

BEFORE THE  
STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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In the Matter of

National Grid PLC and KeySpan Corporation - Proposed Merger  
Case 06-M-0878

The Brooklyn Union Gas Company d/b/a KeySpan Energy Delivery New  
York - Gas Rates  
Case 06-G-1185

KeySpan Gas East Corporation d/b/a KeySpan Energy Delivery Long  
Island - Gas Rates  
Case 06-G-1186  
January 2007

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Exhibit\_\_ (MPP-1)  
Merger Policy Panel

**STANDARD  
& POOR'S**

**RatingsDirect**

**RESEARCH**

**Research Update:**

**Ratings On National Grid Remain On Watch Neg Re:  
Pending Acquisition**

**Publication date:** 22-Nov-2006  
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**Rationale**

On Nov. 22, 2006, Standard & Poor's Ratings Services said that the ratings on National Grid PLC (NG), including the 'A' corporate credit rating, will remain on CreditWatch with negative implications where they were placed on Feb. 24, 2006, following the company's confirmation that it has agreed to buy U.S. gas distributor KeySpan Corp. (A/Watch Neg/A-1) for \$7.3 billion (£4.2 billion) plus assumed debt of \$4.5 billion (£2.6 billion). The U.S. expansion is part of NG's strategy to diversify revenue and earnings outside the U.K. We anticipate lowering all the ratings on NG by one notch and removing the ratings from CreditWatch once the acquisition of KeySpan becomes unconditional. This is expected in mid-2007, following approval from the New York and New Hampshire state public utility regulatory commissions.

The ratings on electricity and gas provider National Grid USA reflect the consolidated credit profile of its parent, U.K.-based NG, and its U.S.-based regulated operating units, Massachusetts Electric Co., Narragansett Electric Co., New England Power Co., and Niagara Mohawk Power Corp.

The ratings on NG and its subsidiaries continue to reflect the strong, predictable cash flows generated by the group's low operating-risk electricity and gas network operations in the U.K. The group's U.S. operations benefit from the generally supportive regulatory regime. Furthermore, the group has a proven track record in managing large acquisitions and delivering identified cost savings, as well as successfully managing geographically remote subsidiaries. The ratings are also supported by the group's moderate financial policy. These strengths are offset by NG's moderately aggressive financial profile, potential regulatory revenue cuts for the U.K. operations from 2007, and the challenges of integrating KeySpan into the group.

National Grid USA serves about 3.3 million electric customers in New York, Massachusetts, Rhode Island, and New Hampshire, as well as 565,000 gas customers in New York. As part of these states' electric industry restructuring laws, the operating companies sold their nuclear and fossil fuel generation assets and transferred their purchased-power entitlements to third parties, reducing operating risk and introducing a measure of stability to revenues and capital spending.

National Grid USA's excellent business position is characterized by a focus on low-risk electric and natural gas transmission and distribution operations; supportive and long-term regulatory agreements reached with the regulators in Massachusetts, Rhode Island, and New York; a measure of regulatory and operating diversification; and robust economic conditions, which provide for modest customer and load growth on a total basis. The company's consolidated business risk profile is a '2' (excellent). (Utility business risk profiles are categorized from '1' (excellent) to '10' (vulnerable)).

The Massachusetts, Rhode Island, and New York regulatory environments generally support credit quality, as the restructuring framework has allowed for full recovery of stranded costs and the elimination of exposure to commodity prices, while allowing a reasonable ROE. In Massachusetts and Rhode Island, restructuring laws allow utilities to recover through surcharge mechanisms all purchased-power costs that they incur as providers of last

resort, although with some lag. In New York, utilities pass power costs through to retail ratepayers, removing any commodity exposure.

Excluding the acquisition of KeySpan, NG subsidiaries National Grid Electricity Transmission PLC (A/Watch Neg/A-1) and National Grid Gas PLC (A/Watch Neg/A-1), together provide about 60% of group operating cash flow, with the U.S. operations contributing about 30%. The strongly cash-generative nature of the group's business is offset by a moderately aggressive financial profile. KeySpan is expected to contribute about 20% of NG operating profits. The KeySpan acquisition, and ongoing large capital-expenditure programs, will likely weaken NG's credit ratios, and the group will need to raise additional debt to fund network improvements in the U.K. Net debt will likely increase to about £20 billion by 2009, including the KeySpan acquisition.

NG's adjusted funds from operations (FFO) interest coverage of 4x for fiscal 2006 is consistent with expectations. Adjusted FFO to total debt improved to about 17% from the debt reduction. Following the KeySpan acquisition, Standard & Poor's expects consolidated adjusted FFO interest coverage to be above 3.5x and adjusted FFO to debt of more than 15%, despite the acquisition related debt. National Grid USA credit measures exceeded that of the parent, with fiscal 2006 adjusted FFO interest coverage and FFO to total debt at 6x and 28%, respectively.

### Short-term credit factors

National Grid USA's short-term rating is 'A-1' supported by expectations of continued strong cash flow generation over the near term, benefits from the collection of stranded costs, lack of power cost deferrals in New York, and material debt reduction. Furthermore, Massachusetts Electric's standard-offer obligation was replaced by a basic service arrangement beginning in March 2005, significantly reducing the likelihood of increasing power cost deferrals in Massachusetts, which must be funded internally. The short-term rating is also on CreditWatch with negative implications, and is expected to be lowered to 'A-2' and removed from CreditWatch on completion of the KeySpan acquisition.

NG has adequate liquidity in the form of committed backup lines, which enable it to repay any commercial paper that might be issued and fund maturing bond issues over the next 12 months. The acquisition of KeySpan, however, creates a large funding requirement, in addition to the group's considerable capital-expenditure needs over the short to medium term. To cover the costs of the acquisition that have not already been raised and debt maturities over the next 12 months, NG will need to raise about £2.3 billion. We expect the bulk of the acquisition funding to be raised at the NG level, with capital-expenditure requirements funded directly at the licensed operating companies.

NG maintains good access to the debt markets and is an active issuer; the group raised about £3.8 billion of bonds since April 2006. Outstanding required funding for the KeySpan acquisition of £2 billion can be accommodated by NG's committed backup facilities of £2.6 billion. Therefore, liquidity risks arising from the KeySpan acquisition are offset. Standard & Poor's expects, however, that virtually all of NG's remaining funding requirement will be raised in the capital markets or through commercial paper and the backup facilities to remain undrawn. NG recently increased one of its medium-term note programs to accommodate increased issuance.

National Grid USA's contractual debt maturities are manageable, given projected cash flow generation and available liquidity. Total debt was just over \$3.6 billion as of March 31, 2006 (the last reported date), with \$302 million maturing in fiscal 2007, \$207 million in 2008, \$687 million in 2009, \$357 million in 2010, and \$357 million in 2011.

## Ratings List

Ratings Remain On Watch Neg

National Grid USA  
Corp. credit rating      A/Watch Neg/A-1

National Grid PLC  
Corp. credit rating A/Watch Neg/A-1

Massachusetts Electric Co.  
Corp. credit rating A/Watch Neg/A-1

Narragansett Electric Co.  
Corp. credit rating A/Watch Neg/A-1

New England Power Co.  
Corp. credit rating A/Watch Neg/A-1

Niagara Mohawk Power Corp.  
Corp. credit rating A/Watch Neg/--

Complete ratings information is available to subscribers of RatingsDirect, the real-time Web-based source for Standard & Poor's credit ratings, research, and risk analysis, at [www.ratingsdirect.com](http://www.ratingsdirect.com). All ratings referenced herein can be found on Standard & Poor's public Web site at [www.standardandpoors.com](http://www.standardandpoors.com); under Credit Ratings in the left navigation bar, select Find a Rating, then Credit Ratings Search.

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January 2007

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Exhibit\_\_ (MPP-3)  
Merger Policy Panel

## RESEARCH

## New Business Profile Scores Assigned for U.S. Utility and Power Companies; Financial Guidelines Revised

**Publication date:** 02-Jun-2004  
**Credit Analyst:** Ronald M Barone, New York (1) 212-438-7662; Richard W Cortright, Jr. , New York (1) 212-438-7665; Suzanne G Smith, New York (1) 212-438-2106; John W Whitlock, New York (1) 212-438-7678; Andrew Watt, New York (1) 212-438-7868; Arthur F Simonson, New York (1) 212-438-2094

Standard & Poor's Ratings Services has assigned new business profile scores to U.S. utility and power companies to better reflect the relative business risk among companies in the sector. Standard & Poor's also has revised its published risk-adjusted financial guidelines. The new business scores and financial guidelines do not represent a change to Standard & Poor's ratings criteria or methodology, and no ratings changes are anticipated from the new business profile scores or revised financial guidelines.

### New Business Profile Scores and Revised Financial Guidelines

Standard & Poor's has always monitored changes in the industry and altered its business risk assessments accordingly. This is the first time since the 10-point business profile scale for U.S. investor-owned utilities was implemented that a comprehensive assessment of the benefits and the application of the methodology has been made. The principal purpose was to determine if the methodology continues to provide meaningful differentiation of business risk. The review indicated that while business profile scoring continues to provide analytical benefits, the complete range of the 10-point scale was not being utilized to the fullest extent.

Standard & Poor's has also revised the key financial guidelines that it uses as an integral part of evaluating the credit quality of U.S. utility and power companies. These guidelines were last updated in June 1999. The financial guidelines for three principal ratios (funds from operations (FFO) interest coverage, FFO to total debt, and total debt to total capital) have been broadened so as to be more flexible. Pretax interest coverage as a key credit ratio was eliminated.

Finally, Standard & Poor's has segmented the utility and power industry into sub-sectors based on the dominant corporate strategy that a company is pursuing. Standard & Poor's has published a new U.S. utility and power company ranking list that reflects these sub-sectors.

There are numerous benefits to the reassessment. Fuller utilization of the entire 10-point scale provides a superior relative ranking of qualitative business risk. A simultaneous revision of the financial guidelines supports the goal of not causing rating changes from the recalibration of the business profiles. Classification of companies by sub-sectors will ensure greater comparability and consistency in ratings. The use of industry segmentation will also allow more in-depth statistical analysis of ratings distributions and rating changes.

The reassessment does not represent a change to Standard & Poor's criteria or methodology for determining ratings for utility and power companies. Each business profile score should be considered as the assignment of a new score; these scores do not represent improvement or deterioration in our assessment of an individual company's business risk relative to the previously assigned score. The financial guidelines continue to be risk-adjusted based on historical utility and industrial medians. Segmentation into industry sub-sectors does not imply that specific company characteristics will not weigh heavily into the assignment of a company's business profile score.

### Results

Previously, 83% of U.S. utility and power business profile scores fell between '3' and '6', which clearly

does not reflect the risk differentiation that exists in the utility and power industry today. Since the 10-point scale was introduced, the industry has transformed into a much less homogenous industry, where the divergence of business risk--particularly regarding management, strategy, and degree of competitive market exposure--has created a much wider spectrum of risk profiles. Yet over the same period, business profile scores actually converged more tightly around a median score of '4'. The new business profile scores, as of the date of this publication, are shown in Chart 1. The overall median business profile score is now '5'.

Chart 1

Chart 1  
**Distribution of Business Profile Scores**

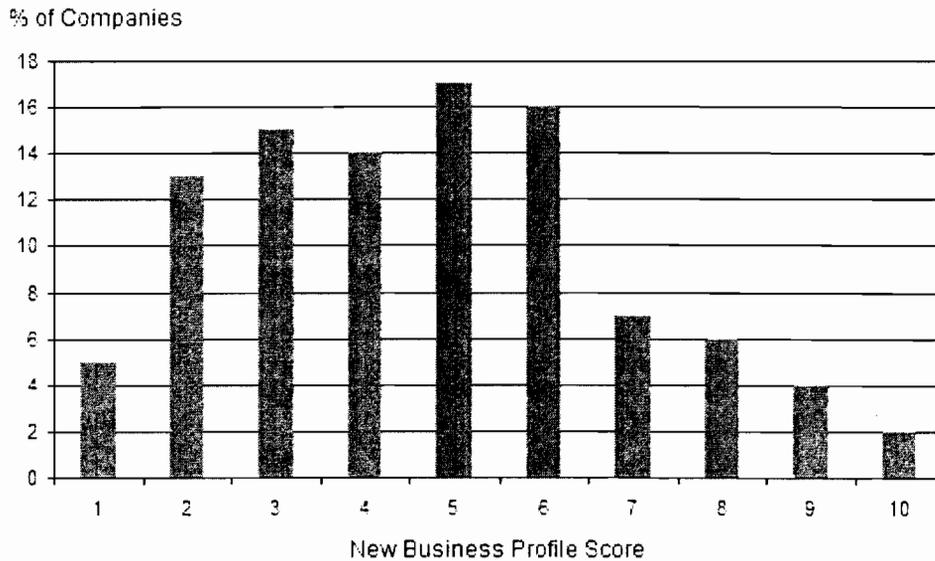


Table 1 contains the revised financial guidelines. It is important to emphasize that these metrics are only guidelines associated with expectations for various rating levels. Although credit ratio analysis is an important part of the ratings process, these three statistics are by no means the only critical financial measures that Standard & Poor's uses in its analytical process. We also analyze a wide array of financial ratios that do not have published guidelines for each rating category.

Table 1

**Revised Financial Guidelines**

Business Profile	Funds from operations/interest coverage (x)							
	AA		A		BBB		BB	
1	3	2.5	2.5	1.5	1.5	1		
2	4	3	3	2	2	1		
3	4.5	3.5	3.5	2.5	2.5	1.5	1.5	1
4	5	4.2	4.2	3.5	3.5	2.5	2.5	1.5
5	5.5	4.5	4.5	3.8	3.8	2.8	2.8	1.8
6	6	5.2	5.2	4.2	4.2	3	3	2
7	8	6.5	6.5	4.5	4.5	3.2	3.2	2.2

Table 1

**Revised Financial Guidelines (cont.)**

8	10	7.5	7.5	5.5	5.5	3.5	3.5	2.5
9			10	7	7	4	4	2.8
10			11	8	8	5	5	3

**Funds from operation/total debt (%)**

Business Profile	AA	A	BBB	BB
1	20	15	15	10
2	25	20	20	12
3	30	25	25	15
4	35	28	28	20
5	40	30	30	22
6	45	35	35	28
7	55	45	45	30
8	70	55	55	40
9		65	45	30
10		70	55	40

**Total debt/total capital (%)**

Business Profile	AA	A	BBB	BB
1	48	55	55	60
2	45	52	52	58
3	42	50	50	55
4	38	45	45	52
5	35	42	42	50
6	32	40	40	48
7	30	38	38	45
8	25	35	35	42
9		32	40	40
10		25	35	35

Again, ratings analysis is not driven solely by these financial ratios, nor has it ever been. In fact, the new financial guidelines that Standard & Poor's is incorporating for the specified rating categories reinforce the analytical framework whereby other factors can outweigh the achievement of otherwise acceptable financial ratios. These factors include:

- Effectiveness of liability and liquidity management;
- Analysis of internal funding sources;
- Return on invested capital;
- The record of execution of stated business strategies;
- Accuracy of projected performance versus actual results, as well as the trend;
- Assessment of management's financial policies and attitude toward credit; and
- Corporate governance practices.

Charts 2 through 6 show business profile scores broken out by industry sub-sector. The five industry sub-sectors are:

- Transmission and distribution--Water, gas, and electric;
- Transmission only--Electric, gas, and other;
- Integrated electric, gas, and combination utilities;

- Diversified energy and diversified nonenergy; and
- Energy merchant/power developer/trading and marketing companies.

Chart 2

Chart 2  
**Transmission and Distribution--Water, Gas, and Electric**

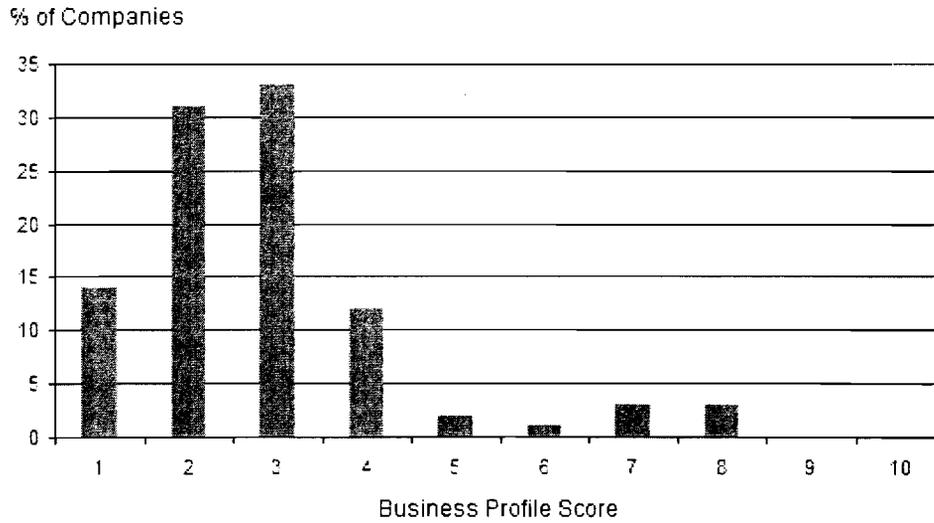


Chart 3

Chart 3  
**Transmission Only--Electric, Gas, and Other**

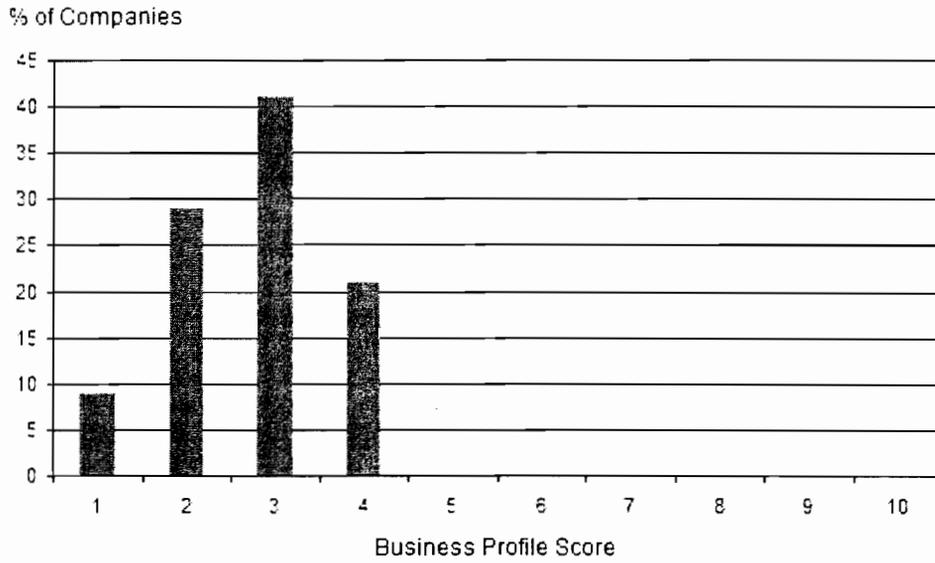


Chart 4

Chart 4  
**Integrated Electric, Gas, and Combination Utilities**

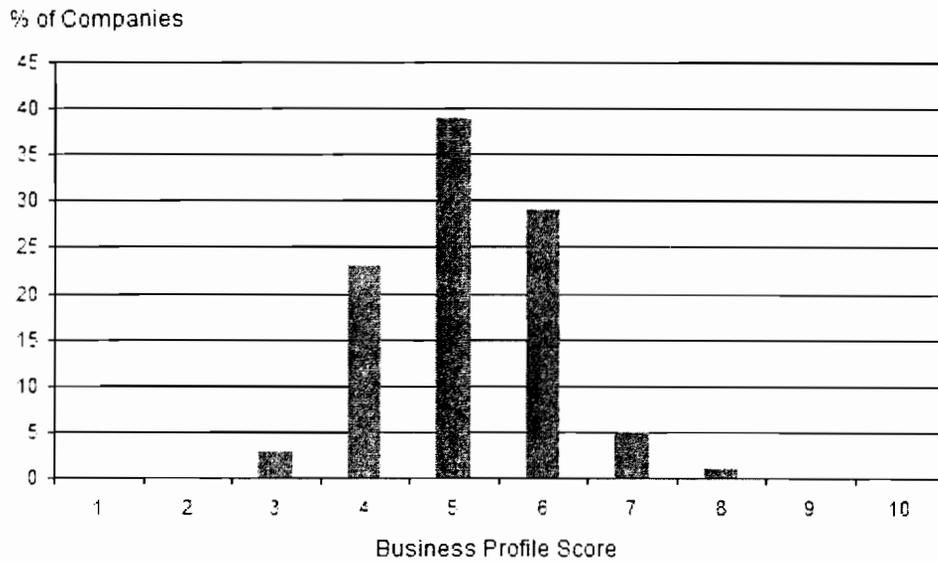


Chart 5

Chart 5  
**Diversified Energy and Diversified Non-Energy**

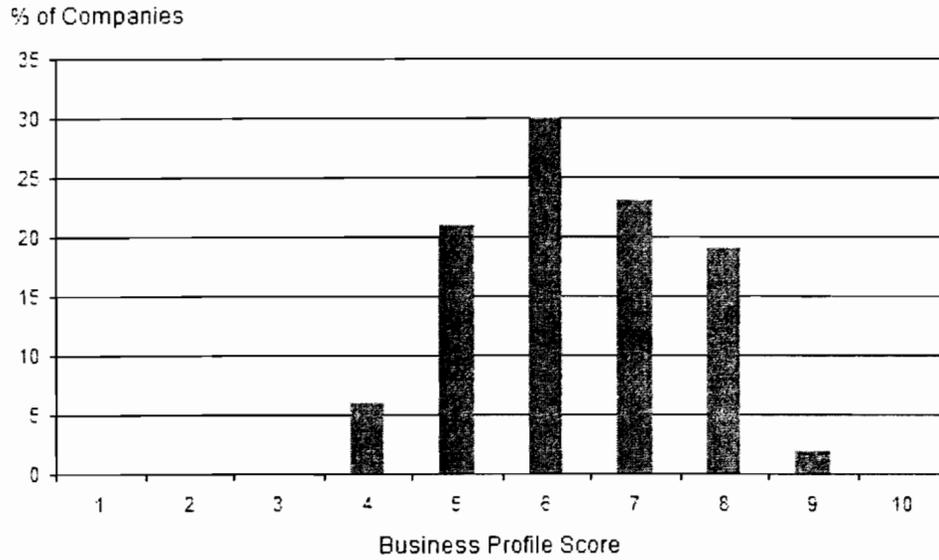
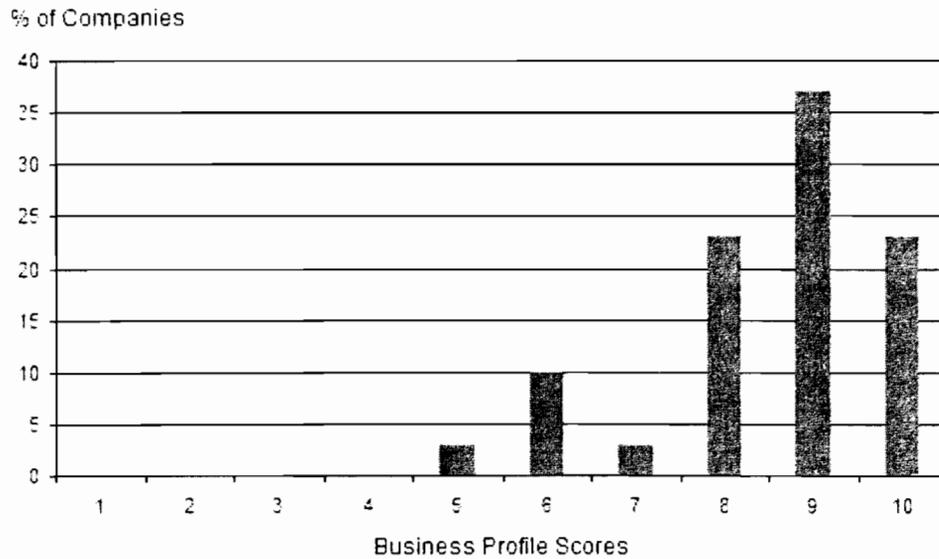


Chart 6

Chart 6  
**Energy Merchant/Developers/Trading and Marketing**



The average business profile scores for transmission and distribution companies and transmission-only companies are lower on the scale than the previous averages, while the average business profile scores for integrated utilities, diversified energy, and energy merchants and developers are higher.

