

## Standard & Poor's Methodology For Imputing Debt For U.S. Utilities' Power Purchase Agreements

**Primary Credit Analysts:**

David Bodek  
New York  
(1) 212-438-7969  
david\_bodek@  
standardandpoors.com

**Secondary Credit Analysts:**

Richard W Cortright Jr.  
New York  
(1) 212-438-7665  
richard\_cortright@  
standardandpoors.com

Solomon B Samson  
New York  
(1) 212-438-7653  
sol\_samson@  
standardandpoors.com

**Publication Date**

May 07, 2007

For many years, Standard & Poor's Ratings Services has viewed power supply agreements (PPA) in the U.S. utility sector as creating fixed, debt-like, financial obligations that represent substitutes for debt-financed capital investments in generation capacity. In a sense, a utility that has entered into a PPA has contracted with a supplier to make the financial investment on its behalf. Consequently, PPA fixed obligations, in the form of capacity payments, merit inclusion in a utility's financial metrics as though they are part of a utility's permanent capital structure and are incorporated in our assessment of a utility's creditworthiness.

We adjust utilities' financial metrics, incorporating PPA fixed obligations, so that we can compare companies that finance and build generation capacity and those that purchase capacity to satisfy customer needs. The analytical goal of our financial adjustments for PPAs is to reflect fixed obligations in a way that depicts the credit exposure that is added by PPAs. That said, PPAs also benefit utilities that enter into contracts with suppliers because PPAs will typically shift various risks to the suppliers, such as construction risk and most of the operating risk. PPAs can also provide utilities with asset diversity that might not have been achievable through self-build. The principal risk borne by a utility that relies on PPAs is the recovery of the financial obligation in rates.

### ***The Mechanics Of PPA Debt Imputation***

A starting point for calculating the debt to be imputed for PPA-related fixed obligations can be found among the "commitments and contingencies" in the notes to a utility's financial statements. We calculate a net present value (NPV) of the stream of the outstanding contracts' capacity payments reported in the financial statements as the foundation of our financial adjustments.

The notes to the financial statements enumerate capacity payments for the five years succeeding the annual report and a “thereafter” period. While we have access to proprietary forecasts that show the detail underlying the costs that are amalgamated beyond the five-year horizon, others, for purposes of calculating an NPV, can divide the amount reported as “thereafter” by the average of the capacity payments in the preceding five years to derive an approximate tenor of the amounts combined as the sum of the obligations beyond the fifth year.

In calculating debt equivalents, we also include new contracts that will commence during the forecast period. Such contracts aren't reflected in the notes to the financial statements, but relevant information regarding these contracts are provided to us on a confidential basis. If a contract has been executed but the energy will not flow until some later period, we won't impute debt for that contract until the year that energy deliveries begin under the contract if the contract represents incremental capacity. However, to the extent that the contract will simply replace an expiring contract, we will impute debt as though the future contract is a continuation of the existing contract.

We calculate the NPV of capacity payments using a discount rate equivalent to the company's average cost of debt, net of securitization debt. Once we arrive at the NPV, we apply a risk factor, as is discussed below, to reflect the benefits of regulatory or legislative cost recovery mechanisms.

Balance sheet debt is increased by the risk-factor-adjusted NPV of the stream of capacity payments. We derive an adjusted debt-to-capitalization ratio by adding the adjusted NPV to both the numerator and the denominator of that ratio.

We calculate an implied interest expense for the imputed debt by multiplying the same utility average cost of debt used as the discount rate in the NPV calculation by the amount of imputed debt. The adjusted FFO-to-interest expense ratio is calculated by adding the implied interest expense to both the numerator and denominator of the equation. We also add implied depreciation to the equation's numerator. We calculate the adjusted FFO-to-total-debt ratio by adding imputed debt to the equation's denominator and an implied depreciation expense to its numerator.

Our adjusted cash flow credit metrics include a depreciation expense adjustment to FFO. This adjustment represents a vehicle for capturing the ownership-like attributes of the contracted asset and tempers the effects of imputation on the cash flow ratios. We derive the depreciation expense adjustment by multiplying the relevant year's capacity payment obligation by the risk factor and then subtracting the implied PPA-related interest expense for that year from the product of the risk factor times the scheduled capacity payment.

