traded, they are; and in today's market of relatively low yields they are traded quite heavily. The designation "below investment grade" is actually due to the fact that some types of investors—pension funds, for example—are often restricted from investing in

bonds that are below investment grade (below “BBB-”) because those securities have greater investment risk than is allowed by the pension fund investment covenants. Therefore, debt that is classified “investment grade” (debt with ratings at the lowest investment grade level (“BBB-”) or above) has a larger market than non-investment grade debt, and is more readily traded.

It is also noteworthy that the average yield for each bond rating category increases from the lowest yield with the “AAA”-rated debt to the highest yield with the “CCC”-rated debt. Also, the yield spread between the lowest investment grade debt (“BBB-”) and the highest speculative grade debt (“BB+”) is larger than the yield spreads between the rating categories in the investment grade group. What this means is that losing an investment grade credit rating can be costly to the borrower (the utility) due to the sometimes significantly higher yield necessary to attract capital to “junk” bonds rather than “investment grade” bonds.

Table 3 shows the average yields over the most recent three months for corporate bonds in each of the ratings categories from “AA” through “CCC,” obtained from the website of the St. Louis branch of the Federal Reserve (<https://fred.stlouisfed.org>).

Table 3

Bond Rating	3 Mo. Avg. Yield
AA	2.14%
A	2.49%
BBB	3.30%
BB	4.84%
B	6.59%
CCC	14.01%

The information displayed in Table 3 is that higher bond ratings (“AA”) have lower default and lower overall investment risk. Thus, investors are willing to accept a lower return in order to invest in those bonds. That is true throughout the bond-rating spectrum. As the bond rating declines, the risk to the investor increases and the return investors require in order to invest in each subsequently more risky bond rating category is higher. The cost of capital to the borrower increases as the risk to the investor increases.

It is also important to note that the current “yield spread” between the debt categories in the investment grade debt is relatively small (30 to 80 basis points between ratings categories). That means the additional cost to the borrower of having debt rated “BBB” rather than “A” is much smaller than it is when the debt falls into the “below investment grade” category. Table 3 indicates that the recent yield difference between non-investment grade debt (“BB”) debt and the lowest

investment-grade debt (“BBB”) debt is 154 basis points or 1.54%—nearly twice the cost of a debt rating change within the investment-grade category (e.g., “A” to “BBB”).

While 1.5 percentage points in additional annual cost does not seem like much, when put in the perspective of large utility financial offerings it can be significant. For example, a \$100 million “BBB-rated” 20-year debt offering would have an interest rate of 3.30%, according to the data in Table 3. That cost rate would require an interest payment of \$3.3 million per year or \$66 million over a 20-year period ($\$100 \text{ mill} \times 3.30\% \times 20 \text{ years} = \66 million). If that same debt issue were rated “BB” and required a 4.84% coupon rate, the total interest paid over the life of the debt would be \$96.88 million—roughly a 50% increase in total debt costs over the life of the debt.

The data also show significantly increasing costs as the debt gets riskier and the ratings decline to “B” and “CCC.” For example, the current average cost rate of “CCC”-rated debt is 14.01%, approximately 10.7% higher than the lowest investment-grade debt. Using our \$100 million, 20-year debt example, the total interest cost of \$100 million of “CCC”-rated debt would be \$280 million [$\$100 \text{ million} \times 14.01\% \times 20 \text{ years} = \280]. If that hypothetical “CCC”-rated debt were issued by a utility, ratepayers would have to pay \$280 million in interest over the life of the debt, more than 2.5 times the original amount borrowed and 4.25 times the amount of interest that would have been required from a “BBB” investment-grade debt issue. Clearly, for a publicly-owned electric utility like PREPA, maintaining a higher bond rating results in lower capital costs and substantially lower expenses to ratepayers over the life of the debt that is issued to fund the investments necessary to fulfill the utility’s public service obligations.

As explained in Part I-A above, it is not clear that in its current uncertain financial condition near default, PREPA could issue any long-term debt capital whatsoever, much less at any debt at a very high cost rate. Therefore, one of the key goals of this rate proceeding must be to initiate PREPA’s return to a more sound financial position from which it will be able to issue debt capital on reasonable terms.

D. What is PREPA’s current financial condition?

PREPA’s current financial condition is very weak as all of the bond rating agencies currently have the Company at or bordering on default. Moody’s and Fitch credit rating agencies have PREPA’s bonds rated only slightly above “Default,” with the expectation that PREPA will not fulfill its current debt obligations. Fitch currently rates PREPA’s debt as “C”, while Moody’s rates PREPA debt as “Caa3”. As seen in the quotes below, Moody’s has changed the credit rating outlook to “developing” from “negative” due to the potential credit benefit of the proposed restructuring in which a large proportion of PREPA’s bondholders have elected to

absorb some losses in order to bolster PREPA's financial position temporarily and create a path for the Company to return to more normal operation.

"Fitch Ratings-New York-27 June 2016: Fitch has downgraded \$8.2 billion of Puerto Rico Electric Power Authority (PREPA) power revenue bonds to 'C' from 'CC'.

In addition, Fitch is assigning an Issuer Default Rating (IDR) of 'C' to PREPA in anticipation of a distressed debt exchange, which will allow Fitch to reflect the potentially different effects of the exchange on outstanding securities.

RESTRUCTURING OR DEFAULT APPEARS INEVITABLE: The downgrade and maintenance of the Negative Watch reflect Fitch's view that a payment default or restructuring of PREPA's debt obligations is inevitable. Although existing agreements between PREPA and certain creditors (including bondholders) have provided temporary relief, a key component of PREPA's restructuring plan is the reduction of existing debt by means of a proposed distressed debt exchange. PREPA is seeking to complete its restructuring by Dec. 31, 2016." [Fitch Ratings: "Fitch Downgrades Puerto Rico Electric Power Auth's Rev Bonds to 'C'; Negative Watch Maintained," June 27, 2016]

New York, July 13, 2016—Moody's Investors Service has revised the outlook on the Puerto Rico Electric Power Authority (PREPA) to developing from negative, while affirming the Caa3 rating on PREPA's approximately \$8.3 billion of Power Revenue Bonds....

The change in outlook to developing from negative and the rating affirmation are driven by recent events that suggest that positive momentum should continue among PREPA and its creditors towards reaching a consensual debt restructuring, all of which could strengthen recover prospects for creditors following an organized debt restructuring. Of particular note is the degree of legislative and regulatory support received by PREPA in support of the debt restructuring. Notwithstanding this notable progress, the developing rating outlook also captures the execution risk that remains in completing the debt restructuring, including the possibility that failure to achieve key milestones necessary to complete the debt restructuring could lead to a delay or revisions to the restructuring transaction." [Moody's Investors Service: Rating Action: "Moody's revises PREPA's outlook to developing from negative," July 13, 2016]

Standard & Poor's has already determined PREPA's debt to be in default and has changed its credit rating to "D." In meeting its principle and interest requirements from the bondholders that were not participating in the debt restructuring,¹⁷ because PREPA did not have the internally-generated cash flow to meet those payments, the Company was required to borrow from current lenders to meet those payments. Because the Company was borrowing from lenders in order to pay them back, Standard & Poor's declared PREPA's debt to be in default, according to their ratings guidelines.

"NEW YORK (S&P Global Ratings) June 30, 2016—S&P Global Ratings has lowered its ratings on the Puerto Rico Electric Power Authority's (PREPA) approximately \$8.3 billion to 'D' from 'CC.'

We understand that on June 30, 2016, PREPA made its regularly scheduled \$417.5 million principal and interest payment due July 1, 2016 from available funds. However, we further understand that on June 30, 2016, certain of PREPA's forbearing creditors [that that are participating in the restructuring] and monoline insurers loaned PREPA approximately \$263.8 million at 8.46% interest, with repayment due in three tranches at an average maturity of 3.5 years.

In our opinion, were it not for the loan, PREPA would not have made the payments, and that the creditor loans were a necessary condition for PREPA to make the debt service payment. Furthermore, we believe that this "payment/re-lending" constitutes a distressed exchange restructuring, tantamount to default under our criteria, whereby creditors are receiving less value than originally promised—full and timely payments of principal and interest when due—and that creditors are accepting less than originally promised due to the risk that PREPA wouldn't fulfill its obligations. [S&P Global Ratings: "Puerto Rico Electric Power Authority Bond Rating Lowered to 'D' from 'CC' on Distressed Exchange Restructuring" June 30, 2016]

Therefore, PREPA's debt is already in default according to one major credit rating agency because the Company does not have enough cash available to pay its required principal and interest and is borrowing those additional necessary funds from the same lenders. Also, while the other two major rating agencies are willing to hold off on the declaration of default because negotiations toward a broad restructuring are underway, they rated PREPA's debt very near the default level and

¹⁷ The majority of PREPA's bondholders are participating in the debt restructuring, but a portion of its bondholders whose bonds are insured by third-party organizations are not, and they are continuing to require PREPA to meet interest and principal requirements for that debt.

“highly vulnerable to non-payment.” PREPA’s current financial condition is very serious. The Company cannot continue borrowing to meet its semi-annual interest and principal payments absent a plan for restoring its financial health over time and improving its bond rating position to the point at which debt can be cost-effectively issued.

E. How did PREPA arrive at its current financial condition?

In PREPA Ex. 2.0, at page 9, line 176, PREPA’s Chief Restructuring Officer, Lisa Donahue, as a partial explanation of how PREPA’s current financial condition came into being, states, “Utility rates that do not keep up with the cost of service are not sustainable.” While that statement is certainly true, it is an oversimplification of PREPA’s history—the Company is not in its current financial condition simply because costs are higher than they used to be. There are other factors at play.

Ms. Donahue continues in her testimony to explain that PREPA has not raised its rates since 1989 and that, absent higher rates, and with willing investors, PREPA borrowed the monies to make up for a shortfall in revenues. However, that policy—issuing debt to pay operating expenses when rates were not being raised to meet those added debt costs—deviates from proper financial planning and leads very directly to a point at which the debt costs cannot be paid. Prior to Act 57, PREPA’s Board had the legal power to raise PREPA’s rates, but last did so in 1989. PREPA needed to increase its rates to cover prudently incurred costs subsequent to that time, but neglected to do so.

The bondholders also have responsibility for the current weak financial condition of PREPA. The original 1974 Trust Agreement, under which all the Revenue Bonds that PREPA has issued are governed, required that a “Consulting Engineer” (CE) provide an annual comprehensive review of PREPA, the condition of its generating plants, transmission and distribution lines, its financial condition and, importantly, a vetting of financial projections for the future. A true “watchdog” (which the CE should have been) would have sounded an alarm when PREPA’s bottom line turned negative (i.e., when all of PREPA’s expenses exceeded its revenues, creating a negative net income). That trend of negative net income began in 2009 and lasted through 2013 (the last year the consulting engineer published a report), and continues today.¹⁸ Also, as a result of the 2008-2009 “Great Recession” on the U.S. mainland as well as other changes in industrial policy, the economy of Puerto Rico did not recover as quickly and, as a result, PREPA’s kWh sales (industrial sales, primarily) declined. With no rate increase, declining sales widens the gap between revenues and costs for a utility. Nevertheless, the bondholder’s watchdog, the CE, opined in its last report on PREPA, in June 2013 as follows:

¹⁸ According to PREPA’s monthly unaudited financial report to its Governing Board for June 2016, the current “net position” or cumulative loss is approximately \$1.9 billion.

“In the opinion of the Consulting Engineers, the properties of the System are in good repair and sound operating condition. The Consulting Engineers believes the Authority will receive sufficient revenues in fiscal year 2014 with the existing rates to cover current expenses, to make all required deposits in accordance with the 1974 Agreement’s dictates and to exceed its 120% debt service coverage requirement. Based on the outstanding debt at the end of fiscal year 2013, the debt service coverage was 138% in fiscal year 2013 and is forecasted to be 141% in fiscal year 2014, prior to adjustment for planned financings during fiscal year 2014.’ [Fortieth Annual Report on the Electric Property of the Puerto Rico Electric Power Authority, URS Corporation, June 2013, Introduction, p. 3 of 3]

The financings planned for 2014, of course, never came to pass because by 2014, PREPA and its bondholders had realized that the Company could no longer meet its debt obligations and continue to operate. Prior to the smaller amounts of debt issued to existing bondholders in 2016 (January and June) to pay for principal and interest payments for which PREPA did not have the cash flow, 2013 was the last year debt was issued by PREPA. The consulting engineer’s opinion of June 2013, that planned debt issuances for 2014 would have the debt coverage required by the Trust Indenture, was clearly incorrect. It was also in 2014 when PREPA and most of its bondholders reached a forbearance agreement wherein PREPA would suspend bond payments and appoint a Chief Restructuring Officer to address the Company’s operating problems and try to manage a turnaround for the Company.

In a recent report published by the Puerto Rico Commission for the Comprehensive Audit of the Public Credit, entitled *Pre-audit Survey Report*, that Commission provides more detail on the points raised above regarding the shortcomings of management and the Consulting Engineer in contributing to PREPA’s current financial crisis. It also underscores the Government Development Bank’s (GDB) role in that process. As the Commission for the Comprehensive Audit of the Public Credit noted at page 23 of its recent report:

“As fiscal agent, paying agent, and financial advisor to the Commonwealth of Puerto Rico and its public entities, the GDB coordinated all bond issues and lines of credit of PREPA and should act in the best interest of PREPA, the Commonwealth, and its residents.” [Puerto Rico Commission for the Comprehensive Audit of the Public Credit, *Pre-audit Survey Report*, p. 23]

A simple summary of a very complex situation regarding PREPA’s decline from an investment-grade credit rating in 2014 to near default today is this: The Company, its Board, as well as the GDB and the Consulting Engineer were unable to sufficiently trim operating expenses to reduce the need for rate increases, were unable to bring revenues in line with expenses through rate increases when

necessary, did not appear to weigh heavily enough the declines in customer base and kWh sales, and thought it appropriate to issue debt in order to make up revenue short-falls. Any one of those factors could be operationally problematic for a publicly-owned utility, but all of them together have led to a decline in PREPA's financial position and, ultimately, its capacity to provide reliable electric service to the Commonwealth.

However, while there is certainly plenty of responsibility to share in the financial problems facing PREPA, it is not clear that assigning specific blame to any party or group could remedy any significant portion of the financial problems that currently face the Company. In setting rates going forward for PREPA, which is our task in this proceeding, the interest and principal arising from the debt that PREPA has issued and is outstanding should be included in those rates, just as PREPA's reasonable and prudent cost of providing service must also be included. We must all learn from PREPA's past errors as well as the errors of those in charge of its oversight (PREPA's Board, the GDB, the bondholder's Consulting Engineer) so that those errors are not repeated as we move forward in setting rates for PREPA, steadily strengthening its financial position and re-building an electric utility system for Puerto Rico's future.

Some intervenor witnesses have addressed the issue of PREPA's financial condition and the amount of its current debt obligations. Mr. Vincente Feliciano, testifying on behalf of the Renewable Energy Contractors and Consultants Association (ACCONER) states, at line 66 of his testimony, that if PREPA's revenues are "not enough" to satisfy its debt service requirements, the amount of debt should be "addressed" (adjusted downward) by PROMESA, Puerto Rico, PREPA and the debtholders. Similarly, Professor Victor Glass, the Director of Rutgers' Center for Research in Regulated Industries (CRRI) and a witness on behalf of the Institute of Competition and Sustainable Economics of Puerto Rico (ICSE-PR), states at line 518 of his testimony that PREPA's debt burden "should be shared more equitably with bondholders." Again, his view is the amount of debt service associated with PREPA's current debt should be negotiated downward, somehow.

Even though the position of those intervenors is that PREPA's debt load is too high and should be re-negotiated downward, Mr. Feliciano also recognizes, at line 277 of his testimony, PREPA's "...need for a rate structure that provides for the coverage of PREPA's just and reasonable costs, both operational and financial." I concur that PREPA needs to have rates that cover its costs, both operational and financial. However, a recommendation to this Commission that the debt is too high and should simply be re-negotiated and something less than all of PREPA's debt costs be included in rates is problematic for two primary reasons.

First, the current restructuring agreement in which bondholders forego 15% of their investment principle as well as debt service payments for five years was an arms-length contract re-negotiation between two parties with opposing interests—

PREPA (trying to create cash flow “head-room” to avoid bankruptcy) and the bondholders (trying to retain as much of their investment as possible). As such, the outcome should be viewed as market-based and reasonable. Second, those negotiations were undertaken separately from the Commission and were concluded in a manner satisfactory to the parties absent the Commission’s input. This Commission was granted limited power by the Legislature to review portions of the restructuring agreement and, following as thorough an examination as possible, published its findings in its Restructuring Order (CAPR-AP-2016-0001). That restructuring engineered by PREPA and its bondholders met all the conditions required by the Legislature of Puerto Rico and the portions subject to Commission review were approved with conditions. I am not an attorney, but it is my understanding as a financial expert that this Commission would not have jurisdiction over PREPA’s bond investors and would be unlikely to be able to force a re-negotiation of a previously determined arms-length transaction.

The Commission and its advisors are aware that any additional reduction in debt service responsibility for PREPA would be good for both the financial health of the Company and the economy of Puerto Rico. Moreover, I am aware that the PROMESA board has the capability to lower debt service requirements by requiring all PREPA bondholders to adhere to the restructuring agreement currently agreed to by about 70% of bondholders. Too, PROMESA may also be able to reduce debt obligations further than the levels previously agreed to. Therefore, in Part II-A-3, below, I recommend that the Commission require PREPA to use all reasonable efforts to petition the PROMESA board to provide the maximum debt service relief available. However, simply setting rates below current debt service costs and requiring PREPA and the bondholders to “work it out,” would not allow PREPA to fulfill its contractual debt agreements and, in my view, is a recipe for default—an unacceptable option for PREPA or its ratepayers.

F. What principles and practices should PREPA follow in the future with regard to financing its operations?

As we can see from the previous discussion of PREPA’s descent into its current financial difficulties, discussed in more detail in the Pre-audit Survey Report of the Puerto Rico Commission for the Comprehensive Audit of the Public Credit (Audit Commission), PREPA has had substantial “oversight” with regard to financing its operations. In addition to PREPA management, the utility had its Board of Directors, the GDB and the bondholders’ Consulting Engineer to oversee the efficacy of prospective debt issuances, future financial conditions, and the uses for those monies to be raised from investors. However, the question is raised repeatedly by the Audit Commission whether or not those entities had the “political will” to object to debt issuances if they put the Company in financial difficulty or, if those debt issuances were necessary, to raise rates to pay for them. That is the key factor in this problem; it is not just the oversight capability, but also the ability to actually alter the trajectory utility’s plan if it puts the utility in financial difficulty.