The Appendix provides the company list of business profile scores segmented by industry sub-sector and ranked in order of credit rating, outlook, business profile score, and relative strength.

## Business Profile Score Methodology

Standard & Poor's methodology of determining corporate utility business risk is anchored in the assessment of certain specific characteristics that define the sector. We assign business profile scores to each of the rated companies in the utility and power sector on a 10-point scale, where '1' represents the lowest risk and '10' the highest risk. Business profile scores are assigned to all rated utility and power companies, whether they are holding companies, subsidiaries or stand-alone corporations. For operating subsidiaries and stand-alone companies, the score is a bottom-up assessment. Scores for families of companies are a composite of the operating subsidiaries' scores. The actual credit rating of a company is analyzed, in part, by comparing the business profile score with the risk-adjusted financial guidelines.

For most companies, business profile scores are assessed using five categories; specifically, regulation, markets, operations, competitiveness, and management. The emphasis placed on each category may be influenced by the dominant strategy of the company or other factors. For example, for a regulated transmission and distribution company, regulation may account for 30% to 40% of the business profile score because regulation can be the single-most important credit driver for this type of company. Conversely, competition, which may not exist for a transmission and distribution company, would provide a much lower proportion (e.g., 5% to 15%) of the business profile score.

For certain types of companies, such as power generators, power developers, oil and gas exploration and production companies, or nonenergy-related holdings, where these five components may not be appropriate, Standard & Poor's will use other, more appropriate methodologies. Some of these companies are assigned business profile scores that are useful only for relative ranking purposes.

As noted above, the business profile score for a parent or holding company is a composite of the business profile scores of its individual subsidiary companies. Again, Standard & Poor's does not apply rigid guidelines for determining the proportion or weighting that each subsidiary represents in the overall business profile score. Instead, it is determined based on a number of factors. Standard & Poor's will analyze each subsidiary's contribution to FFO, forecast capital expenditures, liquidity requirements, and other parameters, including the extent to which one subsidiary has higher growth. The weighting is determined case-by-case.

## Appendix: U.S. Utility and Power Company Ranking List

### U.S. Utility and Power Company Ranking List

Company	Corporate Credit Rating	Business Profile
<b>1. Regulated Transmission and Distribution - Electric, Gas, and Water</b>		
Baton Rouge Water Works Co. (The)	AA/Stable/--	1
Nicor Gas Co.	AA/Stable/A-1+	2
Nicor Inc.	AA/Stable/A-1+	3
Washington Gas Light Co.	AA-/Stable/A-1+	2
WGL Holdings Inc.	AA-/Stable/A-1+	3
New Jersey Natural Gas Co.	A+/Stable/A-1	1
Aqua Pennsylvania	A+/Stable/--	2
KeySpan Energy Delivery Long Island	A+/Negative/--	1
KeySpan Energy Delivery New York	A+/Negative/--	1
Elizabethtown Water Co.	A+/Negative/--	2

## U.S. Utility and Power Company Ranking List (cont.)

California Water Service Co.	A+/Negative/--	3
Questar Gas Co.	A+/Negative/--	3
Southern California Gas Co.	A/Stable/A-1	1
Boston Edison Co.	A/Stable/A-1	1
Commonwealth Electric Co.	A/Stable/--	1
Cambridge Electric Light Co.	A/Stable/--	1
NSTAR	A/Stable/A-1	1
Massachusetts Electric Co.	A/Stable/A-1	1
Narragansett Electric Co.	A/Stable/A-1	1
Northwest Natural Gas Co.	A/Stable/A-1	1
Connecticut Water Service Inc.	A/Stable/ --	2
Connecticut Water Co. (The)	A/Stable/ --	2
Aquarion Co.	A/Stable/--	2
Aquarion Water Co. of Connecticut	A/Stable/--	2
NSTAR Gas Co.	A/Stable/--	2
Piedmont Natural Gas Co. Inc.	A/Stable/A-1	2
National Grid USA	A/Stable/A-1	2
Consolidated Edison Co. of New York Inc.	A/Stable/A-1	2
Orange and Rockland Utilities Inc.	A/Stable/A-1	2
Rockland Electric Co.	A/Stable/--	2
Consolidated Edison Inc.	A/Stable/A-1	2
Laclede Gas Co.	A/Stable/A-1	3
Laclede Group Inc.	A/Stable/--	3
Atlantic City Sewerage Co.	A/Stable/--	3
Niagara Mohawk Power Corp.	A/Stable/--	3
Central Hudson Gas & Electric Co.	A/Stable/--	3
American Water Capital Corp.	A/Negative/	2
Boston Gas Co.	A/Negative/--	2
Colonial Gas Co.	A/Negative/--	2
Middlesex Water Co.	A/Negative/--	3
York Water Co. (The)	A-/Stable/--	2
Alabama Gas Corp.	A-/Stable/–	2
Atlanta Gas Light Co.	A-/Stable/--	2
Public Service Co. of North Carolina Inc.	A-/Stable/A-2	2
Wisconsin Gas Co.	A-/Stable/A-2	2
North Shore Gas Co.	A-/Stable/A-2	2
Peoples Gas Light & Coke Co.	A-/Stable/A-2	2
ONEOK Inc.	A-/Stable/A-2	6
Indiana Gas Co. Inc.	A-/Negative/--	1
Southern California Water Co.	A-/Negative/--	3
American States Water Co.	A-/Negative/--	3
United Water New Jersey	A-/Negative/--	4
United Waterworks	A-/Negative/--	4
PPL Electric Utilities Corp.	A-/Negative/--	4

## U.S. Utility and Power Company Ranking List (cont.)

Commonwealth Edison Co.	A-/Negative/A-2	4
PECO Energy Co.	A-/Negative/A-2	4
Central Illinois Public Service Co.	A-/CW-Neg/--	3
Western Massachusetts Electric Co.	BBB+/Stable/--	1
Cascade Natural Gas Corp.	BBB+/Stable/--	2
South Jersey Gas Co.	BBB+/Stable/--	2
Baltimore Gas & Electric Co.	BBB+/Stable/A-2	3
Connecticut Natural Gas Corp.	BBB+/Negative/--	3
Southern Connecticut Gas Co.	BBB+/Negative/--	3
Central Maine Power Co.	BBB+/Negative/--	3
Atlantic City Electric Co.	BBB+/Negative/A-2	3
Potomac Electric Power Co.	BBB+/Negative/A-2	3
Delmarva Power & Light Co.	BBB+/Negative/A-2	3
Yankee Gas Services Co.	BBB+/Negative/--	3
Connecticut Light & Power Co.	BBB+/Negative/--	3
UGI Utilities Inc.	BBB+/Negative/--	4
Bay State Gas Co.	BBB/Stable/--	2
AEP Texas Central Co.	BBB/Stable/--	2
AEP Texas North Co.	BBB/Stable/--	2
Southwest Gas Corp.	BBB-/Stable/--	3
Columbus Southern Power Co.	BBB/Stable/--	3
Ohio Power Co.	BBB/Stable/--	3
Public Service Electric & Gas Co.	BBB/Stable/A-2	3
Oncor Electric Delivery Co.	BBB/Negative/--	2
Southern Union Co.	BBB/Negative/--	3
Centerpoint Energy Houston Electric LLC	BBB/Negative/--	3
CenterPoint Energy Resources Corp.	BBB/Negative/--	3
Duquesne Light Co.	BBB/Negative/	4
Duquesne Light Holdings Inc.	BBB/Negative/ --	5
TXU Gas Co.	BBB/CW-Dev/--	3
Jersey Central Power & Light Co.	BBB-/Stable/--	4
Metropolitan Edison Co.	BBB-/Stable/--	4
Pennsylvania Electric Co.	BBB-/Stable/--	4
Texas-New Mexico Power Co.	BB+/Stable/--	4
AmeriGas Partners L.P.	BB+/Stable/--	7
NUI Utilities Inc.	BB/CW-Dev/--	4
Suburban Propane Partners L.P.	BB-/Stable/--	8
Star Gas Partners L.P.	BB-/Stable/--	8
SEMCO Energy Inc.	BB-/Negative/--	5
Ferrellgas Partners L.P.	BB-/Negative/--	8
Potomac Edison Co.	B/Stable/--	3
West Penn Power Co.	B/Stable/--	3
Illinova Corp.	B/Negative/--	7
NorthWestern Corp.	D/NM/--	7

## U.S. Utility and Power Company Ranking List (cont.)

### 2. Transmission Only - Electric, Gas, and Other

Questar Pipeline Co.	A+/Negative/--	3
Mid-West Independent Transmission System Operator Inc.	A/Stable/--	1
American Transmission Co.	A/Stable/A-1	1
New England Power Co.	A/Stable/A-1	1
Colonial Pipeline Co.	A/Stable/A-1	3
Dixie Pipeline Co.	--/--/A-1	3
Plantation Pipeline Co.	--/--/A-1	3
Explorer Pipeline Co.	A/Stable/A-1	4
Northern Natural Gas Co.	A-/Positive/--	2
Buckeye Partners L.P.	A-/Stable/--	4
Kern River Gas Transmission Co.	A-/Negative/--	3
Northern Border Pipeline Co.	A-/CW-Neg/--	2
Texas Gas Transmission LLC	BBB+/Stable/--	3
Iroquois Gas Transmission System L.P.	BBB+/Stable/--	3
Florida Gas Transmission Co.	BBB/Stable/--	2
International Transmission Co.	BBB/Stable	2
ITC Holding Corp.	BBB/Stable	2
Texas Eastern Transmission L.P.	BBB/Stable/--	3
PanEnergy Corp.	BBB/Stable/--	3
TE Products Pipeline Co. L.P.	BBB/Stable/--	4
TEPPCO Partners L.P.	BBB/Stable/--	4
Panhandle Eastern Pipeline LLC	BBB/Negative/--	3
Noark Pipeline Finance LLC	BBB/Negative/--	4
Southern Star Central Gas Pipeline Inc.	BB/Stable/--	3
Transwestern Pipeline Co.	BB/CW-Dev/--	4
Transcontinental Gas Pipe Line Corp.	B+/Negative/--	2
Northwest Pipeline Corp.	B+/Negative/--	2
Colorado Interstate Gas Co.	B-/Negative/--	2
Southern Natural Gas Co.	B-/Negative/--	2
ANR Pipeline Co.	B-/Negative/--	3
Tennessee Gas Pipeline Co.	B-/Negative/--	3
El Paso Tennessee Pipeline Co.	B-/Negative/--	3
El Paso Natural Gas Co.	B-/Negative/--	4
Gas Transmission-Northwest Corp.	CC/CW-Pos/--	2

### 3. Integrated Electric, Gas, and Combination Utilities

Wisconsin Public Service Corp.	AA-/Stable/A-1+	4
Madison Gas & Electric Co.	AA/Negative/A-1+	4
Southern Co.	A/Stable/A-1	4
Georgia Power Co.	A/Stable/A-1	4
Alabama Power Co.	A/Stable/A-1	4
Mississippi Power Co.	A/Stable/A-1	4
Gulf Power Co.	A/Stable/--	4

## U.S. Utility and Power Company Ranking List (cont.)

Savannah Electric & Power Co.	A/Stable/--	4
San Diego Gas & Electric Co.	A/Stable/A-1	5
MidAmerican Energy Co.	A/Stable/A-1	5
Questar Corp.	--/A-1	6
Equitable Resources Inc.	A/Stable/A-1	6
Florida Power & Light Co.	A/Negative/A-1	4
South Carolina Electric & Gas Co.	A-/Stable/A-2	4
SCANA Corp.	A-/Stable/--	4
Wisconsin Electric Power Co.	A-/Stable/A-2	4
AGL Resources Inc.	A-/Stable/A-2	4
Virginia Electric & Power Co. (Dominion Virginia)	A-/Stable/A-2	5
Idaho Power Co.	A-/Stable/A-2	5
IDACORP Inc.	A-/Stable/A-2	5
Energen Corp.	A-/Stable/--	6
Vectren Utility Holdings Inc.	A-/Negative/A-2	3
Wisconsin Power & Light Co.	A-/Negative/A-2	4
Atmos Energy Corp.	A-/Negative/A-2	4
Southern Indiana Gas & Electric Co.	A-/Negative/--	5
Montana-Dakota Utilities Co.	A-/Negative/--	5
PacifiCorp	A-/Negative/A-2	5
Northern Border Partners L.P.	A-/CW-Neg/--	4
Central Illinois Light Co.	A-/CW-Neg/--	5
CILCORP	A-/CW-Neg/--	5
Union Electric Co.	A-/CW-Neg/A-2	5
Ameren Corp.	A-/CW-Neg/A-2	5
Cincinnati Gas & Electric Co.	BBB+/Stable/A2-	4
Oklahoma Gas & Electric Co.	BBB+/Stable/A-2	4
Northern States Power Wisconsin	BBB+/Stable /A-2	5
Kentucky Utilities Co.	BBB+/Stable/A-2	5
Louisville Gas & Electric Co.	BBB+/Stable/A-2	5
Allte Inc.	BBB+/Stable/A-2	5
Wisconsin Energy Corp.	BBB+/Stable/A-2	5
PSI Energy Inc.	BBB+/Stable/A-2	5
Union Light Heat & Power Co.	BBB+/Stable/--	5
Hawaiian Electric Co. Inc.	BBB+/Stable/A-2	6
Enogex Inc.	BBB+/Stable/--	6
National Fuel Gas Co.	BBB+/Stable/A-2	7
Energy East Corp.	BBB+/Negative/--A2	3
RGS Energy Group Inc.	BBB+/Negative/--	4
Rochester Gas & Electric Corp.	BBB+/Negative/--	4
Michigan Consolidated Gas Co.	BBB+/Negative/A-2	4
Interstate Power & Light Co.	BBB+/Negative/A-2	5
Public Service Co. of New Hampshire	BBB+/Negative/--	5
Kaneb Pipe Line Operating Partnership L.P.	BBB+/Negative/--	5

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## U.S. Utility and Power Company Ranking List (cont.)

Consolidated Natural Gas Co.	BBB+/Negative/A-2	6
Detroit Edison Co.	BBB+/Negative/A-2	6
Questar Market Resources Inc.	BBB+/Negative/--	8
Portland General Electric Co.	BBB+/CW-Neg./A-2	5
Columbia Energy Group	BBB/Stable/--	3
NiSource Inc.	BBB/Stable/--	4
Xcel Energy Inc.	BBB/Stable/A-2	5
Public Service Co. of Colorado	BBB/Stable /A-2	5
Northern States Power Co.	BBB/Stable /A-2	5
Southwestern Public Service Co.	BBB/Stable /A-2	5
Appalachian Power Co.	BBB/Stable/--	5
Kentucky Power Co.	BBB/Stable/--	5
Public Service Co. of Oklahoma	BBB/Stable/--	5
Southwestern Electric Power Co.	BBB/Stable/--	5
Northern Indiana Public Service Co.	BBB/Stable/--	5
Entergy Arkansas Inc.	BBB/Stable/--	5
Entergy Louisiana Inc.	BBB/Stable/--	5
Progress Energy Florida	BBB/Stable/--	5
Progress Energy Carolinas Inc.	BBB/Stable/A-2	5
Kansas City Power & Light Co.	BBB/Stable/A-2	6
PNM Resources Inc.	BBB/Stable/--	6
Southern California Edison Co.	BBB/Stable/A-2	6
Empire District Electric Co.	BBB/Stable/A-2	6
Entergy Mississippi Inc.	BBB/Stable/--	6
Entergy New Orleans Inc.	BBB/Stable/--	6
Duke Energy Field Services LLC	BBB/Stable/A-2	6
Arizona Public Service Co.	BBB/Negative/A-2	5
TXU U.S. Holdings Co.	BBB/Negative/--	5
Pinnacle West Capital Corp.	BBB/Negative/A-2	6
Cleco Power LLC	BBB/Negative/A-3	6
Puget Sound Energy Inc.	BBB-/Positive/A-3	5
Puget Energy Inc.	BBB-/Positive/--	5
Green Mountain Power Corp.	BBB-/Stable/--	5
Public Service Co. of New Mexico	BBB-/Stable/A-2	6
Pacific Gas & Electric Co.	BBB-/Stable/ --	6
Cleveland Electric Illuminating Co.	BBB-/Stable/--	6
Ohio Edison Co.	BBB-/Stable/--	6
Toledo Edison Co.	BBB-/Stable/--	6
Pennsylvania Power Co.	BBB-/Stable/--	6
El Paso Electric Co.	BBB-/Stable/--	6
Central Vermont Public Service Corp.	BBB-/Stable/--	6
Entergy Gulf States Inc.	BBB-/Stable/--	6
System Energy Resources Inc.	BBB-/Stable/--	7
Tampa Electric Co.	BBB-/Negative/A-3	4

## U.S. Utility and Power Company Ranking List (cont.)

Black Hills Power Inc.	BBB-/Negative/--	6
Westar Energy Inc.	BB+/Positive/--	5
Kansas Gas & Electric Co.	BB+/Positive/--	6
Indianapolis Power & Light Co.	BB+/Stable/--	4
IPALCO Enterprises Inc.	BB+/Stable/--	4
Enterprise Products Operating L.P.	BB+/Stable/--	6
Enterprise Products Partners L.P.	BB+/Stable/--	6
GulfTerra Energy Partners L.P.	BB+/CW-Neg/--	6
Consumers Energy Co.	BB/Negative/--	6
Tucson Electric Power Co.	BB/CW-Neg/--	6
Dayton Power & Light Co.	BB-/CW-Neg/ -	7
Monongahela Power Co.	B/Stable/--	5
Nevada Power Co.	B+/Negative/--	7
Sierra Pacific Power Co.	B+/Negative/--	7
Sierra Pacific Resources	B+/Negative/--	7

### 4. Diversified Energy and Diversified Non-Energy

WPS Resources Corp.	A/Stable/A-1	5
KeySpan Corp.	A/Negative/A-1	4
FPL Group Inc.	A/Negative/--	6
Peoples Energy Corp.	A-/Stable/A-2	5
Vectren Corp.	A-/Negative/--	4
PacifiCorp Holdings Inc.	A-/Negative/--	5
Exelon Corp.	A-/Negative/A-2	7
MDU Resources Group Inc.	A-/Negative/A-2	7
Centennial Energy Holdings Inc.	A-/Negative/A-2	8
Otter Tail Corp.	A-/Negative/--	8
Kinder Morgan Energy Partners L.P.	BBB+/Stable/A-2	4
Northeast Utilities	BBB+/Stable/--	5
OGE Energy Corp.	BBB+/Stable/A-2	6
LG&E Energy Corp.	BBB+/Stable/--	6
Cinergy Corp.	BBB+/Stable/A-2	6
Constellation Energy Group Inc.	BBB+/Stable/A-2	7
Sempra Energy	BBB+/Stable/A-2	7
Pepco Holdings Inc.	BBB+/Negative/A-2	5
Conectiv	BBB+/Negative/--	5
Alliant Energy Corp.	BBB+/Negative/A-2	6
DTE Energy Co.	BBB+/Negative/A-2	6
Dominion Resources Inc.	BBB+/Negative/A-2	7
Kinder Morgan Inc.	BBB/Stable/A-2	5
American Electric Power Co. Inc.	BBB/Stable/A-2	6
Entergy Corp.	BBB/Stable/--	6
Hawaiian Electric Industries Inc.	BBB/Stable/A-2	6
Progress Energy Inc.	BBB/Stable/A-2	6

## U.S. Utility and Power Company Ranking List (cont.)

PPL Corp.	BBB/Stable/--	7
Public Service Enterprise Group Inc.	BBB/Stable/A-2	7
Great Plains Energy Inc.	BBB/Stable/--	7
Duke Energy Corp.	BBB/Stable/A-2	7
Duke Capital Corp.	BBB/Stable/A-2	8
TXU Corp.	BBB/Negative/--	5
Centerpoint Energy Inc.	BBB/Negative/--	5
Cleco Corp.	BBB/Negative/A-3	6
Potomac Capital Investment Corp.	BBB/Negative/--	8
MidAmerican Energy Holdings Co.	BBB-/Positive/--	5
FirstEnergy Corp.	BBB-/Stable/--	6
TECO Energy Inc.	BBB-/Negative/A-3	5
Black Hills Corp.	BBB-/Negative/--	8
Avista Corp.	BB+/Stable/--	6
Edison International	BB+/Stable/--	6
TNP Enterprises	BB+/Stable/--	6
New York Water Service Corp.	BB/Stable	7
CMS Energy Corp.	BB/Negative/--	7
DPL Inc.	BB- /CW-Neg/--	8
Williams Companies Inc. (The)	B+/Negative/--	8
Allegheny Energy Inc.	B/Stable/--	7
Dynegy Inc.	B/Negative/--	8
Dynegy Holdings Inc.	B/Negative/--	9
El Paso CGP Corp.	B-/Negative/--	6
Aquila Inc.	B-/Negative/--	8
El Paso Corp.	B-/Negative/--	8

### 5. Energy Merchants/Power Developers/Trading and Marketing

Entergy-Koch L.P.	A/Stable/--	9
KeySpan Generation LLC	A/Negative/--	5
FPL Group Capital	A/Negative/A-1	8
Exelon Generation Co.	A-/Negative/A-2	8
AmerenEnergy Generating Co.	A-/CW-Neg/--	8
Southern Power Co.	BBB+/Stable/--	6
LG&E Capital Corp.	BBB+/Stable/A-2	9
Alliant Energy Resources Inc.	BBB+/Negative/--	9
American Ref-Fuel Co. LLC	BBB/Stable/--	6
PSEG Power LLC	BBB/Stable/--	8
PPL Energy Supply LLC	BBB/Stable/--	8
TXU Energy Co. LLC	BBB/Negative/--	7
Duke Energy Trading and Marketing LLC	BBB-/Negative/--	10
Northeast Generation Company	BB+/Negative/--	9
Cogentrix Energy	BB-/Stable/--	6
PSEG Energy Holdings Inc.	BB-/Stable/--	9

### U.S. Utility and Power Company Ranking List (cont.)

AES Corp.	B+/Stable/--	9
NRG Energy Inc.	B+/Stable	9
Allegheny Energy Supply Co. LLC	B/Stable/--	8
Reliant Resources Inc.	B/Negative/--	8
Calpine Corp	B/Negative/--	9
Edison Mission Energy	B/Negative/--	9
Orion Power Holdings Inc	B/Negative/--	9
Reliant Energy Mid-Atlantic Power Holdings LLC	B/Negative/--	9
Mirant Americas Generation Inc.	D/--/--	10
Mirant Americas Energy Marketing L.P.	D/--/--	10
Mirant Corp.	D/--/--	10
NEGT Energy Trading Holdings Corp	D/--/--	10
PG&E National Energy Group	D/--/--	10
USGen New England Inc.	D/--/--	10

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BEFORE THE  
STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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In the Matter of

National Grid PLC and KeySpan Corporation - Proposed Merger  
Case 06-M-0878

The Brooklyn Union Gas Company d/b/a KeySpan Energy Delivery New  
York - Gas Rates  
Case 06-G-1185

KeySpan Gas East Corporation d/b/a KeySpan Energy Delivery Long  
Island - Gas Rates  
Case 06-G-1186  
January 2007

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Exhibit\_\_ (MPP-4)  
Merger Policy Panel

# Power Companies

## Rating methodology for global power companies

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 concept is illustrated by the matrix in table 1.

