March 2005

Contact	Phone
London	
Stuart Lawton	44.20.7772.5454
New York	
Daniel Gates	1.212.553.1653
Sydney	
Brian Cahill	61.2.9270.8100
Tokyo	
Takahiro Morita	81.3.5408.4000

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:

Figure 1 – Electric Utility Companies Covered By This Methodology – by Geographic Region and Rating Category

	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
Totals	1	12	40	45	12	6	116

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.

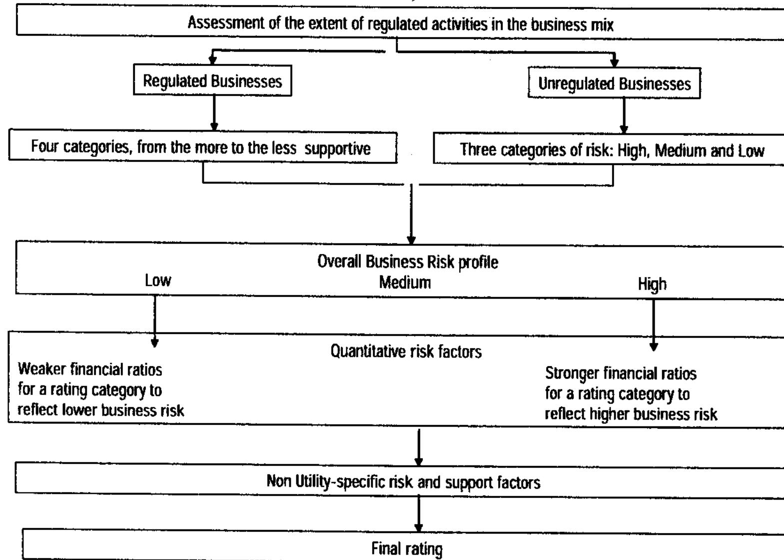
In addition, there is little consistency in the approach and application of regulatory frameworks around the world. Some are highly supportive of the "system" and those that operate within them, often offering implied sovereign support to ensure reliability of supply. Others are designed to protect the 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:

Figure 2



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 benefit for sovereign ownership. Government-owned with highly [illegible] and [illegible] 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 [illegible]	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 [illegible] in their region, and may be sensitive to 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 [illegible] may sometimes be [illegible]. Recovery of costs under regulated rates is generally predictable, with fuel and purchased power recovery provisions in some jurisdictions, but subject to greater [illegible] for regulatory [illegible]. There may be some history of [illegible] the regulated [illegible] 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	[illegible] issuers that [illegible]	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 [illegible] more exposed to competition, less competitive in costs and rates [illegible] to the loss of large industrial customers. There may be substantial competition for all types of customers, including retail and small commercial. Regulatory environment may be inconsistent, with surprisingly unfavorable 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	[illegible] in this rating category are [illegible] owned by [illegible] sovereign [illegible]	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, Mississipi, 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.