The “political” portion of that equation, of course, is the very difficult and often controversial decision of whether or when to raise electric rates in order to increase cash flow to the utility or to borrow from investors for that purpose. When the need for the cash flow is capital expenditures (a new utility-scale solar plant or transmission line), the answer to that question is that those monies should be raised from investors (provided the Company can access the capital markets). When the need is simply for the cash flow to make up a permanent short-fall between revenues and expenses, those monies should *not* be raised from investors. We see before us the results of borrowing to pay operating expenses—a publicly-owned utility near default.

In cases where the utility’s revenues are not sufficient to meet the utility’s legitimate and prudent cost of providing utility service, those additional monies should be provided by ratepayers, i.e., a rate increase is necessary. No one wants an increase in utility rates, but costs increase over time, and, so too, do utility rates. But in the case where a rate increase is necessary, PREPA’s advisors must have the “political will” to choose the path that will be most beneficial for the Company and its ratepayers—a path that will produce a cost-efficient, reliable electric utility system. That appears not to have been the case in the past.

Going forward, in addition to oversight and review of projected PREPA bond issues by PREPA’s board of directors, the GDB and a bondholder representative such as a consulting engineer (preferably a new one—indeed Mr. Quintana testified in the Transition Charge case that he was “not satisfied” with the prior Consulting Engineer), PREPA’s plans for the debt issuance should be submitted to this Commission, reviewed by this Commission and approved by this Commission before that debt is issued to investors. In my view, this Commission offers an independent voice, created by the Legislature specifically to review the rates of PREPA. PREPA’s rates are substantially affected by the debt issued by that entity. Also, this Commission has the ability to independently assess the reasonableness of the debt issue and its impact on the Company’s financial position, as well as the ability to reject the application if it is not in the long-term interest of the Company and its ratepayers. If the Commission does not now have the authority to review and approve future PREPA revenue bond issuances it should seek that authority from the Legislature. The approval of utility debt issuances by regulatory commissions is common in my experience with public utilities in the mainland U.S., and should not be controversial here.

The following information should be provided by PREPA prior to the issuance of new Revenue Bonds or other long-term debt: (1) a prospectus for the debt issue (the document published for investor review of the debt offering); (2) a copy of the supporting Trust Indenture if it is different from the 1974 Trust Indenture under which all of PREPA’s revenue bonds currently are issued; (3) a description of any special considerations associated with the new debt issue; (4) if

not otherwise provided, a description of the expected yield, the term of the debt, a schedule of payments, and a comparison to current yields of similarly-rated bonds; and (5) five-year financial projections showing that the Company will be able to meet its indenture-mandated debt coverage ratio following the issuance of the new bonds.

II. FINANCIAL CONSIDERATIONS IN SETTING PREPA'S RATES

A. What financial realities must the Commission take into account when setting rates in this proceeding?

1. Debt Costs

The annual cost of the debt that currently resides on PREPA's books of account—the annual principal and interest payments for the rate year, fiscal year 2017—must be included in the total PREPA costs used to determine the rates in this proceeding. While, given the recent publication of the report by the Audit Commission regarding the reasonableness of certain PREPA debt issues, there may be questions regarding the prudence of that debt, PREPA's contractual obligation to pay the interest and principal due on that debt remains. Therefore, the annual cost of the debt issued by PREPA must be included in rates—there is no source to meet those required expenses other than ratepayers.

2. Minimum Debt Service Coverage Ratio (DSCR)

The monies intended to be collected in rates must be sufficient not only to cover the principal and interest due; they must also include an amount at least 20% greater than the interest and principal due. The 1974 Trust Indenture under which all of PREPA's revenue bonds are issued mandates that the cash flow available for debt service will be 20% greater than the debt service. Therefore, if the debt service requirement in any year is, for example, \$10 million, PREPA must include \$12 million in rates to "cover" those debt expenses 1.2 times.

The reason for requiring a DSCR greater than 1.0 is that rates, revenues and expenses are all variable under the best of circumstances, and are sometimes widely variable if an unexpected event (such as a boiler fire or hurricane) occurs. In that circumstance, the residual monies available for debt service left after expenses (the normal expenses and the unexpected expenses) have been paid will not be sufficient to "cover" principal and interest expenses if they are designed to be exactly equal to the amount of principal and interest due (i.e., a DSCR of 1.0). A DSCR greater than 1.0 provides "headroom" for expected and unexpected fluctuations in cash flows available for debt service and provides the bond investor a greater degree of assurance that his or her debt payment will be met.

3. Two Types of Debt

PREPA's debt is bifurcated into two groupings. Begun well before the current rate case but continuing is a debt restructuring initiative between PREPA and a

majority of its debt holders. On June 21, 2016, this Commission approved the proposed debt restructuring in which a portion of PREPA's bondholders accepted a reduction in the value of their investment and a 5-year reduction in the interest payments in return for an enhanced revenue collection protocol specifically targeted for those restructured bonds and designed to make debt cost recovery more certain for those bondholders. In addition, due to the stringent collection protocols for the restructured debt, which collect those monies first and make that cash flow stream far less volatile and less risky, a debt service coverage ratio above 1.0 is not required. The debt restructuring is expected to provide approximately \$867 million of debt cost savings to ratepayers.¹⁹

That segregation of the restructured debt and the targeted enhancement of debt collection protocol will create two different types of PREPA debt—restructured debt and “legacy” debt. The legacy debt is that debt which will not be restructured, and therefore not subjected to the new debt collection protocol. In the Restructuring Order this Commission utilized the term “legacy” debt to distinguish that debt not only from the restructured debt but also from any debt that PREPA might be able to issue in the future.

Another “financial reality” impacting the determination of rates in this rate proceeding is the fact that the restructuring is not yet complete. The participating bondholders have, at this point, agreed to continue negotiations through the end of 2016. The restructuring could be completed before that date, or there could be additional conditional agreements to extend the negotiations, or the restructuring effort could fail. In the latter case, the debt that is currently segregated out of consideration for this rate case (and included in the special, separate rate charge—the Transition Charge) would necessarily fall back into consideration for ratemaking purposes in this proceeding.²⁰

Also related to the restructuring and the two debt groupings for PREPA is the fact that the exact number and type of debt issues participating in the restructuring will not be known until the restructuring is complete. For purposes of determining the debt service costs in both the restructuring proceeding and in this rate case, therefore, it was necessary for PREPA and its advisors to make assumptions regarding which bondholders were likely to participate in the restructuring.

For example, as explained in much more detail in the Company's response to CEPR-SGH-03-05, it was assumed that \$700 million of the uninsured bonds remained at PREPA following the restructuring (this is a maximum amount allowed by the restructuring agreement) and that that amount of debt is apportioned

¹⁹ CEPR-AP-2016-0001, Restructuring Order, June 21, 2016, p. 2.

²⁰ If the restructuring does not proceed, what is currently restructured debt would (with no DSCR requirement) have to be included in with the “legacy debt” in this proceeding and would also then require the use of a DSCR, just as the legacy debt does now.

according to the percentages of the types of debt existing at PREPA prior to the restructuring. Also all of the Synchora insured bonds were assumed to continue to reside with PREPA. While my review of the Company's advisors' estimates of the interest and principal responsibility for PREPA during the rate year indicates that analysis to be reasonable and accurate, we must understand that it is an estimate and will remain so until the restructuring is resolved.

A final factor affecting the amount of the debt costs to be included in rates is the impact on those costs arising from the Puerto Rico Oversight, Management, and Economic Stability Act (PROMESA). It is my understanding that if a certain percentage of bondholders elect to participate in a debt restructuring (approximately 70%), the PROMESA board can require the remaining bondholders to accept the same restructuring proposal. In the PREPA restructuring the insured bondholders were being issued what are called "mirror" bonds that duplicated the original terms and conditions and achieved no savings for ratepayers. If those bondholders as well as others (e.g., the Synchora insured bonds that, as of now, reside as legacy debt with PREPA), are required, via PROMESA, to accept the stipulation that would remove almost all of the debt from consideration in the rate proceeding and shift the cost of that debt to be collected through the Transition Charge. The result of the PROMESA impact on PREPA's debt costs would be to reduce those costs by including more of the debt in the restructuring but the amount of that debt cost reduction, may not be known prior to the completion of this rate proceeding.

As noted above, my review of the assumptions made by PREPA and its advisors regarding the amount of and debt service costs related to the legacy debt remaining at PREPA indicates that those recommendations are reasonable for ratemaking purposes. However even reasonable estimates will have to be adjusted in future rate reviews, as actual results are different from the estimates. Any such adjustments should be undertaken by the Commission at the first opportunity to adjust PREPA's rates. I also recommend that this Commission encourage or facilitate a PROMESA review of PREPA debt to see if it meets PROMESA's requirements for making the current debt restructuring agreement apply to all bondholders. A PROMESA requirement that all PREPA bondholders join the restructuring would provide additional reductions in debt service and, as a result, lower rates for PREPA customers.

Moreover, if the PROMESA Board has the ability to improve the restructuring so that it would further reduce the debt costs that must be included in rates below the amount already negotiated between PREPA and its bondholders, and further moderate any rate increase that would obtain in this proceeding, I recommend that the Commission require PREPA to petition the PROMESA Board to provide evidence that additional debt cost savings and the lower rates that would obtain would be beneficial for Puerto Rico and to press for the maximum principal reduction available from that debt oversight commission.

4. Nominal DSCR and Capital Expenditures

Perhaps the most important “financial reality” that must be addressed in determining the rates for PREPA in this proceeding is the initiation of a return to financial well-being for this Company. As discussed in Part I-D, above, PREPA's debt is currently rated in default by one credit rating agency and very near default by the other two major U.S. credit rating agencies. Those very extreme bond ratings signify high investment risk and mean that PREPA cannot raise additional long-term debt capital from investors to build necessary new infrastructure or to repair its current electrical system. The Company is effectively shut out of the capital markets until its financial condition improves, its credit rating improves, and investors have some assurance that the risk of investing in PREPA is much lower than it is today. This condition has two implications: (1) the debt service coverage ratio utilized for PREPA's legacy debt to set rates will have to be higher than the minimum required (1.20) in order to begin to improve PREPA's financial condition, and (2) to the extent that additional funds are needed to meet the Company's minimum necessary capital expenditures, those monies will, until PREPA is able to obtain investor-supplied capital, have to be supplied by ratepayers.

With regard to the use of a DSCR for ratemaking purposes that is higher than the minimum required, PREPA will be starting its return to financial well being from a substantial deficit, i.e., a current financial condition that is precarious. As also noted previously, the Company has accumulated a \$2 billion negative net position (negative equity), which will skew its capital structure for some time to come. While it is not necessary to completely erase that imbalance before PREPA is able to issue debt again, it is important to understand that when the investment community loses confidence in the ability of an entity to pay its debts, it is difficult to win back that confidence. Providing only the minimum amount of Debt Service Coverage required by the bond indenture is not sufficient to signal the investment community that PREPA intends to re-establish its financial position as a reliable lender.

However, utilizing a very high DSCR that could result in a high bond rating (such as the “AA” rating cited by the PREPA advisors as the “better” bond rating result) would require substantial additional debt service coverage, concomitant with a greater annual contribution from ratepayers. Therefore, in order for this Commission to moderate the rate impact on ratepayers, the DSCR selected for ratemaking purposes should be one that fosters the Company's return to investment grade but to a more moderate (“BBB”) investment-grade debt level. As explained in Part II-B below, such a DSCR would be somewhat below that recommended by PREPA's advisors but above the minimum required in the Trust Indenture. That more moderate DSCR would improve PREPA's financial position and would also be cost-effective for PREPA's ratepayers while returning PREPA to investment-grade status. The nominal amount of Debt Service Coverage to be included in rates is discussed in detail below.

Finally, due to cash flow constraints caused by its current financial crisis, PREPA has pared back its system maintenance expenditures and has forgone capital equipment projects that would have normally been undertaken to maintain a reliable electric system.²¹ Those types of expenditures must ultimately be made or the result could be an unreliable electric system prone to the type of unacceptable system-wide blackouts that occurred in the Commonwealth in late September. PREPA cannot now access capital from the investment marketplace, and the Company's current cash flow cannot provide the monies necessary to meet those capital expenditure needs. It is also the case that even when rates are changed to include a moderate DSCR (i.e., one that is higher than the minimum required but below the level indicated by PREPA), PREPA's cash flow may not be sufficient to cover its basic capital expenditure needs. In that case, and only for the specific period of time when PREPA cannot access investor-supplied capital, those rate-year capital expenditures should also be included in rates.

B. What is the amount of debt service expense that should be included in rates in this proceeding?

1. What factors must be considered and what assumptions must be made to determine the debt costs to be included in rates in this proceeding?

The determination of the amount of debt service expense is, in most instances, a simple matter. Each issue of debt on a utility's books has a payment schedule for interest and principal. The rate period in this proceeding is a forward test year—2017. Therefore, the interest and principal due in 2017 for all the debt that is to be considered for ratemaking purposes is summed and equals the debt costs that should be included in revenue requirement used to set the rates.

However, due to the Company's financial position and the ongoing restructuring agreement between the Company and most of its bondholders, a significant portion of the debt on PREPA's books will *not* be considered for ratemaking purposes in this proceeding. The costs associated with that restructured debt (interest and principal) will be collected from ratepayers through a separate Transition Charge (TC) imposed by the PREPA Restructuring Corporation (PREPARC). The Transition Charge will appear as a separate line item on the ratepayer's bills. The Commission has no jurisdiction over the level of those costs; rather, it ensures that the Transition Charge is mathematically accurate, i.e., matches the participating debt whose costs will be recovered through the TC. The ratepayers will ultimately pay for all debt costs whether or not the restructuring proceeds; however, if the restructuring proceeds, as I assume it will, the interest and principal charges for that restructured debt will be lower than they otherwise would be.

²¹ See PREPA Ex. 2.0, pp. 10-12, Direct Testimony of Lisa Donahue, PREPA Chief Restructuring Officer

Therefore, the difficulty in determining the debt costs to include in rates in this rate proceeding is identifying which debt issues will remain with PREPA as “legacy debt,” and which debt issues will participate in the restructuring (and get assigned to PREPARC to be collected in the separate Transition Charge). As previously noted, the manner in which the bonds are actually split into two groups will not be finalized until the restructuring is completed. Therefore, for purposes of this rate proceeding, the bonds that will remain with PREPA and which will have their costs collected in PREPA’s rates must be estimated. As noted in Part II-B-2 below, the methodology utilized by PREPA and its advisors in selecting the debt issues that will remain with PREPA following the restructuring is reasonable for ratemaking purposes.

2. What is the reasonable amount of debt service costs for the rate year 2017 that should be included in rates in this proceeding?

PREPA and its advisors have estimated the debt service—the payment of principal and interest due—for PREPA legacy debt in 2017 to be approximately \$314 million. That amount of principal and interest for 2017 is mentioned only briefly in the revenue requirements testimony of witnesses Pampush, Porter and Stathos at page 17, but the Company provided a more detailed narrative explanation of the derivation of the amount with its filing in Schedule F-4-Section IX:

Following the transaction, an estimated \$1,595 million of debt is assumed to remain outstanding at PREPA, which includes \$696 million and \$35 million of Fuel Lines and GDB LOC, respectively, as well as (i) the maximum \$700 million of uninsured bonds per the RSA and (ii) \$164 million of Syncora bonds following the July 1, 2016 debt service payment.

Debt service on the \$700 million of uninsured bonds remaining at PREPA is calculated assuming that a pro rata portion of each series of the approximately \$2.4 billion of non-forbearing uninsured bonds outstanding (following the July 1, 2016 debt service payment) remains at PREPA. PREPA’s advisors have calculated principal and interest payments on these bonds on a “CUSIP-by-CUSIP” basis. Interest on the Series UU variable rate bonds was projected using the 3-month LIBOR curve and an “Actual/Actual” day count convention. Estimated subsidies have been netted out of interest for the Series EEE and Series YY Build America Bonds (BABs). [Schedule F-4, Section IX, p. 7]

The narrative explanation in Schedule F-4 included a description of a “CUSIP-by-CUSIP” analysis of the debt issues on PREPA’s books by its experts. “CUSIP” stands for Committee on Uniform Securities Identification Procedures, and a CUSIP number is a specific identification code given each bond issuance, and is standard practice in

the securities industry. The Commission’s advisors, in CEPR-SGH-01-016 and CEPR-02-05, requested detailed spreadsheet back-up for PREPA’s analysis of the debt remaining on PREPA’s books following the restructuring, the assumptions used to estimate that amount and the principal and interest due during the rate year on those debt issues. Those data were provided, were well-documented, and the assumptions utilized were reasonable for ratemaking purposes.

According to the PREPA analysis, the principal amount of debt on its books following the restructuring declines from \$1.59 to \$1.42 billion during the rate year. The types of debt and interest and principal for each sum to \$314 million and are as shown in Table 4 below.

Table 4
 PREPA Test Year Debt Costs

Debt Service	Principal [000,000]	Interest [000,000]	Total [000,000]
GDB Letter of Credit	\$5	\$2	\$7
Fuel Lines	\$104	\$38	\$142
Uninsured Bonds	\$25	\$38	\$62
Insured Bonds	\$38	\$65	\$103
PREPA Rate Year Debt Service	\$172	\$143	\$314

Data from PREPA Response to EC Staff CEPR-SGH-02-05_Attach 01 (Confidential) Tab: FY 2017 CUSIP Summary²²

Also, to gather some perspective as to the impact on ratepayers of a debt service cost of \$314 million annually, we can rely on the total kilowatt-hour sales (kWh) used to estimate the Transition Charge—approximately 16.5 billion kWh in annual sales for PREPA. With those annual sales, a \$314 million charge for legacy debt service costs would be 1.9¢/kWh for customers.

²² These data were originally deemed to be confidential. PREPA has agreed that they be made public with the following DISCLAIMER: At the time of the filing, PREPA and its advisors made estimates of the amount of debt PREPA would service in FY17 based on assumptions about the restructuring transaction and relendings. PREPA designated this information confidential at the time of filing, as the July relending transactions had not occurred. It should be noted that these assumptions were to illustrate how the relending might be expected to occur at that time. There was and still is substantial uncertainty as to the timing and amount of PREPA debt to be restructured and additional relendings. But, since substantial time has passed since the original filing, PREPA is willing to remove its confidentially claims at this time for the following information: In excel document provided in response to ROI CEPR-SGH-02-05, lines 6 to 27 of the tab titled “FY 2017 CUSIP Summary” and the numbers included in the tab titled “Ex. 3.03 – DS Schedules.”