### Business profile

Standard & Poor's utilizes 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:

- 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.

**Table 1**  
**Global Utility Rating Matrix**

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

Type I utilities (supported) operate within systems where the utility receives overwhelming government and regulatory support. This support can be explicit, as in cases where a government guarantees a utility's obligations, such as in Canada. Or it can take the form of strong and obvious implicit support, such as in Greece. The government may facilitate the utility's access to external sources of capital, especially 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 and significant supportive actions taken over time build credibility. In addition, Standard & Poor's considers the 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 offer 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 in the U.S.: municipally owned utilities 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 competitive markets. Moreover, an increasing number of city councils or other ratemaking bodies are reluctant to make either upward or downward rate adjustments. For example, it may be politically unpalatable to end the subsidization of residential rates by commercial and industrial customers, even if 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 frustrated 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, evidence some regulatory insulation from the forces of competition, mixed 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, as they are subject to the sometimes harsh realities of supply and demand.

For Type I utilities, 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 competitiveness or management, because of the supportive regulatory umbrella. Conversely, for Type IV utilities, operations, competitiveness, and management are the most heavily weighted factors. Business profile factor weightings for Type III utilities are more evenly distributed.

An 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. Business profile assessments will fall and rating downgrades could result, absent offsetting improvement in financial profiles.

### Typical business profiles

Large transmission systems and regulated distribution systems (the "wires" business) business profile assessments tend to fall within the 1-4 range. Generators generally receive business profile assessments in the 7-10 range.

The business profile assessment of electric systems with elements of integration—either fully vertically integrated from generation through transmission to distribution or partially integrated—is based on a weighted approach, reflecting the relative importance of each business segment to the overall credit.

**Table 2**  
**Utility Types**

	Type I	Type II	Type III	Type IV
	Supported	Sheltered	Exposed	Commodity
Example	France, Ontario	Japan, Denmark	U.S., U.K.	Genco
Primary credit determinants	Owner or guarantor	Structural protection, Rate flexibility	Cost control, Service quality	Performance and cost
Debt-servicing capacity	Not limited by stand-alone risks	Usually highly leveraged	Moderate	Limited

**Financial Ratio Guidelines**

	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	3.25	2.0	15	10	55	65
Generators	6.75	4.25	42	27	35	45
Vertically integrated cos.	4.25	2.75	27	18	45	56

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

The relative importance of each reflects their contributions of cash flow and operating income and 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 could be 3-4, reflecting heavy weighting of the supportive regulatory structure.

**Financial profiles**

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 investment. Standard & Poor's focuses on a utility's financial results for the last five years and on pro forma, five-year projections.

Because of distortions caused by vastly differing asset valuation practices and depreciation policies around the world, certain leverage and earnings ratios are not particularly useful when conducting comparative analysis. As a consequence, 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. The table above displays guidelines for certain key financial ratios for rated transmission and distribution companies, generators, and vertically integrated utilities. Because of the different types of utilities—supported, sheltered, exposed, commodity—financial ratios for any particular entity may differ significantly from the guidelines. However, the ratios in the table are useful in demonstrating the typical differences in financial standards appropriate due to broad differences in business risk.

**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 on a stand-alone basis. 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 more important measures of profitability are:

- Return on average equity,
- Pretax return on 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 EBIT interest coverage (pre-tax 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, abetted by local tax regulation, 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 its meetings with management, Standard & Poor's delves into 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 accounts. Interest that has been capitalized is added back. An interest component is computed for debt-equivalents such as operating leases, fixed contractual obligations, and receivable sales. For U.S. utilities, allowance for funds used during construction is removed from income and interest expense.

In some regions, notably Japan and Europe, the 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, in light of 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.

Most firms use short-term debt as a permanent piece of their capital structure or to bridge to permanent financing. Seasonal, self-liquidating debt is excluded from the permanent debt amount, but this situation is rare—except 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) partially mitigates the risk of interest-rate variability.

Also important is the term structure of a power company's long-term 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 in 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 critical 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/total debt (adjusted for excess liquidity and off-balance-sheet liabilities).
- EBITDA/interest.
- Funds from operations - dividends/capital expenditures.
- Capital expenditures/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. The ability to limit the use of debt also depends on a util-

ity'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.

**Financial flexibility.** Financial flexibility incorporates a utility's financing needs, plans, and alternatives, as well as its flexibility to accomplish its financing program 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 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 default risk, such as a requirement for a funded debt-service reserve. However, very tight covenants can raise default risk by limiting a company's flexibility to raise cash in 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, taking into account both political and competitive considerations.

### **Transmission and distribution qualitative analysis**

Reflecting relatively low business risk, electric transmission and distribution companies can be generally expected to have business pro-

file assessments of 1-4. However, few companies receive the top score and some do 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. For typical transmission and distribution companies, regulation, markets, and management are more important factors 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 are key considerations. Markets and customer composition are also important factors, with weak economic performance and a large industrial sector being less favorable. Importantly, Standard & Poor's evaluates 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 revisited 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 more subject to the whim of ministerial discretion, as in some Asian countries. Also key is the selection process for membership of a regulatory body.

Evaluation of regulation 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. 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 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.

**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 include the significant challenge of matching fuel and power supply with demand. Whether 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, 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.

The analyst 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 number and type of customers, revenue analysis, and margin breakdowns 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 resi-

dential 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. Sometimes, the loss of just one large customer can have a material 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 to connect surplus low-cost generation with growth markets is best. On the other hand, a transmission company that connects relatively high-cost generation to a mature or declining area is at risk. Usage and electric growth levels in the end-use markets are 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. To evaluate the operations of a transmission or distribution company, Standard & Poor's focuses on 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. If utilities are not cost-effective in meeting service standards, compared to the performance of other utilities and administrative benchmarks, 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 suffers. Examples of operating challenges include harsh climates, severe storms, and difficult terrain.

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.

Assets must be in good physical condition and well maintained. Capital expenditures for system improvements must be at manageable levels, while 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 siting difficulties caused by public concerns over duplicate utility poles and wires and environmental issues.

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 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 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. However, 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, and ultimately drive 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. Standard & Poor's assesses financial policies, corporate goals, strategies, tactics, and plans for both regulated and diversified businesses, and monitors how effectively they are implemented.

The assessment of management is based on such factors as tenure, industry experience, grasp of industry issues, and knowledge of customers and their needs. 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 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. Electricity cannot be stored. Electricity must be used instantaneously, as it is produced, and its deliverability can be hampered by transmission constraints. Reliability and deliverability 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. Of course, 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 factor heavily into the business profile of a generation company, other criteria are considered when assessing creditworthiness.

**Regulation.** Some generators may remain highly regulated and achieve superior business profiles due to the more stable revenue stream. Some centralized supply systems derive strength and stability from their highly cohesive nature, stemming, in part, from direct or indirect cross ownership between generators and distributors, and 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 are examined under this heading. In general, regulation is likely to constrain upside profit potential, while providing little protection on the downside.

Standard & Poor's seeks to determine the regulatory posture toward credit quality. The length of time that the regulatory framework has been in place is noteworthy, 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 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 a generation company and an end user will not be undermined by inflated wheeling fees. But 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? (In bilateral contracts, 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."

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.** 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), other 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 suppliers.

As electricity markets become more liquid, prices become more transparent, and energy marketers and financial derivatives begin to develop. It remains to be seen if marketers can aggregate small customer loads effectively to make them economically desirable.

If a generator sells directly to end users, it is important to know 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 introduces concentration risk.

Further market evaluation looks at 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 cost would be a threat to existing generators, higher cost would enhance the generating company's competitive position) and the subsequent surplus situation. If transmission constraints are relieved, either through construction or technology, the supply/demand balance changes. Generators may have access to a broader market, but other suppliers will have access to their customers as well.

**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, provide 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. A generator should diversify 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 enables 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 insure 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, in very simple terms, are as follows: A buyer and seller agree on a price for power, say, 4 cents per kWh. If the market clears at 5 cents per kWh, the seller sells into the pool and receives 5 cents. 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 examines 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 indicates 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 the assessment. New technology is riskier than proven designs. Moreover, nuclear facilities present greater-than-average risk in light of complex technology, additional operating challenges and concerns, and decommissioning costs.

Asset concentration risk is present where any one unit represents a disproportionate share of capital or output in the portfolio. Construction risk is considered in terms of the level of capital expenditures, demonstrated ability to complete projects on time and on budget, and success of start-up. Turnkey pro-

jects could transfer construction risks from the generator to the engineering firm. Lastly, environmental risks are 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 one with a portfolio of assets. The evolution of the merchant power plant has introduced a certain speculative element to the generation sector. Unlike their independent power producer predecessors, merchant plants are generally constructed without benefit of contractual commitments for the sale of their output. Thus, success depends 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 is important. Generators who cannot deliver consistently on their commitments will lose credibility—and customers. 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 need substantial physical and financial liquidity. Size is important because there are informational economies of scale in marketing, and smaller trading firms can be whipsawed. Generators with hard assets have a perceived advantage over energy traders with no owned assets.

**Competitiveness.** The first step of an analysis of competitiveness is 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 those more lucrative hours. First Hydro's 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 for structuring contracts, for deciding what percent of output to contract out versus sell into a spot market or pool, and for limiting the percent of output sold to any one customer. Staying competitive further involves both physical and financial hedging strategies, particularly for fuel.

Competition comes from many sources. Suppliers of new and cheaper power genera-

tion represent a 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 puts 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 gas-fired air conditioning. And further down the road, remote site applications such as the fuel cell may replace generation-produced power. Threat of these alternatives will depend on pricing, switching costs, availability, political and regulatory barriers, and public policy initiatives.

**Management.** The high business risk in generation—compared to transmission or distribution—makes management a critical factor in the credit evaluation of generators. 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 appetite for construction of additional plants and/or diversification into international markets, is examined in assessing its risk tolerance.

The degree to which generators engage in energy marketing activities beyond the sale of their own output is also evaluated. 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.

BEFORE THE  
STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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In the Matter of

National Grid PLC and KeySpan Corporation - Proposed Merger  
Case 06-M-0878

The Brooklyn Union Gas Company d/b/a KeySpan Energy Delivery New  
York - Gas Rates  
Case 06-G-1185

KeySpan Gas East Corporation d/b/a KeySpan Energy Delivery Long  
Island - Gas Rates  
Case 06-G-1186  
January 2007

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Exhibit\_\_ (MPP-5)  
Merger Policy Panel

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## Rating Methodology: Global Regulated Electric Utilities

### Summary

This rating methodology covers electric utility companies worldwide whose credit profile is significantly affected by the presence of regulation. In order for a company to be included within this classification, at least 40% of its business should derive from regulated electric activities. The methodology thus excludes all other electric and power companies operating in the unregulated market, such as generators or power retailers, and other regulated industries such as water and gas utilities.

Based upon this definition, Moody's rates over 100 companies that either are electric utilities or are the parent holding companies for subsidiaries that operate predominantly in the electric utility business. In addition, Moody's rates a large number of utility operating subsidiaries of the ultimate parent companies. Figure 1 offers a breakdown of the ultimate parent companies by geographic region and rating category as of 1 February 2005:

	Aaa	Aa	A	Baa	Ba	B	TOTAL
Asia/Pacific		2	8	6	1	1	18
Europe	1	7	16	9	1		34
Japan		3	6				9
Americas			10	30	10	5	55
<b>Totals</b>	<b>1</b>	<b>12</b>	<b>40</b>	<b>45</b>	<b>12</b>	<b>6</b>	<b>116</b>

Moody's concludes that – despite the considerable number of common characteristics shared by electric utilities on a worldwide basis – country-by-country regulatory differences and cultural and economic considerations make this a local industry seen globally rather than a truly global industry.

In general, regulated electric utilities offer lenders some of the lowest business risks seen amongst corporate entities. However, many of the companies in question may also be active in unregulated businesses, such as speculative trading with exposure to unhedged commodity prices, which can be highly risky and may lead to serious financial difficulties despite the presence of a regulator.

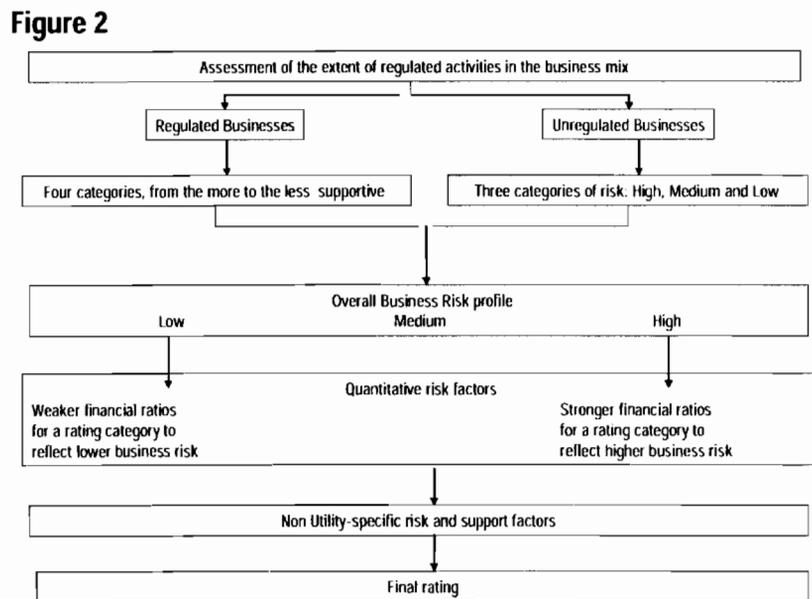
In addition, there is little consistency in the approach and application of regulatory frameworks around the world. Some are highly supportive of the “system” and those that operate within them, often offering implied sovereign support to ensure reliability of supply. Others are designed to protect the end-consumers from abuse of a monopoly supplier – a priority that may work to the detriment of companies operating in the system if they cannot meet regulators' expectations, or if the regulator fails to achieve the appropriate balance in the regulatory framework.



Under this rating methodology, Moody's:

1. Assesses the extent of a “regulated” company’s exposure to its unregulated businesses. The strongest credit risk position is enjoyed by a company whose business is wholly regulated. Where non-utility activities are substantial, the main credit driver will be the assessment of these businesses.
2. Assesses the credit support that is gained from operating within a particular regulatory framework.
3. Considers the exact level of risk posed by the unregulated businesses to the overall credit.
4. Looks at six specific financial ratios which are considered the most useful when assessing an electric utility and the adjustments made to calculate these.
5. Considers more generic risk factors that are not specific to utility companies, e.g. the adequacy of liquidity arrangements, appetite for acquisitions.

Figure 2 depicts the broad methodology for regulated utilities:



## Profile of Key Characteristics by Rating Category

Figure 3 below describes the key characteristics of regulated electric utilities falling within each rating category.

**Figure 3**

Rating Category	Ownership	Market and Regulatory Position	Non-Regulatory Risks
Aaa	Wholly owned by a Aaa-rated sovereign with unquestioned support if needed	Regulatory framework allows full cost recovery. No evidence of a regulator ever blocking regulated price rises. Large and well-protected service area. Support for the electric transmission system outweighs customer considerations. No or very limited competition. If owned by a Aaa-rated sovereign, the risk is deemed equivalent to that of the Aaa parent.	Zero or immaterial when considering revenue, earnings, cashflow and assets.
Aa	Wholly or majority owned by a Aaa or Aa rated sovereign or investor-owned with an effective monopoly and highly supportive regulation	Regulatory framework allows full cost recovery. No evidence of a regulator ever blocking regulated price rises. Large and well-protected service area. Support for the electric transmission system outweighs user considerations. No or very limited competition. Financially robust under all scenarios with unquestioned access to the financial markets and very strong liquidity. Many companies in this category are either sovereign-owned or are deemed to have certain support from the regulatory system or government in times of stress.	Non-electric utility businesses are predominantly low-risk businesses such as natural gas distribution

**Figure 3**

Rating Category	Ownership	Market and Regulatory Position	Non-Regulatory Risks
A	Wholly or partially owned by a Aa or A rated sovereign or rating is based on intrinsic strength without factoring in any uplift for sovereign ownership; or investor-owned with highly predictable and reliable regulation.	Medium to large-sized companies where the core operation is a stable, regulated electric utility business. Well-capitalized companies with moderately strong financials, that face more business risk and/or have weaker financial metrics than the issuers in the Aa category. If exposed to substantial competition, cost structure and rates are highly competitive for their region. Companies in this category often face greater competitive pressures than those in the Aa rating category. The regulatory environment has above-average stability and reliability. Recovery of costs under regulated rates is fairly predictable with automatic fuel and purchased power recovery provisions in some jurisdictions. Service territory has moderate to strong demographics. Customer base is predominantly commercial and residential, and issuer has only modest potential for harm from loss of important industrial customers. There may be some history of a lack of support by regulators on large spending decisions for the regulated business but any amounts disallowed have had only a modest impact on the issuer's creditworthiness.	Larger companies in this category may have substantial non-regulated businesses but the overall profile remains dominated by regulation. Smaller companies in this category are likely to have very limited unregulated activities.
Baa	Wholly or partially owned by a A or Baa rated sovereign or rating is based on intrinsic strength without factoring in any uplift for sovereign ownership; or investor-owned with highly predictable regulation that has modest potential for unexpected rate outcomes.	Medium-sized and smaller companies with average to below-average capitalization and cash flow coverages, that face more business risk and have weaker financial metrics than the issuers in the A category. Core operations are dominated by fairly stable integrated electric utility businesses. Issuers may be more exposed to competition, less competitive in costs and rates in their region, and may be at risk for the loss of large industrial customers. There may be substantial competition for wholesale customers and some competition for retail and small commercial customers. The regulatory environment has average to below-average stability and reliability. The regulatory environment may sometimes be challenging and politically charged. Recovery of costs under regulated rates is usually predictable with fuel and purchased power recovery provisions in some jurisdictions, but there is a greater tendency for regulatory surprises. There may be some history of regulators disallowing large spending decisions for the regulated business and disallowed amounts may have had a meaningful impact on the issuer's creditworthiness.	Issuers may have other utility and energy businesses, especially natural gas distribution. Unregulated non-utility businesses may be substantial in size relative to the regulated business, and unregulated businesses may have a higher risk profile than is the case for most issuers in the A category. Some issuers in this rating category have substantial investments in higher-risk unregulated businesses, including merchant power, energy trading, oil and gas production, real estate, telecom.
Ba	Most of the issuers that are rated Ba are holding companies for regulated utility subsidiaries that are rated in the Baa category. Excluding emerging markets, very few regulated utility operating companies have speculative grade senior ratings.	Medium-sized and smaller companies with below-average capitalization and cash flow coverages, that face more business risk and have weaker financial metrics than the issuers in the Baa category. Core operations may include fairly stable integrated electric utility businesses, but these are offset by substantial debt-financed investments in unregulated activities that are higher risk or have performed poorly. Liquidity is likely to be weak, especially at the parent holding company. Bank financing may be secured and the issuer may have limited headroom under its covenants. Some issuers in this rating category are substantially more exposed to competition, less competitive in costs and rates in their region, and may be at risk for the loss of large industrial customers. There may be substantial competition for all types of customers: wholesale, retail, and small commercial. Regulatory environment may be inconsistent, with surprisingly unfavorable rate decisions or regulatory unwillingness to make timely changes to address unexpected market volatility. Issuer has below-average relationship with regulators. There may be uncertainty of recovery for spikes in costs such as for fuel or purchased power.	Compared to those Baa issuers that also have substantial riskier unregulated investments, the investments are proportionately larger in relation to the regulated utility business and have performed more poorly. Issuers may have other utility and energy businesses, especially natural gas distribution. Unregulated businesses have a higher risk profile than is the case for most issuers in the Baa category. Issuers in this rating category usually have substantial investments in higher-risk unregulated businesses, including merchant power, energy trading, oil and gas production, real estate, telecom.
B	Some issuers in this rating category are majority owned by low-rated sovereign entities	Medium-sized and smaller companies with well below-average capitalization and cash flow coverages, that face more business risk and have weaker financial metrics than the issuers in the Ba category. Core operations may include fairly stable integrated electric utility businesses in some cases, but these are outweighed by large highly risky unregulated activities that were debt-financed and have performed extremely poorly. Some issuers have very poor regulatory relationships. Regulators may have engaged in second-guessing of spending decisions and denied recovery of amounts that jeopardize the issuer's ability to fund its ongoing business activities. Liquidity is likely to be very weak, especially at the parent holding company. Bank financing may be secured and the issuer may have limited headroom under its covenants. There is a significant risk of detrimental sovereign actions such as: politically motivated interference in the ratemaking process, actions based on social/political needs rather than financial returns. There may be a history of using the utility as a government funding source. These issuers also face higher potential for disruption in power and financial markets. The financial profile of these issuers may be relatively strong but susceptible to rapid deterioration.	Unregulated businesses tend to be higher-risk activities, including merchant power and energy trading.

