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Statement No. 9

Phila 11/19/97

Petition of Enron Energy Services Power, Inc.
for approval of an Electric Competition and Customer Choice Plan
and for authority pursuant to Section 2807(e)(3)
of the Public Utility Code
to serve as the Provider of Last Resort
in the service territory of PECO Energy Company

Direct Testimony

of

Susan P. Voorhees

on behalf of

Enron Energy Services Power, Inc.

concerning

Securitization

TESTIMONY OF SUSAN P. VOORHEES

Q. Please state your name and business address.
A. My name is Susan P. Voorhees. My business address is 270 Park Avenue, New York, New York 10017.
Q. By whom are you employed and in what capacity?
A. I am a Managing Director in the Global Asset-Backed Securities Group at Chase Securities Inc. ("Chase").
Q. Please relate your professional experience.
A. Since joining Chase in June 1990, I have developed extensive experience in the securitization of a wide range of asset types in both the private placement and public markets, working with issuers in the United States, Europe and Latin America. I am currently the lead investment banker from Chase's Asset-Backed Securities Group assigned to a team that is engaged in the securitization of the regulatory assets of electric utilities. I was the lead banker from Chase involved in the securitization of conservation assets for Puget Sound Power & Light Company, which Chase co-lead managed the offering with Salomon Brothers Inc. I am also responsible for Chase's participation in the pending securitization of stranded assets for California utilities. Prior to joining Chase, I practiced law, specializing in real estate transactions and land use.
Q. Please state your educational background and professional associations.
A. I have a B.A. from Hamilton College, a J.D. from Washington & Lee University and an M.B.A. from Rutgers University.
Q. Have you testified previously before this Commission or other utility regulatory agencies?

A. No.

Q. What is the purpose of your testimony in this proceeding?

A. I have been asked by Enron Energy Services Power, Inc. ("Enron") to assess the receptivity of the capital markets and the rating agencies to the financing proposal in the Choice Plan which has been filed by Enron. I will first discuss the current market for asset-backed securities ("ABS"). I will then describe the Choice Plan's financing proposal. Finally, I will discuss the marketability of the financing proposal in the Choice Plan. We are confident that, given the necessary regulatory approvals, the inclusion of mechanisms necessary to obtain very high credit ratings and favorable tax treatment and the absence of a significant deterioration of the conditions in the bond market, we will be able to market the full $5.461 billion of Pass-Through Certificates within several months of PECO Energy receiving a qualified rate order ("QRO").

Q. Please describe the present size of the public asset-backed market in terms of the amount outstanding and its composition by asset categories.

A. The market for publicly-issued asset-backed securities has grown to approximately $797 billion with $443.7 billion total outstanding through September, 1997. Credit card receivables, together with auto and home equity loans, continue to comprise the bulk of the ABS market, constituting over 75% of total outstanding ABS (see Figure

1). Credit cards, auto loans and home equity loans comprise 41.3%, 16.1% and 17.7%, respectively, of the market.

Figure 1. Asset Composition of ABS Market as of September 30, 1997 (SEC Registered)

Asset Type	$ Amount (Billions)	% of Total
Credit Cards	$ 183.2	41.3%
Auto loans	71.6	16.1
Home equity loans	78.5	17.7
Manufactured housing	25.7	5.8
Other	84.6	19.1
Total	**$ 443.7**	**100.0%**

Source: Bloomberg Services

Q. Please describe the size of the ABS market in terms of annual issuance.

A. Year to date 1997 issuance is $136 billion, a ten percent increase over the first 9 months of 1996. (see Figure 2) Chase expects total issuance for 1997 to be between $165 billion and $170 billion.

Figure 2. Asset Composition of ABS Issuance for the 9 Month Period ended September 30, 1997 (SEC Registered)

Asset Type	$ Amount (Billions)	%of Total
Credit Cards	$ 33.0	24.3%
Auto loans	28.0	20.6
Home equity loans	36.0	26.5
Manufactured housing	7.0	5.1
Other	32.0	23.5
Total	**$ 136.0**	**100.0%**

Source: Bloomberg Services and Chase Securities Inc. Asset-Backed Research

Q. The proposed transaction calls for a $5.461 billion securities issuance. Are such transactions unusual?

A. No. Multi-billion dollar issues are frequently executed in the ABS market. For example, securitizations of commercial loan obligations ("CLOs") have been as large as $5 billion. (See Figure 3)

Figure 3. Selected Asset-Backed Offerings in 1997
(144A and SEC Registered)

Offer Date	Issuer	Asset Class		$Amount (BBs)
10/9	Rose*	CLOs	US$	3.09
	(Repeat Offering Sec's Funding) 2 Ltd		STG	1.45
9/26	Platinum Commercial Loan MT 97-A*	CLOs	US$	2.67
10/15	Triangle Funding Ltd. 97-1*	CLOs	US$	4.51
			DMK	0.60
9/11	Nation's Bank CLO 97-2*	CLOs	US$	4.23
9/04	Sallie Mae Student Loan 97-3	Student Loans		2.58
6/11	Sallie Mae Student Loan 97-2	Student Loans		2.50
3/12	Sallie Mae Student Loan 97-1	Student Loans		2.05
10/24	Ford Credit Auto Owner Trust 97-A	Auto Loans		1.70
8/13	Chase Manhattan Credit Card 97-2	Credit Cards		1.59
9/18	ContiMortgage HEL 97-4	Home Equity		1.53
8/12	First USA CC Master Trust 97-6	Credit Cards		1.42
4/08	GMAC 1997-A Grantor Trust	Auto Loans		1.41
3/04	Chrysler Premier Auto Trust 97-1	Auto Loans		1.25
2/19	Chase Manhattan CC Trust 97-1	Credit Cards		1.25
3/12	Chase Manhattan Auto 97-A	Auto Loans		1.14
9/11	Toyota Auto Lease Trust 97-A	Auto Loans		1.13
7/31	Citibank Credit Card Trust I 97-6	Credit Cards		1.06
9/04	Green Tree Mnfrd Hous Trust 97-6	Mnfrd Housing		1.05
6/20	PNC Student Loan Trust I 97-2	Student Loans		1.03
7/28	Honda Auto Receivables 97-A	Auto Loans		1.01
10/21	First Chicago MT II 97-T&U	Credit Cards		1.00

* 144A Offerings

Source: Securities Data Company and Bloomberg Services

Q. How do investors analyze asset-backed securities?

A. ABS credit analysis focuses on the projected performance of the receivables through a "worst-case" scenario. This includes the assumption of, among other factors, a recessionary economy, bankruptcy of the originator and significant declines in collateral value. The assurance of timely payment of principal and interest to investors, even in this "stress" scenario, is necessary to achieve high ratings for ABS. Most issues are structured to achieve AAA or AA ratings for senior classes, and lower investment grade ratings for subordinate classes. As a result, the senior class ABS provide assurance of payment to investors even under circumstances where the cash flow from the underlying asset pool is lower than what would otherwise be anticipated, for example, covering loan default increases of 3-5 times the historical rate. As a result, we have seen great stability in the ABS market, and downgrades for asset performance have been virtually nonexistent. The corporate market has much more volatility in ratings as the analysis uses more of an expected case scenario.

Q. Please describe the structure of the financing proposal in the Choice Plan.

A. As described in the testimony of Andrew S. Fastow, PECO would sell the intangible transition property ("ITP") and related intangible transition charges ("ITC") to a bankruptcy-remote special purpose entity ("SPE") established for the transaction for $5.461 billion pursuant to a QRO.

The SPE would finance its acquisition of the ITP and related ITC by issuing $5.461 billion of transition bonds ("Transition Bonds").

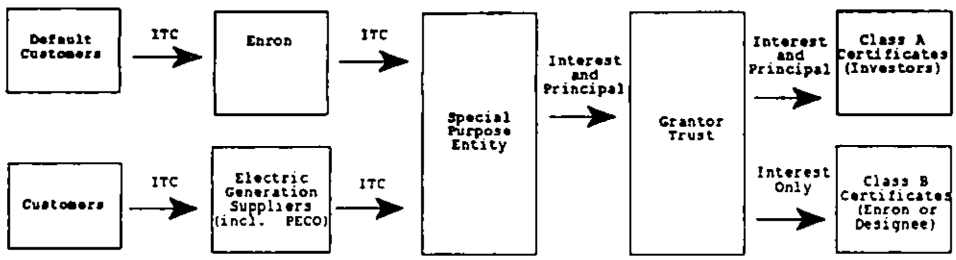
Q. Under the Choice Plan, who will purchase the $5.461 billion of Transition Bonds?