3. Will costs related to the pending restructuring and the Transition Charge be excluded from consideration in this proceeding?

As noted in Part II-B-2 immediately above, provided that the bond restructuring occurs (the operative assumption in this rate case analysis), the only debt costs that will be considered in this rate proceeding are those costs associated with PREPA's legacy debt, because the principal and interest costs associated with the restructured debt are segregated out and recovered by PREPARC through the Transition Charge, which is not part of this rate proceeding.

4. What are the potential impacts of PROMESA on the debt costs to be included in this proceeding?

Provided that a substantial portion of the bondholders of government-based debt in Puerto Rico have agreed to a particular restructuring (approximately 70%), then the PROMESA Board can mandate that the remaining bondholders also accept that "deal." The restructuring under way through PREPARC calls for a reduction in principal of 15% so that investors' claim on loans to PREPA is 85% of the original amount, and a 5-year moratorium on principal payments. If the PROMESA Board required the non-participating bondholders to join the restructuring, there would likely be several results: (1) the insured bonds that are participating in the restructuring but are getting new bonds with exactly the same terms as the old bonds (the "mirror" bonds) would have to forego 15% of their principal claims and accept a five-year principal "holiday" as the other participating bondholders have; (2) the non-participating debt that is currently expected to remain on PREPA's books would be moved into the restructured debt (and therefore be recovered through the Transition Charge), so that the only PREPA debt balances to be included in rates in this case would likely be the Fuel Lines debt and the GDB letter of credit; (3) that smaller PREPA's FY 2017 debt service, reflecting only the GDB and Fuel Line debt would be, less than half the current amount; and (4) the participation in the restructuring of the current non-participating bondholders would further lower the debt costs borne by ratepayers. In summary, if the PROMESA Board required participation in the restructuring of all PREPA bondholders, more of the recovery of debt costs would be shifted out of the rate case and into the Transition Charge; and total debt costs charge to ratepayers would be reduced.

5. What would be the outcome of the rate case debt cost determination if the proposed restructuring does not occur and the PROMESA Oversight Board does not intervene?

If PREPA's discussions with the participating bondholders do not produce a final restructuring agreement, so that the current levels of debt (and their associated terms) remain unchanged, the debt costs to be included in rates in this proceeding would be higher than currently assumed in PREPA's projections. There would be no 15% reduction in face value and no five-year principal holiday.

Moreover, an appropriate debt service coverage ratio in excess of that required by the 1974 Agreement would have to be applied to a much larger combined debt figure than would otherwise be the case. Rates would have to reflect that additional cost.

The magnitude of the increase in debt service costs is difficult to determine precisely, because current available estimates are based on facts in existence during the proceeding to approve the Calculation Methodology associated with the Transition Charge; some of those facts may have changed. However, the FY 2017 interest and principal associated with the debt to be restructured, according to PREPA and its advisors, is \$478 million. Including the Series 2016A, B, and C debt that has been issued to help PREPA meet its other debt payments would add another \$110 million in debt service for FY 2017, for a total of approximately \$588 million.²³ That estimate would indicate that, if the restructuring fails, those additional debt costs would have to be recovered in rates in a more traditional manner, i.e., in combination with the FY 2017 debt service of PREPA's "legacy" debt. The total debt service to be recovered in rates would more than double and would be approximately \$902 million [\$314 (legacy debt service) + \$588 (non-restructured, "status quo" debt service)].

Using the same assumption with regard to determining the per kWh impact as used in Part B2, above (16.5 billion kWh annual sales), a total "un-restructured" debt service for all of PREPA's debt of \$902 million would represent approximately 5.5¢/kWh in rates. That "all debt" rate impact is 3.6¢/kWh higher than would obtain with the inclusion of the debt costs of only PREPA's legacy debt (1.9¢/kWh).

Importantly, the net increase in debt service costs in this rate proceeding absent restructuring would not be as much as indicated by simply adding the "un-restructured" debt with the "legacy" debt. The total debt service costs charged to ratepayers would increase because the debt cost savings gained from restructuring (i.e., from the debt holders 15% "haircut" on principal and the 5-year interest rate pause) would not be available to ratepayers, but ratepayers would still cover the majority of those debt costs in rates just as they would have with restructuring.

During the restructuring investigation, PREPA and its advisors estimated the per kWh savings from the restructuring to be 1.47¢ in 2017. Therefore, the increased cost to ratepayers if the restructuring does not proceed would be only the savings engendered by the restructuring itself (the 1.47¢/kWh) and not the 3.6¢/kWh represented by moving the "non-restructured" debt service costs to this rate proceeding if restructuring fails. That is because, regardless of whether the debt costs associated with the debt targeted for restructuring were billed through a separate line item on the customers' bill, ratepayers were going to pay the debt

²³ 05 PREPA Response to EC Staff CEPR-SH-02-05_Attach 01(Confidential), SPV Petition Attachments, Tab: Ex. 3.03 – DS Schedules.

service costs associated with that debt. Without a restructuring, ratepayers would lose the pricing benefits of that restructuring arrangement (1.47¢/kWh), but would still pay the remainder of the cost of that debt in rates just as they would have with restructuring.

C. What is a “debt service coverage ratio,” why is it necessary, and what is the appropriate ratio for this proceeding?

The debt service coverage ratio (DSCR) for publicly-owned utilities like PREPA is simply a ratio of the cash flow available to meet or “cover” the debt service payments (interest and principal) that are due in a particular time period. Assume, for example, that PREPA’s interest and principal payments in FY 2017 are expected to be \$300 million. Also assume that rates are set so that if the Company sells the amount of electricity that is expected (kWh sales are as projected), corporate expenses are incurred as projected and all other costs are incurred at the rate and magnitude expected, then at the end of the year, after paying all of its costs of operation, PREPA will have \$300 million available to pay its debt service costs—equal to the amount of those costs.²⁴ In this hypothetical, the debt service costs are “covered” once, and the DSCR is 1.0.

If, in our example, the amount of kWh sales was less than expected or there was an unexpected weather event that created costs that were not budgeted or the utility’s short-term financing needs exceeded expectations, the utility would end the year with something less than the \$300 million necessary to “cover” its debt service costs. Absent other sources of funds, those debt costs could not be met. In that case, the utility’s DSCR would be below 1.0; its ability to meet its debt cost responsibility would be jeopardized.

For the reasons discussed above, and the fact that actual events often turn out to be different from what is expected, it is common that rates are set for publicly-owned utilities with DSCRs above 1.0. That increased safety margin allowed by a higher DSCR reduces the risk for an investor and provides greater assurance that their debt costs will be met. That higher assurance and lower risk for the investor translate, eventually, to lower-cost capital for the utility and its ratepayers

The question, then, of what DSCR to select for ratemaking purposes is one of balance. The balance to be struck is between the necessary support for a financially healthy utility and the cost to ratepayers of a DSCR that is unnecessarily high and, thus, too expensive to be cost-effective.

²⁴ This doesn’t all happen at the end of the fiscal year, of course, but in finite increments during the year. Nevertheless we assume here, for illustrative purposes the debt costs are paid at year-end.

1. The DSCR required by the 1974 Trust Agreement.

The 1974 Trust Agreement is the contractual agreement that forms the basis of PREPA's ability to issue "Revenue Bonds" (bonds that are promises to pay interest and principal which are secured by the strength of PREPA's utility revenues). All of PREPA's Revenue Bonds that have been issued since 1974 that were used to raise monies to build the electric plant now in use are subject to the requirements of that 1974 Trust Indenture. One of the requirements of that 1974 Trust Indenture is that PREPA's debt service coverage (the monies projected to be able to cover the debt service) must be 20% greater than the amount necessary to meet debt service.

PREPA, however, is in a most difficult financial condition—a condition that will not allow the Company to access the capital markets. The question arises whether a required minimum DSCR is enough to start the Company on a path toward a better financial future. A review of standards in the industry as well as some of the evidence presented by PREPA's advisors indicates the answer to that question is "no."

2. What are the average DSCRs and Bond Ratings in the publicly-owned utility industry?

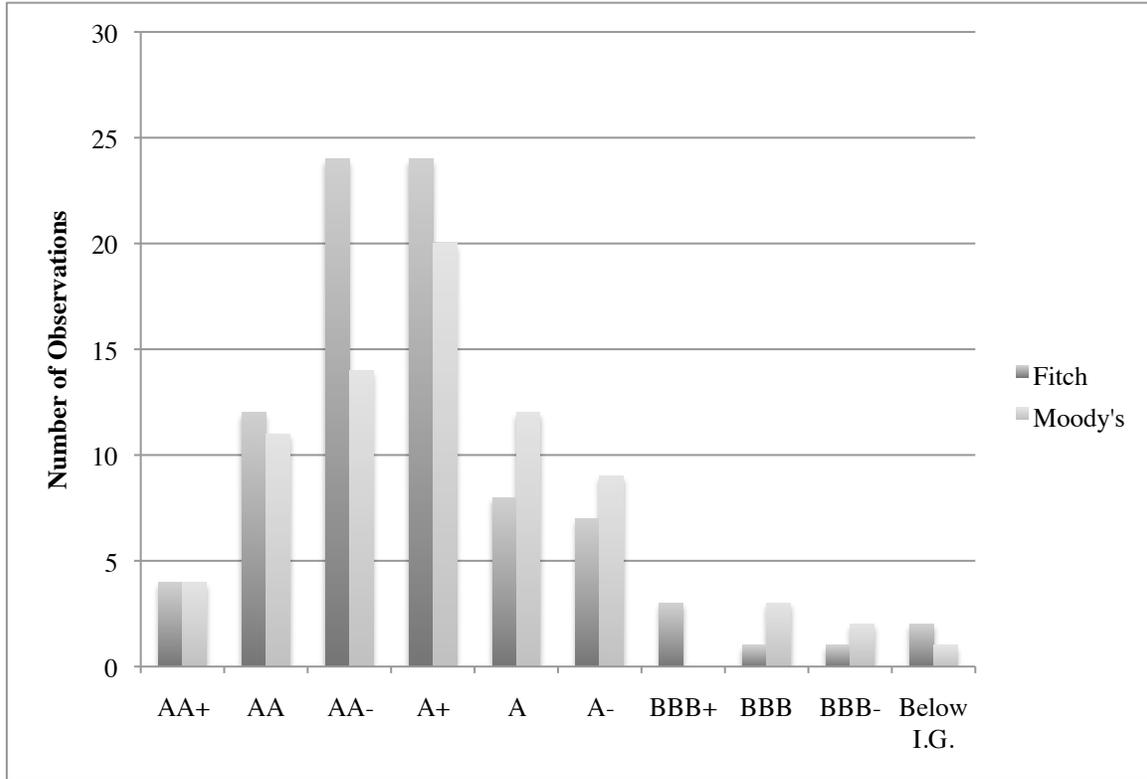
According to the most recent edition of the American Public Power Association's "Financial and Operating Ratios of Public Power Utilities" (November 2015), the median²⁵ debt service coverage ratio (net revenues available for debt service²⁶ to total long-term debt service for the year) for the public power industry is 2.32. For the larger utilities in the American Public Power Association's universe of 131 public power utilities (those with more than 100,000 customers), the median DSCR is lower than average for the entire industry—1.85.

As shown in Chart 1, below, the average credit rating in the public power industry is solidly investment grade. The data available from both Fitch (as reported by PREPA's advisors in PREPA Ex. 5.20) and Moody's indicate that the central nature of public power credit ratings is in the A+/AA- range. As noted previously, that average credit range is significantly higher than that of the investor-owned electric industry, which falls in the BBB+/A- range. These data also show that for the sample of 75 to 85 public power utilities, only 1 or 2 are rated below investment grade.

²⁵ The "median" of a data array is the middle value in a group of values, with just as many observations above the median as below it. The median is less affected by statistical outliers than the average, which is the sum of the observation values divided by the number of observations.

²⁶ "Net revenues available for debt service" – net electric utility operating income (operating revenues minus operating expenses) plus net electric utility non-operating income, plus depreciation.

Chart 1
 Credit Ratings in the Public Power Industry



Note: Fitch data from PREPA Ex. 5.20 (data from 2010-2014), Moody's data from "U.S. Public Power Utilities With Generation Ownership Exposure," November 2011. Credit ratings use Fitch's notation, not Moody's.

3. What evidence have PREPA's advisors presented regarding the appropriate level of debt service coverage (DSCR) to be included in rates?

In Section IV of PREPA Exhibit 5.0, the revenue requirements panel (Pampush, Porter and Stathos) analyzes the credit metrics in the public power industry. As shown in PREPA Ex. 5.23, based on the Fitch 2015 Public Power Peer Study, they found the median and mean (average) DSCR for the investment-grade companies to be as shown in Table 5 below.

Table 5
 Mean and Median DSCR in the Public Power Industry

Credit Rating	Mean	Median
AA	3.33	2.38
A	2.51	2.06
BBB	1.31	1.15

Those industry data from Fitch, shown in Table 5, generally comport with those reported by the American Public Power Association, cited above. These data show that the DSCR necessary to attain a high bond rating (“A” or “AA”) is double or more than double that necessary to attain a “BBB” credit rating—a lower-level investment grade rating. That means, simply, that attaining those higher-level bond ratings which are targeted PREPA’s advisors would require a much higher DSCR and be much more expensive for ratepayers. For example, if a utility’s debt service is \$300 million, the average DSCR for a “BBB”-rated public utility—1.31—would call for a total ratemaking debt service of \$393 million [$\$300 \text{ million} \times 1.31$]. The average DSCR for an “AA”-rated public utility—3.33—would call for a total ratemaking debt service of \$999 million [$\$300 \text{ million} \times 3.33$]. On average, with a \$300 million annual debt service, the difference between an “AA” bond rating and a “BBB” bond rating would cost ratepayers \$606 million annually, according to the public power industry data in Table 5.

Through a statistical decision-tree analysis, PREPA’s revenue requirements panel estimates a DSCR of 1.57, which they believe to be pivotal in determining a “better credit risk characteristic and a move toward financial stability.” As shown in PREPA Ex. 5.27, according to their analysis, a DSCR of 1.57 is the “tipping point” (my phrase, not theirs), between a “better” credit rating (“A”, or “AA”) and something less desirable (a credit rating of “BBB” or below). The revenue panel also states, as summarized in PREPA Ex. 5.19, that a ratemaking DSCR for PREPA should be “at least” 1.57 and “preferably” 2.00.²⁷ Therefore, it is clear from their analysis and DSCR ratemaking recommendations for PREPA, if revenues were to be set using a DSCR methodology, the revenue requirements panel seeks to move PREPA to a credit rating that equals the average for the public power industry, the higher end of the investment-grade credit rating spectrum (“A” to “AA”).

4. What is the appropriate DSCR for PREPA to balance the interests of ratepayers and investors?

As discussed in Part II-C-1 above, the minimum DSCR required for ratesetting in this proceeding is 1.20, the level mandated by the Trust Indenture on which the Company’s revenue bonds are issued. However, PREPA’s financial difficulties have caused significant doubt in the financial community as to its ability to manage its finances and meet its statutory obligations to pay principal and interest. Therefore, in order to “climb out” of its current credit rating position, and to begin a journey back to a credit position from which PREPA can again issue debt, something more than “the minimum” DSCR must be included in rates.

²⁷ The PREPA advisors ultimately do not select DSCR as the appropriate ratemaking methodology. [*can we clarify this sentence. DSCR is not a ratemaking methodology.*] They choose a “cash flow” approach instead. As shown in Schedule A-2, the revenue requirement PREPA requests results in a DSCR of 2.60.

However, we must also remember that, if the debt service is \$314 million, for every one-tenth added to the ratemaking DSCR, we are adding \$31.4 million to the revenues that must be recovered from PREPA's customers. Therefore, while it is fundamentally important to regain access to the capital markets it is equally as important to consider the impact of that move on ratepayers.

The Company's advisors, in their DSCR recommendation of "at least" 1.57 and "preferably" 2.00, are targeting the high bond ratings enjoyed, on average, by the public power industry. In my view, an attempt to move PREPA from a "C" or "D"-rated utility to one that is rated "A" or "AA" over-reaches, and would be unnecessarily expensive and difficult for PREPA's ratepayers. While, in the more distant future, after PREPA's has re-established itself and its ability to access long-term debt capital, it might be reasonable to attempt to move to an industry-average credit rating, such a move at this time is premature.

In addition, in the current economic environment of low capital costs, the - advantages of those higher bond ratings targeted by the PREPA advisors, in terms of reduced interest rate costs, are diminished. As shown in Table 3, with "BBB"-rated corporate yields at 3.30% and even "BB" (below investment grade) debt being issued at a yield of 4.84% (a level below PREPA's current embedded cost of debt), targeting a lower level *investment-grade* credit rating for PREPA now is a more reasonable approach. Of course, the economic environment can change and the cost rate advantages of higher-rated municipal debt could, perhaps, be worth the ratepayer-supplied cost to get there. However, the current economic situation in the U.S. (slow growth, low inflation) has been quite stable over the past six years and is projected to remain so. Therefore, targeting a lower level investment-grade bond rating for PREPA's return to the capital markets is reasonable and, if a standard DSCR ratemaking methodology is used to set rates, would place a lesser burden ratepayers.

At page 67 of PREPA Exhibit 5.0, the Company's revenue requirement panel, discusses the "density plots" for different types of investment-grade credit ratings for publicly-owned utilities. The PREPA advisors indicate that a density plot is a smoothed histogram that provides a graphical indication such that the height of the graph represents the number of observations of a specific DSCR for a particular investment-grade bond rating. The density plots are shown in PREPA Exhibit 5.28. For BBB-rated utilities, PREPA Exhibit 5.28 shows that the "mode" or most-often occurring DSCR is approximately 1.10, and the PREPA advisors describe a DSCR of 1.20 (which is just above the median or middle value of DSCR for a BBB-rated public utility) "is consistent with the bottom rung of the investment-grade bonds."