# Stand-Alone Company Credit Risk Factors

## QUALITATIVE FACTORS

### General rating methodology

Moody's framework for rating regulated electric utilities is constructed around a number of credit risk factors rather than on any one particular metric such as a financial ratio.

The first step is to assess the extent of a "regulated" company's exposure to unregulated businesses. The strongest position is enjoyed by those companies operating in a wholly regulated business. However, the majority of the companies we consider in this sector have additional exposure to unregulated businesses, whether those are unregulated power generation or supply activities or non-electric unregulated businesses.

The second step in the methodology is to assess the credit support that is gained from operating within a particular regulatory framework. Moody's considers each regulatory system and assesses whether there is a high or low expectation of predictability in the system and whether operators can reasonably expect to recover their costs and investments through regulator-approved revenue increases.

The third step is to consider the exact level of risk posed by the unregulated business. Note that a relatively small, but high-risk, unregulated business has the capacity to cause a major credit deterioration for the entity as a whole.

This then leads to an overall assessment of the qualitative business risk of the company's activities.

Each of these steps is now considered in more detail.

### Assessment of the extent of regulation around a business

Moody's classifies companies into four categories to determine how much their business risk is influenced by regulated activities.

This is a measure of the relative weight of regulated to unregulated business within a rated entity. Weighting is based on the element of earnings, cashflows and assets that fall within or outside a regulatory framework. In order to define the "unregulated business" percentage, Moody's takes the highest percentage out of the three measures respectively based on earnings, cashflows and assets. This then allows us to derive the regulated business percentage and to assign the entity to one of the four categories as below:

- Category 1: A wholly regulated business
- Category 2: 80-99% of the business is regulated
- Category 3: 60-80% of the business is regulated
- Category 4: 40-60% of the business is regulated

### Assessment of the supportiveness of the regulatory framework

We also classify entities into the following four categories based on a comparative assessment of the predictability and stability of regulated cashflows for a company operating under a particular regulatory framework – or the Supportiveness of Regulatory Environment (SRE):

- SRE 1: Regulatory framework is fully developed, has shown a long track record of being highly predictable and stable and there is a very high expectation of timely recovery of costs and investments.
- SRE 2: Regulatory framework is fully developed, is predictable and stable and there is a high expectation of timely recovery of costs and investments.
- SRE 3: Regulatory framework is well developed but there is a lower assurance of timely recovery of costs and investments; there may also be evidence of some inconsistency or unpredictability in the way that the regulatory framework has been applied.
- SRE 4: Regulatory framework is still being developed, is unclear, is undergoing considerable change or has a history of being unpredictable.

Consideration is given to the substance of a regulatory ringfence including restrictions on dividends, restrictions on capex and investments, separate financings, separate legal structure, and limits on the ability of the regulated entity

to support its parent company. There is more credit uplift if these provisions are contained within a license or clear regulatory rules rather than in financing documents that can be renegotiated.

In general, Moody's sees regulatory frameworks as being fundamentally designed to achieve a balance between supply reliability and service, efficiency, prices, and financial returns to the utilities. All jurisdictions consider all of these factors, but there are regional differences in their application and degree of emphasis, as discussed below:

- Protecting the "system" to ensure a reliable supply. In such cases, the company receives considerable implied support from the government, which may be at the expense of the end-user. Japan is an example of a system that emphasizes these factors more heavily. Other examples would include systems where considerable infrastructure build-out is needed and incentives for investment outweigh the need to control customer prices. Italy and Spain are examples of jurisdictions that emphasize these factors more strongly.
- Protecting consumers from monopoly over-charging or from sudden large rate increases that could be imposed more gradually. When these concerns are more heavily weighted, companies are at financial risk if they cannot economically deliver a service at the regulated price. Some degree of financial deterioration of the utility may be accepted in the interests of protecting consumers from higher prices. California demonstrated a heavier weighting of these factors when wholesale market prices spiked in 2000-2001.
- Attempting to achieve a balance between satisfying the need of companies to be able to provide a return to their stakeholders and endeavoring to encourage efficiency and hold down prices. The regulatory systems of Australia and the UK are good examples of models that consistently stress these factors most heavily.

Examples of regulatory frameworks in each category:

- SRE 1: Australia, Canada, Iceland, Finland, Hong Kong, Japan, UK
- SRE 2: Austria, France, Germany, Italy, New Zealand, Portugal, Netherlands, Norway, Singapore, Spain, Sweden, U.S. states: Alabama, Delaware, District of Columbia, Florida, Georgia, Hawaii, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Nebraska, New York, North Carolina, Oklahoma, Oregon, Rhode Island, South Carolina, Tennessee, Utah, Virginia, Washington, Wisconsin
- SRE 3: Chile, Czech Republic, Estonia, Greece, Israel, Korea, Latvia, Malaysia, Taiwan, Thailand, U.S. states: Arizona, Arkansas, California, Colorado, Connecticut, Idaho, Illinois, Kansas, Louisiana, Maine, Michigan, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Ohio, Pennsylvania, South Dakota, Texas, Vermont, West Virginia, Wyoming
- SRE 4: Brazil, Bulgaria, China, Colombia, India, Indonesia, Philippines, Romania, South Africa

### **Assessment of the risk of the unregulated businesses**

A key component of Moody's ratings of electric utility companies is an individual assessment of the business risks as well as the financial risks for each company. The regulated activities of electric utility companies generally are more stable and carry lower risk than the business activities of most other corporate entities. As a result, utility companies are rated substantially higher than industrial companies that have a similar financial profile.

However, as noted above, many companies in the electric utility industry have a mix of regulated and unregulated businesses. These companies typically combine a low-risk electric utility business and what is in most cases a higher-risk unregulated business. The risk contribution from the unregulated businesses is determined by:

- 1) The relative proportion of the total company's business that comprises unregulated activities; and
- 2) The degree of risk of the particular unregulated activities.

Companies that have substantial unregulated activities that carry high or medium risk require stronger financial ratios to achieve a particular rating level than companies whose unregulated activities are small in size or are low in risk. Note that a company with a low-risk business profile will be rated more highly than a company that has the same financial profile but which has larger or higher-risk unregulated activities. The presence of a high proportion of risky non-regulated businesses could account for as much as a six rating notch differential over another company that was in a wholly regulated business.

Figure 4 shows a broad categorization of the relative riskiness of unregulated activities that are commonly part of the business of electric utility companies. These are grouped into broad categories of high, medium and low business risk. These classifications are general and do not fully capture individual company characteristics or differences in regional markets. For example, uncontracted wholesale power generation is likely to be riskier in the US, where the market is fragmented, than in Germany, where a smaller number of companies have relatively large market shares.

This categorization of the risks of unregulated businesses can be summarized as follows:

Category 1 – High

Category 2 – Medium

Category 3 – Low

<b>Figure 4</b>
<b>High Business Risk</b>
Merchant power generation that is located in highly competitive markets or merchant power generation that is high-cost and is not sold under long-term contract to a highly creditworthy counterparty.
Energy trading and marketing that is speculative or market-making in nature.
Investments in unregulated international power assets in unfamiliar markets.
Various investments outside the core area of industry expertise. Frequent areas for such diversified investment include: telecommunications; oil and gas exploration and production; and real estate development.
<b>Medium Business Risk</b>
Merchant power generation in markets in which competition is limited by the large market share of each participant, by geographic isolation, or by the utility's control of critical production and transmission infrastructure, or because the unregulated generation is relatively low-cost.
Affiliated energy generation and supply businesses that sell primarily under contract to the regulated utility or within the utility's core market area.
Energy trading and marketing that is strictly limited to trading around the utility's physical generation and transmission assets, with little or no market making trading.
Operation of coal mines or natural gas pipelines that are closely integrated with the utility's regulated generation business as the source of fuel for the regulated power plants.
<b>Low Business Risk</b>
Unregulated electricity generation that is wholly sold under long-term contract to highly creditworthy counterparties which assume all risk of fluctuation in the market prices of fuel and electricity.
Unregulated or lightly regulated electricity generation that is very well insulated from competition because of the utility's high market share or its ownership and tight control of the key infrastructure assets that are needed to generate or deliver electricity.
Selling and maintaining customer equipment that is related to the core utility business, or contractual arrangements to manage customers' fuel and electricity needs, under which the customer retains all risk of fluctuation in market prices.

### ***High-Business-Risk Unregulated Activities***

This higher business risk category includes merchant generation in highly competitive markets, energy trading and marketing that is speculative or market-making in nature, and unregulated electric generation investments in unfamiliar or poorly developed markets.

Merchant energy is considered to include unregulated power generation for which the output is not sold under long-term contract with a creditworthy counterparty. In the merchant model, power is sold into the competitive or merchant market, and cash flows are subject to market price volatility. The absence of contracts results in less predictable cash flows and higher business risk.

Energy marketing and trading is a related activity that often has a high level of risk associated with it. There can be substantial differences in the riskiness of energy trading and marketing, depending upon the strategy and size of this activity. Speculative trading activity has the potential to produce large swings in income or loss, has limited risk transparency, and may result in large swings in liquidity needs. Trading and marketing activities that are ancillary to a core utility business (trading around the physical assets) are considered to be much less risky than pure proprietary or speculative trading. However, all energy trading is viewed as having a higher business risk profile than regulated activities.

A number of other investments outside the core sector of industry expertise are likely to fall into the high business risk category. Such areas of diversification may include telecommunications, equity investments in leases, oil and gas exploration and production, miscellaneous manufacturing and real estate development.

Some companies have high-risk businesses that are sizeable in comparison to the more stable regulated business. These companies are expected to have financial ratios that are closer to those of an unregulated industrial company in the same rating category, in contrast to the financial ratios typical for a lower-risk regulated utility company. Companies with substantial high-risk activities will need lower leverage, and stronger cash flow coverage ratios to qualify for a particular rating category.

### ***Medium-Business-Risk Unregulated Activities***

Unregulated electricity generation may be medium-risk if competition is substantially limited by the structure of the market or by the generators' control over production and transmission infrastructure that is needed to reach customers, or if the unregulated generation has costs that are well below-average.

Also likely to fall into this category is unregulated generation that is largely sold back to the regulated utility without long-term contracts. This activity has a lower risk than merchant sales to third parties if the generating assets are advantageously located for the regulated utility. This is particularly likely when generating assets have been legally separated from the regulated utility. As part of the transition to deregulation, many utilities were required to disaggregate their generation, and these plants were often put into affiliated supply companies under a common parent holding company, but continue to sell a large portion of their output to the affiliated regulated utility.

Medium-risk unregulated generation is likely to have significant exposure to fluctuations in the price of fuel, or capital spending needs to maintain competitiveness or to meet environmental requirements.

### ***Lower-Business-Risk Unregulated Activities***

This category includes unregulated generation of electricity that is sold under long-term contract to highly creditworthy counterparties, with the purchaser bearing the risk of any change in the market price of fuel and wholesale power.

Unregulated electricity generation may also be low-risk if there is little competition due to the structure of the market or the generators' exclusive control over critical production and transmission infrastructure that is needed to reach customers.

Below-average costs are not necessarily sufficient for unregulated generation to be classified in the low-risk category. Without other mitigating factors being present, low-cost merchant generation is likely to be classified as medium-risk due to the potential for changes in relative cost competitiveness as market conditions change.

## **Conclusion on Qualitative factors**

This analysis of qualitative factors – the split of regulated versus non regulated activities and the respective risk analysis of those businesses – allows us to determine how stable and predictable we feel the cashflows of the company should be. The lowest business risk will be a company with wholly regulated activities in a supportive regulatory framework. The highest business risk will be a company with a high degree of exposure to non-regulated businesses when those businesses are viewed to be relatively high-risk.

Companies with a lower business risk can have weaker financial metrics than one with higher business risk for the same rating category.

## **QUANTITATIVE FACTORS**

### **Key ratios**

Moody's uses financial ratio analysis as part of our quantitative analysis of all corporates, including electric utilities. Ratio analysis is a helpful way of comparing one company's performance to that of another and the performance in one year to that in another.

However, the importance of ratio analysis can be overstated. No two companies look exactly alike from a qualitative assessment standpoint and each company we rate is constantly changing. It is impossible to assign an accurate credit rating on the basis of financial ratio analysis alone, even less so on the basis of any one ratio. Therefore, Moody's does not have any specific "hurdle rate" to explain which ratio will make the difference between any two rating categories.

Nonetheless, we have identified six core ratios which we consider to be the most useful when looking at an electric utility company. These are supplemented by other ratios which are particularly useful for various local regulatory frameworks.

The six core ratios<sup>1</sup> are as follows:

Primary:

1. Retained Cashflow<sup>2</sup> / Adjusted gross debt<sup>3</sup>
2. FFO / Adjusted gross debt
3. FFO / Interest
4. Adjusted gross debt / Regulated Asset Value<sup>4</sup>, or Capitalization

Secondary:

5. EBITDA Margin
6. Retained Cashflow / Capex

While other factors considered in this report may outweigh pure quantitative analysis, it is possible to provide broad guidance on the ratio ranges that may generally be seen at different rating levels.

In general, other factors – such as the degree of likely support from a sovereign – tend to outweigh financial ratios for companies operating in a very low business risk environment such as Japan or Finland. Similarly, considerations such as an undeveloped regulatory framework, potential political risk or relatively opaque corporate governance may outweigh financial ratios for companies operating in a high business risk environment. Our analysis also considers prospective future performance, which may differ from historic ratios.

Financial ratios are more useful for companies operating in a low business risk environment where there is a high degree of regulated activities and a supportive regulatory system. This might include the UK, US transmission and distribution utilities (T&Ds), Canada or many European countries. Medium-business-risk operating environments would include US integrated utilities.

As noted above, this is a local industry found globally rather than one where companies compete with each other outside their own local area. While companies in, say, Japan or in the US or in Germany, all tend to have similar profitability dynamics, there is little global similarity. Hence, measures of profitability are helpful in rank-ordering companies within their own local regulatory operating environment, but not helpful as a global indicator of ratings.

Measures of interest cover, cashflow to debt and balance sheet measures tend to be more consistent across the whole universe of global regulated electric utility companies.

As a guide, the following primary ratios, as set out in Figure 5, might be expected for a utility company without factoring in any uplift for possible sovereign support.

	<b>Aa</b>	<b>Aa</b>	<b>A</b>	<b>A</b>	<b>Baa</b>	<b>Baa</b>	<b>Ba</b>	<b>Ba</b>
<b>Business risk</b>	<b>Medium</b>	<b>Low</b>	<b>Medium</b>	<b>Low</b>	<b>Medium</b>	<b>Low</b>	<b>Medium</b>	<b>Low</b>
FFO int. cov. (X)	> 6	>5	3.5-6.0	3.0-5.7	2.7-5.0	2-4.0	<2.5	<2
FFO/Debt (%)	>30	>22	22-30	12-22	13-25	5-13	<13	<5
RCF/Debt (%)	>25	>20	13-25	9-20	8-20	3-10	<10	<3
Debt/Capital (%)	<40	<50	40-60	50-75	50-70	60-75	>60	>70

## **Other utility-specific issues relevant to quantitative analysis**

### ***Power Purchase Agreements (“PPAs”)***

Although many utilities own and operate power stations, some have entered into PPAs to source electricity from third parties to satisfy retail demand. The motivation for these PPAs may be one or more of the following: to outsource operating risks to parties more skilled in power station operation, to provide certainty of supply, to reduce balance sheet debt or to fix the cost of power. While Moody’s regards these risk reduction measures positively, some aspects of PPAs may negatively affect the credit of utilities.

1. Please see Appendix 2 for definitions.

2. Retained Cashflow (RCF) is FFO less dividends

3. Moody’s concentrates on gross debt but will also consider net debt ratios if the cash is clearly being held for future debt maturities or for reasons such as hedging. A good example of this would be a company that has hedged the exchange risk of an overseas investment with the local currency debt despite having surplus cash at the parent level. In such cases, the net ratio will take predominance over the gross ratio.

4. The Regulated Asset Value (RAV) or Regulated Asset Base (RAB)

Under most PPAs, a utility is obliged to pay a capacity charge to the power station owner (which may be another utility or an Independent Power Producer – IPP); this charge covers the portion of the IPP's fixed costs in relation to the power available to the utility. These fixed payments cover debt service and are made irrespective of whether the utility requires the IPP to generate. When the utility requires generation, a further energy charge, to cover the variable costs of the IPP, will also be paid by the utility. Some other arrangements are characterized as tolling agreements, or long-term supply contracts, but most have similar features to PPAs and are thus analyzed by Moody's as PPAs.

#### *Factors determining the treatment of PPAs*

PPAs have a wide variety of financial and regulatory characteristics and are thus each particular circumstance may be treated differently by Moody's. The most conservative treatment would be to treat the PPA as a debt obligation of the utility as, by paying the capacity charge, the utility is effectively providing the funds to service the debt associated with the power station. At the other end of the continuum, the financial obligations of the utility could also be regarded as an ongoing operating cost, with no long-term capital component recognized. Factors which determine where on the continuum Moody's treats a particular PPA are as follows:

- **Risk management:** An overarching principle is that PPAs have been used by utilities as a risk management tool and Moody's recognizes that this is the fundamental reason for their existence. Thus, Moody's will not automatically penalize utilities for entering into contracts for the purpose of reducing risk associated with power price and availability. Rather, we will look at the aggregate commercial position, evaluating the risk to a utility's purchase and supply obligations. In addition, PPAs are similar to other long-term supply contracts used by other industries and their treatment should not therefore be fundamentally different from that of other contracts of a similar nature.
- **Pass-through capability:** Some utilities have the ability to pass through the cost of purchasing power under PPAs to their customers. As a result, the utility takes no risk that the cost of power is greater than the retail price it will receive. Accordingly Moody's regards these PPA obligations as operating costs with no long-term debt-like attributes. PPAs with no pass-through ability have a greater risk profile for utilities. In some markets, the ability to pass through costs of a PPA is enshrined in the regulatory framework, and in others can be dictated by market dynamics. As a market becomes more competitive, the ability to pass through costs may decrease and, as circumstances change, Moody's treatment of PPA obligations will alter accordingly.
- **Price considerations:** The price of power paid by a utility under a PPA can be substantially below the current spot price of electricity. This will motivate the utility to purchase power from the IPP even if it does not require it for its own customers, and to sell excess electricity in the spot market. This can be a significant source of cash flow for some utilities. On the other hand, utilities that are compelled to pay capacity payments to IPPs when they have no demand for the power or when the spot price is lower than the PPA price will suffer a financial burden. Moody's will particularly focus on PPAs that have mark-to-market losses that may have a material impact on the utility's cash flow.
- **Excess Reserve Capacity:** In some jurisdictions there is substantial reserve capacity and thus a significant probability that the electricity available to a utility under PPAs will not be required by the market. This increases the risk to the utility that capacity payments will need to be made when there is no demand for the power. For example, Tenaga, the major Malaysian utility, purchases a large proportion of its power requirement from IPPs under PPAs. PPA payment totalled 42.5% of its operating costs in FY2004. In a high reserve margin environment existing in Malaysia, capacity payment under these PPAs are a significant burden on Tenaga, and some account must be made for these payments in its financial metrics.
- **Risk-sharing:** Utilities that own plant bear the associated operational, fuel procurement and other risks. These must be balanced against the financial and liquidity risk of contracting for the purchase of power under a PPA. Moody's will examine on a case-by case basis which of these two sets of risk poses greatest concern from a ratings standpoint.
- **Default provisions:** In most cases, a default under a PPA will not cross-default to the senior facilities of the utility and thus it is inappropriate to add the debt amount of the PPA to senior debt of the entity. The PPA obligations are not senior obligations of the utility as they do not behave in the same way as senior debt. However, it may be appropriate in some circumstances to add the PPA obligation to Moody's adjusted debt, in the same way as other off-balance sheet items.<sup>5</sup>

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5. See "The Analysis of Off-Balance Sheet Exposures – A Global Perspective", Rating Methodology, July 2004.

Each of these factors will be weighed by Moody's analysts and a decision made as to the importance of the PPA to the risk analysis of the utility.

#### *Methods of accounting for PPAs in our analysis*

According to the weighting and importance of the PPA to each utility and the level of disclosure, Moody's may analytically assess the total obligations for the utility using one of the methods discussed below.

**Operating Cost:** If a utility enters into a PPA for the purpose of providing an assured supply and there is reasonable assurance that regulators will allow the costs to be recovered in regulated rates, Moody's may view the PPA as being most akin to an operating cost. In this circumstance, there most likely will be no imputed adjustment to the obligations of the utility.

**Annual Obligation x 8:** In some situations, the PPA obligation may be estimated by multiplying the annual payments by a factor of eight. This method is sometimes used in the capitalization of operating leases.<sup>6</sup> This method may be used as an approximation where the analyst determines that the obligation is significant but cannot be quantified otherwise due to limited information.

**Net Present Value:** Where the analyst has sufficient information, Moody's may add the NPV of the stream of PPA payments to the adjusted obligations of the utility. The discount rate used will be the cost of capital of the utility.

**Debt Look-Through:** In some circumstances, where the debt incurred by the IPP is directly related to the off-taking utility, there may be reason to allocate the entire debt (or a proportional part related to share of power dedicated to the utility) of the IPP to that of the utility.

**Mark-to-Market:** In situations in which Moody's believes that the PPA prices exceed the spot price and thus a liability is arising for the utility, Moody's may use a net mark-to-market method, in which the NPV of the net cost to the utility will be added to its total obligations.

**Consolidation:** In some instances where the IPP is wholly dedicated to the utility, it may be appropriate to consolidate the debt and cash flows of the IPP with that of the utility. Again, if the utility purchases only a portion of the power from the IPP, then that proportion of debt might be consolidated with the utility.

In some circumstances, Moody's will adopt more than one method to estimate the potential obligations imposed by the PPA. This approach recognizes the subjective nature of analyzing agreements that can extend over a long period of time and can have a different credit impact when regulatory or market conditions change. In all methods the Moody's analyst will account for the revenue from the sale of power bought from the IPP. We will focus on the term to maturity of the PPA obligation, the ability to pass through costs and curtail payments, and the materiality of the PPA obligation to the overall cash flows of the utility in assessing the affect of the PPA on the credit of the utility.

#### ***Nuclear liabilities***

In several integrated European companies, nuclear power generation form a significant component of their power generation activities. These activities will usually be unregulated but comprise an important element of the analysis of these companies. The analysis is complicated by the lack of consistency in treating nuclear related items in different countries.