A. The entire $5.461 billion of Transition Bonds will be deposited in a special purpose entity known as a grantor trust. The grantor trust will issue two classes of trust certificates ("Pass-Through Certificates"). The Class A Pass-Through Certificates will be issued to investors and will be backed by the principal and a portion of the interest payments the grantor trust will receive as a result of its purchase of the $5.461 billion of Transition Bonds. Enron (or its designee) will be issued Class B Pass-Through Certificates backed only by the portion of the interest payments not allocable to the Class A Certificates.

Q. Please describe the flow of ITC charges under the Choice Plan.

A. After issuing the Pass-Through Certificates, the ongoing cash flows of the structure involve: (1) the billing of ITC charges by PECO (acting as "servicer" on behalf of the SPE) (2) the collection of the ITC charges from customers by PECO and other electric generation suppliers ("EGSs") (3) the payment of ITC charges (whether or not collected) by PECO and the EGSs to the SPE, (4) the payment by the SPE of principal and interest to the grantor trust as the holder of the Transition Bonds, and (5) the payment by the grantor trust of principal and interest to holders of the Pass-Through Certificates. This payment stream is illustrated below:

Figure 4: Ongoing Cash Flow After the Sale of the Trust Certificates



Q. Are you familiar with the Application of PECO Energy Company for Issuance of a Qualified Rate Order Under Sections 2808 and 2812 of the Public Utility Code ("PECO Application") filed with the Pennsylvania Public Utility Commission and the proposed Partial Settlement Agreement?

A. Yes.

Q. Based on your knowledge of the PECO Application, the Partial Settlement Agreement and the Choice Plan, please describe the major similarities between the two financing proposals.

A. The structure of the two proposals and the procedures necessary for the issuance of bonds under the two proposals are quite similar. Under both plans, PECO would make an application for a QRO to issue transition bonds backed by ITC payments. In both cases, PECO would include the mechanisms necessary to obtain very high credit ratings and favorable tax treatment. Both proposals also provide protection to the ratepayers from load decline in PECO's service territory.

Q. What are the major differences?

A. The major structural difference is the use of the grantor trust to issue the Pass-Through Certificates backed by the Transition Bonds to investors.

Q. Are you familiar with the ITC Shortfall Agreement included in the financing proposal in the Choice Plan?

A. Yes. The Choice Plan will require a highly creditworthy party to enter into an agreement known as the ITC Shortfall Agreement with PECO, to virtually eliminate the risk to ratepayers of increased payments due to load decline.

Q. Is it your opinion that Enron will be able to obtain a highly creditworthy guarantor to enter into the proposed ITC Shortfall Agreement?

A. Yes. There are numerous highly creditworthy institutions who regularly engage in the provision of guaranties in connection with structured financings.

Q. Is the Choice Plan's proposal to have the SPE issue bonds to a grantor trust that will in turn issue two classes of Pass-Through Certificates a novel or difficult structure for a securitization financing?

A. No. Multiple classes of certificates and/or notes are frequently issued out of grantor trusts and other legal entities issuing ABS. These transactions involve a wide variety of assets, including U.S. Treasury securities, corporate bonds and real estate mortgages as well as ABS. Aggregate transaction amounts are well into the billions of dollars.

Q. How do you believe the rating agencies would treat the *financing proposal in the Choice Plan?*

A. Because the Transition Bonds and the Pass-Through Certificates to be issued pursuant to the Choice Plan will contain all of the characteristics required by the rating agencies for this asset class, we expect a favorable reception by the rating agencies for the Choice Plan.

Q. How will these securities be received by the capital markets?

A. Transition bonds have been well-studied by the investment community and their introduction to the market is highly anticipated. Transition bonds have a number of features that make them attractive, including the legislative mandate to issue these securities, the strong and predictable cash flows of public utilities and the true-up feature. Among traditional asset-backed investors, transition bonds represent an opportunity to diversify their portfolio. Chase also expects that these securities will be purchased by investors in more traditional corporate debt instruments, such as bonds issued by utilities. Accordingly, we expect a favorable reception by the investor community.

Q. Are you familiar with the lawsuit filed by the Utility Workers Union of America, AFL-CIO System Local No. 102 and others against the Commission and its Chairman challenging the constitutionality under the Constitution of the Commonwealth of Pennsylvania of the Electricity Generation Customer Choice and Competition Act (the "Competition Act")?

A. Yes.

Q. Is it your belief that this lawsuit is likely to adversely affect the marketing, or constitute a legal impediment to the issuance, of the Pass-Through Certificates?

A. An adverse determination in this lawsuit would impair the marketing and issuance of the Pass-Through Certificates. However, we have been informed by counsel that this lawsuit is without merit.

Q. Are you familiar with the lawsuit filed by the Indianapolis Power & Light Company against the Commission challenging the constitutionality under the commerce clause of the U.S. Constitution of the Competition Act?

A. Yes.

Q. Is it your belief that this lawsuit is likely to adversely affect the marketing, or constitute a legal impediment to the issuance, of the Pass-Through Certificates.?

A. An adverse determination in this lawsuit would impair the marketing and issuance of the Pass-Through Certificates. However, we have been informed by counsel that this lawsuit is without merit.

Q. Does this conclude your testimony?

A. Yes, at this time. I must say, however, that this testimony is based my knowledge of these matters as of today. Given the constant movement regarding securitization in particular and electric industry restructuring in general, I must reserve my right to update or supplement this Testimony to properly inform the Commission and to reflect additional information as it becomes available.

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Statement No. 9-R et al

Phila 11/19/97
C.H.

Petition of Enron Energy Services Power, Inc. for
Approval of an Electric Competition and Customer Choice Plan
and for Authority Pursuant to Section 2807(e)(3) of the
Public Utility Code to Serve as the Provider of Last Resort
in the Service Territory of PECO Energy Company

Rebuttal Testimony

of

Susan P. Voorhees

on behalf of

Enron Energy Services Power, Inc.

Concerning

Securitization

Q. PLEASE STATE YOUR NAME AND BUSINESS AFFILIATION.

A. My name is Susan P. Voorhees. I am a Managing Director in the Global Asset-Backed Securities Group at Chase Securities Inc.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS PROCEEDING?

A. Yes, I submitted Enron Statement Number 9.

Q. HAVE YOU HAD THE OPPORTUNITY TO REVIEW PECO'S TESTIMONY ON THE FINANCING PROPOSAL IN THE CHOICE PLAN?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. To address certain portions of the testimony of Mr. Mitchell relating to the financing proposal in the Choice Plan.

Q. PLEASE COMMENT ON MR. MITCHELL'S STATEMENT ON ESTIMATED COSTS ON PAGE 11 IN HIS RESPONSE TESTIMONY.

A. Mr. Mitchell estimates that there will be $32 million in issuance expenses. Under the Choice Plan, PECO should not be responsible for any underwriting fees in connection with issuance of the Transition Bonds. Accordingly, the fees incurred by them should be much lower because Enron will purchase the Transition Bonds, and any underwriting fees incurred in connection with the marketing of the Pass-Through Certificates would be for Enron's account. In addition, Mr. Mitchell estimates use of proceeds costs of $504 million. Since Mr. Mitchell does not discuss the use of proceeds, it is not possible to evaluate the accuracy or reasonableness of this estimate.

Q. CAN YOU COMMENT ON MR. MITCHELL'S TESTIMONY REGARDING ISSUANCE OF THE TRANSITION BONDS WHILE LITIGATION IS PENDING.

A. Enron has agreed to have the Grantor Trust purchase the Transition Bonds assuming that the Transition Bonds are granted a AAA rating (or its equivalent) or the highest possible rating for their asset type (the "Required Rating").

It is impossible to predict what consequences, if any, the pendency of the litigation might have on issuance of the Pass-Through Certificates. At this time, the litigation is viewed as lacking merit. The pendency of litigation, its status and the possible effects of the litigation would be disclosed by the underwriter in the offering materials relating to the securities. It is anticipated that absent an adverse non-final determination the Pass-Through Certificates would be issued and marketed in accordance with the terms of the Choice Plan. Assuming the Transition Bonds receive the Required Rating and contain other provisions required by the market to address the effect of potential legal challenges, as is being clarified in pending transactions by California utilities, Chase believes it will be able to market the Pass-Through Certificates as contemplated by the Choice Plan.