The PREPA advisors also note their 1.57 DSCR benchmark is near the mode (most-often occurring) of the A-rated publicly-owned utility observations, and a DSCR of 2.00 is near the most-often occurring value for AA-rated publicly-owned utilities. As previously noted, the PREPA advisors recommend a DSCR from 1.57 to

2.00, and in so doing, target an ultimate bond rating for PREPA between “A” and “AA.” The cost to ratepayers of moving to a relatively high investment-grade bond rating, compared to a more moderate (lower) investment grade rates can be substantial. Therefore, as PREPA begins its financial reconstruction I believe a more moderate bond rating target—one which takes into account ratepayer concerns regarding rate increases—would be more appropriate for ratemaking purposes. In my view, a DSCR higher than that appropriate for BBB-rated publicly-owned utilities (1.20) but lower than the most-often occurring level for a single-A utility (1.57) would be reasonable. In that regard a DSCR of 1.40, would target an investment grade bond rating between “BBB” to “A,” according to the data provided by the PREPA advisors, and would be appropriate for ratemaking purposes.

In addition, a DSCR of 1.40 is well above the minimum required by the Trust Indenture and will provide a clear sign to the investment community that PREPA, supported by the Commission, intends to improve its financial position, with the goal of being able to return to the capital markets in the near future, issuing investment-grade debt.

Some may be of the opinion that a DSCR of 1.40 is too far in excess of the averages for BBB-rated utilities and, thus, too costly for ratepayers. However, it is important to understand that an integral part of the support for PREPA’s credit strength is the economy of the Commonwealth, in which it operates and which is also in a relatively weak position. Therefore, the DSCR used to set rates in this case should be far enough in excess of the minimum necessary for an investment-grade credit rating to compensate for some of the underlying credit issues faced by Puerto Rico. Again, a DSCR of 1.40—above necessary minimums and above average DSCRs for “BBB”-rated publicly-owned electric power companies—is reasonable in that regard.

Witnesses Sanzillo and Kunkel, from the Institute for Energy Economics and Financial Analysis (IEEFA), testifying in this proceeding on behalf of the Institute for Competitiveness and Sustainable Economy of Puerto Rico (ISCE-PR), concur, at page 33 of their Direct Testimony in this proceeding, that (1) the DSCR is the most important credit metric, (2) PREPA’s Modified Cash Basis method (which included test year Capital Expenditures) is the most reasonable revenue requirement model for PREPA, and (3) creditworthiness is based on lenders’ belief that they will receive timely and complete payments they are due. The ISCE-PR witness also indicate at pages 35 and 36 of their testimony that the DSCR calculations provided by PREA were inaccurate and overstated. However, there are four factors that call that conclusion into question.

First, the DSCR formula shown on page 34 of the panel’s testimony shows the numerator of the DSCR calculation to be “net income.” However, the numerator of the DSCR is “net revenues” as defined by the American Public Power Association (and by PREPA’s 1974 Trust Agreement), not “net income.” “Net revenues” includes

other income and non-cash expenses, notably, depreciation. Second, the panel expresses concern that PREPA provided a corrected DSCR calculation of 1.47, which is below the 1.57 DSCR threshold PREPA recommends. As I have shown above, a DSCR of 1.40 is more than sufficient to support PREPA's progress to an investment-grade credit rating. Third, the panel's expressed concern that the DSCR for the combined debt service (legacy debt and restructured) is too low appears to neglect that, due to the strict collection regimen implemented with the proposed restructuring, a DSCR above 1.0 for the restructured debt is unnecessary. Including that debt in the calculation of the DSCR as the panel has done, then, would understate the result. Fourth, at page 38 of their testimony, the panel indicates that capital expenditures should be excluded from the monies available for debt service before the DSCR is calculated. However, PREPA's Modified Cash Base revenue requirement model specifically includes capital expenditures in the revenue requirement, which would be subtracted from revenues as an operating expense prior to the determination of net revenues and would not enter the DSCR calculation. Subtracting capital expenditures again would be double-counting that expense and would lead to an understated DSCR.

Finally, the credit improvement offered for PREPA by the use of a 1.40 DSCR will be enhanced by the use of a Formula Rate Mechanism (FRM), which, as proposed by PREPA, would be based on rates determined in a contested rate proceeding and, for the next two years, rates adjusted for over- and under-recoveries of originally estimated revenue and expense categories. That process is intended to be repeated in three-year cycles. The Formula Rate reconciliation process is described by PREPA witness Dr. Hemphill at page 5 of his Supplemental Direct Testimony in this proceeding (PREPA Exhibit 16.00).

Then, in the year after rates have been in effect, revenues are reconciled to actual costs and any question of the prudence of those actual costs is resolved. To do this, a reconciliation factor will be calculated by comparing base revenues recovered (or charged, plus an uncollectible allowance) for service provided during the previous fiscal year with the then-known actual reasonable and prudent costs of providing service for that year. The difference, which may be positive or negative, will also be adjusted for interest (at a just, reasonable, and symmetric rate to be determined.)

Also, in his updated testimony, in response to questions from the Commission (PREPA Ex. 17.0), Dr. Hemphill makes clear that the Commission will have detailed input into the FRM reconciliation process. That FRM reconciliation process, according to Dr. Hemphill will allow for better adherence and oversight to a "strict business plan that seeks operational efficiencies year after year." (PREPA Ex. 17, ll. 141, 142)

From the viewpoint of the investment community a Formula Rate ratemaking plan is beneficial and would be seen to reduce risk and enhance credit strength because rate adjustments in the “out years” (those beyond the base-year rate case) are designed to cover costs and to be less contentious than a full rate proceeding, with a reduced probability of disallowances.

While the Commission’s experts recommend that it adopt a Formula Rate methodology for PREPA, as noted by Commission Advisor Tim Wolf, due to the nature of this proceeding (i.e., the concurrent debt restructuring, the Commission’s recent Integrated Resource Plan Order, PROMESA, the lack of recent audited test-year data for PREPA), the “adjustments” necessary for the first year of the Formula Rate Plan following the rate case are expected to be complicated and numerous. As such, a more substantial review of the data will be necessary than that called for in PREPA’s suggested FRM plan, described by Dr. Hemphill and cited above.

ISCE-PR witnesses Sanzillo and Kunkel, at page 23 of their Direct Testimony in this proceeding, recommend that the formula rate process be changed to an “Annual Rate Review.” ISCE-PR also recommends that the Commission extend the rate review process each year to allow for more detailed analysis. While I agree that rate adjustments in the first year following this rate proceeding will require detailed analysis—a review well beyond what would be allowed in a simple formulaic “update” of the ratemaking data—it is not clear at this point that that sort of very detailed rate process will continually be necessary. Also, one of the favorable aspects of an FRM from an investor viewpoint is that it avoids a contracted annual disagreement about rates and, for that reason, reduces the uncertainty of the rate outcome and lowers risk. That benefit would be lost with an annual rate review process.

As PREPA “re-starts” its return to financial well-being with its first rate increase in 18 years, detailed analysis of the ratemaking parameters will be necessary initially (and, in my view, will be beneficial to both the Company and its investors), and both this Commission and PREPA should prepare for a detailed reconciliation of rates in the first year or two following this rate case. However, for a financially stronger, successfully operating PREPA, a FRM based on a thorough rate examination every three years is a reasonable ratemaking option and an annual full-fledged rate review, I believe, is unnecessary. Finally, as noted in the updated testimony of PREPA advisor Dr. Hemphill this Commission will have detailed oversight and input into the FRM process and its outcome.

D. PREPA’s financial condition and its impact on the type of revenue requirement model to be used in determining rates.

The PREPA revenue requirements panel (Pampush, Porter and Stathos) discuss three different types of revenue requirement models that could be used to determine the revenue requirement in this proceeding: (1) the Accrual Basis

methodology (a rate base/rate of return method), (2) the Cash Basis methodology (based on operating expenses and a DSCR), and (3) a Modified Cash Basis approach (including rate year Capital Expenditures in the model). Each of these models is discussed in the Report of Commission Advisor Ralph Smith, noting the advantages and disadvantages of each. Also, Mr. Smith describes a fourth, hybrid model that follows traditional ratemaking guidelines for public power utilities (which the PREPA advisors reference as the “Cash Basis” method), while recognizing the financial realities faced by PREPA and its ratepayers through the inclusion of rate year Capital Expenditure needs that are beyond the expected cash flows available to PREPA. That hybrid methodology recommended for ratesetting by the Commission advisors in this proceeding is termed the “Modified DSCR” methodology.

The ratemaking methodology most often used to set rates for publicly-owned utilities is what the PREPA advisors term the “Cash Basis” approach. However, there is one aspect of PREPA’s financial condition that that standard revenue requirement model is unable to address completely—capital expenditures. PREPA will have rate year capital expenditures to maintain and improve its utility plant. As noted in the discussion of PREPA’s financial condition in Part I of this Report, the Company is currently unable to access capital by issuing debt. Absent that ability, its only source of funds to provide for basic maintenance and to support reliable plant operations is from ratepayers.

Therefore, it is necessary to include explicit consideration of the portion of the Company’s rate year capital expenditures that exceeds the cash flows available under normal ratemaking methods (DSCR). Doing so will provide needed financial support for the Company’s operations and will further PREPA’s recovery from its current poor financial condition. If the Modified DSCR methodology is not used and PREPA does not have the funding necessary to provide for reliable operation of its electric system it will continue to deteriorate as necessary repairs are forgone and PREPA’s electrical system will not provide the reliable source of electricity that the ratepayers require.

Also, during the period in which PREPA is unable to access long-term capital from the capital marketplace and the Modified DSCR is in use for ratesetting purposes, the Commission should maintain close supervision of PREPA’s capital budget. That supervision should ensure that the capital expenditures are moderated to the greatest extent possible while also confirming that they are in line with the Commission-approved Integrated Resource Plan. In that way, the rate impact of allowing direct recovery of capital expenditures in rates will be moderated.

Finally, as noted by Commission Advisor Smith, the Modified DCSR ratemaking model is not intended to be a permanent ratemaking technique. Once PREPA is able to issue additional long-term debt, the “Additional Capital Expenditures” adder of the Modified DSCR should no longer be employed for ratemaking purposes. PREPA should instead finance its capital needs, beyond its

internally generated cash, through the issuance of long-term debt, as is normally done by public power electric utilities and rates should be determined through a more standard DSCR methodology. Nevertheless, in PREPA current financial condition, the use of a Modified DSCR ratemaking methodology is necessary as an integral part of the Company's return to financial health, and I recommend that this Commission utilize that ratemaking methodology.

E. How will the Commission's January 11, 2017 Order affect PREPA's financial position?

According to the differences PREPA describes in operating costs between 2014 (the most recent year of audited accounting data) and 2017 (the projected rate year), PREPA has made substantial management operating improvements and lowered its cost of operations.²⁸ Also, the cost of fuel today—a significant part of PREPA's operating costs and, therefore, its rates—is far lower than it has been in the past.²⁹ The reduction in those costs serves to moderate to some degree any rate increase that may result from this proceeding. Nevertheless, there are many costs that are not included in PREPA's existing rates because the Company last raised rates in 1989. Those costs currently not included in rates are, for example, the cost of debt issued after the last rate increase, the expenses related to PREPA's failure to meet its debt cost requirement (e.g., periodic financing of principal and interest to non-participating bondholders during the forbearance), the operating costs of plant and equipment that did not exist when rates were last determined, all of which are to be recovered given the customer count and kWh sales reductions that have occurred over the past few years. It is reasonable to believe that recognizing those heretofore unrecognized costs and ratemaking factors would cause PREPA's rates to increase to some degree.

PREPA's advisors and the Commission's experts disagree on the amount of the required increase. PREPA's advisors originally recommend an annual rate increase of approximately \$222 million, that estimate was recently reduced in PREPA's Rebuttal Testimony to \$178 Million (PREPA Ex. 23.0, l. 56). The Commission's experts recommend a lower amount—\$169.7 million. Although the Commission's experts believe that their revenue requirement recommendation for PREPA better estimates the Company's needs while moderating the impact of necessary increase on customers to some degree, the acceptance by the Commission of a recommendation to increase PREPA's rates will be viewed positively in the capital markets. That is because, at this point, the absolute dollar value of the

²⁸ According to Schedule A attached to PREPA's rate filing, the difference between Generation, Transmission, Distribution, Billing and Administrative expenses in 2014 and projected for 2017 is approximately \$175 million annually.

²⁹ In Schedule A attached to PREPA's rate filing in this proceeding, PREPA's advisors estimate that the Company's fuel costs were \$2.3 billion in 2014, but will be \$655 million in 2017.

revenue requirement awarded by this Commission is, in my view, not as important to the capital markets and future investors as the Company initiating a “re-start”—a new beginning under new rates designed to collect all of its on-going prudently-incurred costs. PREPA, since the realization in 2014 that it could not pay its debts on time, has been involved in a forbearance and restructuring status that prevents the Company from operating normally. A resolution of those problems—a new revenue requirement, a rate structure designed to recover forward-looking costs, and a debt restructuring in which debtholders share some of the burden of PREPA’s debt load—will allow the Company to begin its return to a financially viable, publicly-owned provider of reliable electric service and, critically, an attractive investment opportunity. Therefore, a rate decision that (1) addresses all of PREPA’s reasonable costs, (2) encourages an equitable sharing of those costs between the Company and its ratepayers, (3) moderates to the extent possible any rate increase impact on customers, and (4) incorporates a workable Integrated Resource Plan, would be more likely to be successful in restoring the Company’s financial health and would, therefore, be preferred by investors. The Commission’s advisors have offered such a rate plan in this proceeding.

Some intervenors express concern that any rate increase, even if it might be determined to be otherwise reasonable, could be unaffordable for Puerto Rico and PREPA’s ratepayers. For example, Professor Ramón J. Cao Garcia, formerly of the Department of Economics at the University of Puerto Rico, and testifying in this proceeding on behalf of ICSE-PR, undertakes a multi-factor regression analysis to estimate the economic impact on Puerto Rico of a rate increase by PREPA. He estimates that a 4.2¢ increase in electric prices would reduce real GNP in Puerto Rico by 1.05%. Based on that estimated GNP reduction, Professor Cao also estimates the loss of approximately 11,000 jobs, an increase in the inflation rate, and a kWh demand reduction for PREPA of approximately 0.83%.

While the Professors’ analysis is well-constructed and the notion that an increase in electricity prices could have a negative effect on the economy is certainly a reasonable one, it is important to note that the estimates he provides assume the validity of the theoretical construct from which the estimates are provided. That is, if we could be sure that the only variables that impact the real rate of growth in the economy in Puerto Rico are the variables included in his regression model (economic growth in the U.S., the prime rate of interest, the average price of electricity, and a factor that adjusts for serial correlation between variables in the regression, see Professor Cao’s Exhibit 5), then we could be more certain about the predicted outcome of his model. If key variables are missing from the Professor’s model of GNP in Puerto Rico his estimate may not be accurate. There are indications in his own data that such may be the case.

Professor Cao’s analysis indicates that Puerto Rico’s GNP would fall by 1.05% if PREPA’s per kWh price rose 4.2¢. If the only factors contributing to that GNP impact were those used in the Professors’ analysis, then we could also say that if

PREPA's electric prices *decreased* by 4.2¢/kWh, then the GNP in Puerto Rico would be likely to *increase* by about the same amount (leading to lower unemployment, lower inflation, and an increase in utility sales). However, with the change in oil prices between 2012 and 2016 there was a significant *reduction* in PREPA's price of electricity, but the magnitude of increases in GNP, increases in employment, and increases in utility sales predicted by Professor Cao's model did not occur.

Professor Cao's Table 5-1 attached to his testimony in this proceeding indicates that the price per kWh for PREPA was 27.9¢ in 2012 and 17.95¢ in 2016—a decline in the price of electricity of roughly 10¢/kWh. That decline is similar to the price decline for residential customers shown in the testimony of ACONER witness Edward Previdi, at page 8 of his testimony in this proceeding, which shows a decline in the per kWh electricity price of 30¢ in 2013 to a price of about 17¢ in 2016. Those data represent a decline of 10¢ to 13¢ per kWh—more than 2 to 3 times the increase Professor Cao used in his model (4.2¢/kWh).

According to Professor Cao's statistical model, an electric price *decrease* of that amount should have *increased* Puerto Rico's GNP by approximately 2% to 3% (two or three times the amount of the 1.05% decline resulting from the 4.2¢/kWh increase assumed in the Professor's analysis). However, as shown on Table 5-1 in Professor Cao's testimony, the GNP in Puerto Rico actually *declined* from 2012 and 2013 to 2016 by 3.4% to 3.5%.³⁰ In other words, the GDP (the fundamental predictor used by Professor Cao to also predict changes in inflation, employment and electric sales) declined when utility prices fell even though according to Professor Cao's regression model of GNP in Puerto Rico, GNP should have increased when the electricity prices declined. Therefore, the model did not accurately predict the actual changes in economic growth.

All would agree with Professor Cao's analytical premise that increases in electricity prices will raise costs to all electricity consumers and the economic impact will not necessarily be beneficial. However, with all due respect to Professor Cao, it is quite difficult to accurately predict precise outcomes in that regard. Broad economic changes are most difficult to measure with accuracy using a few selected variables and a linear regression analysis. A relatively high correlation of the variables used in the regression (and Professor Cao's analysis shows an r-squared coefficient of 0.91—very high) does not necessarily imply "causation," i.e., the variables selected are not necessarily those that precisely determine the value of the dependent variable (in this case, GNP in Puerto Rico), and the result may not be accurate.

³⁰ Professor Cao's Table 5-1 shows Real GNP for Puerto Rico in 2012, 2013 and 2016 of 6,466.2, 6457.6 and 6238.0, respectively. The decline in GNP from 2012 and 2013 to 2016 ranged from 3.4% to 3.5%.

Finally, while on the topic of measuring the economic impact of PREPA on the Puerto Rican economy, it is important to note that the alternative to allowing a rate increase would be to invite default for PREPA. In that event, the Company would be heavily involved in legal struggles with its creditors, would lack cash flow for maintenance and it is quite likely that electricity service would suffer substantially. An alternative question for Professor Cao is “what is the impact on Puerto Rico’s economy of an electrical system that operates only intermittently,” or one that suffers long outages. Again, those data are very difficult to accurately assess. Nevertheless, I believe it is a fair counter-question to Professor Cao’s analysis of the economic impact of a rate increase and would be necessary for a complete analysis of the issue. If the cost to Puerto Rico of an unreliable electric system is greater than the impact of a rate increase, which I believe is a reasonable assumption, a rate increase would appear to be the preferable choice. Any such rate increase, of course, should be as modest as possible and cover only the utility’s prudent costs of operation, expected capital expenditures and debt service.