In general, nuclear waste management obligations are factored into debt using Moody's methodology for unfunded pensions. This recognizes the uncertainty of final amounts and timing in assessing the likely call on future cash flows. The methodology simulates a pre-funding of the obligation, taking into account access to the equity market and management's probable funding strategy. The existing debt-to-equity mix is generally used as a starting point.

For ratio analysis purposes, Moody's excludes reprocessing provisions from its calculation of total nuclear liability provisions if such provision is expected to remain a permanent component of the nuclear liabilities that will continually be replenished as fuel is used in the production process in line with the expectation that nuclear power will remain an important component of the company's generation portfolio for the foreseeable future.

For nuclear provisions that are recorded and funded on balance sheet, Moody's does consider the impact of their inclusion on adjusted debt ratio. However, we do recognize that their inclusion does understate the company's degree of financial flexibility for meeting financial debt obligations given the long duration of those provisions. This

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6. For further discussion of the methodology of rating lease obligations see "Off-Balance Sheet Leases: Capitalization and Ratings Implications – Out of Sight But Not Out of Mind", October 1999.

is because the cash outflows for these liabilities will not occur for a number of years and will then extend out in a form similar to operating expenses over a further extended period of time. This is taken into account by looking at both gross and net debt ratios.

### ***U.S. Securitization***

Beginning in the late 1990s, legislatively approved stranded cost securitization has become an increasingly used financing technique among investor-owned electric utilities. In its simplest form, a stranded cost securitization isolates a dedicated stream of cash flow into a separate special purpose entity (SPE) and uses that stream of cash flow to provide annual debt service for the securitized debt instrument.

Moody's generally treats securitization debt of industrial and financial issuers as being on-credit debt. The debt that is being securitized usually carries a rating that is higher than that of the issuing entity, and the assets that are being sold to the separate SPE are often of better quality than the assets that remain with the issuer.

Stranded cost securitization differs somewhat from other generic securitizations because the asset being sold is often of poor quality prior to the passage of legislation and the completion of a securitization. In most cases, the asset represents stranded costs that would have been written off by the utility in the absence of legislation allowing for recovery through a surcharge on regulated customers.

Instead, the state regulator – and sometimes the state legislature – establishes the authority for a surcharge on customers' bills, and authorizes the sale of securitized debt. The utility then sells the right to collect a dedicated stream of future cash flows from its regulated customer base that is sufficient to provide debt service on the securitized piece of debt. The issuing utility is typically required to use the proceeds of the debt offering to retire both debt and equity in a manner intended to maintain a predetermined capital structure. The securitization generally has language that enables the tariff to be unilaterally raised in the event that future sales turn out to be lower than originally planned.

Generally speaking, Moody's views stranded cost securitization as being credit-neutral to credit-positive since it typically addresses a major credit overhang, some form of potential stranded costs, and legislatively requires the utilities to use the proceeds for debt and equity reduction in a manner that targets a relatively conservative capital structure.

For the most part, the securitization tariff is separate from the "general tariff" charged to customers and any increase in the size of the securitization tariff is not at the expense of the general tariff. However, in two states, Illinois and Michigan, the utilities operate under a rate freeze, which precludes them from raising rates until the termination of their respective rate freeze. As such, any increase in the securitization tariff is at the expense of revenues and cash flow that would be available to service debt of the remaining creditors of the utility.

Along the same lines, Moody's notes that the size of the securitization tariff relative to the total tariff is an important element in evaluating the credit implications of a securitization because it can impact the future ability of a utility to obtain subsequent rate relief for other costs of service. In effect, customers do not discriminate between the securitization tariff and the general tariff when paying their bills. Consequently, to the extent that the securitization tariff needs to be increased, the financial flexibility and associated credit quality of the utility may be compromised, particularly if the securitization tariff is large relative to the general tariff and if the increase is taken from the cash flow of the utility. As a consequence, Moody's considers the impact that a securitization may have on the ability of the utility to raise rates in the future.

In calculating balance sheet leverage, Moody's treats the securitized bonds as being fully non-recourse to the utility even though accounting guidelines require the debt to appear on the utility's balance sheet. Consistent with this view, all balance sheet capitalization metrics exclude the securitized debt from the capital structure given the legal separateness that exists between the debt of the utility and the debt of the SPE, and the fact that regulators set future rates based upon a capital structure that does not include the securitization debt.

However, in looking at cash flow coverages, Moody's analysis stresses ratios that include the securitized debt in the company's total debt as being the most consistent with the analysis of comparable companies. This recognizes that regulatory approval for recovery of stranded costs and securitization are not always inextricably linked. Many utilities have approval for recovery of stranded costs but do not execute a securitization financing. Regulatory approval of stranded costs can be a credit transforming event when there is substantial doubt about recovery. However, the subsequent completion of a securitization financing does not change the amounts that are expected to be recovered. A securitization transaction does make it extremely unlikely that regulators can later disavow an agreement to allow recovery, and regulatory approval is often packaged together with a securitization with the view that ratepayers will benefit from low borrowing costs.

While our standard credit ratios for funds from operations to total debt and funds from operations interest coverage include the securitization debt, Moody's also looks at these two metrics without the securitization debt, to ensure that the benefits of securitization are not ignored. In making this adjustment, funds from operations is adjusted downward by the amount of principal amortization that is annually paid to the SPE in support of the securitization. Consistent with that adjustment, Moody's excludes the principal amount of securitization debt in the denominator in calculating a company's Adjusted FFO/Adjusted Total Debt and excludes the portion of a company's interest costs relating to the securitized debt when calculating a company's Adjusted FFO/Adjusted Interest. The analytical benefit of making this adjustment helps to determine the amount of residual cash flow (cash flow after satisfying securitization debt service) that is available to service the debt of general creditors.

The recent bankruptcy of Pacific Gas and Electric Company (PG&E) fortifies the strength of the legal separation among cash flows available to the SPE and cash flows available to the utility. Throughout the bankruptcy, funds dedicated to the securitization debt were collected by the utility and transferred on a daily basis to the trustee for the SPE creditors and PG&E's general creditors and the bankruptcy judge never challenged the continued transfer of such funds to the SPE. For this reason, the securitization debt of PG&E remained rated Aaa while the company operated in bankruptcy for more than three years.

## **ADDITIONAL RISK CONSIDERATIONS**

### **Analysis of Multiple Legal Entities within a Single Issuer Family**

Utility companies may have multiple legal entities within a single consolidated organization. This is the prevalent legal structure in the US, even for small utilities. The multiple-entity legal structure is also common in Canada and the UK and is employed by a number of the larger international utilities in other countries. In the US, most utility families have an unregulated holding company. The holding company will have one or more regulated operating subsidiaries, and may have one or more unregulated subsidiaries. Most utility families in the US issue debt at multiple legal entities within the organizational family.

In the case of multiple legal entities within a single issuer family, our approach is to assess each issuer on a stand-alone basis as well as evaluating the creditworthiness of the consolidated entity. We then assess the degree of legal and regulatory insulation that exists between the lower-risk regulated entities and the higher-risk unregulated entities.

The degree of notching (i.e. the rating differential) between entities in a single family of companies depends upon the degree of insulation that exists between regulated and unregulated entities. If the regulatory framework or regulatory practice establishes that there is substantial ring-fencing type insulation for the regulated entity, there may be three or more notches of rating differential between the regulated and the unregulated entities. If there is little or no ring-fencing, there will usually be only a one- or two-notch differential between the unregulated entity (in most cases a holding company) and the regulated entity (in most cases an operating company).

Regulatory ring-fencing for utilities may include minimum equity requirements, limitations on the movement of funds from regulated entities to unregulated entities, and prohibitions against credit support by regulated entities for unregulated entities. This may exist by statute, but most typically takes the form of rules that are established by the regulator. In the United States, where these provisions are most common, the rules may differ for individual utilities in the same state.

Many regulators restrict the ability of utilities to extend intercompany loans, guarantees, or to make payments to unregulated affiliates and parent holding companies. For example, utilities in the state of Wisconsin may only pay dividends to their unregulated holding company (the ultimate parent company in these organizations) in excess of an amount established in each rate case if common equity falls below an authorized level.

Regulators also often have wide discretion to impose new restrictions on regulated entities when the utility appears to be threatened by weakness of its unregulated affiliates. For example, the state regulatory commission in Oregon established tight limitations on any movement of funds by Portland General to its parent company when the parent company filed for bankruptcy protection. These ring-fencing protections were a key reason that Portland General did not default or experience substantial financial distress while its parent was in bankruptcy.

Where regulated utility entities are not well insulated from unregulated affiliates, the ratings of these entities will be notched fairly closely, generally within one or two notches. This will be the case even when one entity has substantially stronger financial ratios than its affiliate, if there is little or no restriction upon movement of funds between the two entities, or if there is a substantial operational interdependence. For example, where the regulated utility is highly dependent upon contractual purchases of power from its unregulated generating affiliate, the ratings of

these two entities will likely be one or two notches apart even if their individual financial profiles would suggest different ratings on a stand-alone basis.

Where regulated utility entities are strongly insulated from unregulated affiliates through prohibitions on loans and credit support, where there are strong regulatory limitations on dividends, and where there is little or no operational interrelationship between regulated and unregulated affiliates, the ratings will be driven more by the stand-alone credit quality of each entity, and may be three or more notches apart.

### **Non-specific utility risk factors**

The majority of the risks considered in this rating methodology are specific to utilities. However, lenders to utilities are also exposed to many of the risks that are common to all industrial companies. These are not covered in detail here as a full analysis can be found in the relevant Moody's research. However, it should be noted that such factors may potentially outweigh the utility-specific considerations covered in depth in this report.

For example, a company that currently shows very strong financial ratios and operates in a supportive regulatory framework could still have a relatively low rating if it had very weak liquidity arrangements or high "event risk" such as if it were pursuing an acquisition policy that was very likely to result in a change in the company's business risk policy going forward.

The generic industrial company risks to which a utility may also be exposed include the following:<sup>7</sup>

- An assessment of the adequacy of the company's liquidity arrangements<sup>8</sup>
- An assessment of the quality of its corporate governance arrangements<sup>9</sup>
- An assessment of the quality of its management – their experience, appetite for risk and ability to fulfill the company's stated strategy
- An assessment of event risk and the probability that this could lead to a change in the company's financial position, business risk profile or its regulatory and political operating environment<sup>10</sup>
- Exposure to off-balance sheet risks<sup>11</sup>
- The potential support of or interference by a sovereign or sub-sovereign entity<sup>12</sup>

## **Regional Considerations**

### **RATING DIVERGENCE LIMITED AMONG JAPANESE UTILITIES**

Japanese electric utilities are rated in a relatively narrow range from Aa3 to A1. This reflects Moody's view that the conservative and predictable regulatory regime, and the individual companies' solidly established franchises in their operating regions, will not lead to major differences in credit risks among the rated utilities. Their financial profiles are more or less comparable, and they have simple corporate structures and limited business diversification exposures.

Moody's rates the three utilities that cover Japan's three largest economic areas at Aa3 (Chubu Electric Power, Kansai Electric Power, and Tokyo Electric Power), and six other utilities at A1 (Chugoku Electric Power, Hokkaido Electric Power, Hokuriku Electric Power, Kyushu Electric Power, Shikoku Electric Power, and Tohoku Electric Power).

Japan's regulator makes the maintenance of supply security its primary policy objective, followed in priority by environmental protection and, finally, allowing market mechanisms to work. This approach preserves utilities' integrated operations and makes them responsible for final supply to users in the liberalized market.

The government is gradually deregulating the industry and expanding the liberalized market. This market, which was partially introduced in 2000, was expanded from about 26% of the total to about 40% in April 2004, and will be

7. See, for example, "Industrial Company Rating Methodology", July 1998

8. See, for example, "Moody's Liquidity Risk Assessments – Q&A", March 2002, "Moody's Analysis of US Corporate Rating Triggers Heightens the Need for Increased Disclosure" and "Rating Triggers in Europe: Limited Awareness but Widely Used Among Corporate Issuers", September 2002

9. See, for example, "U.S. and Canadian Corporate Governance Assessment", August 2003 and "Moody's Findings on Corporate Governance in the United States and Canada: August 2003 - September 2004", October 2004

10. See, for example, "Event Risk's Four Horsemen of the Apocalypse: Decapitalization, Cash-financed M&A, Litigation, and Accounting Irregularities", November 2000 and "Event Risk For European Corporates 2003 – Still A Credit Risk, Still Part Of Our Analysis", February 2003

11. See, for example, "The Analysis Of Off-Balance Sheet Exposures: a Global Perspective", July 2004

12. Note: Moody's paper "The Incorporation of Joint-Default Analysis into Moody's Corporate, Financial and Government Rating Methodologies" February 2005 which may affect the ratings of, for example, a municipality supported by a regional or national government.

further expanded to about 63% in April 2005. However, the pace of deregulation has been set as moderate so that the regulator can monitor the risks and the effects on the power companies, especially in the context of supply security.

The Japanese utilities hold strongly established franchises in their operating regions, maintaining dominant market shares despite the market for large customers being deregulated. Some utilities still hold 100% shares.

Direct competition among integrated utilities has been very limited. This is mainly because: (1) each integrated operator holds a solid franchise in its operating region due to effective regional monopolies; (2) the companies display similar cost positions, and achievement of any meaningful differentiation in pricing is difficult; (3) the utilities are fully aware that an aggressive challenge by one utility in another's franchise would trigger industry-wide competition, which would, in turn, significantly weaken the industry's overall profitability; and (4) all the utilities exhibit similarly leveraged balance sheet positions and place priority on debt reduction, having completed most of their major investments.

In addition, the ability of power producers and suppliers (PPSs) to take utilities' shares has been restrained by limitations on: (1) their ability to purchase power from, for example, captive power plants; (2) their opportunities to build competitive plants on their own; and (3) their marketing abilities.

Although PPSs have been gaining minor shares in some utilities' franchise areas, and some are constructing their own power plants, their aggregate share is expected to remain insignificant over the intermediate term, due to power companies' rate strategies aimed at protecting their franchises and PPSs' ongoing limited access to power sources.

As such, although the rates are to be further lowered through the ongoing deregulation process, we expect the utilities' franchises to remain solid and stable over the intermediate term.

Government energy policy has made nuclear generation a core power source, while leaving actual implementation of the policy – construction and operation of nuclear power plants – to privately owned and managed utilities. Thus, these companies play an important role in the nation's energy policy, although the government remains the main driver by establishing and maintaining their nuclear power operation systems.

The government is now reviewing the economic feasibility of the nuclear fuel cycle, the allocation of back-end costs, and power utilities' reserves for back-end costs. While the outcome of the review could affect utilities' investment, cost, and balance sheet positions to some extent, we do not expect any significant changes in their policy role, business risks or cost competitiveness.

## **EUROPE**

### **EU policy is the driver for regulatory development in Europe**

The EU Electricity Directive of 1999, subsequently amended by the EU Energy Council in 2002, set the roadmap towards full supply liberalization in the European Union as well as addressing issues such as non-discriminatory access to the transmission grid and the granting of new generation licenses. The current aim is to have full liberalization within the EU by 2007.

#### ***Despite EU policy, there is a regulatory patchwork across Europe***

Despite the EU directive, there is some flexibility in its implementation, leading to different regulatory models. The process has in most cases led to the establishment of an independent regulator, although the degree of independence from government influence varies significantly. In some countries, such as Spain and Greece, the government maintains control for final setting of tariffs and the regulator acts in an advisory capacity, whilst at the other end of the spectrum are those countries where there is a fully independent regulator, such as in the UK.

Having achieved full supply liberalization, the regulator can focus on regulating the monopoly wires activities – transmission and distribution. The UK has adopted an ex-ante approach, with a tight regulatory framework for wires activities. "Ex-ante" means setting the tariffs in advance, normally for a 3-5 year period, and the regulator allows the company to recover operating and capital expenditures as well as a return on capital. Normally the regulator will benchmark companies against their peers and will allow certain revenues (a revenue or price cap), often adjusted for inflation and an efficiency incentive, depending on how efficient the company is perceived to be.

By contrast, Sweden and Finland initially adopted a much lighter "ex-post" system, which allows companies to set their own prices to achieve a reasonable return on a cost-plus basis, with an arbitration mechanism to allow for complaints and remedies. Despite this looser regime, prices in these markets have been some of the lowest in Europe, benefiting no doubt from the overall greater price transparency from a fully liberalized market. However, under

further direction from the EU, Finland and Sweden (and Denmark) are now moving towards an ex-ante regime and this we would expect to become the norm in Europe.

Germany has yet to establish an independent regulator – although it is now moving in this direction – with network tariffs being set within the context of a voluntary agreement between utilities. Access tariffs are set on a negotiated basis, but in practice the German market is difficult and expensive for new entrants to access.

***In Moody's view, power shortages in 2003 have led to an easing in regulatory pressure as security of supply displaces cost as a key aim***

Regulators initially introduced quite harsh efficiency incentives or tariff caps, with tariffs reduced in real terms as companies have become more efficient. However, recent tariff pressure has been upward, e.g. Spanish tariffs fell in real terms between 1996 and 2002 but the current tariff framework now allows for gradual increases. This can be explained by greater concern over security of supply, with Europe having experienced blackouts during 2003. Moody's believes that regulators wish to ensure that an incentive to invest remains, particularly as some aged thermo capacity and a number of nuclear plants are earmarked for decommissioning in the next few years.

***In Central and Eastern European countries, regulation is following in a similar direction but at a slower pace***

Central and Eastern European countries and the Baltic states are following EU directives, but are at an earlier stage of regulatory evolution. Whilst most have put in place at least the first Energy Law, implementation is often at an early stage under an extended implementation timetable or relatively new and untested. Many of these countries have now established an independent regulator although there is still a state-owned incumbent with a dominant or monopoly position.

These countries typically face privatization, structural separation (generation, transmission, distribution and supply), tariff increases and issues concerning cross-subsidization – with accession states such as Romania and Bulgaria aiming to have completed the process by 2007. Electricity market development is often linked to the economic and structural development of the country in which they operate. Indeed, the requirements of the IMF or World Bank may allow for only a gradual increase in tariffs (Romania and Bulgaria).

From a credit perspective, whilst the timely recovery of all costs may be delayed or constrained, the impact of such can be mitigated by the dominant market position of these key utilities and/or their strategic importance to the State and the role they play in the development of the economy.

**Rating the UK regulated transmission and distribution companies**

The UK electricity system is divided into a number of monopoly areas for the high-voltage transmission and lower-voltage local distribution of electricity. There is one monopoly transmission area and 12 Distribution Network Operators (DNOs) covering England and Wales. Two additional companies have the monopoly rights to transmission and distribution in distinct areas within Scotland. As these businesses are monopolies they are subject to price control regulation primarily aimed at protecting the consumer's interests.

All of these businesses are regulated by the Office of Gas and Electricity Markets (OFGEM). OFGEM itself is an independent body governed by an authority made up of independent, non-executive Directors and an Executive team. OFGEM is not part of the UK government but its duties and powers were established by Acts of Parliament and they must have regard to guidance from the government on issues such as protecting the environment.

The revenue that a monopoly business can earn on its regulated business is restricted by an RPI-X price control formula that is reviewed every five years. The formula is designed to allow a company to increase prices to reflect inflation while encouraging efficiency through a "-X" from the RPI. In addition, at the start of each regulatory period, prices are raised or reduced by a one-off price adjustment known as the  $P_0$  adjustment. In order to calculate the "X" and the " $P_0$ " for each company, OFGEM considers the Regulatory Asset Base of each company and sets a formula to provide a fair rate of return on those assets, typically around 6-7%. The next regulatory period for the transmission companies starts in 2007 and for distribution companies in 2005.

The practical regulation system involves a very detailed analysis of each company's regulated asset base and operating and capital expenditures. The output is a very detailed and highly predictable cashflow forecast for the next regulatory period. If the companies can improve efficiency, then they can retain most of the benefit. However, if they lose efficiency or the regulatory outcome proves unachievable, then this is a risk for the stakeholders in that company.

For Moody's, the ratings of these businesses depend upon two key factors:

1. The projected financial position of the company once the final regulatory outcome is known. This is measured by a number of financial ratios including FFO interest cover and Debt/Regulated Asset Value.
2. The additional burdens placed on the regulated entity's cash flows by its parent, mainly in the form of additional parental debt which needs to be serviced by dividends from the regulated operating company.
3. DNO-specific issues such as unfunded pension deficits unrelated to the distribution business, debt maturity profile and debt capital structure considerations.

According to OFGEM, after these adjustments, the intention is that all companies will earn the same baselines return of 6.6% on a pre-tax, real basis if they perform in line with the regulator's projections. The main issues are expected to be the need to increase capex to replace network assets and improve network performance, to put a greater emphasis on quality of service, and to respond to the growth in sources of renewable energy. These final determinations for the 2005-2010 price control period will become effective in April 2005.

The main rating implication from these proposals is likely to fall on companies whose overall financial profile is burdened by the need to pay large dividends to service and repay debt at holding company levels. While this can lead to a significant cash drain, the debt at the holding companies is outside the regulatory ringfence and is not protected by the OFGEM framework. One such holding company, Avon Energy Partners, has already defaulted on its debt obligations, while the operating company Midlands Electricity had no financial difficulties, thus illustrating that lending to such holding companies is significantly more risky than lending to the regulated entity itself.

When looking at the financial ratios for regulated UK DNOs, there are a number of important considerations to bear in mind:

1. The Regulated Asset Value (RAV) is an important reference point as allowable revenues and allowable capital expenditures both feed from or into this. Hence, the Debt/RAV ratio is one of the more critical financial ratios to consider.
2. OFGEM's scope of regulation is limited to the regulated entity, while Moody's rating of the DNO also factors in debt which must be serviced by cash flows from the DNO. This means that an RCF number (cashflow after dividends) is an important one for a DNO. It also means that ratios factoring in any "Holdeo" debt tend to outweigh pure "stand-alone" DNO ratios. In practice, there are no remaining stand-alone DNOs.
3. Some DNOs retain cash to meet future debt maturities and where this is the case, the emphasis falls on net rather than gross debt numbers.

As a guideline and ignoring other considerations, the following ratios might be expected for UK DNOs at various rating levels, without factoring the need to support other group debt (if there is such debt, stronger ratios would be needed for the same rating level):

DNO	RCF/Net debt	Net debt/RAV	FFO interest cover
Aa	> 17%	< 45%	> 4.5 X
A	7 - 18%	40 - 68%	2.8 - 5.0X

## **AUSTRALIAN T&D RATINGS ARE HIGHER THAN UK RATINGS FOR COMPARABLE ENTITIES**

Differences in regulatory philosophy between Australia and the UK mean that Moody's on average rates Australian electricity transmission and distribution (T&D) companies one notch above the ratings of their UK peers, even though both parties may have approximately the same level of debt coverage measures.