Q. **DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

A. Yes.

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Exhibits to Statement No. 11-R

Phila 11/19/97

Petition of Enron Energy Services Power, Inc. for
Approval of an Electric Competition and Customer Choice Plan
and for Authority Pursuant to Section 2807(e)(3) of the
Public Utility Code to Serve as the Provider of Last Resort
in the Service Territory of PECO Energy Company

Rebuttal Testimony and Exhibits

of

Christopher P. Kinney

on behalf of

Enron Energy Services Power, Inc.

concerning

Financing Proposal in the Choice Plan

Q. Please state your name and business address.

A. Christopher P. Kinney, 270 Park Avenue, New York, New York 10017.

Q. Could you state your professional qualifications?

A. I am employed by Chase Securities Inc. where I am a Managing Director in the Global Power and Environmental Group. I have 16 years experience in commercial and investment banking. In my current capacity, I am focused on the "Power" sector, which is largely comprised of electric utility companies. I routinely perform financial analysis on electric utility companies in conjunction with advisory and financing assignments. I am the lead investment banker from Chase's Global Power and Environmental Group assigned to a team that is engaged in the securitization of regulatory assets of electric utilities. I am a Chartered Financial Analyst and a member of the New York Society of Security Analysts.

Q. What is purpose of your testimony?

A. To respond to Barry Mitchell's testimony regarding the impact of the Choice Plan on the PECO's financial integrity, and specifically, the projected bond rating based on Table JBM-1.

Q. Have you been able to replicate and evaluate Mr. Mitchell's analysis?

A. Not in a manner that would be consistent with standard practices in financial analysis.

Q. Please explain.

A. I do not have sufficient information to completely evaluate Mr. Mitchell's analysis. There are four broad categories of assumptions that need to made and then tested for reasonableness.

1) The assumptions regarding the projected operating results of the Company in the partially deregulated environment envisioned by the Choice Plan;

2) The assumptions regarding the effect of the accounting entries, the Transition Bond financing and the use of proceeds on the financial statements of the Company;

3) The assumptions regarding the calculation of the S&P benchmark ratios in Table JBM-1; and

4) The assumptions regarding the application of the benchmark ratios in the final determination of a bond rating.

Mr. Mitchell has not supplied the necessary information regarding the assumptions he has made in each of these categories. Without this information, we cannot completely evaluate his assertions.

Q. Can you please provide some examples of how the assumptions in these categories will affect the conclusions?

A. I will provide two: For category 3 above, the ratio calculations require judgment of the analyst regarding the potential impact of the calculation inputs on the rating. For example, the calculation of the Debt to Total Capital ratio could be significantly influenced by the treatment of the approximately $2 billion write-off of regulatory assets that PECO has agreed to in the Partial Settlement, and that presumably would be required in the Choice Plan. It could be argued that S&P will largely ignore this write-off in its ratings analysis due to the fact that the write-off will be a non-cash charge to earnings and does not affect revenue since the regulatory assets being written off primarily are deferred taxes that are not currently being recovered in rates. This argument is further supported by the fact that S&P has not changed the current bond rating (BBB+) or the outlook (positive) since the public announcement of the $2 billion write-off. I have attached an example of the calculation of this ratio with and without the inclusion of the write-off in Exhibit I.

Q. What is your second example?

A. For category 4 above, S&P's bond rating methodology incorporates both quantitative and qualitative analysis. This is detailed in S&P's publication. "Rating Methodology for Global Power Companies" dated October, 1997 (attached as Exhibit II to this testimony) in which the author says, "The two components are inextricable." Therefore, to base a conclusion of a bond rating on simply the quantitative analysis can be misleading. Furthermore, to my knowledge, S&P abandoned the purely ratio-based quantitative approach to bond ratings in 1994, and has not since that time published any definitive ratios for bond rating purposes. Given the sweeping changes in the electric utility industry, and in particular electric utilities located in the Commonwealth of Pennsylvania that are preparing for transition to a partially deregulated environment, I do not believe it would be appropriate to base rating projections on the abandoned 1994 approach.

Q. Given the lack of sufficient information to evaluate Mr. Mitchell's assertions, have you attempted to analyze the effects of the Choice Plan on PECO's financial integrity?

A. Yes. I have performed the analysis and the ratio calculations, filling in the missing assumptions as required in a manner I believe to be reasonable.

Q. What is the result of your analysis?

A. I summarize in Table CPK-1, contained in Exhibit II, the same ratio results presented in Table JBM-1.

Q. What is your conclusion?

A. The conclusion is that the results of this analysis vary considerably from Mr. Mitchell's. These results show that while the Choice Plan has an impact on PECO, the results are not "catastrophic." In fact, the results show that PECO would retain its investment grade status and otherwise are consistent with a partial recovery of stranded costs by an electric utility and a movement to a competitive environment for the generation portion of its business.

Q. Please explain.

A. It would be reasonable to conclude that if a monopoly enterprise is subject to competition, its financial performance would decline unless it significantly changed its business profile. S&P's Barbara Eiserman wrote in her paper entitled "Deregulation Leads to Riskier Era for U.S. Electrics" dated October, 1997: "The monopolistic, tightly regulated utility industry quickly is being exposed to competition, especially in the generation and bulk power markets. The risk faced by the industry is that competition will inevitably lead to lower rates, which may translate into reduced cash flows, lower earnings protection parameters and more volatile profit."

Q. Does this conclude your testimony?

A. Yes, at this time although I may wish to amend or supplement my testimony if PECO provides, information that they have withheld, if that information would cause me to reconsider the assumptions I have used in the analysis.

Exhibit I

Effect of $2 billion write-off of Regulatory Assets on Total Debt to Capital Ratio

	Ratio of Total Debt to Total Capital (1999)	Implied Rating (1999)
Including $2 billion write-off	63.54%	BB-
Excluding $2 billion write-off	37.14%	AA

Total debt to capital ratio is defined as :

Notes payable, long term debt (including current maturities), capitalized lease obligations and all off-balance sheet debt

over

Notes payable, long term debt (including current maturities), capitalized lease obligations, all off-balance sheet debt, minority interest, preferred and preference stock and common equity.

EXHIBIT II

Rating Methodology For Global Power Companies

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Standard & Poor's criteria approach to rating power companies located around the world is flexible, since utilities have different ownership structures, varying government support, and diverse regulatory regimes. In addition, global power companies face distinct macroeconomic environments and unique operating environments, and there are disparate risks for generation, transmission, and distribution. *(For a separate discussion of Standard & Poor's criteria for evaluating energy marketing (or supply) companies, see Standard & Poor's March 12, 1997 CreditWeek.)*

Taking into consideration the disparity in credit risks caused by these factors, Standard & Poor's rating methodology for global power companies incorporates two basic components: business profile (qualitative analysis) and financial profile (quantitative analysis). The two components are inextricable. A utility with a strong business profile, for example, could have less financial protection than one with a weaker business profile and still achieve the same rating. Conversely, a utility with a weak business profile would require a more robust financial profile than one with a stronger business profile in order to get the same rating. This basic matrix is illustrated in table 1.

Business Profile

Standard & Poor's utilities business profile assessments to measure a power company's qualitative credit fundamentals. Business profiles are expressed numerically on a scale of 1 (strong) to 10 (weak). To determine a business profile, Standard & Poor's analyzes the key qualitative business or operating characteristics typical for any utility. The main criteria examined are:

- Regulation,
- Markets,
- Operations,
- Competitiveness, and
- Management.

Identifying Utility Types

The weighting or analytical emphasis that each business profile factor receives is strongly influenced by the type of utility. Standard & Poor's has identified four types of utilities (*see table 2*). The type is determined through analysis of the influence of government ownership (if any), the degree of financial stability derived from the structure of the industry, and the relative competitiveness of the system. There are both investor-owned and government-owned utilities found in all four types, and more than one type may exist within the same country.