III. ADDITIONAL FINANCIAL ISSUES

A. PREPA Holdings, LLC

1. Description of PREPA Holdings, LLC

PREPA Holdings, organized in 2009, is a wholly owned subsidiary of PREPA. PREPA Holdings, in turn, holds three other subsidiaries (described below). According to its enabling legislation, PREPA is allowed to create subsidiary corporations “directly related to the maximization of the Authority’s electrical infrastructure:”

To create, in Puerto Rico or abroad, companies, entities, or subsidiary corporations, for profit or nonprofit, affiliated or associated, for purposes, among others, of developing, financing, building and operating industrial projects and other infrastructure directly related to the maximization of the Authority's electrical infrastructure, and acquiring, having and disposing of value and participation, contracts, bonds or other interests in other companies, entities or corporations, and exercising each and every power and right that such interest allows, provided that, in the Board's judgment, such act be necessary, appropriate or convenient to reach the Authority's purposes or to exercise its powers, and to sell, lease, grant or in any other way convey any property of such Authority or to delegate or transfer any of its rights, powers, functions or duties, to any of said companies, entities or corporations that are subject to its total or partial control, except the right to begin expropriation procedures. The above shall take place without detriment to the functions that other public

corporations or government agencies of the Commonwealth of Puerto Rico currently have. [22 L.P.R.A. § 196 (v)]

PREPA Holdings is a limited liability company,³¹ as is each of its subsidiaries. Each of the subsidiaries of PREPA Holdings is described in Schedule K provided with PREPA's rate case filing.

PREPA Networks, LLC invests, develops, finances, constructs and operates new generation fiber optics for PREPA within and outside Puerto Rico. The Company provides wholesale telecommunications services and markets the excess communications capacity of PREPA's fiber optic cable system.

Consolidated Telecom of Puerto Rico, LLC invests, develops, finances, constructs and operates new generation fiber optics for PREPA. This company also provides enterprise (retail) telecommunications services.

InterAmerican Energy Sources, LLC invests, develops, finances, constructs and operates renewable and non-renewable energy power projects and other electric utility services and infrastructure, such as but not limited to the generation, purchase, sale and distribution of photovoltaic solar-thermal, Eolic, waste to energy, oil, gas and petroleum distillates within and outside the Commonwealth of Puerto Rico in connection with the operation of PREPA.

PREPA Holdings is the "sole member" (only owner) of PREPA Networks and InterAmerican Energy Sources. Consolidated Telecom of Puerto Rico is a subsidiary of PREPA Networks. PREPA Networks has a 51% membership (ownership) interest in Consolidated Telecom; PREPA Holdings has the remaining 49% membership interest.³² PREPA Networks has 50 employees; its subsidiary, Consolidated Telecom, has 8 employees. InterAmerican Energy Sources has no employees and is not currently operating.³³

The three subsidiaries of PREPA Holdings are housed outside of PREPA (i.e., not in buildings owned or occupied by PREPA); and, according data responses

³¹ A limited liability company is a hybrid type of legal structure that provides the limited liability features of a corporation and the tax efficiencies and operational flexibility of a partnership. In PREPA's description, the "owners" of an LLC are referred to as "members." Depending on the state, the members can consist of a single individual (one owner), two or more individuals, corporations or other LLCs. Unlike shareholders in a corporation, LLCs are not taxed as a separate business entity. Instead, all profits and losses are "passed through" the business to each member of the LLC. LLC members report profits and losses on their personal federal tax returns, just like the owners of a partnership would. [www.sba.gov]

³² SGH-02-08 (g) iii.

³³ SGH-01-38 (f).

provided by PREPA's Chief Financial Officer, operate as separate corporate entities. As discussed in more detail below, although each of the unregulated subsidiaries of PREPA Holdings operates independently, they each have business relationships with PREPA: The telecom entities lease fiber capacity; PREPA uses their services and provides construction services to the subsidiary companies when necessary. Also, the PREPA Holdings companies are owned, ultimately, by PREPA, while members of PREPA's Board of Directors and Executives also are members of the Board of Directors of PREPA Holdings and each of the three subsidiaries. Therefore, despite the claim that the subsidiaries of PREPA Holdings operate independently of PREPA, there are multiple interconnections between the entities regarding their control, governance and commercial relationships.

PREPA Holdings, which is consolidated with PREPA for financial reporting purposes, is much smaller than PREPA. As noted in PREPA's 2014 Annual Report at page 36 (PREPA Exhibit I-2), the consolidated assets of PREPA Holding's three subsidiaries totaled approximately \$53 Million. Also, those three unregulated subsidiaries, in 2014, had a positive net position of about \$20 million. A "positive net position" means that, over time, those companies have operated profitably so that the difference between their assets and liabilities is positive (assets, which includes residual net income, are greater than liabilities and the difference is the companies' "net position"). As presented in Part I-E above, PREPA, in contrast, has a large negative net position following years of consecutive negative net income.

Theoretically, then, the consolidation of the three PREPA Holdings, LLC subsidiaries with the financial statements of PREPA would be beneficial for the ultimate parent company—PREPA. That is, the positive net position of PREPA Holdings would offset, to some degree, PREPA's large deficit in net position. However, PREPA's 2014 Annual Report (p. 27) shows the total assets of PREPA to be approximately \$10.5 billion. PREPA Holding's total asset value of \$53 million is only 0.5% of the total asset value of its parent company. Therefore, in comparison to the financial size of PREPA, the subsidiaries of PREPA Holdings are quite small and, thus, offer little financial support for PREPA.

Also PREPA Holdings, in theory, pays a dividend to its parent PREPA, which could be beneficial to PREPA's cash flow. However, as noted in response to CEPR-RS-05-27 (a), PREPA Holdings has declared *but has not paid* a dividend of \$3.5 million in 2014, and, in response to that same data request, PREPA identified no other dividend payments from PREPA Holdings to PREPA in 2015 or 2016.

2. Benefits and risks of current corporate structure

The benefits of having a limited liability subsidiary holding company are suggested in the previous section. First, a limited liability company implies that the debts undertaken by the subsidiary are non-recourse to the parent companies (PREPA Holdings and, ultimately, PREPA).³⁴ Debt issued by the subsidiaries would be secured by the subsidiary assets or by the strength of the subsidiaries' income stream, not by the assets or income stream of the parent. Second, the subsidiaries (if successful) could have a modest positive financial impact on the ultimate parent, PREPA, through their positive net position and through dividend payments—although as indicated, the current small size of the subsidiaries makes this benefit insignificant. Third, according to PREPA CFO Ramos, in his response to SGH-03-02, PREPA benefits from the existence of the PREPA Holdings subsidiaries because PREPA is relying on “capable local vendors with PREPA experience” and “because those vendors are owned by PREPA, no earnings are distributed to external equity investors,” (i.e., those earnings could be distributed to PREPA, not an outside investor).

As long as the size of the unregulated companies in PREPA Holdings remains relatively small compared to PREPA, the risks and rewards will also remain relatively small. If, however, any one of those companies undertakes a substantial expansion or a large construction project and requires a significant capital infusion, the risk of financial harm rises. While not offering any legal opinion with regard to avenues for debt relief, I believe it reasonable to assume that in the event of any significant debt issuance by a subsidiary of PREPA Holdings and a subsequent business failure of that subsidiary, that the subsidiary's debt holders, regardless of their “non-recourse” position, would undertake a concerted effort to access the assets or revenue stream of the ultimate owner of that failed subsidiary company—PREPA. Therefore, even though the limited liability corporation is designed to prohibit precisely the condition I propose here, in the event of a significant amount of debt residing at a subsidiary (which would not be prohibited by the corporate structure existing with PREPA Holdings) risks of financial harm to PREPA could increase.

Aside from the benefits and risks of the structure of PREPA Holdings from a financial perspective, there is a concern (as there is with any affiliate/supplier relationship) regarding “cross-subsidization,” from a ratemaking point of view. Cross-subsidies can occur when the prices paid by affiliates for the utility services are too low or the prices paid to the affiliates by the utility for services rendered are too high. Resource transfers between the utility and the unregulated/competitive affiliates can also lead to cross-subsidization if assets, personnel, or technology is

³⁴ Because PREPA Holdings has no operations of its own and appears to have no current plans to issue debt, the “subsidiary debt” in this instance would be that of the two telecom companies and InterAmerican Energy Sources.

developed by the utility (affiliate) and transferred to the affiliate (utility) at less (more) than market value (or cost, whichever is the relevant benchmark). Also, if affiliate corporate overhead is over-allocated to the utility operation, the utility effectively pays a portion of the unregulated affiliate's overhead expenses and, in so doing, subsidizes its operations. All of those potential areas of cross-subsidization, if unexamined and unaccounted-for in rates, could lead to utility rates that are too high—as well as giving the affiliate a competitive advantage over businesses unaffiliated with PREPA.

For example, when questioned about the prices PREPA Networks was paying for capacity on PREPA's fiber optic cable in SGH-03-04 and asked to show that that the price was similar to other market-based rates, PREPA provided a list of rates for fiber optic capacity in the U.S. The Company showed that, for lease rates in rural areas, the lease rate paid by PREPA Networks in Puerto Rico was similar to other lease rates in the U. S. However, PREPA also provided information in SGH-03-04, Attachment 6, which shows that lease rates in metropolitan areas in the U.S. can be many times higher than rural rates. Much of PREPA's service territory is rural, but the Company also serves San Juan, a densely populated metropolitan area where lease rates should be much higher than they are in less densely populated areas. If PREPA Network's lease rates are below prices for comparable service in Puerto Rico's metro areas, then PREPA customers are not being properly compensated for the value of the infrastructure they have provided. Also, if the lease rate is too low, PREPA Networks would be afforded an unfair competitive advantage, discouraging competitive entry into that portion of the telecommunications market.³⁵

As another example, PREPA's response to CEPR-RS-05-27, Attachment 01 shows that PREPA paid PREPA Networks approximately \$0.5 million for 60 mobile radios in July of 2015—a time during which maintaining an adequate cash flow was critical for PREPA. While the utility certainly needs mobile radios to be able to coordinate its maintenance and construction crews, it is also reasonable to ask the question of whether or not the price paid was reasonable, or might have been lower from an un-affiliated supplier. In fairness, that question may have been asked before PREPA paid the bill, but we have no evidence of that.

In addition, while it is reasonable to note, as PREPA CFO Ramos does, that doing business with PREPA Networks is beneficial for PREPA because that company has what he terms "PREPA experience," that familiarity with the inner-workings of PREPA could also be a deterrent to other telecom competitors that are not so familiar with how PREPA works (i.e., companies that lack "PREPA experience"). The same potential for suppression of competition is true with regard to name recognition. A customer may be more likely to rely on a fiber optic capacity vendor

³⁵ It is important to note that the discussion here is directed to *potential* areas of cross-subsidization. The investigation necessary to examine that cross-subsidization issue in necessary detail to make a final determination in that regard has not been undertaken here.

with the name “PREPA”—a familiar name associated with a very large utility with substantial cash flow, that it would be a smaller telecom company without the benefit of a recognizable brand name.

Another example of potential difficulty with PREPA’s affiliate relationships is that presented by InterAmerican Energy. According to InterAmerican’s 2015 filing before the Federal Energy Regulatory Commission (FERC) in Docket No. EL15-24-000, that company was planning to “develop and own an underwater transmission cable that will interconnect the electric power systems on the islands of Puerto Rico and St. Thomas, U.S. Virgin Islands.”³⁶ InterAmerican further states to FERC that either it or PREPA will provide transmission service over that line and that, initially, power will flow from Puerto Rico to St. Thomas from an interconnection at PREPA’s Fajardo Substation.

This potential construction project could be problematic for PREPA customers for several reasons. First, constructing a 50-mile undersea direct-current power transmission cable would be expensive and risky. That project would require substantial investment and, while the debt issued by InterAmerican is “non recourse” to PREPA, because the project is undertaken for the mutual benefit of both the subsidiary and the parent it is reasonable to believe that in any default event creditors would try to make PREPA the guarantor of their debt payments. Second, the undersea cable project relies on PREPA’s infrastructure which is being paid for by ratepayers who run the risk that they may not be fairly compensated for the use of that infrastructure if the prices charged by PREPA to InterAmerican for that use are not high enough. Third, similar to the telecom subsidiaries, InterAmerican’s familiarity with PREPA could provide it with unfair competitive advantage, discouraging other companies that might be able to construct such a project more efficiently. Fourth, and this is a very small point but illustrates the complexities of cross-subsidization: if InterAmerican Energy currently has “no operations” as PREPA indicates, who paid for the expertise required to initiate and prosecute the FERC filing? Given InterAmerican’s non-operating status, the Commission should require PREPA to provide that information.

Finally InterAmerican, according to the description provided by PREPA in Schedule K in its filing in this proceeding, intends to develop and finance energy power sources related to solar and other “green energy” generation methods. Its affiliation with PREPA, the primary energy provider in Puerto Rico, would be beneficial to it competitively, given its familiarity with the details of operations at PREPA and the brand loyalty that some consumers may have. That is, given a choice between a rooftop solar installation by a lesser-known, unaffiliated company versus one by a subsidiary of the power company—the provider of electricity when the sun is not shining—a customer could lean toward the affiliated provider. Again, there is

³⁶ FERC Docket No. EL15-24-000, Order Granting Petition for Declaratory Order, February 15, 2015, p. 1.

potential for unfair competitive advantage with InterAmerican Energy, even though it currently has “no operations.”

3. Recommendations

While PREPA’s enabling legislation allows it to form subsidiary companies directly related to the maximization of the Authority’s infrastructure, the Commission is tasked with the analysis and review of PREPA’s rates and the determination of what those rates should reasonably be. As noted above, PREPA’s rates could be affected by the conduct of and the inter-relationship with its unregulated affiliates housed under PREPA Holdings. Therefore, to be able to assess the degree of cross-subsidization of unregulated operations by PREPA ratepayers, if any, the Commission should use whatever authority it has to examine operations of the subsidiaries of PREPA Holdings.

Assessing the reasonableness of the charges to and from PREPA and its unregulated affiliates is a difficult task, as recognized by PREPA CFO Ramos:

It is difficult to quantify the added value PREPA receives from its subsidiaries; attempting to do so would require a review of all services they have provided to PREPA and a comparison of the quality and cost of those services relative to implied quality and cost of the services that would have been provided by the next best supplier, in addition to an attempt to model an imputed private capital cost. In addition, prior to the formation by PREPA or PREPA Holdings or any of PREPA Holdings’ subsidiaries of any additional unregulated affiliate operations, the rationale supporting the creation of any such new subsidiary should be submitted to the Commission for review and approval. [PREPA Response to CEPR-SGH-03-02]

Mr. Ramos has identified precisely the sort of analysis that should be undertaken to assure that PREPA’s ratepayers are not providing subsidies to the subsidiaries of PREPA Holdings. Moreover, he has recognized that prior to the formation of any new affiliates, the economic and financial rationale supporting the creation of any such new subsidiary “should be submitted to the Commission for review and approval.” While that sort of detailed analysis of PREPA Holdings, a relatively minor portion of PREPA, is not be in order in this proceeding where analytical resources are limited and the issues in question (rates, debt service, rate design) have rate impacts far greater than any that may arise from a full vetting of PREPA Holdings in its current form, those issues should be addressed in future proceedings, such as a performance investigation involving a detailed audit of PREPA’s management and corporate structure. When some of the larger, more immediate questions regarding

PREPA are answered following this rate proceeding and the debt restructuring, this Commission and PREPA should undertake an analysis of the affiliate relationships between PREPA and the subsidiaries of PREPA Holdings.

Of course, the key to understanding and analyzing the operations of unregulated affiliates is transparency—the ability by the regulators to access and review the details of the operations of the subsidiaries and the details of the cash flows between PREPA and those affiliates. However, in my efforts to obtain information I have not experienced the necessary transparency. Repeated attempts by the Commission Staff to obtain basic annual financial information regarding the subsidiaries of PREPA Holdings, (income statements, balance sheets, cash flow statements) in order to assess the individual financial strength of those operations and further our understanding of them were unsuccessful.³⁷ The Company did supply consolidated financial data for one year and some data regarding charges to PREPA by the PREPA Holdings companies, but never supplied annual historical financial data of each of the unregulated subsidiaries of PREPA Holdings as requested.

Even though (1) PREPA is the sole owner of PREPA Holdings, (2) PREPA Holdings is the sole owner of all of the unregulated companies, (3) PREPA does business with each of those companies (leasing fiber optic capacity to the telecom companies, providing construction services and buying equipment from them), and (4) members of PREPA's board and its operating officers are on the Boards of Directors for the PREPA Holdings subsidiaries, PREPA has taken the position that these subsidiary companies operate outside of PREPA in an independent fashion and are not connected with the provision of electric service, and that therefore those financial data requested by the Commission are “not available.” In fact, PREPA CFO Ramos, in response to SGH-03-01 indicated that PREPA “does not have control of the income statements, cash flow statements, and balance sheets of any of [the PREPA Holdings] subsidiaries.” Further, he suggests, “contacting each of the subsidiaries to request such information directly from them.”

In summary, there is potential for financial and economic cross-subsidization between PREPA and the unregulated affiliates—the subsidiaries of PREPA Holdings. That cross-subsidization, if it exists, would cause PREPA to absorb expenses it should not absorb, and to receive compensation for its services offered to those affiliates that is below its market value—causing PREPA ratepayers to overpay for their electric service. I recommend the Commission obtain access to the operating and financial records of each of PREPA Holdings subsidiaries in order that the analysis described by PREPA CFO Ramos can be undertaken and any current cross-subsidies removed and future cross-subsidies prevented. In addition, as also recommended by CFO Ramos, prior to the initiation of any new unregulated affiliate (within or without PREPA Holdings), the financial and economic analyses

³⁷ CEPR-SGH-01-038, CEPR-SGH-02-08, CEPR-SGH-03-01 through 06.

supporting the creation of any such entity should be submitted to this Commission for approval.

B. What is the Future of the Consulting Engineer?

The 1974 Trust Indenture, which is the foundational document on which PREPA's ability to issue revenue bonds rests, requires that PREPA utilize a "Consulting Engineer," approved by the Trustee, effectively, as an independent overseer of the details PREPA's operations to ensure that the bondholder's requirements are met.