Furthermore, the impact of the regulatory differences is such that when Australian and UK companies share the same rating level, the Australian companies conversely exhibit weaker debt coverage measures. Moody's believes that the financial profiles of Australian T&D companies are sustainable within their present ratings, given their benign regulatory environments.

Moody's compared – on a senior unsecured basis – Baa-rated T&D companies in Australia and those in the UK. The projected average financial ratios for Australian T&D companies over the next few years are as follows:

Debt-to-Regulated-Asset-Base	103%
RCF-to-Debt	4%
FFO-to-Interest	2.3 times

The UK T&D companies – on the other hand – have higher financial ratio hurdles at the Baa rating range. For instance, UK Baa-rated T&D companies are expected to have Debt-to-RAB ratio in the range of 60-90%, RCF-to-Debt 10-15%, and FFO-to-Interest of above 2.8 times.

On one level, the Australian and UK regulatory regimes are close matches. For example, regulators in both countries have adopted similar frameworks for determining revenues and returns. However, on a practical level, regulators in Australia have assumed a more benign stance on requirements for revenues and returns.

Moody's believes that this situation reflects the Australian regulators' approach in the following areas: (1) more generous cost allowances for maintaining minimum levels of service and system reliability for T&D assets; (2) appropriate levels of return for regulated T&D companies; (3) regulators' willingness to allow the retention of efficiency out-performances; and (4) greater certainty in regulatory outcomes at the next resets.

A comparison of recent tariff resets in both countries supports the conclusion that the Australian environment is more benign, a situation which Moody's believes will prevail over the medium term. Consequently, we do not expect an aggressive tariff decision at the next reset, scheduled for 2006 for electricity distributors in the state of Victoria.

In the UK, electricity distributors are undergoing a tariff reset for the five-year period commencing April 2005. The expected outcome for this reset is still evolving. However, the UK electricity distributors' cash flows could come under some pressure as the regulator restricts the ability of distributors to carry through to the next regulatory period the efficiency savings achieved. At the same time, distributors are expected to face higher cash commitments as a consequence of increased tax obligations and capital expenditure requirements to support various policy initiatives. As a result, UK T&D companies would need a more prudent set of financial policies to preserve their credit profiles.

While there is relative certainty in the Australian regulatory environment over the next reset period, it is more difficult to predict with confidence developments in regulatory thinking over the longer term. Consequently, Australian T&D companies must adopt prudent financial policies in readiness for a possible evolution in regulatory thinking at the end of the next regulatory period in 2010.

In this regard, companies that persist with highly leveraged capital structures on a Debt-to-RAB basis – that is, a ratio of over 100% – and exhibit no ability or commitment to de-leverage over the longer term may be more exposed to severe regulatory outcomes.

The ability of a company to de-leverage is indicated by the extent of free cash flow generation – relative to debt levels – after servicing all operational, debt, and dividend obligations.

## UNITED STATES

The US electric utilities are characterized by a substantial diversity in both their business models and their regulatory risk. Business models vary from the lowest-risk companies that have purely regulated activities and which operate in states that have supportive regulation, to the highest-risk companies that have substantial unregulated activities and which operate in states that have less supportive or less predictable regulation.

Moody's views the business risk of US utilities as being higher in most cases than that of utilities in some other developed countries, including Japan, Australia, and the United Kingdom. This difference in risk reflects the following factors:

1. State regulation is seen as less predictable than national regulation. State regulation is the primary form of regulation in the US. Compared to national regulators, state regulators represent a smaller economic region. As a result, Moody's believes that state regulators may be more likely to be responsive to the objections of local customers and politicians when a utility seeks a large rate increase to address a large increase in costs or capital expenditures. As noted in the default section in Appendix 3, failure to obtain timely rate increases was a key factor in four recent defaults by US utilities. In addition, various parties may seek to intervene in in U.S. state regulatory proceedings, which can cause delay and increased uncertainty.

2. A large fragmented market structure results in stronger competition in unregulated wholesale power markets. The US electric utility industry is fragmented in comparison to Japan and major countries in Europe. Although the US represents over one fourth of global electricity consumption, none of the US utilities ranks in the top ten in terms of revenues among global utility companies. As portions of the market have become deregulated, US utilities are more vulnerable to changes in wholesale power costs because their market share and market power is more limited than those of comparable utilities in most other countries. Regulators have strived to limit market power to protect consumers, resulting in longstanding legal and regulatory impediments to industry mergers and consolidation.
3. More volatile fuel and wholesale power markets. Natural gas prices are completely unregulated in the US, which can result in rapid and wide swings in prices. There is a large unregulated power market in the US, which responds quickly to changes in fuel costs and passes these changes through to wholesale power prices. This combination of factors can result in more rapid and wider swings in prices than in more controlled markets.
4. Low likelihood of extraordinary political action to support a failing company. Utilities provide an essential service, so financial distress has a high political profile. Governments in the US have broadly demonstrated a reluctance to intervene on behalf of troubled investor-owned utilities when this could be viewed as providing economic assistance to private shareholders. This approach is in sharp contrast to the large US municipal utility sector, in which supportive government action is far more likely. Governments in many other countries (for example, Japan or Canada) are perceived as being more likely to work with regulators and financial institutions to support electric utilities as highly visible entities that provide a critical service.
5. Holding company structures limit regulatory oversight. State regulators only have authority over the regulated operating utility. The vast majority of companies have established unregulated holding companies that have the ability to engage in higher-risk unregulated businesses in the hopes of earning shareholder returns that are higher than the returns provided for the regulated business.
6. Overlapping or unclear regulatory jurisdiction. The electric utilities industry in the US is characterized by regulation at both the federal and state levels. Traditionally, the federal government has regulated the interstate and wholesale transmission of electricity, while distribution and retail services to consumers have been regulated by the states. Each state exhibits its own unique regulatory characteristics which set the parameters and define the environment in which a particular utility operates. In some instances the jurisdictions can overlap, such as in the case of mergers and transactions with affiliates.

### **Federal Energy Regulatory Commission (FERC)**

The key federal regulatory agency governing utilities in the US is the Federal Energy Regulatory Commission (FERC), an independent agency that regulates the interstate transmission of natural gas, oil, and electricity, as well as natural gas and hydroelectric power projects. In the electric market, the FERC's responsibilities include the approval of rates for the wholesale sale of electricity and transmission on an interstate basis for utilities, power marketers, power pools, power exchanges, and independent system operators. The FERC sets the price for those utility transmission systems that fall within its jurisdiction, although many portions of utility transmission systems fall under the jurisdiction of the state regulatory agencies.

In recent years, FERC has issued several orders aimed at opening the transmission lines of utilities in the US. In 1996, FERC Order 888 provided rules for open access of transmission lines to all suppliers and for competition in the wholesale market and set standards for regional transmission organizations (RTOs). In 1999, FERC Order 2000 encouraged utilities with transmission assets to voluntarily transfer control of their transmission systems to these RTOs, which could either be non-profit independent system operators (ISOs) or for-profit transmission companies. Although some utilities have transferred their transmission assets into RTOs, others have thus far resisted attempts to place their transmission assets under outside control.

### **Public Utility Holding Company Act (PUHCA)**

The most significant piece of legislation governing public utility holding companies at the federal level is the Public Utility Holding Company Act, more commonly known as PUHCA. The Act was passed in 1935 to regulate interstate utility holding companies in response to the financial collapse of a number of such holding companies following the stock market crash of 1929. When utilities in different states combine or merge under a holding company, the new

entity becomes registered under PUHCA, which provides for SEC regulation of their financing activities, including the sale and purchase of securities and assets. PUHCA gives the SEC the power to exercise broad oversight over business combinations that result in functional or geographic diversification of utilities.

Historically, the SEC has severely restricted the types of business activities in which registered holding companies may engage. The National Energy Policy Act of 1992 (NEPA) eased some of the regulatory restrictions imposed by PUHCA by allowing registered holding companies to establish non-utility generating subsidiaries and to purchase foreign utilities without seeking prior SEC approval. However, registered holding companies are still prohibited from owning both electric and gas operations or possessing unregulated businesses without SEC approval. Although there have been a number of attempts over the last few years to repeal PUHCA, most recently as part of comprehensive energy legislation considered but not passed in 2003, it remains a key federal regulatory constraint and limitation for those holding companies registered under PUHCA.

### **State Regulatory Commissions**

The most important regulatory factor affecting the sale of electricity by utilities at the retail level are state agencies generally known as Public Utility Commissions or Public Service Commissions. These commissions comprise elected or appointed officials in each state who determine, among other things, whether utility expenditures are reasonable and how they should be passed on to consumers through their electric rates. They also regulate each utility's rates of return and monitor the quality and reliability of a utility's electric service. The state-level factors that Moody's takes into consideration when evaluating the credit quality of utilities include the following:

- **Status of Deregulation/Retail Access**

Since industry restructuring began in the mid-1990s, states have taken a variety of approaches to the question of whether they should deregulate their electricity markets. Some states have passed comprehensive deregulation legislation and completely restructured. Some have avoided it entirely, while others have introduced some elements of deregulation into their markets. Over the last several years, 18 states have undertaken some form of deregulation or retail open access, while 32 others have elected not to deregulate after studying and debating restructuring initiatives (see Figure 8 for details).

- **Ring-Fencing Provisions**

State commissions sometimes attempt to insulate and protect regulated operating utilities from the often riskier activities of their parent companies or unregulated subsidiaries. Some so-called "ring-fencing" provisions that have been adopted at the state level include: dividend limitations, minimum equity requirements, limits on unregulated activities, credit rating requirements, the maintenance of collateral, limitations on intercompany transactions, and restrictions on asset sales.

- **Transition Periods and Rate Caps**

Some utilities are subject to price limitations or rate freezes which were put in place as states implemented transition plans to deregulate their electric markets. These rates were often thought to be adequate to permit the utilities to both recover stranded costs and earn an adequate rate of return until a fully competitive environment developed. Many of these transition periods and associated rate caps are now ending without a fully competitive market having developed, and the likelihood that these transition periods will be extended is an important credit consideration.

- **Cost Recovery Provisions**

States have various policies with respect to fuel and wholesale power cost recovery, and the recent volatility in commodity prices have made these provisions important elements of a utility's cost management capability. Such provisions make it possible for utilities to quickly adjust rates in the event of an unexpected hike in fuel costs. Although the number of states permitting such recovery has declined, particularly in those that have transitioned to a competitive market, they remain critical risk mitigants to those utilities still operating in regulated environments.

- **Incentive- or Performance-Based Rates (Earnings Sharing)**

Utilities in the US have traditionally operated under "cost of service"-based rates under which revenues were set to permit the utility to cover its costs and provide for an acceptable rate of return. However, a number of state regulatory commissions have implemented incentive- or performance-based rates which give utilities incentives to operate better and more efficiently. Often, these incentives take the form of an earnings sharing mechanism, allowing a utility to keep some of the profits earned above a predetermined range, while returning any excess to ratepayers.

**Figure 8 – Regulatory Characteristics of States in the U.S.**

State	Deregulation	Rate Cap	Cost Recovery	Earnings Sharing
Alabama			X	X
Alaska	N/A	N/A	N/A	N/A
Arizona	X	X	X	
Arkansas			X	
California	X		X	X
Colorado			X	X
Connecticut	X	X	X	X
Delaware	X	X	X	
DC	X	X		
Florida			X	X
Georgia			X	X
Hawaii			X	
Idaho			X	
Illinois	X	X	X	X
Indiana			X	X
Iowa			X	
Kansas			X	
Kentucky			X	
Louisiana			X	
Maine	X		X	
Maryland	X	X		
Massachusetts	X		X	X
Michigan	X	X	X	
Minnesota			X	
Mississippi			X	X
Missouri				X
Montana				
Nebraska	N/A	N/A	N/A	N/A
Nevada			X	
New Hampshire	X	X	X	
New Jersey	X		X	
New Mexico		X		
New York	X		X	X
North Carolina			X	
North Dakota			X	X
Ohio	X	X		
Oklahoma			X	
Oregon			X	
Pennsylvania	X	X		
Rhode Island	X		X	
South Carolina			X	
South Dakota			X	
Tennessee			X	
Texas	X		X	
Utah				
Vermont				
Virginia	X	X		
Washington			X	
West Virginia			X	
Wisconsin			X	
Wyoming			X	

Source: Moody's, Regulatory Research Associates.

## APPENDICES

### Appendix 1 – Three Year Average Ratios and Current Ratings

Company name	Country	Rating	Revenues \$bn equiv	EBITA margin %	FFO interest times coverage	FFO/TD %	RCF/TD %	RCF/ Capex %	TD/ Capitalization %
<b>EUROPE</b>									
Landsvirkjun	Iceland	Aaa	0.2	28.2	2.7	6.7	6.4	67.7	68.2
EVN	Austria	Aa3	1.1	11.9	10.3	30.0	26.2	111.8	43.6
Fingrid	Finland	Aa3	0.3	33.9	2.6	8.1	7.5	165.2	78.4
Electricite de France	France	Aa3	45.4	13.4	4.3	20.1	16.9	93.6	64.2
E.on	Germany	Aa3	41.1	12.1	4.7	13.7	9.6	76.2	37.4
Terna	Italy	Aa3	1.2	50.8	3.8	17.7	15.7	43.9	50.0
Statnett	Norway	Aa3	0.5	30.8	3.1	15.6	9.7	92.3	57.6
Scottish & Southern Energy	UK	Aa3	7.2	15.4	8.5	38.6	20.7	94.9	45.3
			hi	50.8	10.3	38.6	26.2	165.2	78.4
			avg	24.1	5.3	20.6	15.2	96.9	53.8
			med	15.4	4.3	17.7	15.7	93.6	50.0
			low	11.9	2.6	8.1	7.5	43.9	37.4
Verbund	Austria	A1	2.3	21.9	2.1	8.7	7.6	311.4	74.4
RWE	Germany	A1	42.0	11.5	3.6	15.8	13.6	58.3	40.3
ENEL	Italy	A1	38.1	15.1	5.0	21.9	14.7	69.1	53.3
			hi	21.9	5.0	21.9	14.7	311.4	74.4
			avg	16.2	3.6	15.5	12.0	146.3	56.0
			med	15.1	3.6	15.8	13.6	69.1	53.3
			low	11.5	2.1	8.7	7.6	58.3	40.3
Suez	France	A2	45.2	9.3	2.3	12.0	7.8	42.0	68.8
EWE	Germany	A2	2.9	7.3	22.4	77.5	69.4	100.8	42.9
Essent	Netherlands	A2	8.8	10.4	5.6	28.4	25.5	152.5	61.3
Nuon	Netherlands	A2	4.7	9.4	7.0	28.6	25.2	93.9	40.8
Red Electrica de Espana	Spain	A2	0.5	36.6	8.2	25.2	18.1	37.0	56.9
Iberdrola	Spain	A2	7.0	18.7	3.3	14.4	9.9	72.3	57.9
National Grid Company	UK	A2	2.5	0.4	4.0	0.2	0.1	1.2	0.6
United Utilities Electricity	UK	A2	0.5	53.6	4.5	22.2	14.4	75.8	52.4
			hi	53.6	22.4	77.5	69.4	152.5	68.8
			avg	18.2	7.2	26.1	21.3	71.9	47.7
			med	9.9	5.0	23.7	16.3	74.0	54.6
			low	0.4	2.3	0.2	0.1	1.2	0.6
Eesti Energia	Estonia	A3	0.3	12.6	10.9	49.6	49.6	71.2	23.3
Energie Baden-Wuerttemberg (EnBW)	Germany	A3	9.7	6.9	2.3	5.8	3.6	21.9	80.3
Electricidade de Portugal	Portugal	A3	8.7	11.8	3.6	10.8	7.3	65.2	58.3
Endesa	Spain	A3	21.0	19.4	3.3	12.7	9.2	-971.8	66.6
Vattenfall	Sweden	A3	13.6	16.5	4.0	15.6	14.0	84.1	53.9
			hi	19.4	10.9	49.6	49.6	84.1	80.3
			avg	13.4	4.8	18.9	16.7	-145.9	56.5
			med	12.6	3.6	12.7	9.2	65.2	58.3
			low	6.9	2.3	5.8	3.6	-971.8	23.3

## Appendix 1 – Three Year Average Ratios and Current Ratings

Company name	Country	Rating	Revenues \$bn equiv	EBITA margin %	FFO interest times coverage	FFO/TD %	RCF/TD %	RCF/ Capex %	TD/ Capitalization %
CEZ	Czech Republic	Baa1	2.2	18.7	8.4	50.0	45.6	145.7	21.8
Public Power Corp (PPC)	Greece	Baa1	3.5	19.6	4.9	15.8	14.4	101.6	69.3
Latvenergo	Latvia	Baa1	0.3	11.8	14.6	63.2	59.0	63.0	25.3
Eskom	South Africa	Baa1/A3	3.5	37.3	3.4	24.2	23.8	202.7	53.2
Scottish Power plc	UK	Baa1	9.3	19.5	3.8	16.2	8.7	30.6	56.6
			hi	37.3	14.6	63.2	59.0	202.7	69.3
			avg	21.4	7.0	33.9	30.3	108.7	45.2
			med	19.5	4.9	24.2	23.8	101.6	53.2
			low	11.8	3.4	15.8	8.7	30.6	21.8
Israel Electric Corporation (IEC)	Israel	Baa2	2.6	17.3	2.2	7.5	7.4	65.1	69.9
Union Fenosa	Spain	Baa2	5.6	15.7	2.1	4.4	2.3	54.8	65.1
WPD Holdings UK	UK	Baa3	0.5	47.7	2.4	9.1	6.7	50.0	68.3
CE Electric	UK	Baa3	1.1	36.8	2.6	10.5	8.1	-1.1	75.0
			hi	47.7	2.6	10.5	8.1	65.1	75.0
			avg	29.4	2.3	7.9	6.1	42.2	69.6
			med	27.0	2.3	8.3	7.1	52.4	69.1
			low	15.7	2.1	4.4	2.3	-1.1	65.1
Transelectrica	Romania	Ba3	0.2	-1.4	7.3	77.1	76.4	122.6	10.1
			hi	-1.4	7.3	77.1	76.4	122.6	10.1
			avg	-1.4	7.3	77.1	76.4	122.6	10.1
			med	-1.4	7.3	77.1	76.4	122.6	10.1
			low	-1.4	7.3	77.1	76.4	122.6	10.1
<b>ASIA/PACIFIC</b>									
Singapore Power	Singapore	Aa1	2.6	26.0	7.0	32.0	-8.0	-362.0	48.0
SP PowerAssets		Aa1	0.4	44.0	6.0	8.0	8.0	625.0	61.0
			hi	44.0	7.0	32.0	8.0	625.0	61.0
			avg	35.0	6.5	20.0	0.0	131.5	54.5
			med	35.0	6.5	20.0	0.0	131.5	54.5
			low	26.0	6.0	8.0	-8.0	-362.0	48.0
CLP Holdings		A1	3.4	35.0	14.0	22.0	49.0	94.0	20.0
			hi	35.0	14.0	22.0	49.0	94.0	20.0
			avg	35.0	14.0	22.0	49.0	94.0	20.0
			med	35.0	14.0	22.0	49.0	94.0	20.0
			low	35.0	14.0	22.0	49.0	94.0	20.0
Australian Gas Light Company	Australia	A2	3.8	13.0	4.1	23.0	14.0	96.0	49.0
			hi	13.0	4.1	23.0	14.0	96.0	49.0
			avg	13.0	4.1	23.0	14.0	96.0	49.0
			med	13.0	4.1	23.0	14.0	96.0	49.0
			low	13.0	4.1	23.0	14.0	96.0	49.0

## Appendix 1 – Three Year Average Ratios and Current Ratings

Company name	Country	Rating	Revenues \$bn equiv	EBITA margin %	FFO interest times coverage	FFO/TD %	RCF/TD %	RCF/ Capex %	TD/ Capitalization %
KEPCO		A3	18.0	24.0	6.0	33.0	31.0	112.0	40.0
Citipower		A3	0.5	39.0	3.0	10.0	7.0	132.0	88.0
ETSA		A3	0.7	42.0	2.0	4.0	-2.0	69.0	64.0
Powercor		A3	0.6	42.0	4.0	12.0	12.0	111.0	51.0
SPI Powernet		A3	0.3	62.0	2.0	10.0	10.0	258.0	71.0
TXU Australia		A3		24.0	3.0	10.0	8.0	171.0	57.0
			hi	62.0	6.0	33.0	31.0	258.0	88.0
			avg	38.8	3.3	13.2	11.0	142.2	61.8
			med	40.5	3.0	10.0	9.0	122.0	60.5
			low	24.0	2.0	4.0	-2.0	69.0	40.0
United Energy		Baa1	0.4	32.0	3.0	13.0	7.0	71.0	60.0
Vector		Baa1	0.5	39.0	3.0	8.0	5.0	117.0	67.0
Electranet		Baa1	0.1	46.0	2.0	3.0	3.0	151.0	74.0
Gasnet		Baa1	0.1	61.0	2.0	6.0	4.0	687.0	68.0
			hi	61.0	3.0	13.0	7.0	687.0	74.0
			avg	44.5	2.5	7.5	4.8	256.5	67.3
			med	42.5	2.5	7.0	4.5	134.0	67.5
			low	32.0	2.0	3.0	3.0	71.0	60.0
Tenaga		Baa2	4.1	18.0	3.0	11.0	10.0	82.0	61.0
			hi	18.0	3.0	11.0	10.0	82.0	61.0
			avg	18.0	3.0	11.0	10.0	82.0	61.0
			med	18.0	3.0	11.0	10.0	82.0	61.0
			low	18.0	3.0	11.0	10.0	82.0	61.0
National Thermal Power Corporation		Baa3	4.1	20.5	5.5	31.2	25.7	93.8	29.1
			hi	20.5	5.5	31.2	25.7	93.8	29.1
			avg	20.5	5.5	31.2	25.7	93.8	29.1
			med	20.5	5.5	31.2	25.7	93.8	29.1
			low	20.5	5.5	31.2	25.7	93.8	29.1
Tata Power		Ba1	1.1	17.9	3.6	28.6	25.1	133.3	42.7
			hi	17.9	3.6	28.6	25.1	133.3	42.7
			avg	17.9	3.6	28.6	25.1	133.3	42.7
			med	17.9	3.6	28.6	25.1	133.3	42.7
			low	17.9	3.6	28.6	25.1	133.3	42.7
National Power Corporation		B1	2.1	29.7	2.1	3.6	1.9	129.0	94.5
			hi	29.7	2.1	3.6	1.9	129.0	94.5
			avg	29.7	2.1	3.6	1.9	129.0	94.5
			med	29.7	2.1	3.6	1.9	129.0	94.5
			low	29.7	2.1	3.6	1.9	129.0	94.5