Type I utilities ("supported") operate within systems where the utility receives overwhelming government and regulatory support. This support can be explicit, as cases where a government guarantees a utility's obligations, such as Canada. Or it can be in the form of strong and obvious implicit support, such as Greece, whereby the government facilitates the utility's access to external sources of capital or where the utility is a direct instrument of government policy. Type I utilities need not be completely owned by government, but government ownership is usually present. Before attributing support from government, Standard & Poor's reviews the track record of assistance, the procedures and timeliness of support mechanisms, the government's policy objectives for utility ownership, and financial policies. Standard & Poor's looks for evidence that the government would stand behind a debtor in time of financial need. Written and oral statements consistently made over time and significant supportive actions build credibility. In addition, Standard & Poor's considers incentives for the government to provide tangible support. Questions asked include: What would be lost if a payment were missed? Would the borrower be able to continue to operate if it defaulted on a debt? Is the name of the borrower closely tied to the government in the market's perception so that a default by the borrower would cause the government difficulties in the capital markets? What are the political realities?

Type II utilities ("sheltered") conduct business where the utility is sheltered from competition and financial variability by the government or regulator. Sheltered utilities are not necessarily owned by government. Japanese investor-owned utilities are an example. These vertically integrated utilities have historically been insulated from competition and protected by a very cooperative, coordinated rate-setting process. While generally highly leveraged, these utilities' financial results are quite stable. Another example is U.S. municipally owned utilities, which have traditionally been sheltered from competitive forces and have enjoyed significant rate-setting flexibility. While categorized as Type II utilities, Standard & Poor's analysis of municipal utilities is evolving as deregulation measures aimed at investor-owned utilities are pressuring municipal utilities to create

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competitive markets. Moreover, there is an increasing number of city councils or other ratemaking bodies that are reluctant to make either upward or downward rate adjustments. For example, it may become politically unpalatable to end the subsidization of residential rates by commercial and industrial customers even if rate hikes for residential customers are necessary to achieve cost of service rates that are more competitive for the commercial and industrial classes. Similarly, the ability to effect rate reductions necessitated by a more competitive environment may be hindered by a city's general fund's dependence upon transfers from the electric system.

Type III utilities ("exposed"), such as vertically integrated utilities in the U.S. or distribution companies in the U.K. or Victoria, Australia, are identified by evidence of some regulatory insulation from the forces of competition mixed in with exposure to business risk. Although Type III utilities have certain franchise monopoly characteristics, their financial success may hinge more on their ability to control costs and provide high quality service.

Finally, Type IV utilities ("commodity") are essentially unregulated as to revenue or return. Unregulated generators, such as in Argentina and Chile, owe their success or failure to their ability to operate well at low cost, and are also subject to the sometimes harsh realities of supply and demand.

For Type I utilities, the business profile analysis is not particularly significant since the ratings will reflect the credit quality of the entity providing explicit or strong implicit support. For Type II utilities, the business profile factors of regulation and markets are weighted more heavily than other criteria such as competitiveness or management because of the supportive regulatory umbrella. Conversely, for Type IV utilities, operations, competitiveness, and management are the most heavily weighted criteria. Business profile factor weightings for Type III utilities are more evenly distributed across all five criteria.

Another important point is that many utilities are gradually transitioning from Type II to Type III and perhaps to Type IV. As many countries' electricity sectors undergo structural reform and introduce competition, Standard & Poor's will weigh more heavily the business profile factors of operations, competitiveness, and management. As this occurs, the business profile assessments will fall and rating downgrades could result, absent offsetting improvements in financial profiles.

Typical Business Profiles

Owing to the relatively low business risk of large transmission systems and regulated distribution systems (the "wires" business), business profile assessments in this area should fall within the 1-4 range. The generation business is the most risky, reflecting the competitive nature of this business, and generators generally receive business profile assessments in the 7-10 range.

The business profiles of electric systems with elements of integration, either fully vertically integrated from generation through transmission to distribution, or partially integrated via, for instance, generation and transmission, reflect a weighted approach reflecting the relative importance of each business segment to the overall credit. To determine the relative importance, contributions of cash flow and operating income from each segment are compared, as is the amount of capital invested. In addition, credit is given for the benefits of integration. For example, a company owning integrated generation and distribution operations benefits from the natural hedge that integration creates for both businesses. Integrated utilities tend to have business profiles in the 3-7 range.

Because of the importance of the different analytical emphasis accorded to the five business profile factors as influenced by the type of utility, the overall business profile assessment can diverge from the general expectations stated above. For example, certain generators can have strong regulatory support, and would therefore be characterized as Type II utilities. Consequently, their business profile assessment, which could be 3-4, reflects heavy weighting on the supportive regulatory structure.

Financial Profile

Standard & Poor's measures financial strength by a utility's ability to generate consistent cash flow to service its debt, finance its operations, and fund its investments. Standard & Poor's focuses on a utility's financial results for the last five years and on pro forma, five-year projections.

To identify potential financial pressures, Standard & Poor's examines major revenue and expenditure items. Per unit revenues indicate the competitiveness and sustainability of rates, and are contrasted with those in other electric systems. The relative financial performance of electric utilities is quantified through the use of ratio analysis. Because of distortions caused by widely differing asset valuation practices and depreciation policies around the world, certain leverage and earnings ratios are not particularly useful when conducting comparative analyses. As a consequence, Standard & Poor's has concluded that the proper analytical focus should be on "real" stocks and flows, namely, levels of debt, cash, and cash flow. Financial parameters that are increasingly viewed as relevant and reliable are coverage of fixed financial charges by cash flow and cash flow from operations to total debt. Less comparable measures, such as shareholders' equity, leverage, and reported earnings, are also reviewed but deemphasized.

Tightly regulated transmission and distribution utilities generally face limited business risk and can operate with relatively low operating margins and high leverage. Conversely, generating companies operating in a very competitive environment face much higher business risk and attendant cash flow volatility, and therefore generally can sustain only modest levels of debt. Table 3 lists certain key financial ratios for rated transmission and distribution companies, generators, and vertically integrated utilities. The figures represent the medians of the ratios derived from Standard & Poor's financial projections used in the most recent review of companies rated both publicly and confidentially. Because of the different types of utilities (supported, sheltered, exposed, commodity) in each category (transmission and distribution, generators, and vertically integrated companies), the actual financial ratios for any particular entity may differ significantly from the medians. However, the ratios in the table are useful in demonstrating the typical differences in financial standards appropriate due to differences in business risk.

Below are the major financial profile factors analyzed for transmission companies, distributors, generators, and vertically integrated companies.

Profitability. Profit potential is a critical determinant of credit protection for investor-owned utilities. A company that generates higher profits has a greater ability to generate equity capital internally, attract capital externally, and withstand business adversity. Earnings power ultimately attests to the value of the firm's assets. Profit is less significant for non-U.S. government-owned utilities, but still relevant because higher operating margins provide additional bondholder protection. For U.S. municipal utilities, Standard & Poor's does not measure "profit" per se, but rather looks at financial health as measured by excess margins on a cash flow basis and their ability to provide coverage of revenue bonds and off balance sheet obligations, as measured through fixed-charge coverage.

The most important measures of profitability are:

- Return on average equity,
- Pretax return on average capital, and
- Operating margins.

Earnings are also viewed in relation to a company's burden of fixed charges. Otherwise-strong performance can be affected detrimentally by aggressive debt financing, and the opposite also is true. The primary fixed-charge coverage ratio is pretax interest coverage (pretax income plus interest divided by interest). If preferred stock is outstanding, coverage ratios are calculated both including and excluding preferred dividends, to reflect the company's discretion over paying the dividend when under stress.

To reflect more accurately the ongoing earnings power of the firm, reported profit figures are adjusted. These adjustments remove the effect of foreign-exchange gains and losses, writedowns, and other nonrecurring or extraordinary gains and losses. Unremitted equity earnings of a subsidiary are also excluded. Adjustments are also made for the impact of hyperinflation on nonmonetary assets—gains are subtracted while losses are added back.

Shareholder pressures and accounting standards in certain countries, such as the U.S., can result in companies seeking to maximize profits on a quarter-to-quarter or short-term basis. In other regions, allowed by local tax regulations, it is normal practice to take provisions against earnings in good times to provide a cushion against downturns, resulting in a long run "smoothing" of reported earnings. For example, given local accounting standards, it is common to see a Swiss or German company vaguely report "other income" or "other expenses," which are largely provisions or provision reversals, as large items in a profit and loss account. In meetings with management, Standard & Poor's evaluates provisioning and depreciation practices to see to what extent a company employs noncash charges to reduce or bolster earnings.