### ***Risk Factors***

The NPVs that Standard & Poor's calculates to adjust reported financial metrics to capture PPA capacity payments are multiplied by risk factors. These risk factors typically range between 0% to 50%, but can be as high as 100%. Risk factors are inversely related to the strength and availability of regulatory or legislative vehicles for the recovery of the capacity costs associated with power supply arrangements. The strongest recovery mechanisms translate into the smallest risk factors. A 100% risk factor would signify that all risk related to contractual obligations rests on the company with no mitigating regulatory or legislative support.

For example, an unregulated energy company that has entered into a tolling arrangement with a third-party supplier would be assigned a 100% risk factor. Conversely, a 0% risk factor indicates that the burden of the contractual payments rests solely with ratepayers. This type of arrangement is

frequently found among regulated utilities that act as conduits for the delivery of a third party's electricity and essentially deliver power, collect charges, and remit revenues to the suppliers. These utilities have typically been directed to sell all their generation assets, are barred from developing new generation assets, and the power supplied to their customers is sourced through a state auction or third parties, leaving the utilities to act as intermediaries between retail customers and the electricity suppliers.

Intermediate degrees of recovery risk are presented by a number of regulatory and legislative mechanisms. For example, some regulators use a utility's rate case to establish base rates that provide for the recovery of the fixed costs created by PPAs. Although we see this type of mechanism as generally supportive of credit quality, the fact remains that the utility will need to litigate the right to recover costs and the prudence of PPA capacity payments in successive rate cases to ensure ongoing recovery of its fixed costs. For such a PPA, we employ a 50% risk factor. In cases where a regulator has established a power cost adjustment mechanism that recovers all prudent PPA costs, we employ a risk factor of 25% because the recovery hurdle is lower than it is for a utility that must litigate time and again its right to recover costs.

We recognize that there are certain jurisdictions that have true-up mechanisms that are more favorable and frequent than the review of base rates, but still don't amount to pure pass-through mechanisms. Some of these mechanisms are triggered when certain financial thresholds are met or after prescribed periods of time have passed. In these instances, in calculating adjusted ratios, we will employ a risk factor between the revised 25% risk factors for utilities with power cost adjustment mechanisms and 50%.

Finally, we view legislatively created cost recovery mechanisms as longer lasting and more resilient to change than regulatory cost recovery vehicles. Consequently, such mechanisms lead to risk factors between 0% and 15%, depending on the legislative provisions for cost recovery and the supply function borne by the utility. Legislative guarantees of complete and timely recovery of costs are particularly important to achieving the lowest risk factors.

### ***Illustration Of The PPA Adjustment Methodology***

The calculations of the debt equivalents, implied interest expense, depreciation expense, and adjusted financial metrics, using risk factors, are illustrated in the following example:

| <b><i>Example Of Power-Purchase Agreement Adjustment</i></b> |                          |                      |                      |                      |                      |                      |                          |
|--|--------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|--------------------------|
| <b><i>(\$000s)</i></b>                                       | <b><i>Assumption</i></b> | <b><i>Year 1</i></b> | <b><i>Year 2</i></b> | <b><i>Year 3</i></b> | <b><i>Year 4</i></b> | <b><i>Year 5</i></b> | <b><i>Thereafter</i></b> |
| Cash from operations   | 2,000,000                |                      |                      |                      |                      |                      |                          |
| Funds from operations  | 1,500,000                |                      |                      |                      |                      |                      |                          |
| Interest expense   | 444,000                  |                      |                      |                      |                      |                      |                          |
| <b><i>Directly issued debt</i></b>                           |                          |                      |                      |                      |                      |                      |                          |
| Short-term debt  | 600,000                  |                      |                      |                      |                      |                      |                          |
| Long-term due within one year                                | 300,000                  |                      |                      |                      |                      |                      |                          |
| Long-term debt   | 6,500,000                |                      |                      |                      |                      |                      |                          |
| Shareholder's Equity   | 6,000,000                |                      |                      |                      |                      |                      |                          |
| Fixed capacity commitments                                   | 600,000                  | 600,000              | 600,000              | 600,000              | 600,000              | 600,000              | 4,200,000*               |
| <b><i>NPV of fixed capacity commitments</i></b>              |                          |                      |                      |                      |                      |                      |                          |