...so long as any bonds are outstanding under this Agreement, it [PREPA] will employ an independent engineer or engineering firm or corporation having a wide and favorable repute in the United States for skill and experience in the construction and operation of electric systems. No engineer or engineering firm shall be employed as Consulting Engineers under this Agreement, except with the written approval of the Trustee....

It shall be the duty of the Consulting Engineers to prepare and file with the Authority and with the Trustee on or before the 1st day of May in each year a report setting forth their recommendations as to any necessary or advisable revisions of rates and charges and such other advices and recommendations as they may deem desirable. [1974 Trust Agreement, §706, pp. 64, 65]

The Trust Agreement required the Consulting Engineers to provide opinions to both PREPA and the Trustee regarding rates, budgets, bond issuances, financial covenants, and improvements to and the state of utility infrastructure. PREPA was also required to provide the Consulting Engineer "access to all properties of the System and every part thereof for the purposes of inspection and examination, and that its books, records and accounts may be examined by the Consulting Engineers at all reasonable times."³⁸

The last available Consulting Engineers' report, filed in June 2013 in URS Corporation, The 40th Annual Report, provided a very detailed review of PREPA, its operating systems (power plants, transmission and distribution), economic forecasts for Puerto Rico, demand forecasts, capacity planning, sales forecasts for different customer classes, rates and subsidies and an analysis of PREPA's financial position. In the Executive Summary of that report on page 1, the Consulting

³⁸ 1974 Trust Agreement, § 706, p. 65.

Engineer predicted a debt service coverage ratio (DSCR) for PREPA of 1.34 to 1.42 through 2018. However, as evidenced by PREPA's current near-bankrupt financial position and confirmed in the Puerto Rico House of Representatives Resolution 1049 (June 24, 2015), and the Puerto Rico Commission for the Comprehensive Audit of the Public Credit cited previously in this report, the Consulting Engineer was wrong and misrepresented PREPA's financial position.

Therefore, while the final report by the Consulting Engineer was quite detailed and offered information regarding all aspects of PREPA's operations the one aspect of that report that seems to have been missing is independence. Apparently, the Consulting Engineer had grown reliant on data provided by PREPA (a necessary raw material for the job) but it did not bother to independently evaluate the reliability of those data—a requirement of the job. One aspect of the analysis that led to an unreliable assessment of PREPA's condition that stands out in hindsight was the Consulting Engineer's reliance on PREPA's financial projections which included an expectation of continually increasing peak demand from 2013 through 2018.³⁹ It is also worth noting that the Trustee, the bondholder representative to whom the Consulting Engineer reported, appears to have accepted as reasonable the “rosy” financial projections of 2013 that were in sharp contrast to the actual operating results of the prior years. Those increased power sales, of course, did not come to pass, and absent those increased sales and the revenues that accompanied them, PREPA was ultimately unable to meet its debt obligations.

There are many positive aspects of having a detailed, independent oversight of PREPA's operations that, in theory, add significantly to the transparency of PREPA for customers, municipalities, legislators, investors and regulators. The failure of the Consulting Engineer role in the current situation can be attributed to what appears to be a lack of independence from the entity for which it was to be a watchdog. After many decades of relying on PREPA-provided data during periods where operating margins and the room for error were probably greater than they are today, the Consulting Engineer appears to have become, effectively, an arm of PREPA rather than an evaluator of the adequacy of PREPA's financial and operational management as an agent for the bondholders. The absence of an independent voice to disagree with a too-optimistic financial projection or to suggest a revenue increase when necessary has, ultimately, led PREPA and its ratepayers to face a financial emergency.

In its forward-looking Business Plan filed in Exhibit 3.02 with its rate application in this proceeding, at page 65, PREPA discusses its objectives and proposals related to changes in the 1974 Trust Agreement. One of those proposed amendments to the existing Trust Agreement is a “phase out of the Consulting Engineer's role.” The recent short-comings of the Consulting Engineer discussed

³⁹ Fortieth Annual Report on the Electric Property of the Puerto Rico Electric Power Authority, June 2013, p. 55.

above would appear to support the Company's desire to eliminate the additional scrutiny of the Consulting Engineer. However, as also noted above, the fundamental problem with the analysis provided by the Consulting Engineer appears that it eventually came to lack independence from PREPA's worldview. The Consulting Engineers' report provided a wealth of information to both investors and the general public that PREPA does not otherwise provide, and is unlikely to provide in the future.⁴⁰ Therefore, as long as the independence of the Consulting Engineer's assessments and opinions regarding PREPA's operations can be maintained, so that its opinions are its own and not, necessarily, those of PREPA the Consulting Engineers' annual reports would provide valuable insight into the operations of PREPA.

In addition, with authority for determining PREPA's rates now in the hands of this Commission, the Consulting Engineer would be relieved of ultimate ratemaking responsibility. It would continue however, as a primary representative of PREPA's bondholders, to thoroughly review physical and financial operations and to provide opinions with regard to the ability of the Company to meet its financial obligations to those investors—a valuable service to this Commission. The Commission would then be able to balance those opinions with its own and its duty to represent ratepayer interests in determining the reasonableness of PREPA's rates.

Therefore, even though the Consulting Engineer has not, in the past, provided the ultimate service for which it was intended (ensuring that PREPA's bondholders' principal and interest requirements were met), I believe getting rid of the function of the Consulting Engineer, as PREPA intends in its Business Plan, would not be beneficial to the Company or its customers. An *independent* annual check of PREPA's operating and financial health and the detailed information that it would provide, in addition to this Commission's oversight, would be beneficial for all the stakeholders in this proceeding and, ultimately, for Puerto Rico. I recommend that the Consulting Engineer function be retained in the future by PREPA.

⁴⁰ The 40th Consulting Engineers' Report, Table of Contents, indicates detailed information provided regarding the following aspects of PREPA's operations: Production Plants, Environment, Co-generators, Transmission and Distribution Systems, Technological Systems, General Facilities, Puerto Rico Economy, Econometric Projections, Generation Forecast, Demand-Side Management and Energy Conservation Programs, Capacity Planning, Alternative Energy Sources, Fuel Mix, Energy Sales Forecasts, Rate Schedules, Subsidies and Credits, Selected Rates, Cost of Service, Annual Budget, Revenues, Expenses, O&M Expenses, Net Revenues, Debt Service Coverage, Depreciation, Accounts Receivable, Contributions to the Commonwealth, Financing, Capital Improvement Program, Retirement Funding, Inventories, Insurance, Funding Recommendations, Human Capital, Legal Affairs, PREPA Subsidiaries.

C. Hemphill Supplemental Testimony

At pages 13 and 14 of his Supplemental Direct Testimony in this proceeding, PREPA witness, Dr. Ross Hemphill discusses PREPA's proposed Formula Rate Mechanism (FRM). As discussed in Part II-C-4, an FRM is a ratemaking device that adjusts a utility's revenues in future years based on assumptions regarding future changes in expenses and revenues. I should note at the outset that Dr. Hemphill and I are in conceptual agreement that the existence of an FRM lowers the risk of PREPA and will hasten its return to a more stable financial position. While, due to the substantial uncertainty of the primary cost-causation parameters in this proceeding, the Commission experts would require a far more detailed reconciliation after the first rate year(s) than Dr. Hemphill or the Company would prefer, I concur, generally, with the benefits of a three-year "rate path" for PREPA as a result of this proceeding and potential continuation of that model in the future.

Dr. Hemphill also expresses concern in his testimony that the rates allowed by this Commission may differ from the "interim rates" requested by the Company and put into place earlier this year. Dr. Hemphill's concern is that the rates allowed by the Commission in January of 2017 will be lower than those authorized in the interim rates *and* that the Commission will order rate refunds that would create a "cash flow problem" with the utility. Dr. Hemphill does not seem to be concerned about cash flow problems that might plague ratepayers if the Commission's permanent rates were higher than the previously allowed interim rates. Nevertheless, one of this Commission's primary goals in this proceeding and those in the future is the return of PREPA to independent financial viability. That is why it approved, with conditions, the Debt Restructuring requested by the Company and its bondholders and why it allowed the Company to institute interim rates at the level it projected to be reasonable. Given that history, the Commission would be most unlikely to "undo" that supportive posture and knowingly damage PREPA's cash flow. Therefore, I believe Dr. Hemphill's concern here is misplaced and the Commission, if a refund is called for, will not undertake that refund in a way that financially damages the company. That said, if ratepayers have paid too much for their utility service, they should get their money back, and this Commission will make sure that happens. It will accomplish that task, through consulting with its experts, PREPA and PREPA's experts, in a manner that does not put the Company in financial difficulty.

Certification:

By filing this report, I certify that the information, facts and analysis provided herein is my direct testimony and, to the best of my knowledge, true and correct.

A handwritten signature in black ink that reads "Stephen G. Hill". The signature is written in a cursive style with a large, stylized 'S' and 'H'.

Stephen G. Hill
November 21, 2016

Hill Curriculum Vitae

My name is Stephen G. Hill. I am self-employed as a financial consultant, and principal of Hill Associates, a consulting firm specializing in financial and economic issues in regulated industries. My business address is P. O. Box 587, Hurricane, West Virginia, 25526 (e-mail: hillassociates@gmail.com).

After graduating with a Bachelor of Science degree in Chemical Engineering from Auburn University in Auburn, Alabama, in 1971, I was awarded a scholarship to attend Tulane Graduate School of Business Administration at Tulane University in New Orleans, Louisiana. In 1973, I received a Master's Degree in Business Administration from Tulane.

In 1975 I worked as a Chemical Engineer for the West Virginia Air Pollution Control Commission, where I was responsible for ensuring the compliance of the chemical plants in West Virginia with the requirements set out in the 1971 Clean Air Act.

In 1982 I joined the Consumer Advocate Division of the West Virginia Public Service Commission as a rate of return analyst, providing expert testimony on utility financial issues and engineering issues, when necessary. While employed by the State of West Virginia, I applied for and was awarded the professional designation of "Certified Rate of Return Analyst" by the Society of Utility and Regulatory Financial Analysts. That professional designation is based upon education, experience and the successful completion of a comprehensive examination. In recent years I have been a member of the Board of Directors of that national organization, and served as its Vice President.

In 1989 I ceased work for the West Virginia Consumer Advocate Division and started my own utility financial consulting firm, Hill Associates. Since that time, I have been providing expert witness testimony regarding utility financial issues, the cost of capital, capital structure and mergers and acquisitions to public utility commissions, consumer advocates, attorneys general and utility companies in the United States.

I have published articles in the Proceedings of the Fourth NARUC Biennial Regulatory Information Conference ("The Market Risk Premium and the Proper Interpretation of Historical Data", Volume I, pp. 245-255); *Public Utilities Fortnightly* ("Use of the Discounted Cash Flow Has Not Been Invalidated", March 31, 1988, pp. 35-38); and the National Regulatory Research Institute ("Private Equity Buyouts of Public Utilities: Preparation for Regulators", Paper 07-11, December 2007).

Over the past 30 years, I have testified on cost of capital, corporate finance, mergers and acquisitions, corporate structure and capital market issues in more than 300 regulatory proceedings before the following regulatory bodies: the West Virginia Public Service Commission, the Pennsylvania Public Utilities Commission, the Oklahoma State Corporation Commission, the Public Utilities Commission of the State of California, the Texas Public Utilities Commission, the Maryland Public Service Commission, the Public Utilities Commission of the State of Minnesota, the Ohio Public Utilities Commission, the Insurance Commissioner of the State of Texas, the North Carolina Insurance Commissioner, the Hawaii Public Utilities Commission, the Rhode Island Public Utilities Commission, the City Council of Austin, Texas, the

Texas Railroad Commission, the Arizona Corporation Commission, the Missouri Public Service Commission, the South Carolina Public Service Commission, the New Mexico Corporation Commission, the Kentucky Public Service Commission, the Massachusetts Department of Public Utilities, the State of Washington Utilities and Transportation Commission, the Alabama Public Service Commission, the Georgia Public Service Commission, the Public Service Commission of Utah, the Illinois Commerce Commission, the Kansas Corporation Commission, the Indiana Utility Regulatory Commission, the Washington Utilities and Transportation Commission, the Montana Public Service Commission, the Public Service Commission of Wisconsin, the Vermont Public Service Board, and the Federal Energy Regulatory Commission. I have also testified before the West Virginia Air Pollution Control Commission regarding appropriate pollution control technology and its financial impact on the company under review and have been an advisor to the Arizona Corporation Commission on matters of utility finance.

A list of cases in which I have testified follows, including the jurisdiction in which the testimony was submitted, the party for whom the testimony was prepared, the case number, and the subject matter of the testimony.

STEPHEN G. HILL
EXPERT TESTIMONY

WEST VIRGINIA

Testimony on behalf of: Consumer Advocate Division of the WV Public Service Commission

1. Case No. 80-039-G-42T - Holden Division, Southern Public Service Company; cost of capital / capital structure
2. Case No. 80-040-G-42T - Logan Division, Southern Public Service Company; cost of capital / capital structure
3. Case No. 80-041-G-42T - Man Division, Southern Public Service Company; cost of capital / capital structure
4. Case No. 82-207-W-42T - Huntington Water Corporation; cost of capital / capital structure
5. Case No. 82-162-E-42T - Appalachian Power Company; cost of capital / capital structure
6. Case No. 82-334-E-42T - Wheeling Electric Company; cost of capital / capital structure
7. Case No. 82-380-G-42T - Columbia Gas of West Virginia; cost of capital / capital structure / equity cost penalty
8. Case No. 82-391-E-42T - Virginia Electric Power Company; cost of capital / capital structure
9. Case No. 82-580-E-GI - Potomac Edison Electric Company; "show cause" hearing; cost of capital / capital structure
10. Case No. 82-561-W-42T - West Virginia Water Company; cost of capital / capital structure
11. Case No. 82-615-G-42T - Equitable Gas Company; cost of capital / capital structure
12. Case No. 83-030-E-GI - Appalachian Power Company (fuel review) ; engineering issues / line loss
13. Case No. 83-170-W-42T - Huntington Water Corporation; cost of capital / capital structure / double leverage
14. Case No. 83-316-G-42T - Milton Division, Southern Public Service Company; cost of capital / capital structure
15. Case No. 83-317-G-42T - Holden Division, Southern Public Service Company; cost of capital / capital structure

16. Case No. 83-318-G-42T - Montgomery Division, Southern Public Service Company; cost of capital / capital structure
17. Case No. 83-319-G-42T - Logan Division, Southern Public Service Company; cost of capital / capital structure
18. Case No. 83-320-G-42T - Boone Division, Southern Public Service Company; cost of capital / capital structure
19. Case No. 83-321-G-42T - Man Division, Southern Public Service Company; cost of capital / capital structure
20. Case No. 83-383-E-GI - Appalachian Power Company (fuel review); engineering issues / line loss
21. Case No. 83-333-G-42T - Penzoil Company; cost of capital / capital structure
22. Case No. 83-411-E-42T - Virginia Electric and Power Company; cost of capital / capital structure
23. Case No. 83-648-G-SC - Columbia Gas of West Virginia / Allegheny and Western Energy Corporation (special hearing to investigate a buy-out/merger of Columbia by A&W); financial integrity of purchasing company / potential ratepayer impact
24. Case No. 83-692-E-42T - Appalachian Power Company; cost of capital / capital structure
25. Case No. 84-008-W-42T - West Virginia Water Company; cost of capital / capital structure / double leverage
26. Case No. 84-191-E-42T - Wheeling Electric Company; cost of capital / capital structure
27. Case No. 84-173-W-42T - Huntington Water Corporation; cost of capital / capital structure / double leverage
28. Case No. 84-250-T-42T - West Virginia Telephone Company; cost of capital / capital structure / double leverage
29. Case No. 84-168-E-42T - Monongahela Power Company; cost of capital / capital structure
30. Case No. 84-7338-G-42T - Hope Gas, Incorporated; cost of capital / capital structure
31. Case No. 84-875-E-42T - Potomac Edison Electric Company; cost of capital / capital structure
32. Case No. 84-747-T-42T - Chesapeake and Potomac Telephone Company of West Virginia; cost of capital / capital structure
33. Case No. 84-861-G-42T - Consumer's Gas Company; cost of capital capital structure
34. Case No. 85-179-W-42T - Huntington Water Corporation; cost of capital / capital structure / double leverage
35. Case No. 85-289-G-42T - Penzoil Company; cost of capital / capital structure
36. Case No. 85-204-W-42T - West Virginia Water Company; cost of capital / capital structure / double leverage
37. Case No. 85-222-T-42T - Continental Telephone Company of West Virginia; cost of capital / capital structure / double leverage
38. Case No. 85-405-G-30C - Mountaineer Gas Company; investor attitudes toward company's gas supplier and owner-Allegheny and Western Energy / affiliated transactions
39. Case No. 85-553-E-PC - Utilicorp United, Inc.; incremental cost of capital charges borne by ratepayers due to buy-out of Virginia Electric and Power's West Virginia service territory by Company
40. Case No. 85-536-E-42T - Virginia Electric and Power Company; cost of capital / capital structure
41. Case No. 86-008-G-42T - Southern Public Service Company; cost of capital / capital structure
42. Case No. 86-524-E-SC - Monongahela Power Company ("show cause" proceeding); cost of capital / capital structure
43. Case No. 86-212-W-42T - West Virginia Water Company; cost of capital / capital structure
44. Case No. 86-341-W-42T - Huntington Water Corporation; cost of capital / capital structure
45. Case No. 86-587-E-42T - Wheeling Electric Company; cost of capital / capital structure
46. Case No. 86-604-G-42T - Mountaineer Gas Company; cost of capital / hypothetical capital structure / management efficiency / equity return penalty
47. Case No. 86-780-T-42T - General Telephone Company of the South; cost of capital / capital structure / rural telephone company operating risk

48. Case No. 88-097-G-42T - Consumer's Gas Company; cost of capital hypothetical capital structure
49. Case No. 88-685-T-42T - General Telephone Company of the South; cost of capital / capital structure / earnings stability
50. Case No. 88-311-G-PC - Hope Gas, Inc.; financial condition of Company
51. Case Nos. 89-439 and 87-434-G-30C - Hope Gas, Inc.; ability of Company to refund purchased gas over-collections
52. Case No. 89-206-T-42T - Contel of West Virginia; cost of capital / capital structure
53. Case No. 89-481-G-42T - Equitable Gas Company; cost of capital / capital structure
54. Case No. 89-498-W-42T - West Virginia-American Water Co.; cost of capital / capital structure
55. Case No. 89-640-G-42T - Mountaineer Gas Company; cost of capital / capital structure
56. Case No. 90-243-E-42T - Wheeling Electric Power Company; cost of capital / capital structure
57. Case No. 90-522-T-42T - GTE South; Telephone utility operating risk / ratemaking capital structure / cost of capital
58. Case No. 90-504 -E-42T - Monongahela Power Company; capital structure, cost of capital, flotation cost issues
59. Case No. 90-888-G-42T - Equitable Gas Company; capital structure, cost of equity, inflation adjustment
60. Case No. 91-025 -G-42T - Hope Gas, Inc.; capital structure, earnings volatility analysis, cost of capital, flotation cost issues
61. Case No. UT-09-0871 – Frontier Communications/Verizon merger; Financial Issues related to merger.