There are numerous analytical adjustments to the interest coverage. Interest that has been capitalized is added back. An interest component is computed for debt-equivalents such as operating leases, fixed contrac-

Table 1

Global Utility Rating Matrix

Indicative Ratings

Financial Profile			
Weak	A	BBB	BB
Average	AA	A	BBB
Strong	AAA	AA	A
	Strong	Average	Weak

Business Profile

tual obligations, and receivable sales. For U.S. utilities, allowance for funds used during construction is removed from income and interest expense.

Moreover, in many regions, notably Japan and Europe, local practice is to maintain a high level of debt while holding a large portfolio of cash and marketable securities. Many companies manage their finances on a net debt basis. When a company consistently demonstrates such excess liquidity, interest income may be offset against interest expense in looking at overall financial expenses. Each situation is evaluated on a case-by-case basis, subject to additional information regarding a company's liquidity position, normal working cash needs, nature of short-term borrowings, and funding philosophy.

Capital structure. The principal capital structure ratio analyzed is total debt to total debt plus equity. However, analyzing debt leverage goes beyond the balance sheet and covers quasi-debt items and elements of hidden financial leverage. Noncapitalized leases, debt guarantees, receivables financing, and purchased-power contracts are all considered debt equivalents and are reflected as debt in calculating capital structure ratios. Moreover, adjustments are made to reflect unfunded pension liabilities. In countries where local practice is to hold significant cash and marketable securities, Standard & Poor's will focus on net debt leverage, which nets out excess liquidity from borrowings.

Some firms use short-term debt as a permanent piece of their capital structure. Short-term debt also is considered part of permanent capital when it is used to bridge to permanent financing. Seasonal, self-liquidating debt is excluded from the permanent debt amount, but this situation is rare as in the case of natural gas utilities. Given the long life of almost all utility assets, short-term debt exposes these companies to interest-rate volatility, remarketing risk, bank line backup risk, and regulatory exposure that cannot be readily offset. The lower cost of shorter-term obligations (assuming a positively sloped yield curve) is a positive factor that partially mitigates the risk of interest-rate variability.

Also important is the term structure of a power company's debt. Amortizing debt is less risky than bullet maturities, and may be more appropriate for certain companies with limited asset lives. Generators, in particular, may have a tendency to rapidly depreciate assets, so they face greater risk of mismatching assets and liabilities when they fund their operations with long-term bullet maturity debt.

What is considered "debt" and "equity" for the purpose of ratio calculation is not always simple. In the case of preferred stock and other hybrid securities, the analysis is based on their features, not the accounting or nomenclature. Pension and retiree health obligations are similar to debt in many respects.

Knowing the true values to assign to a company's assets is important to capital structure analysis. Consequently, assets are examined to identify undervalued or overvalued items. Asset valuation practices differ from country to country, resulting in differences in both a company's reported equity base and its depreciation expense. There is no easy way to compare companies that revalue their assets with those that do not. Rather, Standard & Poor's recognizes that, for all companies, reported asset values often differ from market values. In discussions with management, Standard & Poor's analysts endeavor to gain an appreciation of the realizable values of a company's assets under reasonably conservative assumptions.

Cash flow. Cash flow analysis is critical to all credit rating decisions. Interest or principal obligations cannot be serviced out of earnings, which is just an accounting concept; payment has to be made with cash. Many transactions and accounting entries can affect earnings but not cash, and vice versa. Analysis of cash flow patterns can reveal a level of debt-servicing capability that is either stronger or weaker than might be apparent from earnings. Since both common and preferred dividend payments are important to maintain capital market access, Standard & Poor's looks at cash flow measures both before and *after dividends* are paid. Working capital analysis is typically not a major factor in utility credit analysis given the relatively minor impact on cash flow from period to period. However, such analysis can be crucial for certain utilities operating in developing economies where late payment or nonpayment of bills can drive up receivables. Cash flow is also measured against fixed contractual obligations, capital expenditures, debt maturities, and shareholder dividends. Some of the specific ratios considered are:

- Funds from operations/average total debt (adjusted for excess liquidity and off-balance-sheet liabilities).
- (Funds from operations + interest)/interest.
- (Funds from operations - dividends)/capital expenditures.
- Capital expenditures/average total capital (debt + equity).

Because of the capital-intensive nature of the power industry and the lengthy periods sometimes necessary to construct facilities—particularly generating plants—utilities require extensive and flexible capital planning systems. The ability to limit the use of debt also depends on a utility's skill in managing construction projects and completing any new facilities on schedule and within cost estimates. Accordingly, Standard & Poor's reviews capital priorities for the next five years and beyond under varying assumptions.

Table 2

Utility Types

	Type I Supported	Type II Sheltered	Type III Exposed	Type IV Commodity
Example	France, Canada	Japan, [illegible]	U.S., U.K.	[illegible]
Primary Credit Determinants	Owner Or Guarantor	Sustained Protection Rate Flexibility	Cost Control Service Quality	Performance & Cost
Debt Servicing Capacity	Not Limited By Stand-Alone Risks	Usually Highly Leveraged	Moderate	Limited

Financial flexibility. Financial flexibility incorporates a utility's financing needs, plans, and alternatives, as well as its flexibility to accomplish its financing programs under stress without damaging creditworthiness. External funding capability complements internal cash flow. Especially since utilities are so capital intensive, a firm's ability to tap capital markets on an ongoing basis must be considered. Relationships with banks and the availability of bank lines are also reviewed. A utility's debt capacity reflects all the earlier elements: profitability, capital structure, and cash flow. Market access at reasonable rates is restricted if a reasonable capital structure is not maintained and the company's operational and financial prospects dim.

Standard & Poor's also reviews indenture and bank loan covenants. Certain restrictions such as a limit on the ability to issue additional debt provide some comfort as do provisions such as debt service coverage tests that restrict the distribution of dividends unless there is adequate cash flow to provide for projected debt service (interest and principal). Other covenants viewed favorably are those that may reduce credit default risk, such as a requirement for a funded debt-service reserve. Alternatively, very tight covenants can raise default risk by limiting a power company's financial flexibility to raise cash at times of crisis.

For investor-owned utilities, Standard & Poor's assesses a company's capacity and willingness to issue common equity. This is affected by various factors, including stock price, dividend policy, and any regulatory restrictions regarding the composition of the capital structure. For government-owned utilities, analysis focuses on the government's willingness and ability to inject equity as needed or to forgo dividends. An additional measure of financial flexibility important in the analysis of U.S. municipal utilities is ratemaking flexibility and the ability to raise rates taking into account both political and competitive considerations.

Transmission And Distribution Qualitative Analysis

Reflecting relative low business risk owing to regulation, electric transmission and distribution companies can be generally expected to have business profile assessments of 1-4. However, few companies will receive the top score and some may fall below a 4.

When evaluating electric transmission and distribution companies, Standard & Poor's is most concerned about the predictability and sustainability of financial performance. In the near and intermediate terms, certain qualitative factors are expected to play a larger role in determining financial performance. For typical transmission and distribution companies, business profile factors of regulation, markets, and management are more important than operations and competitiveness, although the relative emphasis on the factors may differ depending on the type of system. Regardless of type, the regulatory environment will have great impact. Variations in policies and practices among local and national regulatory bodies will be key considerations. The markets and customer composition are also important factors, with weak economic performance and a large industrial sector being less favorable. Importantly, Standard & Poor's will evaluate management, especially its leadership qualities and its response to industry changes.

Regulation. Regulation defines the environment in which a utility operates, and has great influence on the company's financial performance. A utility with a marginal financial profile can, at the same time, be considered highly creditworthy due to a supportive regulatory environment. Conversely, unpredictable or antagonistic regulatory action can undermine the financial position of utilities that are very strong from an operational standpoint. To be viewed positively, regulatory treatment should be timely and allow consistent performance from period to period, given the importance of financial stability as a rating consideration. Also important is the transparency of regulatory policies and the length of time that the regulatory framework has been in place. Clearly, there is concern that the mechanics of a recently privatized system could be reviewed for fine tuning. Because of this, Standard & Poor's also examines the relative ease with which regulation can be changed. That is, a transparent system that requires legislative action to modify is viewed more favorably than one subject more to the whim of ministerial discretion, as in some Asian countries. Also key to Standard & Poor's analysis is the selection process and membership of a regulatory body, the regulatory framework, and regulatory policies and practices.