**Example Of Power-Purchase Agreement Adjustment (cont.'d)**

| <i>(\$000s)</i>                            | <i>Assumption</i> | <i>Year 1</i> | <i>Year 2</i> | <i>Year 3</i> | <i>Year 4</i> | <i>Year 5 Thereafter</i> |
|--|-------------------|---------------|---------------|---------------|---------------|--------------------------|
| Using a 6.0% discount rate                 | 5,030,306         |               |               |               |               |                          |
| Application of an assumed 25% risk factor  | 1,257,577         |               |               |               |               |                          |
| Implied interest expense¶                  | 75,455            |               |               |               |               |                          |
| Implied depreciation expense               | 74,545            |               |               |               |               |                          |
| <b>Unadjusted ratios</b>                   |                   |               |               |               |               |                          |
| FFO to interest (x)                        | 4.4               |               |               |               |               |                          |
| FFO to total Debt (%)                      | 20.0              |               |               |               |               |                          |
| Debt to capitalization (%)                 | 55.0              |               |               |               |               |                          |
| <b>Ratios adjusted for debt imputation</b> |                   |               |               |               |               |                          |
| FFO to interest (x)§                       | 4.0               |               |               |               |               |                          |
| FFO to total debt (%)**                    | 18.0              |               |               |               |               |                          |
| Debt to capitalization (%)¶¶               | 59.0              |               |               |               |               |                          |

\*Thereafter approximate years: 7. ¶The current year's implied interest is subtracted from the product of the risk factor multiplied by the current year's capacity payment. §Adds implied interest to the numerator and denominator and adds implied depreciation to FFO. \*\*Adds implied depreciation expense to FFO and implied debt to reported debt. ¶¶Adds implied debt to both the numerator and the denominator. FFO—Funds from operations. NPV—Net present value.

**Short-Term Contracts**

Standard & Poor's has abandoned its historical practice of not imputing debt for contracts with terms of three years or less. However, we understand that there are some utilities that use short-term PPAs of approximately one year or less as gap fillers pending the construction of new capacity. To the extent that such short-term supply arrangements represent a nominal percentage of demand and serve the purposes described above, we will neither impute debt for such contracts nor provide evergreen treatment to such contracts.

**Evergreen Treatment**

The NPV of the fixed obligations associated with a portfolio of short-term or intermediate-term contracts can lead to distortions in a utility's financial profile relative to the NPV of the fixed obligations of a utility with a portfolio of PPAs that is made up of longer-term commitments. Where there is the potential for such distortions, rating committees will consider evergreen treatment of existing PPA obligations as a scenario for inclusion in the rating analysis. Evergreen treatment extends the tenor of short- and intermediate-term contracts to reflect the long-term obligation of electric utilities to meet their customers' demand for electricity.

While we have concluded that there is a limited pool of utilities whose portfolios of existing and projected PPAs don't meaningfully correspond to long-term load serving obligations, we will nevertheless apply evergreen treatment in those cases where the portfolio of existing and projected PPAs is inconsistent with long-term load-serving obligations. A blanket application of evergreen treatment is not warranted.

To provide evergreen treatment, Standard & Poor's starts by looking at the tenor of outstanding PPAs. Others can look to the "commitments and contingencies" in the notes to a utility's financial statements to derive an approximate tenor of the contracts. If we conclude that the duration of PPAs is short relative to our targeted tenor, we would then add capacity payments until the targeted tenor is

achieved. Based on our analysis of several companies, we have determined that the evergreen extension of the tenor of existing contracts and anticipated contracts should extend contracts to a common length of about 12 years.

The price for the capacity that we add will be derived from new peaker entry economics. We use empirical data to establish the cost of developing new peaking capacity and reflect regional differences in our analysis. The cost of new capacity is translated into a dollars per kilowatt-year (kW-year) figure using a weighted average cost of capital for the utility and a proxy capital recovery period.

### ***Analytical Treatment Of Contracts With All-In Energy Prices***

The pricing for some PPA contracts is stated as a single, all-in energy price. Standard & Poor's considers an implied capacity price that funds the recovery of the supplier's capital investment to be subsumed within the all-in energy price. Consequently, we use a proxy capacity charge, stated in \$/kW, to calculate an implied capacity payment associated with the PPA. The \$/kW figure is multiplied by the number of kilowatts under contract. In cases of resources such as wind power that exhibit very low capacity factors, we will adjust the kilowatts under contract to reflect the anticipated capacity factor that the resource is expected to achieve.

We derive the proxy cost of capacity using empirical data evidencing the cost of developing new peaking capacity. We will reflect regional differences in our analysis. The cost of new capacity is translated into a \$/kW figure using a weighted average cost of capital and a proxy capital recovery period. This number will be updated from time to time to reflect prevailing costs for the development and financing of the marginal unit, a combustion turbine.