ALABAMA

Testimony on behalf of: the American Association of Retired Persons (AARP)

62. Docket No. 28101 – Mobile Gas Service Corporation; cost of capital / capital structure /
63. Docket Nos. 18117 and 18416 – Alabama Power Company; cost of capital / capital structure / use of market-value capitalization in ratemaking
64. Docket Nos. 18046 and 18328 – Alabama Gas Corporation; cost of capital / capital structure / rate stabilization mechanism

ARIZONA

Testimony on behalf of : Az. Corporation Commission, Residential Utility Consumer Office

65. Docket No. U-1933-88-280 - Tucson Electric Power Company; cost of capital / capital structure / unregulated subsidiary risk
66. Docket No. U-1551-89-102 - Southwest Gas Corporation; cost of capital / actual v. hypothetical capital structure / use of jurisdictional capital structures
67. Docket No. U-1345--90-007 - Arizona Public Service Company; cost of capital / capital structure / electric utility dividend policy / recommended dividend policy for APS / electric utility industry diversification
68. Docket No. U-1551-90-322 - Southwest Gas Corporation; cost of capital / actual v. hypothetical capital structure / use of jurisdictional capital structures
69. Docket No. U-5555-91-333 - US West, Inc. - capital structure / cross-subsidization of unregulated by regulated operations / operating risk analysis / cost of equity capital [case settled after filing of testimony]
70. Docket No. U-1933-92-101 - Tucson Electric Power; engaged by Commission Advisory Staff to review and analyze Company filing and intervenor testimony in TEP financial reorganization case
71. Docket No. E-1032-93-073- Citizens Utilities - Arizona Electric Division ; cost of capital / capital structure
72. Docket No. E-1032-92-183 - Citizens Utilities - Agua Fria Water Company; cost of capital / capital structure

73. Docket No. E-1032-93-203 - Citizens Utilities - Northern Arizona Gas Division; cost of capital / capital structure
74. Docket No. E1032-93-183 - US WEST Communications - Arizona ; cost of capital / operating risk / capital structure
75. Docket No. U-1551-93-272- Southwest Gas Corporation; cost of capital / capital structure
76. Docket Nos. U-1933-95-069 and -317 - Tucson Electric Power; holding company restructuring, cost of capital, capital structure, settlement issues
77. Docket Nos. E-1032-95-417, et. al. - Citizens Utilities Maricopa Water/Wastewater Division; cost of capital / capital structure / leverage-risk adjustment
78. Docket No. E-1032-95-433 - Citizens Utilities Arizona electric Division; cost of capital / capital structure / leverage-risk adjustment
79. Docket No. E-1032-95-473 - Citizens Utilities Northern Arizona Gas Division; cost of capital / capital structure / leverage-risk adjustment
80. Docket No. U-1551-96-596 – Southwest Gas Corporation – cost of equity capital / capital structure
81. Docket No. T-01051B-99-105 - US WEST Communications - Arizona ; cost of capital / operating risk / capital structure
82. Docket No. G-01551A-00-0309 – Southwest Gas Corporation – cost of equity capital / capital structure / debt refinancing
83. Docket No. E-01245A-03-04437 – Arizona Public Service Company – capital structure / cost of common equity / restructuring issues
84. Docket No. G-01551A-04-0876 – Southwest Gas Corporation – cost of equity capital / capital structure / recapitalization plan
85. Docket No. E-01345A-05-0816 – Arizona Public Service Company – capital structure / cost of common equity / restructuring issues

CALIFORNIA

Testimony on behalf of : Utility Consumers Action Network (UCAN) and Toward Utility Rate Normalization (TURN) (1992), Federal Executive Agencies (2007, 2012)

86. Application Nos. 92-05-010 through 015 - Annual Cost of Capital Proceeding; cost of equity capital
87. Application Nos. 07-05-003 through 008 - Annual Cost of Capital Proceeding; cost of equity capital
88. Application Nos. 12-04-015 through 018 – Tri-Annual Cost of Capital Proceeding; cost of equity capital, California regulatory risk

CONNECTICUT

Testimony on behalf of the Office of Consumer Counsel

89. Docket No. 01-05-19PH01 – Yankee Gas Services Company – capital structure / short-term debt / cost of equity capital
90. Docket No. 10-02-13 – Aquarion Water Company – capital structure/ corporate structure/cost of equity capital

DISTRICT OF COLUMBIA

Testimony on behalf of : DC Peoples’ Counsel

91. Formal Case No. 916 - Washington Gas Light - review the application to issue securities / projected financial statements / recommended alternative financing plan

GEORGIA

Testimony on behalf of the Governor’s Office of Consumer Utility Counsel

92. Docket No, 14000-U – Georgia Power Company – Testimony on capital structure and the cost of equity capital / comparable earnings
93. Docket No, 14618-U – Savannah Electric & Power Company – Testimony on capital structure and the cost of equity capital / comparable earnings
94. Docket No, 18300-U – Georgia Power Company – Testimony on capital structure and the cost of equity capital / investor required market return
95. Docket No. 18638-U – Atlanta Gas Light – Testimony on capital structure and the cost of equity capital
96. Docket No. 19758-U – Savannah Electric and Power Company – Testimony on capital structure and the cost of common equity
97. Docket No. 20298-U – Atmos Energy – Testimony on cost of common equity and capital structure

HAWAII

Testimony on behalf of Department of Commerce; the County of Kauai, Department of Defense

98. Docket No. 7585 - GTE Hawaiian Telephone - Testimony addressed the financial and cost of capital impacts of a surcharge designed to recover weather-related damages.
99. Docket No. 7579 - GTE Hawaiian Telephone - capital structure/ operating risk / cost of equity
100. Docket No. 94-0097 - Citizens Utilities Kauai Electric Division - risk/return requirements within a regulatory framework regarding natural disasters
101. Docket No. 94-0298 - GTE Hawaiian Telephone - capital structure / cost of equity capital / weather-related damage risk
102. Docket No. 95-0051 - Proceeding to Examine the Establishment of a Self-Insured property Damage Reserve for Public Utilities in the State of Hawaii - risk/return requirements within a regulatory framework regarding natural disasters
103. Docket No. 04-0104 – Purchase of Verizon Hawaii by the Carlyle Group (merger); developed position on financial requirements for Consumer Advocate
104. Docket No. 04-0113 – Hawaiian Electric Company, Testimony on cost of equity capital and capital structure.
105. Docket No. 06-0386 – Hawaiian Electric Company, Testimony on cost of equity capital and capital structure.
106. Docket No. 09-0083 – Hawaiian Electric Company, Testimony on cost of equity capital and capital structure, Hawaii Clean Energy Initiative.
107. Docket No. 10-0083 – Hawaiian Electric Company, Testimony on cost of equity capital and capital structure, cost of capital impact of decoupling
108. Docket No. 2011-0092 – Maui Electric Company, Testimony on cost of equity capital, capital structure, purchased power risk, impact of decoupling on the cost of equity capital.
109. Docket No. 2013-0141 – Investigation to Re-examine Decoupling Mechanisms. Testimony on risk-reducing nature of decoupling / cost of capital.
110. Docket No. 2015-0022 – Proposed merger between HEI and NextEra Energy, testimony on financial issues related to the proposed merger, ring-fencing.

ILLINOIS

Testimony on behalf of: the City of Chicago and the Illinois Attorney General

111. Docket No. 91-0586 - The Peoples Gas Light and Coke Company; capital structure / projected capital structure / cost of equity capital / focus on analysts' projected growth rates
112. Docket No. 92-0448 - Illinois Bell Telephone Company - Alternative Regulation case, testimony on capital structure / cost of capital
113. Docket No. 95-0032 - The Peoples Gas Light and Coke Company; capital structure / projected capital structure / cost of equity capital

114. Docket No. 95-0031 - North Shore Gas; capital structure / projected capital structure / cost of equity capital

INDIANA

Testimony on behalf of: Office of Utility Consumer Counselor

115. Cause No. 38880 - Indiana-American Water Company; cost of capital / capital structure
116. Cause No. 39641 - Indiana Cities Water Corporation; cost of capital / fair value rate base

KANSAS

Testimony on behalf of the Citizen's Utilities Ratepayer Board

117. Docket No. 186,371-U 93-GIME-391-GIE - Commission investigation of § 712 Standards of the Energy Policy Act of 1992, comments on purchased power agreements.
118. Docket No. 01-WSRE-436-RTS – Western Resources – capital structure / cost of equity / capital structure implications of spin-off of unregulated operations
119. Docket No. WSRE-949-GIE – Western Resources – review of company plans to separate electric utility business from unregulated business
120. Docket No. 03-KGSC-602-RTS – Kansas Gas Service Company – capital structure / convertible preferred stock / cost of common equity / overall cost of capital

KENTUCKY

Testimony on behalf of the Office of Attorney General

121. Case No. 2008-00427 – Kentucky-American Water Company – capital structure / cost of equity / use of book value capital structures
122. Case Nos. 2010-00161, 2010-00162 – Kentucky Utilities Company and Louisville Gas and Electric Company – capital structure / cost of equity capital / incentive regulation
123. Case No. 2011-00401 – Kentucky Power Company – capital structure / cost of equity capital

LOUISIANA

Testimony on behalf of: Louisiana Public Service Commission Staff

124. Docket No. U-20925 – Entergy Louisiana, Inc. – Annual Rate Review/ Formula Rate Plan / FRP 2000 and FRP 2001 – Testimony on the cost of common equity capital
125. Docket No. U-32538 – Entergy Louisiana, Entergy Gulf States Louisiana, ITC Holdings Corp. – Application for Approval of Transmission Asset Transfer/Merger – Testimony on the financial aspects of the transaction.

MAINE

Testimony on behalf of: Public Advocate

126. Docket No. 84-104 - Continental Telephone Company of Maine; cost of capital / capital structure / double leverage
127. Docket No. 85-159 - New England Telephone and Telegraph Co.; case settled; prepared settlement position for Public Advocate
128. Docket No. 86-242 - Bangor Hydro-Electric Company; cost of capital / capital structure / relative risk / recapitalization options
129. Docket No. 89-68 - Central Maine Power; cost of capital / capital structure / flotation and market pressure cost issues
130. Docket No. 89-354 - Maine Water Company; cost of capital / capital structure
131. Docket No. 90-001 - Bangor Hydro-Electric Company; cost of capital / capital structure

132. Docket No. 90-076 - Central Maine Power; cost of capital / capital structure / flotation and market pressure cost issues
133. Docket No. 90-085- Central Maine Power Company; decoupling risk/cost of capital
134. Docket No. 93-005 and 93-145 - Consumers Maine Water Company; cost of capital impacts of merger, cost of equity, capital structure (testimony on behalf of municipal and industrial intervenors as well as Maine Consumer Advocate)
135. Docket No. 97-016 – Central Maine Power – Mid-period Review of Alternative Rate Plan, cost of capital, capital structure issues.
136. Docket No. 97-580 – Central Maine Power – Stranded Cost Review/Transmission & Distribution Rate Case, cost of capital, capital structure, relative risk of distribution operations
137. Special Project for Maine Public Advocate – Gas distribution cost of capital, merger risk.
138. Docket No. 2001-249 – Community Service Telephone Company – capital structure / company financial history / cost of equity
139. Docket Nos. 2002-99/2002-100 – Lincolnville/Tidewater Telecom – capital structure / cost of common equity capital
140. Docket Nos.2002-747, 2003-34, 35, 36, and 37 – FairPoint New England Telephone Companies; testimony on capital structure, cost of common equity.
141. Docket No. 2004-112 – Bangor Hydro-Electric Company; testimony on capital structure; market-based cost of common equity, overall cost of capital
142. Docket No. 112/339 – Bangor Hydro-Electric Company; Central Maine Power; stranded cost hearings, lower risk of guaranteed returns, cost of common equity capital for electricians
143. Docket No. 2005-155 –Verizon Maine – Alternative Form of Regulation/Rate Proceeding; cost of equity capital for a local distribution company and capital structure / competition
144. Docket No. 07-215 - Central Maine Power; cost of capital / capital structure / market risk premium issues
145. Docket No. 2013-362 – Maine Water Company (Camden & Rockland Division); cost of capital/ capital structure / alternative cost of equity estimation methods

MARYLAND

Testimony on behalf of: Maryland Peoples' Counsel

146. Case No. 8119 - Maryland Natural Gas Company; cost of capital /capital structure (current and pro-forma)
147. Case No. 8191 - Maryland Natural Gas Company; cost of capital / capital structure (current and hypothetical) / earnings stability
148. Case No. 8469 - Potomac Edison Company; capital structure, cost of capital, flotation cost issues, purchased power issues
149. Case No. 8725 - Baltimore Gas & Electric Company and Potomac Electric Company merger application - cost of capital / capital structure for individual and combined companies
150. Case No. 8774 – Potomac Edison (Allegheny Energy) – cost of equity, capital structure, merger issues (APS-DQE)
151. Case No. 8794/8804 – Baltimore Gas & Electric Company – Electric Restructuring, cost of equity capital for integrated electricians, T&D, merchant power plants, capital structure and regulatory policy issues.
152. Case No. 8795 – Delmarva Power & Light Company (Connectiv) – Electric Restructuring, cost of equity capital for integrated electricians, T&D, merchant power plants, capital structure and regulatory policy issues.
153. Case No. 8796 – Potomac Electric Power Company– Electric Restructuring, cost of equity capital for integrated electricians, T&D, merchant power plants, capital structure and regulatory policy issues.
154. Case No. 8797 –Potomac Edison Company (Allegheny Energy) – Electric Restructuring, cost of equity capital for integrated electricians, T&D, merchant power plants, capital structure and regulatory policy issues.

155. Case No. 8819 - Washington Gas Light Company – Alternative Regulatory proposal, cost of capital, capital structure, regulatory policy issues.
156. Case No. 8829 – Baltimore Gas and Electric Company / Gas Division – cost of capital, capital structure
157. Case No. 8890 – Pepco/Delmarva Merger – financial and capital structure issues related to the proposed merger
158. Case No. 8883 – Baltimore Gas & Electric Company – business separation of Constellation Energy – financial and capital structure issues related to the proposed business separation
159. Case No. 8920 – Washington Gas Light Company – Capital structure, cost of capital
160. Case No. 8959 - Washington Gas Light Company – Capital structure, cost of capital
161. Case No. 8994 – Delmarva Power & Light – Capital structure, financial cross-subsidization, cost of capital benchmark for merger review.
162. Case No. 8995 – Potomac Electric Power Company – Capital structure, financial cross-subsidization, cost of capital benchmark for merger review.
163. Case No. 9221 – Baltimore Gas and Electric Company – Return to be included in cash working capital allowance of standard offer service.
164. Case Nos. 9226, 9232 – Delmarva Power & Light, Potomac Electric Power – Return to be included in cash working capital allowance of standard offer service.
165. Case No. 9221(Remand) – Baltimore Gas and Electric Company – Return to be included in cash working capital allowance of standard offer service.

MASSACHUSETTS

Testimony on behalf of: Attorney General of Massachusetts

166. Docket No. 09-30 – Bay State Gas Company - Cost of equity/ Financial market conditions/ Decoupling Impact on Cost of Equity Capital

MINNESOTA

Testimony on behalf of: Minnesota Department of Public Service

167. Docket Nos. P-442, 5321, 3167, 466, 421/CI-96-1540 – US WEST Communications - Unbundled network elements cost proceeding – cost of equity/ capital structure
168. Docket Nos. P404 et. Al./CI-00-712 – Sherburne County Rural Telephone Company - Cost of equity/ capital structure/ relative competitive risk of rural telephone companies

MISSOURI

Testimony on Behalf of Office of Public Counsel / Missouri Public Service Commission / Veolia Energy

169. Docket No. TC-93-244, et al., Southwestern Bell Telephone Company; capital structure / optimal capital structure / cost of equity capital
170. Docket No. WR-95-145, St. Louis County Water Company, capital structure, cost of capital
171. Docket No. ER-97-394 – Missouri Public Service (UtiliCorp), cost of capital, capital structure (divisional cost of capital issues)
172. Docket No. EM-97-515 – Western Resources/Kansas City Power & Light Merger, merger history, financial aspects and impacts of merger, analysis of company testimony, review of alternative regulation proposal
173. Docket No. ER-2007-0002 and 0003 – Ameren-UE, cost of capital, capital structure, market value versus book value capital structure
174. Docket No. HR-2008-0300 – Trigen-Kansas City Energy Corporation – capital structure, cost of equity capital, overall cost of capital
175. Docket No. ER-2008-0318– Ameren-UE, cost of capital, capital structure, overall cost of capital
176. Docket No. ER-2010-0036—Ameren-UE; Cost of equity capital
177. File No. HR-2011-0241 – Veolia Energy Kansas City, Inc. – capital structure, cost of equity capital, overall cost of capital

178. File No. HR-2014-0066 – Veolia Energy Kansas City, Inc. – capital structure, cost of equity capital, overall cost of capital

MONTANA

Testimony on Behalf of the Montana Consumer Counsel

179. Docket No. D95.7.90, Montana-Dakota Utilities Company; capital structure / embedded cost of debt refinancing costs / cost of equity capital
180. Docket No. D95.9.128, Montana Power Company, capital structure, cost of capital
181. Docket No. D96.7.123, Great Falls Gas Company, capital structure, cost of capital, relative risk
182. Docket No. D998.176 – Montana Power Company, Gas Utility Division cost of capital, capital structure
183. Docket No. D2000.8.113 – Montana Power Company, capital structure, debt refinancing due to sale of generation plants / cost of capital
184. Docket No. D2000.7.112 – Mountain Water Company / capital structure / cost of equity capital
185. Docket No. D2002.5.59 – Montana-Dakota Utilities Company, cost of equity / capital structure / overall cost of capital.
186. Docket No. D2004.4.50– Montana-Dakota Utilities Company, gas operations, cost of equity / capital structure / overall cost of capital.
187. Docket No. D2014.8.72– Montana-Dakota Utilities Company, gas operations, cost of equity / capital structure / overall cost of capital.