Standard & Poor's evaluation of regulation also encompasses the administrative, judicial, and legislative processes involved in local or national regulation. These can affect rate-setting activities and other aspects of the business, such as competitive entry, environmental and safety rules, facility siting, and securities sales. In addition, the terms of a utility's license or franchise often impose obligations to serve any customer and provide a reasonable standard of service, and a variety of other stipulations. Standard & Poor's ratings factor in the impact of such constraints and obligations on a utility's operations and financial performance.

Transmission and distribution companies are expected to remain tightly regulated monopolies, with rates set on a cost-plus basis in many circumstances. Under a cost-plus regime, rates are set to recover costs and, for investor-owned utilities, a return on shareholder investment. Under cost-based rates, Standard & Poor's analysis focuses on the predictability of costs and revenues. While a utility may be largely protected from business risk under cost-based rates, the responsiveness of the rate-setting process to changes in a utility's cost structure or to discrepancies between allowed and actual revenues influences the business pressures on the company.

One drawback to cost-based ratemaking is the lack of strong incentive for utilities to control costs. Since rates and earnings are closely linked to the amount of invested capital and the cost of capital, utilities may be rewarded more for justifying costs than for containing them. Consequently, Standard & Poor's believes that performance-based ratemaking will become an increasingly popular form of ratemaking, particularly for the distribution business. Because financial results can vary depending on a company's ability to meet performance challenges, performance-based systems are inherently somewhat more risky than cost-based systems. Flexible plans incorporating performance-based rewards or penalties could include market-based rates, price caps, revenue caps, index-based prices or other yardstick measures, and rates premised on the value of customer service. As with other forms of regulation, the key for credit quality is the extent to which a prudently managed utility can manage the risks contained in a performance-based system.

Markets. Many distribution companies are common carriers. That is, they carry electricity being purchased by customers from independent suppliers, either generating companies or marketers. Other distributors participate in the energy marketing (supply) business by buying, brokering, or generating electricity through an affiliate, and selling the power to a customer. Risks in the marketing business are discussed fully in Standard & Poor's criteria on energy marketers (see *March 12, 1997 CreditWeek*), and include the significant challenge of matching fuel and power supply with demand. Whether or not a utility is involved in the sale or brokering of electricity or merely distributes the commodity, prospects for the stable growth of revenues and cash flow are ultimately related to the strength of the local economy. Customer growth is important for distributors. And, even for utilities involved only in distribution and not in energy marketing, the outlook for electricity consumption is important because the typical distributor recovers some portion of its distribution costs through a volumetric, per kwh, charge in addition to any fixed monthly or quarterly customer charge that may be in place. Accordingly, assessing a distributor's markets begins with the economic and demographic evaluation of the area in which distribution services are provided. Strength of long-term demand is examined from a macroeconomic perspective, which enables Standard & Poor's to measure trends in investment, income, and employment as indicators of economic change within the service area. The sustainability of increasing demand is also analyzed. Many emerging economies go through periods of very rapid growth followed by severe contractions. This volatility can contribute to significant and unhealthy swings in a utility's revenues.

Standard & Poor's also tries to discern any secular consumption trends and, more importantly, the reasons behind them. Specific items addressed include the size and growth rate of the market, strength of the franchise, historical and projected growth, income levels and trends in population, employment, and per capita income. Other relevant factors include proximity to attractive markets, the quality of public infrastructure, and, particularly in developing countries, the affordability of electricity and customers' ability and willingness to pay their bills.

A distributor with a healthy economy and customer base, as illustrated by diverse employment opportunities, average or above-average wealth and income statistics, and low unemployment, is likely to exhibit greater revenue stability.

For electric distribution utilities, the total number of customers, revenues, and margins are closely scrutinized to assess the depth and diversity of the utility's customer mix. For example, heavy industrial concentration is viewed cautiously since the utility may have significant exposure to cyclical volatility. On the other hand, a large residential component produces a stable and more predictable revenue stream. The utility's largest customers are identified to determine their stability and relevance to the bottom line since loss of one large customer could have an adverse effect on the utility's financial position. Credit concerns arise where any one customer plays a dominant role in the overall economic base of the service area. Moreover, large customers may turn to self generation and leave the distribution system altogether, potentially leading to reduced financial protection for the utility.

Similarly, for electric transmission companies, the total number of customers—largely distributors—is evaluated to assess the depth and diversity of the transmission company's customer mix. The transmission company's largest distribution customers are identified to determine their stability and contribution to revenues. Also important to a transmission company is the strength and diversity of the end-use markets of its distribution customers. Accordingly, these end-use markets are evaluated from a macroeconomic perspective in an analysis identical to that described above for a distribution utility.

Another key consideration for a transmission company is the location of its transmission facilities. A transmission company that is strategically located and connects surplus low-cost generation to growth markets is viewed favorably. On the other hand, a transmission company that connects relatively high-cost generation to a mature or declining area is more at risk. Usage and electric growth levels in the end-use markets will be compared with transmission capacity utilization. Underutilized transmission lines that serve growth markets have positive implications while fully utilized lines that serve mature markets have less favorable implications.

Operations. Transmission and distribution operations are typically low risk relative to generation operations. To evaluate the operations for a transmission or distribution company, Standard & Poor's focuses on the nature of operations from the perspective of cost, reliability, and quality of service. With gradually increasing competition in all segments of the electric power business, utility managers are under increasing pressure to optimize their use of resources as compared to the performance of other utilities and administrative benchmarks. If utilities are not cost effective in meeting service standards, stronger regulatory or competitive pressures are likely. Consequently, emphasis is placed on those areas that require management attention in terms of time or money and which, if unresolved, may lead to political, regulatory, or competitive problems.

In addition, the status of utility plant investment is reviewed, with regard to reliability and utilization, as well as for compliance with existing and contemplated environmental and other regulatory standards. The record of outages, system losses, and capacity utilization are examined. Important considerations include the projected capital improvements necessary to provide high quality and reliable service. Additionally, unique operating challenges could be present that impact costs to a degree where credit quality is impacted. Examples of operating challenges include harsh climates, severe storms, and difficult terrain. The general condition of the assets and how well such assets are maintained is also an important evaluation consideration.

Utilities in emerging countries face additional operating challenges, such as the fundamentals of metering and billing. Certain utilities may struggle with accurate and timely metering and billing because they do not have the appropriate technology, computer infrastructure, or control systems in place. Moreover, getting the bills correct and out in a timely fashion is only part of the issue. Collections can be a nagging problem where political or economic realities prevent service cutoff for nonpayment. In addition, outright theft of electricity service can be a big problem.

Operational characteristics that will support an above-average evaluation for transmission and distribution companies are assets that are in good physical condition and are being well maintained. Additionally, capital expenditures for necessary system improvements must be at manageable levels, yet sufficient to provide for constant renewal and refurbishment of the system. Operating performance, reliability statistics, and efficiency measures are expected to meet industry and regional averages. Having interconnections that provide access to low-cost and diverse power supply sources is viewed favorably, as is limited environmental exposure.

Competitiveness. Competitive pressures in the transmission and distribution businesses are generally quite limited by virtue of franchise monopolies. While introducing competition into the generation business and creating national or international power exchange systems is increasingly popular worldwide, there is near unanimous agreement that transmission and distribution systems should largely remain monopolies. This limited competition is a major factor in the strong business profile assessment for a typical transmission or distribution utility. Franchise monopolies are significant barriers to entry by competitors. Where there are nonexclusive franchises, other barriers to competitors exist such as the siting difficulties caused by public concerns about duplicate utility poles and wires and environmental issues.