### ***Transmission Arrangements***

In recent years, some utilities have entered into long-term transmission contracts in lieu of building generation. In some cases, these contracts provide access to specific power plants, while other transmission arrangements provide access to competitive wholesale electricity markets. We have concluded that these types of transmission arrangements represent extensions of the power plants to which they are connected or the markets that they serve. Irrespective of whether these transmission lines are integral to the delivery of power from a specific plant or are conduits to wholesale markets, we view these arrangements as exhibiting very strong parallels to PPAs as a substitute for investment in power plants. Consequently, we will impute debt for the fixed costs associated with long-term transmission contracts.

### ***PPAs Treated As Leases***

Several utilities have reported that their accountants dictate that certain PPAs need to be treated as leases for accounting purposes due to the tenor of the PPA or the residual value of the asset upon the PPA's expiration. We have consistently taken the position that companies should identify those capacity charges that are subject to operating lease treatment in the financial statements so that we can accord PPA treatment to those obligations, in lieu of lease treatment. That is, PPAs that receive operating lease treatment for accounting purposes won't be subject to a 100% risk factor for analytical purposes as though they were leases. Rather, the NPV of the stream of capacity payments associated with these PPAs will be reduced by the risk factor that is applied to the utility's other PPA commitments. PPAs that are treated as capital leases for accounting purposes will not receive PPA

treatment because capital lease treatment indicates that the plant under contract economically “belongs” to the utility.

***Evaluating The Effect Of PPAs***

Though history is on the side of full cost recovery, PPAs nevertheless add financial obligations that heighten financial risk. Yet, we apply risk factors that reduce debt imputation to recognize that utilities that rely on PPAs transfer significant risks to ratepayers and suppliers.

Published by Standard & Poor's, a Division of The McGraw-Hill Companies, Inc. Executive offices: 1221 Avenue of the Americas, New York, NY 10020. Editorial offices: 55 Water Street, New York, NY 10041. Subscriber services: (1) 212-438-7280. Copyright 2007 by The McGraw-Hill Companies, Inc. Reproduction in whole or in part prohibited except by permission. All rights reserved. Information has been obtained by Standard & Poor's from sources believed to be reliable. However, because of the possibility of human or mechanical error by our sources, Standard & Poor's or others, Standard & Poor's does not guarantee the accuracy, adequacy, or completeness of any information and is not responsible for any errors or omissions or the result obtained from the use of such information. Ratings are statements of opinion, not statements of fact or recommendations to buy, hold, or sell any securities.

Standard & Poor's uses billing and contact data collected from subscribers for billing and order fulfillment purposes, and occasionally to inform subscribers about products or services from Standard & Poor's, our parent, The McGraw-Hill Companies, and reputable third parties that may be of interest to them. All subscriber billing and contact data collected is stored in a secure database in the U.S. and access is limited to authorized persons. If you would prefer not to have your information used as outlined in this notice, if you wish to review your information for accuracy, or for more information on our privacy practices, please call us at (1) 212-438-7280 or write us at: [privacy@standardandpoors.com](mailto:privacy@standardandpoors.com). For more information about The McGraw-Hill Companies Privacy Policy please visit [www.mcgraw-hill.com/privacy.html](http://www.mcgraw-hill.com/privacy.html).

Analytic services provided by Standard & Poor's Ratings Services ("Ratings Services") are the result of separate activities designed to preserve the independence and objectivity of ratings opinions. Credit ratings issued by Ratings Services are solely statements of opinion and not statements of fact or recommendations to purchase, hold, or sell any securities or make any other investment decisions. Accordingly, any user of credit ratings issued by Ratings Services should not rely on any such ratings or other opinion issued by Ratings Services in making any investment decision. Ratings are based on information received by Ratings Services. Other divisions of Standard & Poor's may have information that is not available to Ratings Services. Standard & Poor's has established policies and procedures to maintain the confidentiality of non-public information received during the ratings process.

Ratings Services receives compensation for its ratings. Such compensation is normally paid either by the issuers of such securities or by the underwriters participating in the distribution thereof. The fees generally vary from US\$2,000 to over US\$1,500,000. While Standard & Poor's reserves the right to disseminate the rating, it receives no payment for doing so, except for subscriptions to its publications.

Permissions: To reprint, translate, or quote Standard & Poor's publications, contact: Client Services, 55 Water Street, New York, NY 10041; (1) 212-438-7280; or by e-mail to: [research\\_request@standardandpoors.com](mailto:research_request@standardandpoors.com).