## Appendix 1 – Three Year Average Ratios and Current Ratings

Company name	Country	Rating	Revenues \$bn equiv	EBITA margin %	FFO interest times coverage	FFO/TD %	RCF/TD %	RCF/ Capex %	TD/ Capitalization %
<b>AMERICAS</b>									
WPS Resources Corp	USA	A1	2.4	9.1	4.1	18.4	11.9	51.1	51.7
			hi	9.1	4.1	18.4	11.9	51.1	51.7
			avg	9.1	4.1	18.4	11.9	51.1	51.7
			med	9.1	4.1	18.4	11.9	51.1	51.7
			low	9.1	4.1	18.4	11.9	51.1	51.7
Consolidated Edison Inc	USA	A2	9.2	16.7	4.1	20.3	14.0	80.3	45.3
FPL Group, Inc.	USA	A2	8.7	17.0	6.0	29.0	23.0	57.0	47.0
Hydro One, Inc	CAN	A2	3.3	25.1	3.0	13.0	9.3	83.3	60.3
NSTAR	USA	A2	2.9	16.0	3.5	16.7	12.8	127.0	52.7
Otter Tail Corporation	USA	A2	0.7	13.3	4.3	17.6	11.9	84.9	53.0
			hi	25.1	6.0	29.0	23.0	127.0	60.3
			avg	17.6	4.2	19.3	14.2	86.5	51.7
			med	16.7	4.1	17.6	12.8	83.3	52.7
			low	13.3	3.0	13.0	9.3	57.0	45.3
Ameren Corporation	USA	A3	4.1	24.3	5.0	19.5	11.1	51.2	44.0
Scana Corporation	USA	A3	3.3	18.3	3.1	13.2	9.7	99.3	54.3
Southern Company (The)	USA	A3	10.7	24.3	4.7	19.7	12.3	67.0	50.0
Wisconsin Energy Corp	USA	A3	3.9	18.1	3.8	15.3	13.1	124.1	60.1
			hi	24.3	5.0	19.7	13.1	124.1	60.1
			avg	21.3	4.2	16.9	11.6	85.4	52.1
			med	21.3	4.2	17.4	11.7	83.2	52.2
			low	18.1	3.1	13.2	9.7	51.2	44.0
Constellation Energy	USA	Baa1	6.1	18.7	3.7	16.3	14.0	135.0	52.0
Dominion Resources	USA	Baa1	11.0	23.0	3.3	14.4	10.3	45.7	54.3
Duke Energy Corp	USA	Baa1	18.7	15.0	3.4	17.3	12.7	166.0	49.3
OGE Energy Corp.	USA	Baa1	3.3	9.2	3.9	16.5	11.4	117.6	53.0
Sempra Energy	USA	Baa1	7.2	15.1	4.0	18.6	18.1	76.3	56.3
Xcel Energy Inc.	USA	Baa1	7.9	15.8	4.6	18.8	14.0	114.3	61.6
			hi	23.0	4.6	18.8	18.1	166.0	61.6
			avg	16.1	3.8	17.0	13.4	109.1	54.4
			med	15.4	3.8	16.9	13.3	116.0	53.7
			low	9.2	3.3	14.4	10.3	45.7	49.3

## Appendix 1 – Three Year Average Ratios and Current Ratings

Company name	Country	Rating	Revenues \$bn equiv	EBITA margin %	FFO interest times coverage	FFO/TD %	RCF/TD %	RCF/ Capex %	TD/ Capitalization %
Cinergy Corp	USA	Baa2	4.1	22.3	4.2	14.4	9.5	55.8	56.3
DTE Energy Company	USA	Baa2	6.5	24.0	2.8	11.0	7.5	NM	58.0
Emera Inc.	CAN	Baa2	1.0	27.8	2.7	10.5	7.0	151.7	64.9
Empire District Electric Company	USA	Baa2	0.3	21.0	3.0	15.0	8.0	51.0	51.0
Energy East Corporation	USA	Baa2	4.1	16.0	2.6	11.1	8.3	127.0	58.0
Exelon Corp	USA	Baa2	15.2	25.8	4.4	24.7	14.0	86.1	39.9
Great Plains Energy Inc.	USA	Baa2	1.8	16.9	4.3	17.4	11.9	139.1	56.6
IDACORP, Inc.	USA	Baa2	1.0	14.3	4.3	19.7	14.0	98.7	44.0
Northeast Utilities	USA	Baa2	5.7	18.1	2.9	11.0	9.6	124.7	42.9
Pepco Holdings, Inc.	USA	Baa2	5.8	12.5	3.3	10.8	8.4	136.2	56.5
Pinnacle West Capital Corp.	USA	Baa2	2.6	21.7	4.8	18.8	15.3	81.2	50.8
Progress Energy	USA	Baa2	8.3	15.1	3.4	14.4	10.1	68.6	59.1
Public Service Enterprise Group Inc.	USA	Baa2	8.7	23.7	2.4	10.0	6.3	52.7	59.0
			hi	27.8	4.8	24.7	15.3	151.7	64.9
			avg	19.9	3.5	14.5	10.0	97.7	53.6
			med	21.0	3.3	14.4	9.5	92.4	56.5
			low	12.5	2.4	10.0	6.3	51.0	39.9
American Electric Power Co	USA	Baa3	13.5	19.6	3.4	13.2	9.0	208.0	58.5
Cleco Corp	USA	Baa3	0.8	22.0	3.4	16.0	12.0	132.3	57.0
Duquesne Light Holdings	USA	Baa3	1.0	16.9	3.9	18.9	13.4	428.4	54.4
Edison International	USA	(P)Baa3	11.6	33.6	3.0	17.7	17.6	NM	59.8
Energy Corporation	USA	Baa3	9.0	19.0	4.1	21.1	18.0	100.4	41.3
FirstEnergy Corp.	USA	Baa3	10.8	18.1	3.0	10.9	8.3	108.6	60.1
MidAmerican Energy Holding Co.	USA	Baa3	5.1	25.1	2.2	8.6	8.6	128.4	75.7
PG&E Corporation	USA	Baa3	10.4	28.7	2.9	14.4	14.3	142.4	76.4
PNM Resources, Inc.	USA	Baa3	1.6	11.4	4.4	17.4	14.8	83.0	52.5
PPL Corporation *	USA	Baa3	5.4	21.6	2.5	13.6	11.1	104.5	67.1
UIL Holdings Corporation	USA	Baa3	1.0	12.3	4.0	16.0	10.3	100.7	50.3
			hi	33.6	4.4	21.1	18.0	428.4	76.4
			avg	20.8	3.3	15.3	12.5	153.7	59.4
			med	19.6	3.4	16.0	12.0	118.5	58.5
			low	11.4	2.2	8.6	8.3	83.0	41.3
Avista Corp	USA	Ba1	1.2	15.7	2.3	10.0	8.7	128.0	54.3
Empresa Nacional de Electricidad S.A.	Chile	Ba1	1.5	35.3	2.1	8.2	6.3	217.7	56.0
Enerjis S.A.	Chile	Ba1	4.0	17.7	2.3	11.5	9.3	207.0	76.0
Puget Energy, Inc.	USA	Ba1	2.6	15.0	2.8	13.3	10.0	94.7	56.3
TXU Corp	USA	Ba1	10.3	17.0	2.9	13.0	10.0	160.3	62.0
Westar Energy	USA	Ba1	1.4	26.2	2.1	8.9	7.0	93.1	60.7
			hi	35.3	2.9	13.3	10.0	217.7	76.0
			avg	21.1	2.4	10.8	8.5	150.1	60.9
			med	17.3	2.3	10.8	9.0	144.2	58.5
			low	15.0	2.1	8.2	6.3	93.1	54.3

\* Rating on guaranteed debt issued by PPL Capital

## Appendix 1 – Three Year Average Ratios and Current Ratings

Company name	Country	Rating	Revenues \$bn equiv	EBITA margin %	FFO interest times coverage	FFO/TD %	RCF/TD %	RCF/ Capex %	TD/ Capitalization %
Centerpoint Energy, Inc.	USA	Ba2	9.4	17.0	2.4	9.7	7.0	90.0	65.0
DPL Inc.	USA	Ba2	1.2	35.8	2.6	12.6	8.1	107.2	67.0
TECO Energy	USA	Ba2	2.6	8.8	2.7	11.0	5.6	24.3	59.4
			hi	35.8	2.7	12.6	8.1	107.2	67.0
			avg	20.5	2.6	11.1	6.9	73.8	63.8
			med	17.0	2.6	11.0	7.0	90.0	65.0
			low	8.8	2.4	9.7	5.6	24.3	59.4
COELCE	Brazil	Ba3	0.3	22.3	6.3	43.5	28.9	113.3	35.8
			hi	22.3	6.3	43.5	28.9	113.3	35.8
			avg	22.3	6.3	43.5	28.9	113.3	35.8
			med	22.3	6.3	43.5	28.9	113.3	35.8
			low	22.3	6.3	43.5	28.9	113.3	35.8
Allegheny Energy Inc.	USA	B1	2.2	2.4	1.9	6.2	4.1	40.6	62.0
CEMIG	Brazil	B1	1.8	16.8	2.4	15.7	11.8	66.7	43.9
CMS Energy Company	USA	B1	7.4	6.5	1.8	5.2	5.2	-46.8	84.0
			hi	16.8	2.4	15.7	11.8	66.7	84.0
			avg	8.6	2.0	9.0	7.0	20.2	63.3
			med	6.5	1.9	6.2	5.2	40.6	62.0
			low	2.4	1.8	5.2	4.1	-46.8	43.9
Sierra Pacific Resources	USA	B2	3.5	5.2	-0.1	-6.3	-7.0	NM	64.7
			hi	5.2	-0.1	-6.3	-7.0	NM	64.7
			avg	5.2	-0.1	-6.3	-7.0	NM	64.7
			med	5.2	-0.1	-6.3	-7.0	NM	64.7
			low	5.2	-0.1	-6.3	-7.0	NM	64.7
EDELNOR	Chile	B3	0.1	6.0	1.8	3.0	3.0	343.6	49.1
			hi	6.0	1.8	3.0	3.0	343.6	49.1
			avg	6.0	1.8	3.0	3.0	343.6	49.1
			med	6.0	1.8	3.0	3.0	343.6	49.1
			low	6.0	1.8	3.0	3.0	343.6	49.1

Note: The listed U.S. issuers are all holding company parent entities. Almost all have regulated operating utility subsidiaries that have higher ratings.

## Appendix 1 – Three Year Average Ratios and Current Ratings

Company name	Country	Rating	Revenues \$bn equiv	EBITA margin %	FFO interest times coverage	FFO/TD %	RCF/TD %	RCF/ Capex %	TD/ Capitalization %
<b>JAPAN</b>									
Tokyo Electric Power Company, Inc.	Japan	Aa3	46.6	13.1	6.0	15.8	12.3	150.3	92.7
Chubu Electric Power Company, Inc.	Japan	Aa3	20.2	14.5	5.4	17.4	13.5	153.9	81.7
Kansai Electric Power Co., Inc.	Japan	Aa3	24.4	13.5	7.1	19.3	15.4	156.7	77.9
			hi	14.5	7.1	19.3	15.4	156.7	92.7
			avg	13.7	6.2	17.5	13.8	153.7	84.1
			med	13.5	6.0	17.4	13.5	153.9	81.7
			low	13.1	5.4	15.8	12.3	150.3	77.9
Hokuriku Electric Power Co., Inc.	Japan	A1	4.3	15.2	4.8	15.1	13.0	128.1	85.5
Chugoku Electric Power Co., Inc.	Japan	A1	9.3	12.9	5.5	15.9	11.6	167.3	80.7
Tohoku Electric Power Company, Inc.	Japan	A1	15.0	13.1	5.4	18.2	14.0	142.3	80.6
Shikoku Electric Power Company, Inc.	Japan	A1	5.4	13.3	6.6	21.0	17.4	199.7	76.0
Kyushu Electric Power Company, Inc.	Japan	A1	13.4	13.7	6.0	18.2	16.2	154.8	81.6
Hokkaido Electric Power Co., Inc.	Japan	A1	5.0	15.5	5.9	20.3	16.3	137.0	72.1
			hi	15.5	6.6	21.0	17.4	199.7	85.5
			avg	13.9	5.7	18.1	14.7	154.9	79.4
			med	13.5	5.7	18.2	15.1	148.5	80.7
			low	12.9	4.8	15.1	11.6	128.1	72.1

## **Appendix 2 – Definition of Ratios**

### **FFO Interest cover**

(Cash Flow from Operations – Changes in Working Capital + Interest Expense) / (Interest Expense + Capitalized Interest Expense)

### **FFO / Adjusted gross debt**

(Cash Flow from Operations – Changes in Working Capital) / (Total debt + operating lease adjustment + under-funded pension liabilities + basket-adjusted hybrids + securitizations + guarantees + other debt-like items)

### **Retained Cash Flow / Adjusted gross debt**

(Cash Flow from Operations – Changes in Working Capital – Common and Preferred Dividends) / (Total debt + operating lease adjustment + under-funded pension liabilities + basket-adjusted hybrids + securitizations + guarantees + other debt-like items)

### **Adjusted gross debt / Regulated Asset Value or Capitalization**

(Total debt + operating lease adjustment + under-funded pension liabilities + basket-adjusted hybrids + securitizations + guarantees + other debt-like items) / RAV or (Shareholders' equity + minority interest + deferred taxes + goodwill write-off reserve + Total debt + operating lease adjustment + under-funded pension liabilities + basket-adjusted hybrids + securitizations + guarantees + other debt-like items)

### **EBITA / Sales (margin)**

(Net operating income + Equity Earnings of Affiliates + Income from Financial Asset Investments + Goodwill amortization + Interest Component of Operating Lease (1/3 of Rent) + Interest Income – Other expense) / Total revenues

### **Retained Cash Flow / Capex**

(Cash Flow from Operations – Changes in Working Capital – Common and Preferred Dividends) / (Capex + Acquisitions – Divestitures)

## Appendix 3 – Description of Utilities Bond Default History

Electric utilities have historically enjoyed a relatively strong credit quality thanks to their stable and predictable cash flows and the tendency of regulators to be supportive when a utility experiences financial stress. Over the past 70 years (since the Great Depression), only five rated investor-owned utilities have experienced bond defaults in highly developed countries; these were all US-domiciled issuers:

- 1988 Public Service Company of New Hampshire (bankruptcy)
- 1992 El Paso Electric (bankruptcy)
- 2001 Pacific Gas & Electric Company (bankruptcy)
- 2001 Southern California Edison Company (payment default)
- 2003 Northwestern Corporation (bankruptcy)

Two principal factors contributed to these defaults. In four of the five defaults, a state regulatory commission failed to provide sufficient and timely rate relief for recovery of costs or capital investment in utility plant. This reflected regulatory commission concerns about the impact of large rate increases on customers, as well as debate about the appropriateness of the regulatory relief being sought by the utility. In two of these four cases, transition towards deregulation of the electricity market was a key contributing factor in that it exposed the utilities to dramatic increases in wholesale market prices for purchased power. These two California utilities also lacked long-term contracts such as PPAs, leaving them highly exposed to sharp spikes in market prices. In the remaining case, the default resulted from a failed diversification into unregulated businesses that were totally unrelated to the basic utility business.

These defaults resulted in an average recovery for bondholders that is well above the average for corporate bonds. Holders of secured debt recovered 100% of principal and interest in all five cases. In the case of Pacific Gas & Electric and Southern California Edison Company, 100% of all debt holder claims were ultimately paid.

Figure 9 below lists each of the five bond defaults within the sector and categorizes the reasons for the defaults as the “Principal Factor” or a “Contributing Factor”.

Issuer	Regulators/ Legislators Failed to Respond on a Timely Basis	Transition from a Regulated Environment to a Unregulated Marketplace	Poor-Performing Unregulated Investments
Public Service Company of New Hampshire	Principal Factor		
El Paso Electric Company	Principal Factor		Contributing Factor
Pacific Gas and Electric Company	Principal Factor	Principal Factor	
Southern California Edison Company	Principal Factor	Principal Factor	
Northwestern Corporation			Principal Factor

### LESSONS FROM THE ELECTRIC UTILITY INDUSTRY’S DEFAULT HISTORY

Among rated utilities in developed countries, only US utilities have experienced defaults in the last 70 years. In addition to the five US defaulting utilities, several US utilities have narrowly avoided default. In 2002, Allegheny Energy and Centerpoint Energy each experienced a serious liquidity crisis and only avoided defaulting on debt payments due to last-minute agreements with bank lenders that allowed all payments to be made on a timely basis. The greater historic tendency for US companies to default is consistent with Moody’s view that regulatory risk is greater in the US than in a number of other highly developed countries.

## **Related Research**

### **Rating Methodology:**

[The Analysis of Off-Balance Sheet Exposures – A Global Perspective, Rating Methodology, July 2004, #87408](#)

[Off-Balance Sheet Leases: Capitalization and Ratings Implications, October 1999, #48591](#)

[Industrial Company Rating Methodology, July 1998, #36188](#)

### **Special Comment:**

[Moody's Liquidity Risk Assessments – Q&A, March 2002, #74571](#)

[Moody's Analysis of US Corporate Rating Triggers Heightens the Need for Increased Disclosure, July 2002, #75412](#)

[Rating Triggers in Europe: Limited Awareness but Widely Used Among Corporate Issuers, September 2002, #76199](#)

[U.S. and Canadian Corporate Governance Assessment, August 2003, #78666](#)

[Moody's Findings on Corporate Governance in the United States and Canada: August 2003 - September 2004, October 2004, #89113](#)

[Event Risk's Four Horsemen of the Apocalypse: Decapitalization, Cash-financed M&A, Litigation, and Accounting Irregularities, November 2000, #61838](#)

[Event Risk For European Corporates 2003 – Still A Credit Risk, Still Part Of Our Analysis, February 2003, #77436](#)

[The Analysis Of Off-Balance Sheet Exposures: a Global Perspective, July 2004, #87408](#)

[The Incorporation of Joint-Default Analysis into Moody's Corporate, Financial and Government Rating Methodologies, February 2005, #91617](#)

*To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.*



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BEFORE THE  
STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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In the Matter of

National Grid PLC and KeySpan Corporation - Proposed Merger  
Case 06-M-0878

The Brooklyn Union Gas Company d/b/a KeySpan Energy Delivery New  
York - Gas Rates  
Case 06-G-1185

KeySpan Gas East Corporation d/b/a KeySpan Energy Delivery Long  
Island - Gas Rates  
Case 06-G-1186  
January 2007

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Exhibit\_\_ (MPP-6)  
Merger Policy Panel

*This Analysis provides a discussion of the factors underpinning the credit rating/s and should be read in conjunction with our Credit Opinion. The most recent ratings, opinion, and other research specific to this issuer are provided on [Moody's.com](http://Moody's.com). Click here to link.*

## Analysis

UNITED KINGDOM  
Europe/M.East/Africa

October 2006

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# National Grid Plc

## Corporate Profile

### THE NATIONAL GRID GROUP IS THE UK'S LARGEST REGULATED UTILITY

National Grid Plc ("NG", rated Baa1/P-2) is the holding company for a range of largely regulated businesses, focusing on the ownership and operation of electricity and gas, as well as wireless networks. The NG Group was established in its current form from the merger of National Grid Group Plc with Lattice Group Plc in 2002, thereby combining Great Britain's gas transportation (Lattice) and England and Wales' electricity transmission assets under one roof. Today, the group's primary regulated UK subsidiaries include National Grid Gas plc (formerly Transco) and National Grid Electricity Transmission Plc (formerly National Grid Company). Following the recent disposal of four gas distribution networks, the group's UK gas distribution business now comprises approximately half of Britain's gas distribution system, serving around 11 million consumers over a network of 82,000 miles.

In addition to its UK businesses, the NG Group also owns and operates transmission and distribution assets for electricity and gas in the US - in the states of New York, Massachusetts, Rhode Island and New Hampshire, where it serves 3.4 million electricity customers over a network of 72,000 miles and 568,000 gas customers over a network of 8,500 miles. Its US presence will be substantially enhanced by NG's pending acquisition of KeySpan as well as additional Rhode Island gas distribution assets, which will add around 3.7 million additional customers to the group's US businesses, and will result in the US contributing to just over 50% of the group's total operating profit from currently 38%.

The NG Group also operates a small but growing segment of non-regulated businesses, including notably a wireless infrastructure business enlarged through the acquisition of the UK operations of Crown Castle International Corp. in August 2004, as well as metering and meter-reading services, communications infrastructure solutions and interconnectors between national electricity networks. This also includes the LNG terminal on the Isle of Grain, which has been in operation since 2005.

**Figure 1: FY05/06 Financial Highlights of the NG Group (in GBP million)**

	Revenues	% of total	Op Profit	% of total
UK electricity & gas transmission	2,710	29%	1,441	33%
UK gas distribution	1,222	13%	483	19%
US electricity transmission	310	3%	127	5%
US electricity & gas distribution	3,713	39%	1,631	14%
US stranded costs recoveries*	511	5%	480	19%
Wireless infrastructure	325	3%	75	3%
Other activities**	701	7%	145	6%
<b>Total</b>	<b>9,490</b>	<b>100%</b>	<b>2,527</b>	<b>100%</b>

\* US stranded costs are costs associated with NG's former generation investment and related contractual commitments that were not recovered through the sale of those investments. NG recovers a large portion of these costs, along with a return, through a special rate charged to customers.

\*\* Revenues from other activities include intra-group sales

Source: NG



**Moody's Investors Service**  
Global Credit Research

## Key Developments since last Analysis

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### BELOW WE SET OUT THE KEY DEVELOPMENTS SURROUNDING NG SINCE MOODY'S LAST PUBLISHED AN ANALYSIS ON THE COMPANY IN 2005

- **US acquisitions:** In February 2006, NG announced an all-cash acquisition of KeySpan (rated A3, under review for possible downgrade) for GBP 4.2 billion. In August 2006, the group also acquired Rhode Island gas distribution assets for GBP 280 million. KeySpan is a regulated gas network operator on the US East Coast, covering the areas of New York (including New York City), Massachusetts and parts of New Hampshire. It also has some unregulated activities, notably the Ravenswood power generation business located in the New York City load pocket and some participations in gas energy investments and services. The completion of the KeySpan acquisition is expected for 2007, while the completion of the Rhode Island assets acquisition happened in August 2006. In Moody's view, the KeySpan acquisition is highly likely to be completed successfully and is therefore reflected in the current rating outlook of the group. Moody's expects the consolidated credit quality of the group to drop by one notch on completion of the acquisition, and is presently examining the implications for the various ratings within the enlarged group.
- **Rating Under Review:** Moody's placed NG's holding company ratings on review for downgrade following the announcement of the KeySpan acquisition. The decision was determined by the all-cash nature of the proposed transaction, which is likely to increase holding company debt by up to GBP 4.2 billion, in addition to around GBP 2.6 billion of existing debt located at various entities of KeySpan. Moody's also changed the outlook of NGET's A2 rating to negative (the A2 rating of its other UK business, NGG, was already on negative outlook) to reflect the possibility of growing demands on its cash flows to service holding company dividends and debt and the resulting deterioration in the group's consolidated credit quality.
- **UK transmission review process:** In September 2006, Ofgem, the UK gas and electricity regulator, published its updated proposals for the next gas and electricity transmission regulatory period starting on 1 April 2007 until 2012. Final determinations are scheduled to be announced in December. Furthermore, next year will see the commencement of the gas distribution review for the new price control period starting on 1 April 2008 until 2013. At this stage in the process, Ofgem's updated proposals have seen allowed returns lower than those asked for by NG. Significant divergences exist on the additional risk associated with proposed incentive arrangements, opex and capex allowances, and allowances of historical capex spend. Due to the ongoing stage of the review, it is difficult to pre-judge any possible rating implications. However we take comfort from the well-established and transparent regulatory framework in the UK, and the generally ratings-conscious approach adopted by the regulator on previous occasions. We would thus not expect final outcomes, which - in isolation - are capable of causing a material deterioration in credit quality.