Still, transmission and distribution utilities do face competitive pressures in the form of substitute energy sources and customer self-generation and bypass. Electricity competes with other fuels such as natural gas for certain segments of the market like space heating, water

Table 3

Financial Ratio Medians

	Funds from operations interest coverage (x)		Funds from operations to total debt (%)		Total debt to total capital (%)	
	A	BBB	A	BBB	A	BBB
Transmission and distribution cos.	3.25	2.0	15	10	55	65
Generation cos.	6.75	4.25	42	27	35	45
Vertically integrated cos.	4.25	2.75	27	18	45	55

Note: Financial ratio medians are the average of ratios derived from Standard & Poor's financial projections for companies rated both publicly and confidentially.

heating, and cooking. Thus, high electricity prices, which may be caused by inefficient transmission or distribution service, are cause for concern if customers have alternate energy sources. Self-generation has for many years been a significant concern for larger commercial and industrial customers who have been able to take advantage of certain cogeneration technologies to significantly reduce their reliance on, and, in some cases, disconnect from transmission and distribution systems. In the future, technology could pose a greater threat for transmission and distribution companies. Bypass risk is likely to grow as distributed generation, microgeneration, and self-generation gradually become more economically attractive for smaller and smaller customers. These technological evolutions are likely to be gradual, so the currently configured transmission and distribution networks should continue to play a viable role for the foreseeable future.

Management. Owing to the safety net provided by regulation, evaluation of management is less critical for tightly regulated transmission and distribution companies than for generators or energy marketers operating in a very competitive environment. Still, assessing management remains significant since management's abilities and decisions affect all areas of a company's operations. Moreover, while regulators can heavily influence results, it is ultimately the quality of management that drives the success of a company. Important considerations include strengths and weakness of key members of management, depth and stability of top management, and recent and prospective management changes. Management strategies are also a material determinant in differentiating utilities and in establishing where companies are on the business profile spectrum. Standard & Poor's will assess financial policies, corporate goals, strategies, tactics, plans for both regulated and diversified businesses as well as analyze how effectively they are implemented.

The assessment of management is accomplished through meetings, conversations, and reviews of company plans. It is based on such factors as tenure, industry experience, a grasp of industry issues, and knowledge of customers and their needs. Management's ability and willingness to develop workable strategies to address its system's needs, to execute reasonable and effective long-term plans, and to be proactive in leading its company into the future are assessed. Management quality is also indicated by thoughtful balancing of public and private priorities, a record of credibility, and effective communication with the public, regulatory bodies, and the financial community.

Key financial policy considerations include management's ability to achieve cost-effective operations and, of utmost importance, management's relative commitment to credit quality. This can be assessed by evaluating accounting and financing practices, capitalization and common dividend objectives, and the company's philosophy regarding growth and risk taking.

Generation Qualitative Analysis

Generation is the riskiest segment of the electric utility industry due to complex operating risks and the increasingly competitive nature of the business. Risk may be further heightened by absence of the regulatory umbrella. Because of the higher risks, generators can generally be expected to have business profile assessments in the 7-10 range.

Generation is a commodity business. Electrons are physically indistinguishable from each other and therefore compete primarily on price. However, electricity has some characteristics that make it less like other commodities. Generally sized electricity cannot be stored. Electricity must be used instantaneously as it is produced, and its deliverability can be hampered by transmission constraints. Thus, reliability, deliverability, and some value-added services may distinguish one generating company from another, and perhaps elicit a premium in the marketplace. Value-added services, such as customization and load following, can tailor the shape and firmness (or lack of firmness, for example, interruptible service) of electricity delivered to the customer.

Generation also faces unique operating risks. Because electricity cannot be stored, generating plants cannot afford to have unplanned outages since they are only paid when they run. Furthermore, contractual commitments could force a downed generator into the market to seek replacement power, which could be costly or unavailable if the outage occurs during a peak usage period. Thus, while low production costs will factor heavily into the business profile and success of a generation company, other criteria will be considered when assessing creditworthiness.

Regulation. Some generators may remain highly regulated and achieve superior business profiles than their deregulated brethren due to a more stable revenue stream. For example, some centralized supply systems derive credit strength and stability from their highly cohesive nature, stemming in part from direct or indirect cross ownership between generators and distributors, with government entities as ultimate owners. However, most global generators operate in deregulated environments where rates are determined by the market. Even so, regulatory considerations are still pertinent, and vary among global electric utility systems. Regulation typically establishes the basic framework of the electricity market. The market may be primarily a wholesale rather than retail market. The system may mandate that all players bid into a pool or exchange, whereby generators are economically dispatched and the last unit to run sets the market clearing price for all players. A power pool may have rules regarding price bids, dispatch, financial standing of market players, or other factors. Generators may have an obligation to build, or may be limited in building or investing. Furthermore, political stability, legal environment, and contract law influence the generator's operating environment and will be examined under this heading. Clearly, the more commodity-like the environment, the less influential regulation is in the traditional sense. Still, regulation is likely to constrain upside profit potential, while providing little protection on the downside. The lack of economic regulatory protection is considered a negative in terms of credit quality.

Standard & Poor's will seek to determine if the regulatory environment is supportive of credit quality, and if it creates a level playing field. Standard & Poor's will also note the length of time that the regulatory framework has been in place given the potential for a relatively new system to be modified. The U.K. is notorious for having touted its competitive power pool, only to have the regulator step in subsequently and tamper with the pool's market clearing price.

In the U.S., the Federal Energy Regulatory Commission (FERC) has established regulations for nondiscriminatory interstate transmission pricing. Therefore, a transaction between an economic generation company and an end user will not be undermined by inflated wheeling fees. Also in the U.S., market power issues are still being sorted out. FERC may prohibit mergers where bulking up on generation results in a utility being able to exert market power over its competitors. As a result, regulators may limit size and restrict certain contractual arrangements. Regulators may also set prudence requirements (financial creditworthiness) for entrants to the market. Questions asked include: How will prices be established? Will there be a power pool or bilateral contracts only? Bilateral contracts are where buyers and sellers negotiate the terms, including cost, of the transaction. Often times a pool transaction can be hedged to financially simulate a bilateral contract through "contracts for differences." The type of regulatory/legal environment can impact credit quality. For example, in some international systems, short-term marginal cost is determined by a pool, but the tariff also includes a charge to cover the long-run marginal cost of the next capital addition. This pricing system offers some greater assurance to the recovery of fixed costs and therefore lowers risk to the generator.

Markets. Markets for generators are vastly different than for those utilities with defined, franchised service territories. A generator's market expands as far as it can transport its electrons within physical (transmission) and economic (transportation fees) constraints. It typically has no obligation to serve and may be free to hand pick its customers and negotiate its own contracts. While it is anticipated that in the U.S. all customers will be able to choose their supplier (retail wheeling), some countries permit retail access to only the very largest industrial entities. Markets in these countries are primarily wholesale. It is anticipated in the U.S. that residential and small customers will initially tend to stick with their local utility distribution company for supply. However, in pilot programs to date, many customers have exercised their option to choose and left their traditional supplier.

Thus, Standard & Poor's must first determine if the market consists of intermediary or end users, and what its geographical boundaries are. If the generator sells directly to end users, what is the customer mix in terms of residential, commercial, and industrial segments? A diverse customer base within a stable, growing economy would be positive from a credit risk perspective. An economy that is driven by only a handful of products or industries would introduce concentration risk. As electricity markets become more liquid, prices will become more transparent, and energy marketers and financial derivatives will begin to develop. It remains to be seen if marketers can aggregate small customer loads effectively to make them economically desirable.

Further market evaluation would encompass a macroeconomic assessment of electricity supply and demand. In terms of demand, what are the economic prospects, inflationary pressures, and electricity consumption patterns within the country or region where the generating company operates? In developing countries, growth prospects would be higher than in a mature economy such as the U.S. However, strong growth could be subject to extreme volatility due to recessionary or inflationary pressures. If one or a few industries dominate the region, growth prospects could be tied to the fate of that industry.

In terms of supply, who are the other players in the market, and what are the barriers to entry? How much capacity is there relative to demand? Surplus capacity could reduce sales and/or put pressure on margins. A deficit capacity situation would inflate margins over the short term, but encourage other entrants to the market. This would not necessarily be bad, depending on the incremental cost of supply (lower would be a threat to existing generators, higher would enhance the generating company's competitive position) and if the incremental load maintained resource balance, or created a surplus situation. In addition, if transmission constraints are relieved, either through construction or technology, the supply/demand balance will change. Generators may have access to a broader market, but other suppliers will have access to their customers as well. Also, it is necessary to examine the availability and reliability of power supply.

Operations. An analysis of operations overlaps somewhat with examination of markets and competitiveness. The market within which a generating company is a player (local, regional, national, or international) has implications for how it operates. Transmission interconnections and constraints, as well as the location of a plant relative to customers, provides operating limitations and opportunities. Having a strategic location might necessitate that the plant be run constantly to provide system voltage support. And the efficiency of a generator's operations is directly tied to its competitive position.