NEW MEXICO

Testimony on behalf of the State Corporation Commission Staff

188. Docket No. 92-291-TC, GTE Southwest, capital structure/ operating risk/ cost of equity capital / competitive risk
189. Case No. 3008 US WEST Communications (before the State Public Regulation Commission), capital structure/ operating risk/ cost of equity capital / competitive risk

NEW HAMPSHIRE

Testimony on behalf of the Office of Consumer Advocate

190. Docket No. DT02-110, Verizon New Hampshire; cost of common equity and capital structure in both a TELRIC and traditional rate base rate of return cases.
191. Docket No. DE 04-177; Public Service Company of New Hampshire; cost of equity capital of integrated generation operations.
192. Docket No. DE-06-028; Public Service Company of New Hampshire, cost of equity capital, capital structure.

NORTH CAROLINA

Testimony on behalf of the North Carolina Department of Insurance

193. Docket No. 942 – Private Passenger Automobile Insurance Rate Proceeding – cost of capital/fair rate of return
194. Docket No. 1073 – Private Passenger Automobile Insurance Rate Proceeding – cost of capital/fair rate of return
195. Docket No. 1174 – Private Passenger Automobile Insurance Rate Proceeding – cost of capital/fair rate of return
196. Docket No. 1235 – Private Passenger Automobile Insurance Rate Proceeding – cost of capital/fair rate of return
197. Docket No. 1407 – Private Passenger Automobile Insurance Rate Proceeding – cost of capital/fair rate of return

OHIO

Testimony on behalf of : Consumers' Counsel

198. Case No. 85-1778-EL-AIR - Monongahela Power Company; cost of capital / capital structure
199. Case No. 87-1307-TP-AIR - General Telephone Company of Ohio; cost of capital / capital structure (actual and hypothetical) / earning stability / critical analysis of Commission's "standard adjustment" for flotation-market pressure-financial flexibility
200. Case No. 88-718-GA-AIR - Columbia Gas of Ohio; cost of capital / capital structure / issuance expense adjustment

OKLAHOMA

Testimony on behalf of the Oklahoma Corporation Commission; Attorney General of Oklahoma

201. Cause No. PUD 001190 - Oklahoma Natural Gas Company - cost of capital/ capital structure
202. Cause No. PUD 920001342 - Public Service Company of Oklahoma - cost of capital / capital structure
203. Cause No. PUD 940000477 - Oklahoma Natural Gas Company - cost of capital/ capital structure
204. Cause No. PUD 990000166 - Oklahoma Natural Gas Company - cost of capital/ capital structure
205. Cause No. 200300076 - Public Service Company of Oklahoma - cost of capital/ capital structure/ leverage adjustment to cost of capital

PENNSYLVANIA

Testimony on behalf of : Office of Public Advocate

206. Docket No. R-870719 - National Fuel Gas Distribution Corporation; cost of capital / capital structure / relative risk
207. Docket No. R-891259 - Dauphin Consolidated Water Company; cost of capital / ratemaking capital structure / earnings variability
208. Docket No. R-901609 - West Penn Power Company; capital structure, cost of capital, validity of the DCF model
209. Docket No. R-912060- Shenango Valley Water Company; cost of capital / capital structure / risk premium volatility
210. Docket No. R-922180 - Peoples Natural Gas Company; cost of capital / capital structure / business risk of utility operations
211. Docket No. R-922420- Shenango Valley Water Company; cost of capital / capital structure
212. Docket No. R-922378- West Penn Power Company; cost of capital / capital structure / risk premium reliability / purchased power risk
213. Docket No. R-00932798- Shenango Valley Water Company; cost of capital / capital structure
214. Docket No. R-009438001- Columbia Gas of Pennsylvania ; cost of capital / capital structure / business risk of utility operations
215. Docket No. R-00943252 - Peoples Natural Gas Company; cost of capital / capital structure
216. Docket No. R-00953524 - PFG Gas, North Penn Gas; cost of capital / capital structure / use of preferred stock in ratemaking capitalization
217. Docket No. R-00963858 - Equitable Gas; cost of capital / capital structure
218. Docket No. R-00984280 - PG Energy, Inc., cost of capital / capital structure
219. Docket No. R-00005119 - PG Energy, Inc., cost of capital / capital structure
220. Docket No. R-00005277 - PFG/North Penn Gas Company, cost of capital / capital structure
221. Docket No. R-00005459 - TW Phillips Oil & Gas Company, cost of capital / capital structure
222. Docket No. R-00027975 - York Water Company, cost of capital / capital structure
223. Docket No. R-00038805 - Aqua Pennsylvania Water Company, cost of capital/ capital structure

- 224. Docket No. R-00049884 - Pike County Light & Power Company; cost of capital/ capital structure
- 225. Docket No. R-00051030 – Aqua Pennsylvania Water Company, cost of capital/ capital structure / market-value capital structures
- 226. Docket No. R-00061346 – Duquesne Light Company, cost of capital/ capital structure/ market-value capital structure
- 227. Docket No. R-2010-2161694 – PPL Electric Utilities Corporation – cost of capital/capital structure
- 228. Docket No. R-2010-2179522 – Duquesne Light Company – cost of capital / capital structure / overall cost of capital
- 229. Docket No. R-2012-2290597 – PPL Electric Utilities Corporation – cost of capital / capital structure

RHODE ISLAND

Testimony on behalf of: Rhode Island Division of Public Utilities

- 230. Docket No. 2681 – Bell Atlantic – Rhode Island - Bell Atlantic’s Total Elemental Long Run Incremental Cost (TELRIC) Studies for Unbundled Network Elements Filed by the Company Pursuant to Sections 251 and 252 of the Telecommunications Act of 1996 – capital structure / cost of equity capital

SOUTH CAROLINA

Testimony on behalf of : Division of Consumer Advocacy

- 231. Docket No. 91-141-G - Piedmont Natural Gas Company; cost of capital / capital structure / use of short-term debt as permanent capital / operating risk analysis

TEXAS

Testimony on behalf of : Texas Attorney General, Austin Ratepayers Association, Office of Public Insurance Counsel, Office of Public Utility Counsel, Allied Coalition of Cities,

- 232. Docket No. 5220 - Southwest Bell Telephone Company; cost of capital / capital structure / double leverage
- 233. Docket No. 1 - City of Austin Electric Utility; cost of capital / debt service coverage ratio / municipal bond rating parameters / appropriate treatment of nuclear investment
- 234. Docket No. 454-95-0966.G - Texas Automobile Insurance Plan Association Rate Hearing; cost of capital / profit factor
- 235. Docket No. 454-95-1218.G - Private Passenger and Commercial Automobile Insurance Benchmark Rate Hearing; cost of capital / profit factor
- 236. Docket No. 454-95-1280.G - Residential Property and Catastrophe Insurance Rate Hearing - cost of capital / profit factor
- 237. Docket No. 454-96-1640.G - Texas Automobile Insurance Plan Association Rate Hearing; cost of capital / capital structure
- 238. Docket No. 454-96-1639.G - Private Passenger and Commercial Automobile Insurance Benchmark Rate Hearing; cost of capital / capital structure
- 239. Docket No. 454-96-1638.G - Residential Property and Catastrophe Insurance Rate Hearing - cost of capital / capital structure
- 240. Docket No. 454-98-0224.G - Texas Automobile Insurance Plan Association Rate Hearing; cost of capital / capital structure
- 241. Docket No. 454-97-2106.G - Private Passenger and Commercial Automobile Insurance Benchmark Rate Hearing; cost of capital / profit factor
- 242. Docket No. 454-97-2107.G - Residential Property and Catastrophe Insurance Rate Hearing - cost of capital / profit factor
- 243. Docket No. 454-99-0408.G - Private Passenger and Commercial Automobile Insurance Benchmark Rate Hearing; cost of capital / profit factor

- 244. Docket No. 454-99-0294.G - Residential Property and Catastrophe Insurance Rate Hearing - cost of capital / profit factor
- 245. Docket No. 454-99-1332.G - Texas Automobile Insurance Plan Association Rate Hearing; cost of capital / capital structure
- 246. Docket No. 22344 - Texas Universal Cost of Service Hearings - capital structure / cost of capital
- 247. Docket No. GUD 9400 (Before the Texas Railroad Commission) - TXU Gas - capital structure/ cost of capital
- 248. Docket No. 28840 - AEP Texas Central Company - capital structure / economic environment / cost of capital
- 249. Docket No. 32093 - Centerpoint Energy - capital structure/ cost of capital
- 250. Docket Nos. 33309 and 33310 - AEP Texas Central Company and AEP Texas North Company - capital structure / economic environment / cost of capital
- 251. Docket No. 38929 - Oncor Electric Delivery Company, LLC - capital structure / cost of equity capital / overall cost of capital
- 252. Docket No. 38480 - Texas-New Mexico Power Company - capital structure / cost of equity / overall cost of capital
- 253. Docket No. 40020 - Lone Star Transmission, LLC - capital structure / corporate interrelationships / cost of equity capital
- 254. GUD Docket Nos. 10170 and 10174 - Atmos Energy, West Texas and Mid-Texas Divisions - capital structure / cost of equity / overall cost of capital
- 255. Docket No. 40443 - Southwest Electric Power Company - capital structure / cost of equity capital

UTAH

Testimony on behalf of: The Committee of Consumer Services

- 256. Docket No. 97-049-08 - US WEST Communications - cost of capital/ relative risk/ capital structure / financial cross-subsidization

VERMONT

Testimony on behalf of : Vermont Department of Public Service

- 257. Docket No. 5282 - Green Mountain Power Company; cost of capital / capital structure / relative risk
- 258. Docket No. 5370 - Green Mountain Power Company; cost of capital / capital structure / unregulated operations
- 259. Docket No. 5428 - Green Mountain Power Company; cost of capital / capital structure / relative risk / unregulated operations
- 260. Docket No. 5678 - Green Mountain Power Company; cost of capital / capital structure
- 261. Docket No. 5700 - New England Telephone - Vermont; capital structure/ operating risk/cost of equity capital / competitive risk
- 262. Docket No. 5724 - Central Vermont Public Service - capital structure / historical operating risk / cost of equity capital
- 263. Docket No. 5713 - Phase II - New England Telephone (d/b/a - Bell Atlantic - Vermont) - capital structure / cost of equity capital / TELRIC proceeding
- 264. Docket NO. 6167 - Bell Atlantic - Vermont - alternative regulatory plant / capital structure / cost of capital
- 265. Docket No. 7336 - Central Vermont Public Service - capital structure / cost of equity / overall cost of capital

VIRGINIA

Testimony on behalf of the Division of Consumer Council, Office of the Attorney General / Department of Defense

- 266. SCC Case No. INS940101 – Workers Compensation Benchmark Rate Proceeding - Cost of capital and relative risk issues in assigned risk workers compensation insurance.
- 267. Case No. PUC950019 - GTE South, Incorporated - capital structure / re-engineering adjustment to equity capital / cost of equity capital
- 268. SCC Case No. INS960191 - Workers Compensation Benchmark Rate Proceeding - Cost of equity capital, capital structure, investment return
- 269. Case No. PUE 960227 – Virginia Natural Gas – cost of capital/ capital structure
- 270. Case No. PUE-2009-00019 – Virginia Dominion Power – statutory allowed return / capital structure / cost of capital.
- 271. Case No. PUE-2011-00027 – Virginia Dominion Power – statutory allowed return / capital structure / cost of capital.
- 272. Case No. PUE-2013-00020 – Virginia Dominion Power – statutory allowed return / capital structure / cost of capital.

WASHINGTON

Testimony on behalf of : Attorney General's Office, and Washington Utilities and Transportation Commission Staff

- 273. Docket No. UT-901033 - Local Exchange Carrier Rates of Return Under WAC 480-80-390; economic environment and changes in capital cost rates / LEC risk / telco population density and risk / equity capital cost
- 274. Docket No. UG-920840 - Washington Natural Gas Company; cost of capital / capital structure / weather normalization
- 275. Docket No. UE-921262-Puget Sound Power & Light; cost of capital, capital structure, impact of decoupling on risk and return, purchased power risk.
- 276. Docket No. UT-931591, GTE Northwest, capital structure/ operating risk/ cost of equity capital / competitive risk.
- 277. Docket No. UT-950200, US WEST Communications, capital structure/ operating risk/ cost of equity capital
- 278. Docket No. UE-991832, Pacificorp, capital structure/ cost of equity capital.
- 279. Docket Nos. UE-991606 and UE-991607 – Avista Corporation, capital structure, operating risk/ cost of equity capital.
- 280. Docket No. UG-011570/1-Puget Sound Power & Light; Interim/Emergency Rate Case/ financial need / bond rating impact of purchased power losses
- 281. Docket No. UG-031885 – Northwest Natural Gas; capital structure / cost of common equity capital
- 282. Docket No. UE-032065 – Pacificorp; capital structure / cost of common equity capital
- 283. Docket No. UE-040640000/UG-040641 – Puget Sound Energy; capital structure / cost of common equity capital
- 284. Docket No. UE-050684 – Pacificorp; cost of common equity / capital structure / overall cost of capital
- 285. Docket No. UE-0501090 – Pacificorp/Mid-American Energy Holding Company Merger Application; financial aspects of merger / leverage at parent company
- 286. Docket No. UT-051291 – Sprint/Nextel – Merger/Spin-off of regulated telephone operations; financial aspects of spin-off / leverage at parent company
- 287. Docket Nos. UE-050482 & UG-050483 - Avista Utilities – testimony on cost of equity capital / capital structure / economic environment
- 288. Docket Nos. UE-060266/UG-060267 – Puget Sound Energy, cost of equity capital/ capital structure/ overall cost of capital
- 289. Docket Nos. UE-072300/UG-072301 – Puget Sound Energy, cost of equity capital/ capital structure/ overall cost of capital

290. Docket Nos. UE-072375 – Puget Holdings LLC and Puget Energy, acquisition proposal by private equity firm for utility operations of Puget Energy
291. Docket Nos. UE-090704/UG-090705-- Puget Sound Energy, cost of equity capital/ capital structure and costs associated with private equity corporate structure/ overall cost of capital
292. Docket No. UT-090842—Frontier Communications/Verizon merger; Financial Issues related to merger.
293. Dockets UE-121697 and UG-121705 – Puget Sound Energy – testimony regarding the change in the cost of equity capital since the Company’s 2011 rate proceeding and the impact of decoupling on the cost of equity capital.
294. Dockets UE-140188 and UG-140189- Avista Corporation – cost of equity/capital structure/ decoupling and relative risk
295. Docket UE-140762 – Pacific Power & Light, cost of equity / capital structure / relative risk issues
296. Dockets UE-121697 and UG-121705 [Remand] – Puget Sound Energy – testimony regarding the cost of capital at the time of the Company’s last rate proceeding / impact of decoupling on the cost of equity capital

WISCONSIN

Testimony on behalf of: Wisconsin Citizens’ Utilities Board

297. Docket Nos. 9403-YI-100 and 6680-UM-100 – Alliant Energy – merger-related issues/unregulated investment limitation
298. Docket No. 6680-UR-112, Wisconsin Power & Light – capital structure / cost of common equity / overall cost of capital
299. Docket No. 6680-CE-171, Wisconsin Power & Light – cost of common equity / fixed rate of return for wind generating plant
300. Docket No. 6680-CE-170, Wisconsin Power & Light – cost of common equity / fixed rate of return for coal generating plant
301. Docket No. 05-UR0104, Wisconsin Power & Light –treatment of OBS (off-balance sheet) obligations in the ratemaking process/ cost of capital.
302. Docket No. 6690-UR-122, Wisconsin Public Service Corporation, cost of capital / capital structure / decoupling risks and return impact / the use of market-value capital structures in utility ratemaking

EASTERN CARIBBEAN TELECOMMUNICATIONS AUTHORITY (ECTEL)

Testimony on behalf of: ECTEL

303. (No Docket Number) Initial Rate Determination of Cable & Wireless local exchange telecommunications operations – capital structure/ relative risk/ cost of equity/ risk premium for investing in Easter Caribbean/ overall cost of capital.

FEDERAL COMMUNICATIONS COMMISSION

Testimony on behalf of: Consumer Advocate Division of the WV Public Service Commission

304. Docket No. 89 - 624 – Re-prescribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers; statement in response to initial submission of telephone companies.

FEDERAL ENERGY REGULATORY COMMISSION

Testimony on behalf of: Consumer Advocate Division of the WV Public Service Commission, Maryland Peoples’ Counsel, Pennsylvania Office of Consumer Advocate, Joint Consumer Advocates in Midwest (MISO Complaint)

305. Docket No. 84-348 - American Electric Power Company, Transmission Equalization Agreement; cost of equity capital
306. Docket No. 86-37 - Allegheny Generating Company (complaint case); cost of capital / capital structure
307. Docket Nos. 85-19-001 through 005 - Comments on FERC's Generic Determination of Rate of Return on Common Equity for Electric Utilities in response to FERC's Notice of Proposed Rulemaking, July 21, 1986
308. Docket No. 87-61-000 - Eastern Shore Natural Gas Company; cost of capital / capital structure
309. Docket No. EL-89-17 and 18 - San Diego Gas and Electric Company v. Alamito Company; Arizona Corporation Commission v. Alamito Company (complaint case), testimony on financial history of Alamito Company, regulation as marketplace surrogate, "sharing" gain on sale leaseback as generic policy, institutional investor responsibility.
310. Docket No. EL-92-10 - Allegheny Generating Company (complaint case); cost of equity capital / relative risk of FERC-regulated subsidiary v. parent / risk premium reliability
311. Docket No. EL-94-24- Allegheny Generating Company (complaint case); cost of equity capital / relative risk of FERC-regulated subsidiary v. parent / risk premium reliability
312. Docket No. ER98-2383-000 - Montana Power Company – cost of equity for electric transmission, capital structure
313. Docket No. PL98-2-000 – Conference on the Financial Outlook of the Natural Gas Pipeline Industry, prepared comments for the Pennsylvania Office of Consumer Advocate
314. Docket No. EL 14-12-002, Midcontinent Independent System Operator, complaint proceeding / cost of equity (determined by FERC Opinion 531 methodology) / capital structure / operating risks of FERC-regulated transmission