## Management Strategy

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### THE GROUP'S STRATEGY IS TO FOCUS ON REGULATED GAS & ELECTRICITY NETWORK BUSINESSES

The NG Group sees itself as an asset-based network provider, which focuses on the ownership and operation of large complex networks, mostly in but not exclusive to the gas and electricity sectors. The group has combined its operational and regulatory expertise through the gas-electricity merger in 2002 and has used these attributes to extract synergies by outperforming benchmarks and regulatory targets. Its strategy thus rests predominantly on the exploitation of these core skills to create value by:

- Investing in existing businesses, both in the UK and the US, where it targets organic growth. The group is planning to invest GBP 12 billion over the next 5 years in order to upgrade and adapt its network to market changes. Investment priorities will be towards UK transmission activities and UK gas distribution activities representing 50% and 20% of the total investments respectively.
- Creating opportunities from incentive-based regulation. For example, the group has reduced the controllable costs of its UK gas distribution operations by 35% in real terms between March 2002 and March 2006, achieving this objective one year early compared to the planned target.
- Acquiring energy or related network businesses (e.g. Niagara Mohawk in the US in 2002, Crown Castle UK in 2004, Rhode Island gas distribution assets in 2006 and KeySpan, which is likely to complete in early 2007) where it believes it can leverage off its expertise. For example, NG is planning to apply its cost-cutting skills when integrating KeySpan to save approximately GBP100 million per year.

## MOODY'S BELIEVES THAT NG'S NETWORK-ORIENTED STRATEGY HAS BEEN CONSISTENTLY PURSUED, ALTHOUGH GREATER LEVERAGE COULD LEAD TO CREDIT DETERIORATION

As a general rule, Moody's views regulated utilities as exhibiting a very low business risk profile. The group's ratings are therefore underpinned by its clear and conservative strategy, as long as it continues to focus on networks rather than trading, and is not seeking exposure to power generation or commodity risks. Following its recent announcement of a further long-awaited acquisition in the US, we also believe that acquisition event risk has reduced, given the significant lead-times required to execute such acquisitions and the ongoing management attention the integration of KeySpan will require, once completed.

Moody's also takes comfort from NG's stated disciplined approach to capital management, and notes that the group has historically been investing mostly in regulated activities or similar types of businesses (e.g. wireless infrastructure business which, though non-regulated, exhibits a relatively low-risk business profile). The pending KeySpan acquisition is in line with this strategy as the share of regulated assets represents over 60% of the company's 2005 EBITDA. However the relative increase in debt raised to fund the acquisition, which is likely to be raised primarily at the holding company, could lead to a deterioration of the group's consolidated credit quality and thus put negative pressure on the Group's ratings.

### Key Rating Considerations

The Baa1/Prime-2 ratings of the NG holding company are underpinned by its relatively low-risk businesses, the vast majority of which operate within stable and transparent regulatory frameworks. However, they also reflect the weaker position of its structurally subordinated debt holders versus operating company debt holders, given that the latter benefit from protection afforded by a comprehensive set of regulatory ring-fence provisions as well as closer proximity to assets and cash flows. NGET's and NGG's A2 ratings in turn reflect both entities' low-risk business profile, the transparent and predictable regulatory framework in which both operate, as well as moderate leverage, reflected by debt protection metrics that are in line with parameters required for such businesses to achieve A2 ratings. Ratings are, however, constrained by the high and, in Moody's view, growing demand on operating company cash flows to service NG's dividend policy and, potentially, debt, although at present, most of the holding company debt service is deemed to be supported by its US subsidiaries.

### BUSINESS RISK PROFILE

#### NG'S RATINGS ARE SUPPORTED BY THE CASH-FLOW IT RECEIVES AS DIVIDENDS FROM ITS OPERATING COMPANIES...

Moody's determines NG's ratings by looking at both the consolidated credit profile of the whole group, and NG bondholders' distance from cash flows generated at various operating companies, which need to be upstreamed as dividends before they are able to service debt at NG. Accordingly, NG's ratings are notched from Moody's view of the group's consolidated credit profile to reflect the distance between NG and operating company cash flows, which also service debt located at each respective operating company (notably NGET, NGG and the companies under NG USA). The notching currently represents two notches from the consolidated credit quality of the group, as Moody's believes that structural subordination is increased by the fact that the UK regulated subsidiaries and some US regulated subsidiaries benefit from regulatory ring-fence protection, which enables the Regulator to prevent the companies from paying dividends (to NG) in certain - albeit presently remote - circumstances. As such, NG's ratings are not notched solely from the UK subsidiaries (which form an integral, but not sole part of the group's consolidated credit quality), but from the implied credit quality of the whole group, which includes US businesses as well as unregulated and/or unrated activities. As part of the ratings review, Moody's is also looking into the continuation of the two-notch rating differential between the holding company and

the consolidated group. At current levels, the rating differential is highly unlikely to be widened.

#### Regulatory Ring-Fence Provisions

NG's regulated UK subsidiaries benefit from so-called ring-fence provisions which are embedded in their respective licences. The regulatory regime encourages these entities to maintain "strong investment grade ratings", and the provisions give Ofgem, the UK regulator, additional powers to lock cash within the subsidiary (e.g. by prohibiting the payment of dividends) where the financial profile deteriorates. They also enable Ofgem to protect a regulated entity from potential crisis situations or a parent by, for instance, prohibiting regulated operating companies from issuing guarantees over group liabilities. As a safety net, the regulatory ring-fence constitutes a valuable downside protection for bondholders against financial meltdown.

As a result, NG's Baa1 rating is tied to the credit quality of all its operating companies, some of which are rated, others are not. This in effect means that any deterioration of the credit quality at the aggregate operating company level ultimately exerts downward pressure on the holding company ratings.

**Figure 2: NG Group's Main Operating Companies**

Company	Rating	Activity	Country
National Grid Electricity Transmission Plc ("NGET")	A2 / Neg.	Electricity transmission	UK
National Grid Gas Plc ("NGG")	A2 / Neg.	Gas T&D	UK
National Grid Gas Holdings Plc	A3 / Neg.	Holding Company of NGG	UK
Niagara Mohawk Power Corporation	Baa1 / RID	Electricity T&D, gas distribution	US
Massachusetts Electric Company	A2 / RID	Electricity distribution	US
Narragansett Electric Company	A2 / RID	Electricity distribution	US
New England Power Company	A1 / RID	Electricity transmission	US
National Grid Wireless	Not rated	Wireless infrastructure	UK

**... AND ARE THEREFORE UNDERPINNED BY THE PREDICTABLE REGULATORY FRAMEWORKS IN WHICH ITS UK AND US SUBSIDIARIES OPERATE**

With more than 80% of its operating profits stemming from NGET, NGG and National Grid USA (intermediate holding company for the group's US subsidiaries), the group's business risk profile remains driven by the stability and predictability of its UK and US regulated businesses. These businesses operate within established and transparent regulatory frameworks associated with little regulatory uncertainty, although Moody's views the UK regulatory framework as relatively more developed than the US regulatory regimes. Indeed, the rating agency classifies entities into four categories based on the Supportiveness of the Regulatory Environment (SRE, see Related Research: Global Regulated Electric Utilities, March 2005). Under this methodology, the UK regulatory framework is viewed as a "type 1" environment (SRE1), indicating the highest degree of supportiveness, while the regulatory frameworks in the states of New York, Rhode Island and Massachusetts are seen as marginally less supportive "type 2" environments (SRE2).

In the UK, NGET and NGG's transmission and distribution revenues are governed by a five-year price control period set by Ofgem, the UK electricity and gas regulator, which limits the returns the companies can make on their respective regulated asset bases. The price NGET and NGG are able to charge as transmission/distribution owners for the use of their networks is based on an 'RPI minus x' formula, which enables them to generate revenues sufficient to cover their operating expenditure, capital expenditure and replacement expenditure, as well as to earn an allowed return on their regulatory asset values (RAV).

In the US, electricity transmission owners collect revenues from their distribution company affiliates under tariffs approved by the Federal Energy Regulatory Commission (FERC) which allow them to recover their costs, with a return on capital. The regulatory agreements which govern the relationships between the state commissions and the group's electricity distribution companies are based on long-term incentive-based rate plans which, most importantly, allow for a pass-through of the commodity price risk.

**Figure 3: Summary of UK and US Regulation**

Location	Activity	Regulator	Regulatory Period	Prices	Return Allowed	RAV at 31/03/06
UK	Electricity transmission	Ofgem	5 year period extended by 1 year to March 2007	RPI+1.5%	6.25% pre-tax real on RAV	GBP2.6 bn
UK	Gas transmission	Ofgem	5 year period to March 2007	RPI-2%	6.25% pre-tax real on RAV	GBP2.0 bn
UK	Gas distribution	Ofgem	5 year period extended by 1 year to March 2008	RPI-2%	6.25% pre-tax real on RAV	GBP3.9 bn
US - New York	Electricity distribution	State regulator	10 year plan until 2011	Frozen until 2011	Base ROE of 10.6%	
US - New York	Gas distribution	State regulator	10 year plan until 2011	Frozen until 2004	Base ROE of 10.0%	
US - Rhode Island	Electricity distribution	State regulator	20 year plan until 2019	Down by US\$10m p.a.	Base ROE of 10.5%	
US - Massachusetts	Electricity distribution	State regulator	20 year plan until 2019	Changed annually	No cap	

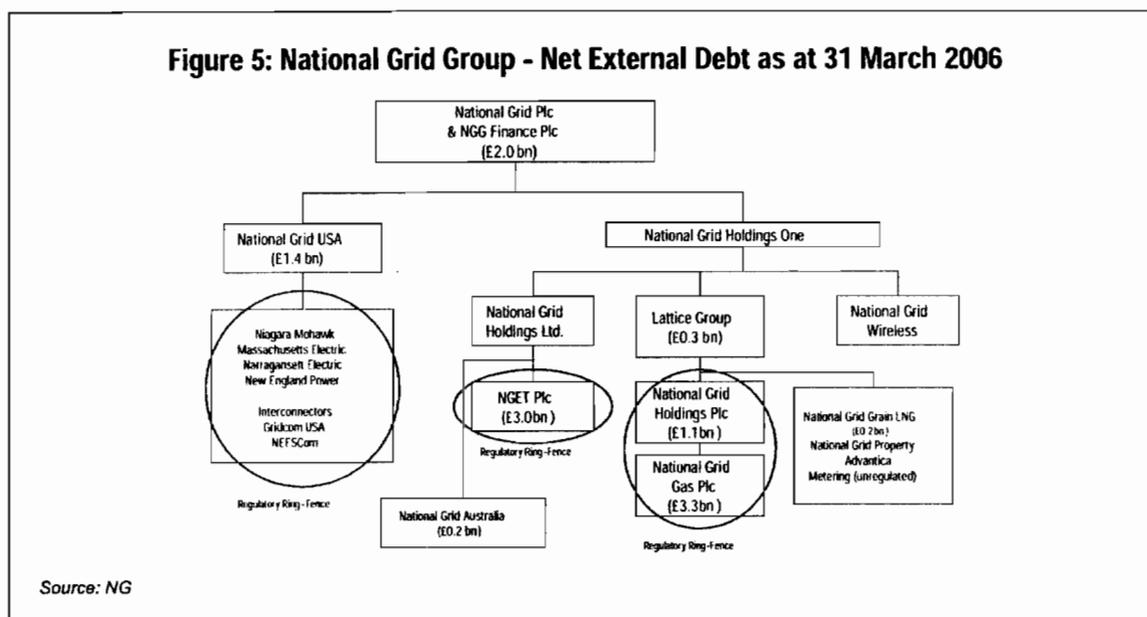
\* Retained regulatory asset value post disposal  
 \*\* Niagara Mohawk now has the right to request an increase at any time if needed  
 Source: NG

## US BUSINESS AFTER COMPLETION OF THE KEYSpan ACQUISITION WILL MAKE UP MORE THAN HALF OF THE GROUP'S CONSOLIDATED REVENUES

Following the completion of the acquisition of KeySpan, US businesses will contribute approximately 50% of the group's operating profit, thus underlining the growing importance of US operations to the group. In putting NG's ratings under review, Moody's assumes that the deal is likely to be completed, presumably in the first half of 2007, as evidenced by recent shareholder approvals from both NG and KeySpan and clearance by the US FERC on 20<sup>th</sup> October 2006.

## NG'S RATINGS ALSO REFLECT STRUCTURAL SUBORDINATION OF HOLDING COMPANY DEBT BY OPERATING COMPANY DEBT...

NG's Baa1 rating is two notches lower than the ratings of its main UK subsidiaries, as well as the group's consolidated credit quality, which Moody's regards to be in line with an A2. In Moody's view, and regardless of the credit quality of the operating companies, debt holders at the operating companies benefit from being closer to the cash-generative assets as these, in a distress scenario, would be serviced in priority over debt holders at the holding company level.



## ... AS WELL AS THE IMPACT OF THE REGULATORY RING-FENCE PROVISIONS EMBEDDED IN NGET AND NGG'S LICENCES, WHICH BENEFIT OPERATING COMPANY CREDITORS OVER HOLDING COMPANY CREDITORS

NGET and NGG's activities are regulated by licences managed by Ofgem, which specify their obligations, including restrictions on undertaking certain businesses and requirements to ensure availability of sufficient managerial and financial resources. The licences are terminable on 25 and 10 years' notice for NGET and NGG, respectively. The licences also restrict NGET and the NGG sub-group from lending to other group companies, including NG. Most importantly, the licences put an obligation on NGET and NGG to maintain "investment-grade" credit ratings, and in theory allow the regulator to take necessary measures in the event that this obligation is jeopardised, e.g., in the form of dividend restrictions. NGET and NGG can only pay dividends, if they are in full compliance with all their ring-fence obligations.

In Moody's view, this provision adds protection to creditors of NGET and NGG, but at the same time weakens the position of debt holders at the holding company, as it would restrict both NGET and NGG's ability to upstream funds to the holding company in a downside scenario. However, Moody's notes that the rating differential between the holding company and the operating companies is not static, and could potentially widen, if the credit quality of the operating companies were to deteriorate, as the likelihood of the ring-fence provisions applying would be greater. Conversely, a material improvement in the credit worthiness of the operating companies or their greater alignment with the credit quality of the consolidated group could translate into a narrower rating differential, as the probability of the ring-fence provisions applying (or this being factored into ratings at the current levels) would be lower.

## FINANCIAL RISK PROFILE

### THE GROUP'S DEBT PROTECTION MEASURES ARE IN LINE WITH ITS LOW-RISK BUSINESS PROFILE...

The NG Group exhibits relatively high leverage and moderate debt protection measures, albeit in line with its low-risk business profile. As at 31 March 2006, the group's straight net financial debt was GBP11.7 billion. Following the completion of the KeySpan and Rhode Island gas transactions, Moody's expects NG's consolidated debt to rise significantly to around GBP20 billion, including GBP 4.2 billion to fund the acquisition of KeySpan, existing debt at KeySpan of around GBP 2.6 billion and GBP 280 million to fund the acquisition of the Rhode Island gas network, as well as ongoing capex requirements.

**Figure 6: NG Financial Profile**

Key Financial Indicators	2004/05	2005/06
EBITA Margin	42.1%	38.2%
Adj. RCF / Net Adj. Debt	13.1%	12.4%
Adj. FFO Interest Cover	3.0	3.6x
Adj. RCF / Capex + Investments	115.0%	81.7%
Adj. FFO / Net Adj. Debt	16.2%	18.2%
Adj. Debt / Adj. Book Capitalisation	76.2%	72.3%

### ...THOUGH IT'S ACQUISITION STRATEGY WEAKENED ITS FINANCIAL PROFILE

NG's Baa1/P-2 rating was put under review for possible downgrade in February 2006 to reflect the additional GBP 6.8 billion of debt that the acquisition of KeySpan will bring (including ca. GBP 2.6 billion existing debt at KeySpan), which is likely to result in a deterioration of the consolidated credit quality of the group by around one notch. This additional debt is expected to be located largely at the holding company. However, this deterioration of the Group's consolidated credit quality could negatively impact UK operating companies' credit profile, if they are called upon for the servicing of additional debt within the group. Whilst Moody's expects the group's retained cash flow to net debt ratios to weaken with the additional debt which is likely to bring total consolidated debt to around GBP 20 billion by the end of the decade, it also expects significant additional incremental cash flow generation from KeySpan to partially mitigate the greater debt burden, with KeySpan most recent RCF at around USD 450 million. Going forward, and after KeySpan, Moody's expects NG's RCF to net debt ratio to be around 10%.

Moody's expects the group to continue to acquire selective assets, as publicly indicated by the management. While opportunities in Europe remain limited, the US electricity T&D sector remains very fragmented and is likely to go through further consolidation as it is illustrated with the KeySpan deal. In addition, NG is likely, in Moody's view, to continue to look at potential acquisitions in non-regulated sectors on an opportunistic basis. Nonetheless, such event risk is limited in the short term due to the management's focus on completing current acquisitions. Moody's cautions that any further sizeable acquisition financed at the holding company level would likely put further pressure on the ratings of both NG and the group's operating companies, as far as higher debt levels contribute to further deterioration of the group's consolidated credit quality, irrespective of where within the group the debt is located. Furthermore, operating company ratings would also be affected, if additional debt at the holding company was deemed by Moody's to result in added demands on operating company cash flows.

**Figure 7: UK Operating Company Financial Profiles**

Key Financial Indicators	NGG		NGET	
	2004/05	2005/06	2004/05	2005/06
EBITA Margin	35.0%	34.0%	34.0%	34.6%
Adj. RCF / Net Adj. Debt	9.5%	8.9%	5.5%	16.2%
Adj. FFO Interest Cover	3.3	3.0	3.6x	3.5x
Adj. RCF / Capex + Investments	106.9%	62.7%	50.4%	178.0%
Adj. FFO / Net Adj. Debt	15.4%	15.5%	15.4%	18.2%
Net Adj. Debt / RAV	53.7%	54.8%	61.3%	59.5%

As far as NG's UK operating companies are concerned, Moody's expects NGG to maintain RCF to net adjusted debt above 10%, net debt to RAV to not materially exceed 55% and FFO interest cover to be well within a 3.0 - 3.5x range, in support of its A2 rating<sup>1</sup>. Similarly, NGET is expected to maintain the same ratio parameters, as well as net debt to RAV to remain below 60% in support of its A2 rating.

## **RATINGS DEPEND ON THE CONTINUED COMMITMENT OF GROUP MANAGEMENT TO ADHERE TO AN APPROPRIATE FINANCIAL POLICY**

Moody's ratings are dependent on NG management continuing to adhere to a financial policy, which underpins both the holding company and the operating companies' credit profiles. While the current dividend policy at NG (7% annual increase through to March 2008) and expected additional group debt are currently in line with required financial parameters, financial flexibility at the UK operating companies is limited. Moody's however takes comfort from management's publicly stated commitment to sustain the group's UK subsidiaries' credit ratings in the single-A range.

## **NG'S LIQUIDITY PROFILE REMAINS STRONG, ALTHOUGH HIGHER IMMEDIATE DEBT MATURITIES AND PARTICULARLY THE NEED TO FUND THE KEYSpan ACQUISITION HAS RESULTED IN GREATER DEBT ISSUANCE NEEDS**

NG has a strong liquidity profile underpinned by a 364-day MAC-free USD 1.550 billion syndicated credit facility, which expires in November 2006 but benefits from a 12-month term-out option which effectively extends the availability until November 2007. As of 31 March 2006 the facility was undrawn. The company has one US CP programme (USD 3.0 billion) which is utilised for working capital management and to help hedge the Group's US investment exposure. The majority of CP-issuance is now practiced at the group's operating companies. As of 31 March 2006 the amount outstanding under the CP programme was nil. Moody's notes management's treasury policy to limit any issuance under this programme at any one time to the amount of its committed back-up facilities, to the extent that these lines are not already utilised to back-up NGET or NGG's CP issuance.

Following the GBP 5.8 billion disposal of the UK gas distribution networks in 2005, NG returned GBP2.0 billion to shareholders and reduced NGG's debt by GBP 2.3 billion. This initially left approximately GBP 1.5 billion of liquidity available at the holding company. However, Moody's regards NG's funding requirement of around GBP 4 billion associated with near-term maturities and the KeySpan acquisition as challenging, and notes that this will require sustained access to the capital markets. Over the course of 2006, NG has already successfully raised the equivalent of more than USD 5 billion on the bond markets with tenors between 3 and 10 years.

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1. National Grid Gas Holdings plc (NGGH), which is NGG's immediate holding company, is rated A3, one notch lower than NGG, to reflect structural subordination, although NGGH is perceived to benefit from equal protection afforded by the regulatory ring fence associated with NGG.

## Related Research

### Industry Outlook:

[European Gas, February 2006 \(96548\)](#)

### Rating Methodologies:

[Global Regulated Electric Utilities, March 2005 \(91730\)](#)

[UK Independent Gas Distribution Companies: Similar Fundamentals to Regulated Water at Slightly Lower Leverage, March 2004 \(81784\)](#)

### Analyses:

[Transco Holdings Plc, February 2004 \(81173\)](#)

[Transco Plc, February 2004 \(81172\)](#)

[National Grid Company Plc, July 2005 \(93703\)](#)

[National Grid USA, February 2001 \(64017\)](#)

[KeySpan Corporation, October 2004 \(89550\)](#)

*To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.*

## Related Websites

### National Grid Plc

<http://www.nationalgrid.com/>

### National Grid USA

<http://www.nationalgridus.com/>

### The Office of Gas and Electricity Markets (Ofgem)

<http://www.ofgem.gov.uk/>

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