Managing production inputs effectively is crucial to competitiveness. Suppliers of fuel, labor, and supplies are sources of economic risk to a generator's ability to produce low-cost power. The generator can be at risk if supplies are disrupted or prices are raised. Standard & Poor's will examine the extent to which a generator diversifies risk as opposed to relying on a few suppliers. What has been the historic growth of operating and maintenance expenditures, and how will they be controlled (or reduced) prospectively? Efficient use of technology will enable a generation company to manage its costs more efficiently.

Fuel typically represents about half the cost per kwh. Generators will need to become sophisticated in physical and financial hedging of fuel commodity risk. To the extent that a generation company has contracted to sell its output at a fixed price, it will be necessary to match the length of fuel contracts and hedges to ensure that margins are locked in. Some contracts permit a pass through of fuel price changes, which might mitigate the necessity of hedging.

Contracts to sell a portion of production output at negotiated prices can protect generators from price and volume risk. Electricity markets are quite volatile, with prices fluctuating as much as 300% daily in U.S. markets. Contracts for differences are a common way to have price settlement around an erratic market clearing price. The mechanics very simplistically are as follows: A buyer and seller agree on a price for power, for example, 4 cents per kwh. If the market clears at 5 cents per kwh, the seller sells into the pool and receives 5 cents. But the buyer must buy from the pool for 5 cents, which is 1 cent higher than his arrangement. To reconcile their 4 cent agreement, the seller pays the buyer 1 cent. Clearly, strategies will vary depending on how contracts are structured, and how much of production is sold under contract versus on the spot market. These strategies are indicative of management's risk appetite.

In addition to these considerations, Standard & Poor's will examine key statistical efficiency measures, such as capacity factor, availability factor, and heat rate of individual plants as compared to industry peers. Clearly, it is preferable to achieve parameters which exceed industry standards. Capacity factor measures the degree to which a plant is actually run over a certain period of time, while availability indicates what percent of the time it would have been available to operate. Heat rates measure a power plant's fuel efficiency. A low heat rate would indicate less fuel input per unit of output. The average age of the facilities in the portfolio is also important; maintenance expense tends to increase as plants age.

The technologies utilized by a generating company also impact Standard & Poor's assessment of risk. Clearly a new technology is riskier than proven design. Moreover, nuclear facilities present greater-than-average risk in light of complex technology, additional operating challenges and concerns, and decommissioning costs. Also examined is asset concentration risk, which is present where any one unit represents a disproportionate share of capital or output in the portfolio. Construction risk will be considered in terms of the level of capital expenditures, ability to complete projects on time and on budget, and successful start up. Turnkey projects could transfer these construction risks from the generator to the engineering firm. Lastly, environmental risks will be evaluated. Imposition of a carbon tax could have significant financial consequences for coal-fired generation.

Diversity of the generation portfolio reduces the risk of dependence on any one unit, or any one fuel. Different fuel sources and the operating characteristics of the facilities (for example, base load versus peaking) further diversify the portfolio, and dual fuel capabilities at individual plants can enhance flexibility. Clearly, a single unit generator is inherently riskier than a portfolio of assets. The evolution of the merchant power plant introduces a certain speculative element to the generation scene. Unlike their independent power producer predecessors, merchant plants are generally constructed without benefit of contractual commitments for the sale of their output. Thus, success will depend on their ability to produce power consistently below the market's forward price curve for electricity. Since a merchant plant has less margin for error, it must have superior technological, marketing, finance, management, and operating skills and be able to manage the risk of uncertain pricing and markets.

For generators selling into spot or short-term contractual markets, reliability will be important. Generators who cannot deliver consistently on their commitments will lose credibility, and likely customers, in the marketplace. This risk increases to the extent that the generating company is involved in marketing transactions beyond the sale of its own generation. Standard & Poor's believes that the more successful and higher-rated energy marketers will have leading national or regional market positions and have substantial physical and financial liquidity. Size is important because there are informational economies of scale in marketing, and smaller trading firms can be outpowered. Since Standard & Poor's has a bias toward hard assets, generators have an advantage over energy traders with no owned assets. Standard & Poor's will evaluate the credit impact of these activities on the consolidated credit profile of the business.

Competitiveness. The first step of an analysis of competitiveness would be to compare the generation company's cost of production to those of other market players. Unless there are overriding circumstances (for example, a must-run facility or an environmentally benign power source) a low cost structure is crucial to a generator's success in a competitive environment. As important as the total cost is the variable cost of production, particularly in markets with overcapacity. Since generators resemble other commodity industries, with their high capital costs, long-lived assets, and low labor content, they may pursue predatory price strategies in an attempt to gain market share. Thus, a generator's ability to beat its competitors' costs at the margin gives it a significant edge. In addition to analyzing marginal cost, Standard & Poor's compares a generator's average costs against contract prices, spot prices, pool prices, other producers, and new entrant costs. Comparing costs, however, is not as straightforward as it might appear. The output of a plant greatly affects the cost of a unit of output, as fixed costs are spread over kwhs generated. This can make cost comparisons between base, intermediate, and peaking facilities difficult. The "peakier" the load curve, the higher the price of electricity at peak hours. As a result, a competitive strategy for a load following generator might be to primarily operate during these more lucrative hours. First Hydro generating plant in the U.K., a pumped storage hydro facility, has found this strategy to be quite lucrative. It pumps water into a reservoir during off peak hours, and uses it to generate electricity during high-price peak hours.

Price comparisons will also become difficult as generating companies begin to customize packages for buyers. A package may include a combination of firm and interruptible power, with the interruptible portion being sold many times over. This type of customizing, or load following, is a value-added service which may command a price premium. Being competitive also involves strategies in how to structure contracts, what percent of output to contract out versus sell into a spot market or pool, and what limits to put on percent of output sold to any one customer. Staying competitive will involve both physical and financial hedging strategies, particularly for fuel.

Competition will come from many sources. Suppliers of new and cheaper power generation may represent the greater threat to existing generating companies. New supplies may come from greenfield projects, renovation of existing facilities, or the opening of transmission pathways. Increasing power supply will put downward pressure on rates. Substitute products, particularly natural gas, also pose a competitive threat. This will become more complex as electric and gas markets "converge." Gas may become a greater threat to electricity usage over time due to the interchangeability of energy sources, as well as technological developments such as the gas-fired air conditioner. And further down the road, remote site applications such as the fuel cell may replace generation-produced power. Threats of these alternatives will depend on pricing, switching costs, availability, political and regulatory barriers, and public policy initiatives.

Management. While management decisions affect many areas of generating company operations, an overall assessment of management is incorporated into the credit evaluation. Because of the higher business risk in generation compared to transmission or distribution, management is a critical factor in the credit evaluation of generators and Standard & Poor's holds a generator's management to a higher standard. In evaluating management, Standard & Poor's attempts to define management's risk appetite, and its overall goals and objectives. What strategies have been utilized to implement these goals, and how effective have they been? This dialogue may also provide insight into the degree of management's credibility to articulate, implement, and achieve its goals. Management's financial and diversification policies, including the construction of additional plants and/or diversification into international markets, will be examined in assessing its risk appetite. The degree to which generators engage in energy marketing activities beyond the sale of their own output will be factored into the credit evaluation. Critically important to these activities are the generator's risk management guidelines that provide for the establishment and strict adherence to risk policies, objectives, and limits.

Exhibit III

Table CPK-1

Effects of Enron Plan Proposal on Key Financial Criteria

	1999	2000	2001	2002	2003	2004	2005
Funds from Operations/ Average Total Debt	0.26	0.22	0.24	0.23	0.24	0.24	0.24
Funds from Operations/ Interest Coverage	4.78	4.15	4.47	4.31	4.35	4.30	4.40
Total Debt/ Total Capital	0.37	0.40	0.42	0.44	0.45	0.47	0.48
Pre-tax Interest Coverage	2.60	2.81	3.44	3.23	3.32	3.30	3.45
Net Cash Flow/ Capital Expenditures	0.59	0.46	0.70	0.71	0.78	0.74	0.83
Projected Bond Rating	BBB	BBB-	BBB	BBB	BBB	BBB	BBB